

Health Care Financing Note

Medicare use and cost of short-stay hospital services by enrollees with cataract, 1984

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In this article, we present data on aged and disabled Medicare hospital insurance enrollees discharged with the principal diagnosis of cataract from short-stay hospitals. Medical technology has reduced the risk of cataract surgery and the time needed to perform the surgery. As a result, the number of enrollees undergoing cataract surgery has increased. Also, such surgery has been shifted from inpatient hospitals to outpatient facilities. However, outpatient reimbursement for cataract surgery often equals or exceeds inpatient payments. To address this inequity, Congress legislated payment limits for cataract surgery.

Overview

Cataract is a major health care problem and is extremely important to the Medicare program for a number of reasons. First, the need for cataract surgery increases rapidly with age, and an estimated 60 percent of all persons 65 to 74 years of age have cataract surgery (Kucherov, 1984). Second, as an indication of prevalence in 1984, the diagnosis-related group (DRG) lens procedure (primarily cataract procedures) was third in size, with 361,000 discharges from short-stay hospitals among aged and disabled Medicare enrollees (Health Care Financing Administration, 1985). Third, given the incidence and prevalence of cataract, as reported by the National Center for Health Statistics (NCHS), between "1970 and 1983 there was more than a twofold increase in the rate of lens extraction performed in short-stay hospitals on persons 65 years of age and over (rising from 8.0 to 18.3 per 1,000 population)" (National Center for Health Statistics, 1985). Lastly, cataract surgery that "... historically involved an inpatient hospital stay of 3 to 6 days can now be performed on an outpatient basis. Formerly, the exclusive province of the hospital, the surgery is now frequently performed in ambulatory surgical centers and even doctor's offices" (Gottlober et al., 1985).

This article presents data on aged and disabled Medicare hospital insurance (HI) enrollees discharged from short-stay hospitals in 1984 with the principal diagnosis of cataract. Also presented are data for Medicare inpatient hospital recipients discharged in 1984 with the principal diagnosis of cataract, by age, sex, race, and State of residence. In addition, a comparison of use and cost data of enrollees with

cataract in 1979 and 1983 is provided. The use of hospital services is measured by number of discharges, discharges per 1,000 HI enrollees, number of days of care, days of care per discharge and per 1,000 HI enrollees. Measures of the cost of hospital care are total charges, and charges per discharge and per day.

Causes and types of surgery

The lens of the eye is located behind the pupil and the colored iris and is normally transparent. A cataract is any opacity or clouding of the lens that blocks or changes the passage of light needed for vision.

The symptoms of a cataract are interference with vision such as blurred vision, double vision, dim vision, or a sensation that a film is over the eyes. Although the underlying cause of cataract formation is unknown, some factors related to cataract are infection, hereditary influences, congenital effects (such as those occurring to children born of mothers who had German measles during pregnancy), physical or chemical injury to the eye, exposure to intense heat or radiation, and certain medications. Eye diseases and certain general diseases (such as diabetes) can also lead to cataract development. The most common variety, senile cataract, occurs in the eyes of persons past middle age. In 1985, 97 percent of all discharges from short-stay hospitals in the United States for persons with cataract as their principal diagnosis were 45 years of age or over (Graves, 1984).

Surgery is the only effective treatment of cataract and entails removal of the lens. The two most frequently performed types of cataract extraction are intracapsular and extracapsular. In the intracapsular operation, the entire lens with its surrounding capsule is removed in one piece. In the extracapsular operation (a microsurgery technique) the front of the capsule is opened and the nucleus and cortex of the lens are removed separately, leaving only the clear back part of the lens intact in the eye to hold an implant lens in place. This lens is designed to improve the quality of vision after cataract extraction. After removal, a substitute lens is needed to permit the eye to focus. There are several kinds of substitute lenses: those placed directly into the eye at the time of surgery, highly corrected eyeglasses, or contact lenses. Without diagnosis and treatment, cataract may result in blindness. However, cataract surgery is successful in restoring vision in 95 out of 100 cases.

Prospective payment system

The prospective payment system (PPS), part of the 1983 Amendments to the Social Security Act (Public Law 98-21), was designed to curb the rapid growth in

Medicare costs. PPS, effective October 1, 1983, replaced the retrospective cost-based system with one that pays short-stay hospitals a predetermined fixed rate according to the DRG assigned to each patient. By comparing short-stay hospital use and cost data on cataract for 1979, 1983, and 1984, we can attempt to judge how Medicare costs for cataract extraction were affected by PPS.

PPS provides hospitals with incentives to control costs because they are entitled to a profit if their cost per case falls below the prospective payment amount. Conversely, they suffer a loss when cost exceeds the payment amount. In addition to total charges, total charges per day, and charges per discharge, a measure to judge the effectiveness of PPS in controlling costs is the annual use rate—total days of care (TDOC) per 1,000 HI enrollees. The TDOC rate is a function of the product of the annual number of discharges per 1,000 HI enrollees and the ratio of the total days of care divided by the annual number of discharges. Thus,

$$\frac{\text{TDOC}}{1,000 \text{ HI enrollees}} = \frac{\text{Discharges}}{1,000 \text{ HI enrollees}} \times \frac{\text{TDOC}}{\text{Discharges}}$$

Highlights

Hospital insurance enrollees

The use and cost of short-stay hospital services by all Medicare hospital insurance enrollees discharged with the principal diagnoses of cataract are shown in Table 1 for the years 1979, 1983, and 1984.

- The total number of enrollees with cataract discharged from short-stay hospitals rose from 279,000 in 1979 to 450,000 in 1983, an average annual increase of 12.7 percent, and then fell to 364,000 in 1984, a decrease of 19.1 percent. The decrease in discharges between 1983 and 1984 was caused primarily by a greater use of hospital outpatient departments and ambulatory surgical centers for cataract surgery.
- A number of factors have contributed to the greater use of cataract surgery in outpatient settings. Peer review organizations (PRO's) conduct reviews of appropriateness of use of medical services and quality control of services for the Health Care Financing Administration (HCFA). Under PPS, 37 PRO's, by preadmission reviews, urged shifting lens procedures from inpatient to outpatient settings. Prior to PPS, the predecessors of PRO's also encouraged outpatient use. PRO's also discouraged premature cataract surgery, that is, operating when the cataract is not "ripe" for surgery, (Ruther, 1986a).
- Because hospitals and physicians regard the reimbursement under PPS for surgical lens procedure (DRG 039) as too low, PPS may have encouraged them to shift lens procedures to outpatient departments. "... Hospital outpatient costs can equal or exceed ... inpatient hospital stays because program reimbursement for hospital departments is not subject to ... a DRG rate. By shifting costs to the outpatient department, hospitals can increase their Medicare revenue. In almost all cases, the hospital outpatient charges are higher than the DRG rate for cataract surgery" (Gottlober et al., 1985).
- The payment for cataract extraction, DRG 039, was also undermined when some providers added an additional code when an injection of healon was given during cataract surgery. This resulted in assignment of DRG 042 (intraocular procedures except retina, iris, and lens) and thus, a higher reimbursement than for DRG 039. This strategy for increasing reimbursement is known as "DRG creep." HCFA instructed providers to discontinue this coding practice. HCFA then modified its computer program to assign DRG 039 even if the provider failed to do so (Ruther, 1986b).
- DRG data based on bills (which provide more current data than discharges) indicated that there were further decreases between 1984 and 1985 in the relative proportion of DRG 039. In fiscal year 1984, inpatient hospital bills for Medicare enrollees that were coded DRG 039 represented 3.5 percent of all bills and were the second most frequently coded DRG number. In fiscal year 1985, the comparable figures fell to 1.6 percent and to 13th place. Also, for DRG code 039, the average total days of care per bill fell from 2.3 days in fiscal year 1984 to 2.1 days in fiscal year 1985.
- The discharge rate of enrollees with cataract rose by 10.8 percent per year (10.1 to 15.2 per 1,000 HI

Table 1

Use and cost of short-stay hospital services, by all Medicare hospital insurance (HI) enrollees discharged with principal diagnoses of cataract: 1979, 1983, and 1984

Discharges, days of care, and total charges	1979	1983	1984	Average annual rate of change	
				1979-83	1983-84
Discharges	278,600	449,685	363,795	12.7	-19.1
Per 1,000 HI enrollees	10.1	15.2	12.1	10.8	-20.4
Total days of care	1,090,180	1,155,510	816,215	1.5	-29.4
Per discharge	3.9	2.6	2.2	-9.6	-15.4
Per 1,000 HI enrollees	39.7	39.1	27.2	-4	-30.4
Total charges in thousands	\$348,268	\$999,934	\$864,181	30.2	-13.6
Per discharge	1,250	2,224	2,375	15.5	6.8
Per day	319	865	1,059	28.3	22.4

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2

Use and cost of short-stay hospital services by aged Medicare hospital insurance (HI) enrollees discharged with principal diagnoses of cataract, by age, sex, and race: 1984

Age, sex, and race	Discharges		Total days of care			Total charges		
	Number	Per 1,000 HI enrollees	Number	Per discharge	Per 1,000 HI enrollees	Amount in thousands	Per discharge	Per day
Total	353,105	13.0	790,375	2.2	29.2	\$837,839	\$2,373	\$1,060
Age								
65-69 years	60,900	7.0	131,755	2.2	15.2	142,494	2,340	1,082
70-74 years	81,810	11.4	178,765	2.2	25.0	193,319	2,363	1,081
75-79 years	90,815	17.5	201,405	2.2	38.8	214,858	2,366	1,067
80-84 years	70,040	21.0	159,960	2.3	47.9	167,792	2,396	1,049
85 years or over	49,540	17.9	118,490	2.4	42.8	119,376	2,410	1,007
Sex								
Male	111,145	10.2	245,710	2.2	22.5	263,931	2,375	1,074
Female	241,950	14.9	544,610	2.3	33.6	573,876	2,372	1,054
Race¹								
White	319,245	13.3	706,145	2.2	29.5	750,888	2,352	1,063
All other	24,165	10.2	62,410	2.6	26.3	63,493	2,627	1,017

¹Excludes race unknown.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

- enrollees) from 1979 to 1983 but then fell to 12.7 per 1,000 or 20.4 percent from 1983 to 1984.
- Enrollees with cataract accounted for 1.1 million days of hospital care in 1979, and days of care increased only 1.5 percent per year through 1983. Days of care then fell markedly, 29.4 percent, the following year.
 - Enrollees with cataract had decreasing lengths of hospital stays prior to prospective payment. The average stay fell from 3.9 days in 1979 to 2.6 days in 1983, an annual decrease of 9.6 percent. In 1984, the first full year of the PPS, the average length of stay decreased markedly, to 2.2 days, a decrease of 15.4 percent from 1983.
 - Days of care per 1,000 enrollees were virtually unchanged between 1979 and 1983 but fell sharply from 39.1 days in 1983 to 27.2 days in 1984, a decrease of 30.4 percent. This decrease in days of care per 1,000 enrollees in the 1983-84 period was the result of decreases in discharges per 1,000 enrollees (20.4 percent) and in average length of stay (15.4 percent).
 - Total charges rose at an annual rate of 30.2 percent from 1979 to 1983, then fell 14.0 percent in 1984, reflecting the decrease in number of discharges.
 - Total charges per discharge before PPS rose 15.5 percent annually from 1979 (\$1,250) to 1983 (\$2,224) but the increase was 6.8 percent in 1984.
 - Total charges per day also increased less between 1983 and 1984, 22.4 percent, compared to an average annual rate of increase of 28.3 percent in the 1979-83 period.

Aged enrollees

The use and cost of short-stay hospital services by aged Medicare hospital insurance enrollees discharged with the principal diagnoses of cataract are shown in Table 2 for 1984.

- The annual discharge rate per 1,000 aged enrollees with cataract increased from 7.0 (for persons 65 to 69 years of age) to 21.0 (for those 80 to 84 years of age) and then decreased to 17.9 for enrollees 85 years of age or over.
- The average length of stay per discharge for cataract rose slightly from 2.2 days for persons aged 65 to 69 years to 2.4 days for those 85 years of age or over.
- The average charge per discharge for enrollees with cataract also increased slightly with age, from \$2,340 for persons 65 to 69 years of age to \$2,410 for those 85 years of age or over, reflecting largely the increasing length of stay.
- Average charges per day declined among aged inpatients discharged with a diagnosis of cataract from \$1,082 for persons 65 to 69 years of age to \$1,007 for those 85 years of age or over, a decline of only 6.9 percent.
- Aged females had a 46-percent higher discharge rate for the principal diagnosis of cataract than males (14.9 and 10.2 per 1,000 enrollees, respectively).
- Females had a slightly longer average length of stay (2.3 versus 2.2 days).
- The greater longevity of white persons probably explains, in part, the 30-percent higher discharge rate for cataract (13.3 per 1,000 HI enrollees) than of all other races (10.2 per 1,000).
- Persons other than white had an average length of stay of 2.6 days, or 18 percent more than that of white persons (2.2 days).
- Because aged persons other than white had longer average stays, they also had higher average charges per discharge (\$2,627) than white persons (\$2,352).

Disabled enrollees

The use and cost of short-stay hospital services by disabled Medicare hospital insurance enrollees

Table 3

Use and cost of short-stay hospital services by disabled Medicare hospital insurance (HI) enrollees discharged with principal diagnoses of cataract, by age, sex, and race: 1984

Age, sex, and race	Discharges		Total days of care			Total charges		
	Number	Per 1,000 HI enrollees	Number	Per discharge	Per 1,000 HI enrollees	Amount in thousands	Per discharge	Per day
Total	10,690	3.7	25,840	2.4	9.0	\$26,342	\$2,464	\$1,019
Age								
Under 35 years	285	0.7	685	2.4	1.8	681	2,389	994
35-44 years	505	1.2	1,555	3.1	3.7	1,401	2,774	901
45-54 years	1,615	2.8	3,945	2.4	6.8	4,025	2,492	1,020
55-59 years	2,515	4.3	6,170	2.5	10.6	6,116	2,432	991
60-64 years	5,770	6.4	13,485	2.3	14.8	14,118	2,447	1,047
Sex								
Male	5,530	3.0	13,375	2.4	7.3	13,535	2,448	1,012
Female	5,160	4.9	12,465	2.4	11.8	12,807	2,482	1,027
Race¹								
White	8,960	3.9	21,065	2.4	9.1	21,662	2,418	1,028
All other	1,475	2.9	4,175	2.8	8.3	4,004	2,715	959

¹Excludes race unknown.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

discharged with the principal diagnosis of cataract are shown in Table 3 for 1984.

- The discharge rate of disabled HI enrollees with cataract increased sharply with age from less than 1 per 1,000 for enrollees under 35 years of age to 6.4 per 1,000 for those 60 to 64 years of age, only slightly below the 7.0 per 1,000 of enrollees 65 to 69 years of age.
- Because the average length of stay of these disabled enrollees was generally similar for all age groups, days of care per 1,000 disabled enrollees increased with advancing age, reflecting the increasing discharge rate.
- Among the disabled with cataract, there was generally little variation with age in both average charge per discharge (\$2,464) and per day (\$1,019).
- Disabled females with cataract had a much higher discharge rate (4.9 per 1,000 enrollees) than disabled males (3.0) but identical average length of stay (2.4 days).
- The average charge per discharge and per day for cataract were similar for disabled males and females.
- Disabled white enrollees had a higher discharge rate than all other races but a shorter average length of stay.
- Because of their shorter length of stay, disabled white enrollees had a lower average charge (\$2,418) than all other races (\$2,715).

Aged enrollees, by region and State

The use and cost of short-stay hospital services by aged Medicare hospital insurance enrollees with cataract are displayed by geographic area for 1984 in Table 4.

- The discharge rate for cataract among aged HI persons varied from 14.8 per 1,000 enrollees in the Northeast to 9.6 in the West.

- Average length of stay varied from 2.5 days in the Northeast to 1.9 days in West. This variation is similar to average length of stay for all Medicare inpatient discharges.
- Among the States, New York had the longest length of stay, with an average of 2.7 days, and Washington had the shortest, with 1.6 days. (Alaska was excluded because of the small sample size.)
- The mean charge per discharge was highest in the West (\$2,655) and lowest in the South (\$2,297).

Disabled enrollees, by region and State

The use and cost of short-stay hospital services by disabled Medicare hospital insurance enrollees with cataract are displayed by geographic area for 1984 in Table 5.

- The discharge rate for cataract ranged from 4.3 per 1,000 HI enrollees in the North Central region to 3.2 per 1,000 in the West.
- Variation in average length of stay ranged from 2.6 days in the Northeast to 2.0 days in the West.
- The West had the highest mean charge per discharge (\$2,893), reflecting the highest average daily charge (\$1,439) and the lowest average length of stay (2.0 days).
- In contrast, the Northeast had the lowest charge per discharge (\$2,360), with the lowest average charge per day (\$911) and the highest average length of stay, 2.6 days.

Aged enrollees, by selected States

The number and percent change of discharges of aged Medicare enrollees with cataract, from short-stay hospitals in selected States, are shown for the years 1983 and 1984 in Table 6.

Table 4

Use and cost of short-stay hospital services by aged Medicare hospital insurance (HI) enrollees with cataract, by geographic area: 1984

Geographic area	Discharges		Days of care			Total charges	
	Number	Per 1,000 HI enrollees	Number	Per discharge	Amount in thousands	Per discharge	Per day
Total	353,105	13.0	790,375	2.2	\$837,839	\$2,373	\$1,060
United States ¹	350,045	13.2	781,425	2.2	833,638	2,382	1,067
Northeast	92,545	14.8	228,990	2.5	221,171	2,390	966
North Central	98,290	14.1	217,120	2.2	230,907	2,349	1,064
South	114,970	13.2	252,525	2.2	264,106	2,297	1,046
West	44,235	9.6	82,780	1.9	117,439	2,655	1,419
New England	19,850	12.5	47,765	2.4	47,448	2,390	993
Connecticut	4,660	11.9	10,245	2.2	10,249	2,199	1,000
Maine	2,170	14.5	4,735	2.2	5,076	2,339	1,072
Massachusetts	10,500	14.2	27,160	2.6	27,035	2,575	995
New Hampshire	920	8.3	2,280	2.5	1,998	2,171	876
Rhode Island	1,055	8.0	2,180	2.1	2,016	1,911	925
Vermont	545	8.9	1,165	2.1	1,074	1,971	922
Middle Atlantic	72,695	15.6	181,225	2.5	173,723	2,390	959
New Jersey	11,715	13.0	29,770	2.5	24,762	2,114	832
New York	34,510	16.1	94,860	2.7	76,145	2,206	803
Pennsylvania	26,470	16.4	56,595	2.1	72,816	2,751	1,287
East North Central	66,960	14.2	149,605	2.2	161,840	2,417	1,082
Illinois	23,325	18.1	55,025	2.4	61,727	2,646	1,122
Indiana	7,045	11.4	15,710	2.2	14,358	2,038	914
Michigan	13,345	13.6	29,630	2.2	34,291	2,570	1,157
Ohio	14,725	12.0	30,550	2.1	33,879	2,301	1,109
Wisconsin	8,520	14.2	18,690	2.2	17,585	2,064	941
West North Central	31,330	13.8	67,515	2.2	69,067	2,205	1,023
Iowa	4,415	11.0	9,580	2.2	9,220	2,088	962
Kansas	4,520	14.4	9,335	2.1	9,948	2,201	1,066
Minnesota	5,670	11.3	10,245	1.8	11,034	1,946	1,077
Missouri	10,325	15.7	24,540	2.4	25,315	2,452	1,032
Nebraska	2,765	13.1	6,355	2.3	6,296	2,277	991
North Dakota	1,825	21.4	3,605	2.0	3,543	1,941	983
South Dakota	1,810	19.1	3,855	2.1	3,710	2,050	962
South Atlantic	56,665	12.4	125,370	2.2	136,229	2,404	1,087
Delaware	605	9.2	1,305	2.2	1,384	2,288	1,061
District of Columbia	890	13.4	2,425	2.7	3,013	3,385	1,242
Florida	17,935	10.2	37,175	2.1	47,904	2,671	1,289
Georgia	9,080	16.9	20,230	2.2	20,453	2,253	1,011
Maryland	5,960	14.4	14,910	2.5	13,453	2,257	902
North Carolina	5,995	9.2	13,070	2.2	12,385	2,066	948
South Carolina	4,630	15.0	11,085	2.4	10,631	2,296	959
Virginia	7,990	14.9	17,620	2.2	18,043	2,258	1,024
West Virginia	3,580	14.8	7,550	2.1	8,962	2,503	1,187
East South Central	24,105	14.4	54,950	2.3	55,278	2,293	1,006
Alabama	6,205	13.9	13,215	2.1	15,252	2,458	1,154
Kentucky	4,710	11.4	11,115	2.4	10,515	2,233	946
Mississippi	3,965	14.0	8,240	2.1	8,023	2,023	974
Tennessee	9,225	17.4	22,380	2.4	21,488	2,329	960
West South Central	34,200	13.8	72,205	2.1	72,599	2,123	1,005
Arkansas	3,965	12.6	8,295	2.1	8,153	2,056	983
Louisiana	8,085	20.2	17,475	2.2	19,516	2,414	1,117
Oklahoma	4,315	11.6	8,000	1.9	9,039	2,095	1,130
Texas	17,835	12.7	38,435	2.2	35,890	2,012	934
Mountain	9,240	7.8	18,490	2.0	20,994	2,272	1,135
Arizona	2,050	5.8	3,945	1.9	4,944	2,412	1,253
Colorado	3,065	11.5	6,060	2.0	6,830	2,229	1,127
Idaho	765	7.3	1,580	2.1	1,529	1,999	968
Montana	485	5.2	925	1.9	996	2,055	1,077
Nevada	405	4.9	740	1.8	1,214	2,996	1,640
New Mexico	1,750	13.8	3,730	2.1	4,059	2,320	1,088
Utah	345	2.8	695	2.0	593	1,718	853
Wyoming	375	9.1	815	2.2	828	2,209	1,016

See footnotes at end of table.

Table 4—Continued

Use and cost of short-stay hospital services by aged Medicare hospital insurance (HI) enrollees with cataract, by geographic area: 1984

Geographic area	Discharges		Days of care			Total charges	
	Number	Per 1,000 HI enrollees	Number	Per discharge	Amount in thousands	Per discharge	Per day
Pacific	34,995	10.2	64,290	1.8	96,445	2,756	1,500
Alaska	150	10.5	510	3.4	520	3,468	1,020
California	28,305	11.2	52,815	1.9	82,906	2,929	1,570
Hawaii	615	7.1	1,045	1.7	1,274	2,071	1,219
Oregon	3,155	9.5	5,440	1.7	6,947	2,202	1,277
Washington	2,770	5.9	4,480	1.6	4,798	1,732	1,071
Other areas	3,060	5.9	8,950	2.9	4,200	1,373	469
Puerto Rico	2,880	9.8	8,490	2.9	3,843	1,334	453
All other areas	180	.8	460	2.6	357	1,983	776

¹Includes residence unknown.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 5

Use and cost of short-stay hospital services by disabled Medicare hospital insurance (HI) enrollees with cataract, by geographic area: 1984

Geographic area	Discharges		Days of care			Total charges	
	Number	Per 1,000 enrollees	Number	Per discharge	Amount in thousands	Per discharge	Per day
Total	10,690	3.7	25,840	2.4	\$26,342	\$2,464	\$1,019
United States ¹	10,565	3.8	25,525	2.4	26,154	2,476	1,025
Northeast	2,485	4.1	6,440	2.6	5,866	2,360	911
North Central	2,830	4.3	6,905	2.4	7,029	2,484	1,018
South	3,790	3.6	9,245	2.4	9,035	2,384	977
West	1,460	3.2	2,935	2.0	4,224	2,893	1,439
New England	495	3.6	1,470	3.0	1,255	2,536	854
Connecticut	120	4.0	465	3.9	328	2,736	706
Maine	80	5.1	200	2.5	181	2,267	907
Massachusetts	195	3.1	585	3.0	573	2,939	980
New Hampshire	20	2.1	55	2.8	33	1,633	594
Rhode Island	50	3.6	95	1.9	84	1,681	885
Vermont	30	4.7	70	2.3	56	1,869	801
Middle Atlantic	1,990	4.3	4,970	2.5	4,610	2,317	928
New Jersey	385	4.4	910	2.4	804	2,089	884
New York	925	4.2	2,570	2.8	1,995	2,157	776
Pennsylvania	680	4.3	1,490	2.2	1,811	2,663	1,215
East North Central	2,010	4.2	4,950	2.5	5,074	2,524	1,025
Illinois	630	5.7	1,675	2.7	1,723	2,735	1,029
Indiana	215	3.3	550	2.6	482	2,241	876
Michigan	460	3.9	1,035	2.3	1,171	2,545	1,131
Ohio	510	3.7	1,260	2.5	1,277	2,505	1,014
Wisconsin	195	3.8	430	2.2	421	2,159	979
West North Central	820	4.6	1,955	2.4	1,955	2,384	1,000
Iowa	110	3.8	240	2.2	264	2,396	1,098
Kansas	75	3.5	160	2.1	184	2,455	1,151
Minnesota	140	4.1	305	2.2	283	2,023	929
Missouri	345	5.2	925	2.7	882	2,557	954
Nebraska	45	3.2	115	2.6	111	2,472	967
North Dakota	55	9.3	105	1.9	111	2,011	1,054
South Dakota	50	7.3	105	2.1	121	2,410	1,148
South Atlantic	1,855	3.4	4,660	2.5	4,565	2,461	980
Delaware	35	4.6	80	2.3	81	2,307	1,009
District of Columbia	35	5.0	80	2.3	105	2,988	1,307
Florida	325	2.3	745	2.3	896	2,757	1,203
Georgia	425	4.9	1,030	2.4	1,004	2,363	975
Maryland	170	4.0	435	2.6	380	2,236	874
North Carolina	245	2.7	825	3.4	617	2,517	748
South Carolina	220	4.3	485	2.2	490	2,228	1,011
Virginia	280	4.0	700	2.5	652	2,329	932
West Virginia	120	2.9	280	2.3	340	2,836	1,216

See footnotes at end of table.

Table 5—Continued

Use and cost of short-stay hospital services by disabled Medicare hospital insurance (HI) enrollees with cataract, by geographic area: 1984

Geographic area	Discharges		Days of care		Total charges		
	Number	Per 1,000 enrollees	Number	Per discharge	Amount in thousands	Per discharge	Per day
East South Central	910	3.7	2,125	2.3	2,141	2,353	1,008
Alabama	230	3.6	510	2.2	560	2,436	1,099
Kentucky	185	2.9	395	2.1	384	2,074	972
Mississippi	150	3.3	355	2.4	375	2,499	1,056
Tennessee	345	4.6	865	2.5	822	2,383	951
West South Central	1,025	3.9	2,460	2.4	2,329	2,272	947
Arkansas	105	2.5	235	2.2	248	2,357	1,053
Louisiana	325	5.5	815	2.5	767	2,360	941
Oklahoma	105	3.0	265	2.5	300	2,861	1,134
Texas	490	3.8	1,145	2.3	1,014	2,069	885
Mountain	320	2.8	740	2.3	813	2,542	1,099
Arizona	75	2.2	165	2.2	182	2,424	1,102
Colorado	140	5.7	325	2.3	358	2,555	1,100
Idaho	20	2.3	45	2.3	39	1,958	870
Montana	15	1.7	40	2.7	42	2,796	1,048
Nevada	15	1.7	35	2.3	50	3,310	1,419
New Mexico	40	2.7	90	2.3	117	2,917	1,297
Utah	10	1.1	25	2.5	15	1,550	620
Wyoming	5	1.7	15	3.0	11	2,224	741
Pacific	1,140	3.3	2,195	1.9	3,410	2,992	1,554
Alaska	0	0	0	0	0	0	0
California	935	3.5	1,830	2.0	2,949	3,154	1,611
Hawaii	30	3.9	75	2.5	84	2,797	1,119
Oregon	90	3.1	155	1.7	219	2,432	1,412
Washington	85	2.0	135	1.6	159	1,870	1,178
Other areas	125	1.2	315	2.5	188	1,503	596
Puerto Rico	120	1.3	305	2.5	184	1,532	603
All other areas	5	0.4	10	2.0	4	811	406

¹Includes residence unknown.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 6

Number and percent change of discharges of aged Medicare enrollees with cataract from short-stay hospitals for selected States: 1983 and 1984

State	Discharges		
	1983	1984	Percent change
North Carolina	10,345	5,995	-42.0
Florida	28,320	17,935	-36.7
California	42,855	28,305	-34.0
Texas	25,755	17,835	-30.8

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

- As shown in Table 6, there were sizable decreases between 1983 and 1984 in number of aged enrollees discharged with cataract by State. Among States with 10,000 or more enrollees discharged with cataract in 1983, the following four States had decreases of more than 30 percent in 1984: North Carolina, 42 percent; Florida, 37 percent; California, 34 percent; and Texas, 31 percent.

Discharges, by principal surgical procedure

Discharges from short-stay hospitals of all Medicare hospital insurance enrollees with the principal diagnosis of cataract are listed by principal surgical procedure for the years 1979, 1983, and 1984 in Table 7.

- There has been a major change in the type of surgical procedure used to extract the lens of the cataract patient. In 1979, among all enrollees with a principal diagnosis of cataract, 11 percent had an extracapsular extraction of the lens as their principal surgical procedure. The comparable proportion increased to 64 percent in 1984. As a result of this change, intracapsular extractions fell from 76 percent of cataract surgical procedures to 31 percent in 1984. The extracapsular extraction is now the most popular type of cataract operation because it reduces postoperative complications.
- Extracapsular extraction resulted in another instance of a major change in medical practice: the increase in the insertion of the intraocular lens at the time of cataract extraction. As evidence of this increase, NCHS reported that the ratio of surgical insertions of the prosthetic lens, for inpatients 65 years of age or over, to extractions of the lens, was

Table 7

Discharges from short-stay hospitals of all Medicare hospital insurance enrollees with principal diagnoses of cataract, by principal surgical procedure: 1979, 1983, and 1984

Surgical procedure code and description ¹	Number of discharges in thousands			Percent distribution			Average annual rate of change	
	1979	1983	1984	1979	1983	1984	1979-83	1983-84
Total selected cataract operations	253	409	331	100.0	100.0	100.0	12.8	-19.1
13.1 Intracapsular extraction of lens	193	165	102	76.3	40.3	30.8	-3.8	-38.2
13.4-13.5 Major types of extracapsular extraction of lens	28	188	213	11.1	46.0	64.4	61.0	13.3
13.7 Insertion of prosthetic lens	32	56	16	12.6	13.7	4.8	15.0	-71.4

¹Codes are from *International Classification of Diseases, 9th Revision, Clinical Modification*, Vol. 3.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

36 percent during 1979 (National Center for Health Statistics, 1985). The comparable figures for Medicare aged enrollees in 1984 increased to 76 percent.

- HCFA conducted a study of the appropriate Medicare payment for an extracapsular procedure with and without implanting an intraocular lens. In a national sample of hospital and hospital outpatient clinics, HCFA found the extracapsular procedure with implant took less time but had a much higher prevailing charge than the procedure without an implant.
- To address these changes, Congress enacted the Omnibus Budget Reconciliation Act of 1986 that included a provision limiting payment for cataract surgical procedures to reflect the improved technology for this procedure. Section 1842 of the Social Security Act requires that the prevailing charge for physicians for cataract surgery shall be reduced by 10 percent for procedures performed in 1987 and further reduced by 2 percent in 1988 and thereafter.
- To summarize, technology has reduced both the risk of cataract surgery and the time needed to perform the surgery. As a result, the number of enrollees undergoing cataract surgery has increased. There has also been a shift of cataract surgery from inpatient hospitals to outpatient facilities. However, hospital outpatient reimbursement for cataract surgery often equals or exceeds inpatient payments. To address concerns about the unit cost of performing cataract surgery, Congress enacted legislation limiting payment for cataract surgery.

Technical note

Sources and limitations of data

The data shown in this article were derived from HCFA's short-stay hospital inpatient stay record file. This file is generated by linking information from three HCFA master program files for a 20-percent sample of Medicare beneficiaries. Whenever a beneficiary in the sample is discharged, the following process takes place to create a statistical stay record for the file.

Selected information is taken from the billing form for inpatient services submitted for payment by participating short-stay hospitals. Data selected from the bill record include the principal diagnosis, surgical procedure code, discharge status, length of hospital stay, and charges submitted. This bill record is then matched to the health insurance entitlement (HIE) master file, which maintains information for each person eligible for HI benefits. Beneficiary characteristics such as age, race, sex, and State of residence are selected from the HIE file and merged with the stay record data describing the beneficiary's period of hospitalization. The stay record is then matched to the provider of services master file, which contains information about the hospital from which the patient was discharged. Data selected include such hospital characteristics as size, type of control (ownership), and State of the provider. The statistical stay record produced by these steps provides information on the patient, the hospital, and the hospitalization. Accumulation of these records for all beneficiaries in the 20-percent sample results in creation of the inpatient stay record file. The sample counts have been multiplied by five to give estimates of the Medicare population totals.

Three types of limitations should be considered when using the data shown in this article: sampling variability, exclusions, and diagnostic coding. The data are based on short-stay hospital stay records for a 20-percent sample of beneficiaries with the principal diagnosis of cataract. Therefore, the data are subject to sampling variability.

Several types of discharges are currently excluded from processing. These represent emergency admissions to short-stay hospitals not participating in the Medicare program, discharges from rehabilitation hospitals, and discharges from distinct parts of long-term care facilities.

The diagnostic information for cataract shown in this article was classified according to the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*. The data shown represent those stay records for which the principal diagnosis was coded 366.

Several studies have been conducted over the years to evaluate the reliability of the principal diagnosis as

coded and shown in the Medicare Statistical System (MSS). In these studies, the diagnosis on the discharge record in MSS was compared with the diagnosis abstracted from the hospital medical record. These studies indicate that data pertaining to the individual diagnoses should be used with caution, especially medical coding in 1979, the first year in which the ICD-9-CM was used.

Definitions

Annual discharge rate per 1,000 HI enrollees—The ratio of the total number of discharges (multiplied by 1,000) to the number of persons entitled to HI benefits on July 1 of that year.

Average length of stay—The ratio of the number of days of care divided by number of discharges.

Day of care—A day of inpatient hospital care, during which services were furnished to a person eligible for hospital insurance benefits. The day of discharge is not counted as a day of care.

Discharge—The formal release of a patient from a hospital. Discharges include persons who died during their hospitalization or were transferred to another hospital.

Geographic classification—Based on the address to which the enrollee's social security benefit check is being mailed, or the mailing address recorded in the HIE master file at the time the bill is processed by HCFA, regardless of the reference date of the table.

Hospital charges—The hospitals' charge for room, board, and ancillary services recorded on the billing form. The charges reflect the prices placed by the hospital on the specific services furnished to the individual patient.

Principal diagnosis—The condition, after study, to be chiefly responsible for the hospital admission. All diagnostic information shown in these tables is classified according to the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*. Three-, four-, or five-digit codes are assigned for each principal diagnosis.

Short-stay hospitals—Those hospitals where the average total length of stay is less than 30 days. General and special hospitals are included in this category.

Surgery—Includes any operative procedure recorded on the patient's billing form defined as surgery in the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*. *Volume 3 - Procedures*.

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