

# The Financial Position of Private Community Hospitals, 1961-71

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*This article describes the trends in the financial position of nongovernmental community hospitals in the period 1961-71 and identifies where possible the important causes of net income variation during the period, both overall and between hospitals of different size and ownership. Variations in net income by bed size of hospital were also studied for 1971 in an attempt to shed additional light on factors influencing financial position.*

*As a result of several factors, including greater third-party coverage and increases in the range and complexity of services, the net income of hospitals improved substantially in 1961-71. Net income as a rate of return on plant assets in non-profit hospitals rose from 1.4 percent to 3.0 percent in the decade; the rate of return in for-profit hospitals increased from 8.9 percent to 16.2 percent. The 1971 data show that net income differentials result from the simultaneous interaction of many factors—from relative prices to the relative efficiency of hospital operation. Among the factors identified, the range and complexity of services, geographical location, and ownership seemed most important in the determination of financial position.*

THE DECADE of the sixties was a period of remarkable change in the delivery and financing of medical care. On the one hand, biomedical knowledge and related technology of diagnosis and treatment advanced very rapidly during this period. On the other hand, the entire medical care industry grew tremendously. Total national health expenditures, which amounted to \$28.8 billion or 5.5 percent of the gross national product (GNP) in 1961, had increased to \$79.8 billion or 7.6 percent of GNP by 1971. In addition, important shifts occurred in the sources of payment for medical care services. These shifts reflected the continued growth of enrollment under private health insurance and the large-scale entry of the Federal Government into health care financing with such new programs as health insurance for the aged (Medicare) and medical assistance

(Medicaid) for individuals with low incomes.

The community hospital, as the provider of the largest share of medical services for the treatment of acute illnesses and injuries, has naturally been the focal point of many of these changes. Substantial improvements in technology have occurred in hospital care. Specialized facilities and services that were rare or nonexistent in 1961 are now offered by many community hospitals. Advances in surgical techniques and development of new drugs have also contributed to higher rates of success in dealing with many diseases.

In the financing of hospital care, the growth of third-party payment systems (private health insurance and public programs) has led to significant changes in the sources of payments. Table 1 shows the distribution of total expenditures for hospital care in all hospitals and in nongovernmental general and other special hospitals in 1961 and 1971, by source of funds. For all hospitals, private direct payments by consumers dropped from 18.4 percent of expenditures for hospital care in the earlier year to 9.9 percent in 1971. The decline occurred as part of the burden of paying for hospital care was shifted from consumers to public programs such as Medicare and Medicaid, which began operations in 1966.

Since changes in medical technology or in the methods and sources of financing hospital care can affect hospital expenses and revenues, it is not surprising to find that the financial position of hospitals has changed considerably in the past decade. This subject has been explored in earlier studies.<sup>1</sup>

The purpose of this article is twofold: First, to examine trend data to see if the patterns discov-

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<sup>1</sup> See Karen Davis, *Net Income of Hospitals, 1961-1969* (Staff Paper No. 6), Office of Research and Statistics, Social Security Administration, 1971, and Paul J. Feldstein and Saul Waldman, "Financial Position of Hospitals in the Early Medicare Period," *Social Security Bulletin*, October 1968.

TABLE 1.—Total expenditures for hospital care, by source of funds and type of hospital, 1961 and 1971

Source of funds	1961		1971	
	Amount (in millions)	Percentage distribution	Amount (in millions)	Percentage distribution
All hospitals				
Total.....	\$9,921	100 0	\$31,119	100 0
Private direct payments.....	1,822	18 4	3,087	9 9
Third-party payments.....	8,098	81 6	28,032	90 1
Private health insurance.....	3,766	38 0	11,369	36 5
Public programs.....	4,082	41 2	16,250	52 2
Medicare.....	-----	-----	5,649	34 8
Medicaid.....	1,256	6 3	3,114	19 2
Other.....	3,826	93.7	7,487	46 1
Philanthropy.....	250	2 5	413	1 3
Nongovernmental general <sup>1</sup> and other special hospitals				
Total.....	\$5,362	100 0	\$19,543	100 0
Private direct payments.....	1,471	27.4	2,190	11.2
Third-party payments.....	3,891	72.6	17,353	88 8
Private health insurance.....	3,214	59.9	9,381	47.8
Public programs.....	427	8.0	7,609	38.9
Medicare.....	-----	-----	5,083	26 0
Medicaid.....	128	2 4	1,556	8 0
Other.....	299	5 6	970	4 9
Philanthropy.....	250	4.7	413	2 1

<sup>1</sup> Vendor medical payments under public assistance programs.  
<sup>2</sup> Including long-term

Source: 1961 data based on *Compendium of National Health Expenditures Data*, Social Security Administration, Office of Research and Statistics, 1973. 1971 data from Research and Statistics Note No. 3, Social Security Administration, Office of Research and Statistics, 1973.

ered in other studies have prevailed in recent years; second, to examine revenue, expense, and net income data in greater detail by bed size for additional insights on the important factors affecting the net income position of hospitals. Because hospital ownership or control frequently has been cited as a factor that influences financial position, comparisons of nongovernmental nonprofit and for-profit hospitals are included.

Community hospitals (non-Federal short-term general and other special hospitals) account for most of the acute medical care provided to the general public in hospitals. Attention is limited here to nongovernmental community hospitals largely because of the character and availability of the published data. Data on the financial experience of State and local government hospitals were not published before 1969; moreover, the funding for these institutions is distinctly different from that for other community hospitals, since they typically receive at least part of their revenue directly from the budgets of State and local governments. The remaining nongovernmental nonprofit and for-profit hospitals ac-

counted for approximately 75 percent of all beds in community hospitals in 1971.

Data for this study are drawn principally from the annual Guide Issues of *Hospitals*, the Journal of the American Hospital Association (AHA). These data are based on the financial experience, as reported in AHA's annual survey, of all nongovernmental nonprofit and for-profit community hospitals registered by the Association. The survey response rate in 1971 was 96.6 percent for nonprofit hospitals, 78.8 percent for all for-profit hospitals. Because the response rate is directly related to size of hospital, the lower rate of for-profit hospitals may result in some bias in the data for these hospitals, especially those with less than 50 beds.

## NATIONAL TRENDS

Annual data on revenue, expenses, and net income of nongovernmental community hospitals for 1961-71 are presented in table 2. Total revenue rose from \$5.0 billion in 1961 to \$18.1 billion in 1971, but expenses increased somewhat less—from \$4.9 to \$17.6 billion—during the same period. As a result, overall net income grew tremendously, from \$110 million in 1961 to \$547 million in 1971.

Much of this growth occurred in the second half of the decade, following the implementation of Medicare and Medicaid. The contrast between annual rates of change for both revenue and expenses is perhaps most striking between the periods 1961-65 and 1967-71. Total revenue, for example, increased from 1961 to 1965 at an annual rate of 10.4 percent but went up 16.4 percent a year from 1967 to 1971.

Changes in the financial position of hospitals stem from the simultaneous interaction of three factors: prices for hospital services, costs of producing services, and utilization. As a first step in attempting to understand the trends in financial experience described above, it may be useful to examine data on these three factors for the decade 1961-71.

Data on prices of selected hospital services have been collected routinely by the Bureau of Labor Statistics for inclusion in the Consumer Price Index. Until recently, however, no effort was made to measure the overall price of hospi-

tal care. Among the items priced during most or all of the period studied are semiprivate room charges (room, board, and routine nursing care in semiprivate accommodations), operating-room charges, and charges for X-ray (diagnostic series, upper G.I.). Index numbers and annual percentage increases for these components are shown in table 3.

The prices for these services, with a pattern of

growth like the one that was observed for hospital revenue, increased much more rapidly in the second half of the decade than they did during the period 1961-65. The semiprivate room index, for example, which rose at an average annual rate of 13.0 percent from 1967 to 1971, had increased at an annual rate of only 5.6 percent from 1961 to 1965.

These data suggest that higher prices for hos-

TABLE 2.—Revenue, expense, and net income for nongovernmental nonprofit and for-profit community hospitals, 1961-71

Year	Total revenue (in millions)	Total expense (in millions)	Net income (in millions)	Plant assets (in millions)	Net income ratio		Annual rate of change		
					Total revenue	Plant assets	Total revenue	Total expense	Plant assets
<b>Total</b>									
1961.....	\$4,998	\$4,888	\$110	\$6,757	2 20	1.63	9.9	10 7	6.6
1962.....	5,358	5,345	13	7,244	.25	.18	7.2	9 3	7.2
1963.....	6,060	5,907	153	7,866	2 52	1.94	13 1	10 5	8.6
1964.....	6,670	6,533	137	8,541	2 06	1.61	10.1	10 6	8.6
1965.....	7,422	7,153	269	9,381	3 62	2.87	11.3	9 5	9.8
1966.....	8,276	7,989	287	10,018	3 47	2 87	11.5	11 7	6.8
1967.....	9,888	9,460	399	10,781	4 05	3 70	19.1	18 4	7.6
1968.....	11,436	11,036	400	11,799	3 50	3 39	16 0	16 7	9 5
1969.....	13,459	12,989	470	12,911	3 49	3 64	17.7	17 7	9 4
1970.....	15,707	15,231	476	14,265	3 03	3 34	16.7	17 3	10.5
1971.....	18,104	17,557	547	15,810	3 02	3 46	15 3	15 3	10 8
Annual average									
1961-65.....	6,102	5,965	136	7,958	2.24	1.71	10.4	10 1	8 5
1967-71.....	13,713	13,255	458	13,113	3 34	3 60	16.4	16 7	10 0
1967-69.....	11,584	11,161	423	11,830	3.65	3 58	16 8	17 2	9 4
1969-71.....	15,787	15,259	498	14,329	3.16	3 47	16 0	16 3	10 7
<b>Nonprofit</b>									
1961.....	\$4,675	\$4,584	\$91	\$6,541	1 94	1.39	9.9	10.7	5.9
1962.....	4,996	4,999	-3	7,010	-.06	-.04	6 9	9 0	7.2
1963.....	5,623	5,491	132	7,592	2 34	1.74	12.5	9 8	8.3
1964.....	6,154	6,039	115	8,217	1.87	1.40	9.5	10.0	8.2
1965.....	6,870	6,643	227	9,078	3.31	2.50	11.6	10.0	10.5
1966.....	7,674	7,435	239	9,752	3.11	2.45	11.7	11.9	7.4
1967.....	9,146	8,806	339	10,457	3 71	3 24	19 2	18 4	7.2
1968.....	10,653	10,317	337	11,490	3.16	2 93	16 5	17 2	9 9
1969.....	12,537	12,137	400	12,523	3.19	3 19	17.7	17 6	9 0
1970.....	14,551	14,163	388	13,783	2.66	2.81	16 1	16 7	10.1
1971.....	16,801	16,344	457	15,259	2.72	3 00	15.5	15 4	10.7
Annual average									
1961-65.....	5,663	5,551	112	7,688	1.98	1.46	10.1	9 7	8.5
1967-71.....	12,738	12,353	384	12,702	3 02	3 02	16.4	16 7	9 9
1967-69.....	10,779	10,420	359	11,490	3 33	3 12	17.1	17 4	9 4
1969-71.....	14,630	14,215	415	13,855	2 84	3 00	15.8	16 0	10.4
<b>For-profit</b>									
1961.....	\$323	\$304	\$19	\$216	5.91	8 85	10 1	10 6	7 9
1962.....	362	346	16	233	4.44	6 90	12 1	13 8	8.1
1963.....	437	417	21	275	4.75	7 56	20 8	20 4	17 9
1964.....	515	493	22	325	4 27	6 77	17 9	18 5	18.2
1965.....	552	510	42	308	7 56	13 77	7 1	3 4	-6.8
1966.....	602	553	49	266	8 05	18.18	0 0	8 4	-12.1
1967.....	713	653	60	324	8 38	18.44	18 5	18 1	21.6
1968.....	* 783	720	64	309	8 12	20 56	9 9	10 2	-4.4
1969.....	922	852	70	387	7.56	17 98	17 7	18 4	25.2
1970.....	1,156	1,068	88	482	7.65	18.35	25 4	25 4	24.6
1971.....	1,303	1,214	89	551	6 87	16 23	12.7	13 7	14.3
Annual average									
1961-65.....	438	414	24	270	5.48	8.88	14.3	13 8	8.8
1967-71.....	975	901	74	411	7.61	18 07	16 3	16 8	14.2
1967-69.....	806	741	65	340	8.02	19 02	13 7	14 2	9 3
1969-71.....	1,127	1,045	82	473	7.31	17 39	18 9	19 4	19.3

\* Estimate based on assumption that nonprofit revenue is 93.15 percent of total nongovernmental community hospital revenue as in 1969.

\* Estimate based on assumption that for-profit revenue is 6.85 percent of total nongovernmental community hospital revenue as in 1969. Source: *Hospitals* (annual Guide Issues).

TABLE 3.—Consumer price index and percentage change for selected hospital services, 1961–71

Year	Annual average index (1967=100)			Percentage change from previous year		
	Semiprivate room charges	Operating-room charges	X-ray (diagnostic series, upper G.I.)	Semiprivate room charges	Operating-room charges	X-ray (diagnostic series, upper G.I.)
1961.....	61.1			6.6		
1962.....	65.3			6.9		
1963.....	69.6	177.9	189.0	5.1		
1964.....	71.9	79.4	89.7	4.8	1.9	0.8
1965.....	75.9	82.9	90.9	5.6	4.4	1.3
1966.....	83.5	88.6	94.1	10.0	6.9	3.5
1967.....	100.0	100.0	100.0	19.8	12.9	6.3
1968.....	113.6	111.5	104.3	13.6	11.5	4.3
1969.....	128.8	128.7	109.3	13.4	15.4	4.8
1970.....	145.4	142.4	116.3	12.9	10.6	6.4
1971.....	168.1	166.2	124.9	12.2	9.7	7.4
Average annual increase.....						
1961–65.....	5.6	3.2	1.0			
1967–71.....	13.0	11.8	5.7			
1967–69.....	13.5	13.4	4.5			
1969–71.....	12.5	10.2	6.9			

<sup>1</sup> December 1963 value when the index began

<sup>2</sup> Average annual increase from December 1963 to approximately midyear

1965 (computation assumed a 2-year period, instead of the actual 18 months, so the growth rates are slightly understated).

Source: Bureau of Labor Statistics, *Consumer Price Index*.

pital services were a major source of increase in hospital revenues during this time. It should be pointed out, however, that even though hospital charges did go up substantially from 1961 to 1971, other changes taking place at the same time tended to reduce the importance of price change as a determinant of hospital revenue.

Total expenditures for hospital care in all non-governmental general and other special hospitals, by source of funds, for 1961 and 1971 are shown in table 1.<sup>2</sup> Private direct payments for hospital services declined from 27 percent of total expenditures of these hospitals in 1961 to only 11 percent in 1971, mostly as a result of the tremendous growth in the share of public programs. Public expenditures represented only 8 percent of the total in 1961, but by 1971 they accounted for 39 percent of all funds. The growth of the public share, despite the decline in the share paid by private health insurance, resulted in a net increase in the share of funds provided by third parties from 74 percent in 1961 to 88.8 percent in 1971.

Such shifts between sources of funds would make no difference if private individuals and third parties paid the same incurred charges. A majority of the reimbursements of third-party payment systems, however, are made on the basis

of negotiated rates or on the basis of defined costs. In addition, the proportion of total expenditures for hospital care paid on the basis of costs has increased significantly during the period studied. Needless to say, as the percentage of expenditures paid on the basis of actual charges declines, so does the significance of price change as a determinant of total revenue.

Utilization is the other important determinant of total revenue. Trends in utilization are influenced by a variety of factors. As the population grows, utilization usually increases. If the demographic characteristics of the population in terms of age, sex, race, or location change, then per capita utilization rates will probably also change. Higher incomes, expanded private health insurance coverage, or new government health insurance programs will also tend to increase the amount of hospital care used by individuals.<sup>3</sup> Moreover, utilization rates will tend to change with the discovery of new techniques for diagnosis and treatment of disease. All these factors changed to some degree during the decade of the sixties.

The trends in hospital utilization rates, total and per capita, from 1961 to 1971 are revealed by the annual data in table 4. Data for the first

<sup>2</sup> This group of hospitals includes long-term general and other special hospitals in addition to the nongovernmental community (short-term) hospitals, which account for approximately 95 percent of the total expenditures shown.

<sup>3</sup> See Martin S. Feldstein, "Hospital Cost Inflation: A Study of Nonprofit Price Dynamics," *American Economic Review*, December 1971, pages 853–72, and Karen Davis and Louise B. Russell, "The Substitution of Hospital Outpatient Care for Inpatient Care," *Review of Economics and Statistics*, May 1972, pages 109–20.

TABLE 4.—Trends in total and per capita hospital utilization for nongovernmental nonprofit and for-profit community hospitals, 1961-71

Year	Nonprofit					For-profit				
	Patient days (in millions)	Admissions (in millions)	Outpatient visits <sup>1</sup> (in millions)	Average length of stay	Average occupancy rate	Patient days (in millions)	Admissions (in millions)	Outpatient visits <sup>1</sup> (in millions)	Average length of stay	Average occupancy rate
Total										
1961.....	127.2	17.0	( <sup>2</sup> )	7.5	76.1	9.1	1.6	( <sup>2</sup> )	5.8	65.4
1962.....	132.4	17.5	45.9	7.5	76.8	9.9	1.7	3.1	5.9	67.3
1963.....	137.7	18.1	55.1	7.6	77.7	11.0	1.8	3.7	6.1	68.0
1964.....	142.6	18.6	59.3	7.6	78.1	11.5	1.8	3.8	6.2	68.3
1965.....	146.3	19.0	59.2	7.7	77.8	11.7	1.8	3.4	6.3	68.6
1966.....	152.5	19.3	69.3	7.9	78.5	12.0	1.9	4.3	6.4	69.0
1967.....	160.1	19.5	73.2	8.2	79.7	12.6	1.8	4.0	6.8	72.7
1968.....	165.9	19.7	76.4	8.3	80.0	12.9	1.8	4.1	7.0	73.9
1969.....	171.0	20.3	82.8	8.2	80.8	13.2	1.9	3.9	6.8	74.6
1970.....	173.2	20.9	91.0	8.2	80.1	13.9	2.0	4.7	6.8	72.2
1971.....	174.2	21.5	103.0	8.1	79.0	13.9	2.1	4.9	6.6	71.0
Per 100 population <sup>3</sup>										
1961.....	70.2	9.4	( <sup>2</sup> )	-----	-----	5.0	0.9	( <sup>2</sup> )	-----	-----
1962.....	72.1	9.5	25.0	-----	-----	5.4	.9	1.7	-----	-----
1963.....	73.8	9.7	29.5	-----	-----	5.9	1.0	2.0	-----	-----
1964.....	75.4	9.8	31.3	-----	-----	6.1	1.0	2.0	-----	-----
1965.....	76.5	9.9	30.9	-----	-----	6.1	.9	1.8	-----	-----
1966.....	78.9	10.0	35.8	-----	-----	6.2	1.0	2.2	-----	-----
1967.....	82.0	10.0	37.4	-----	-----	6.5	.9	2.0	-----	-----
1968.....	84.2	10.0	38.7	-----	-----	6.5	.9	2.1	-----	-----
1969.....	85.9	10.2	41.5	-----	-----	6.6	1.0	2.0	-----	-----
1970.....	85.9	10.4	45.1	-----	-----	6.9	1.0	2.4	-----	-----
1971.....	86.3	10.5	50.4	-----	-----	6.8	1.0	2.4	-----	-----

<sup>1</sup> For hospitals reporting outpatient visits.

<sup>2</sup> Data not available

<sup>3</sup> Population data are for the civilian resident population as of July 1 of each year.

Source. Population data from Bureau of the Census, *Current Population Reports*, Series P-25, various issues, utilization data from *Hospitals* (annual Guide Issues), American Hospital Association.

and last years of the period studied, shown below, indicate that overall inpatient utilization measured by patient days increased by more than 50 percent in hospitals operated for profit but the increase in nonprofit hospitals was somewhat

lower (37 percent). This difference reflects the fact that increases in both admissions and average length of stay were greater in for-profit hospitals. The increase in outpatient visits in nonprofit hospitals, on the other hand, was more than twice that in for-profit hospitals during the period.

Hospital utilization	1961		1971		Percentage increase <sup>1</sup>	
	Total (in millions)	Per 100 population	Total (in millions)	Per 100 population	Total	Per 100 population
Nonprofit						
Admissions.....	17.0	9.4	21.5	10.5	26.8	11.7
Patient days.....	127.2	70.1	174.2	85.3	36.9	21.6
Outpatient visits.....	*45.9	*25.4	103.0	50.4	*124.3	*99.0
Average length of stay.....	7.5	-----	8.1	-----	8.0	-----
For-profit						
Admissions.....	1.6	0.9	2.1	1.0	33.3	14.6
Patient days.....	9.1	5.0	13.9	6.8	52.4	35.1
Outpatient visits.....	*3.1	*1.7	4.9	2.4	*57.5	*40.0
Average length of stay.....	5.8	-----	6.6	-----	13.8	-----

<sup>1</sup> Percentages calculated from unrounded data

<sup>2</sup> 1962 data; 1961 data not available

<sup>3</sup> Percentage change probably overstated, since data refer to only those hospitals reporting visits and the percentage of hospitals reporting has increased significantly since 1962

Source. Estimated from data in *Hospitals* (annual Guide Issues, 1962, 1963, and 1972), American Hospital Association.

Increases in total utilization were an important source of growth in total revenue. It should be noted in addition that shifts in use between population groups can also affect total revenues of hospitals. The Medicare program, for example, enabled elderly citizens to obtain hospital care and thus contributed to a significant increase in the share of total inpatient days used by persons aged 65 and over.<sup>4</sup> Before the program began in 1966, many persons in that age group received hospital care as charity patients or at reduced rates. To the extent that this situation did exist, losses of hospital revenues in the form of bad debts or charity care for the aged must have been nearly eliminated once the program began. No evidence on the trend in utilization by

<sup>4</sup> See Julian Pettengill, "Trends in Hospital Use by the Aged," *Social Security Bulletin*, July 1972.

individuals with low income is available, but the fact that public assistance vendor medical payments went from \$0.1 billion to \$1.6 billion during the decade suggests that Medicaid probably had the same kind of effect on hospital revenues, though perhaps not to the same degree.

Changes in utilization influence the financial position of hospitals in other ways than their impact on revenue. Altered patterns of hospital use often reflect changes in technology and case-mix that, in turn, affect the cost per unit of service. In other words, not only did the number of services produced by hospitals increase, but the mix of services, the methods of producing services, and the mix of patients receiving those services also changed.

These changes, in part, are reflected in both the utilization data and in the trend of expense per patient day or expense per admission. Older persons, for example, have more medical problems than younger persons; their conditions often take longer to stabilize and they may require a longer period of time for recovery. Thus, with fewer financial barriers to medical care, the number of aged persons using hospital care rose and their average length of stay increased following the advent of Medicare, in comparison with earlier periods. As a result, both overall average occupancy (the percentage of beds occupied on an average day during the year) and overall average length of stay increased until 1969 when the trend reversed.

Increases in occupancy rates or average length of stay both tend to influence the cost per patient day. Other things being equal, if occupancy increases then the fixed costs of the hospital are spread over an increased number of patient days and the cost per day will be lower than if occupancy had not changed. An increase in average length of stay has the same effect because most of the expensive ancillary services are given in the first few days of a hospital stay. Therefore, as length of stay increases, these costs are spread over a larger number of patient days and the cost per day falls.<sup>5</sup>

In addition to changes in occupancy rates or length of stay, changes in the character of hospi-

tal services have been shown to have a major effect on expense per patient day.<sup>6</sup> Growth in the number of employees and in the amounts of capital equipment and supplies required to produce a day of hospital care has been estimated to account for about half the increase in expense per patient day in community hospitals during the period 1960-70. These changes in factor input requirements (amounts of labor and capital used in the production of services) have been primarily associated with improvements in technology and changes in case-mix. The remaining half of the increase in cost per day was associated with increases in wages and prices paid by hospitals.

The proportion of the increase in unit costs attributable to increases in factor input requirements was not constant throughout the entire period. According to the Waldman study, this share declined from an estimated 55 percent during the early period to 44 percent in the period from 1966 to 1970. This decline resulted from an increase in the rate of inflation in the economy generally and a significant rise in the rate of increase of wages and salaries paid to hospital employees during the latter period, rather than any decline in the growth of input requirements.

A more recent study based on sample data for individual community hospitals showed a similar decline in the share of the growth in hospital costs that resulted from increases in the quantities of inputs used to provide a day of care.<sup>7</sup> It was estimated that increases in quantities of labor, capital, and supplies accounted for 43 percent of the growth of unit costs during the pre-Medicare period 1962-66 but only 29 percent in the post-Medicare years 1966-68.

Some changes of this type in the period 1961-71 can be observed in table 5. Not only did the number of employees per day of care increase substantially, but average annual salaries approximately doubled during this period. Plant assets per census also increased about 70 percent in both nonprofit and for-profit hospitals. Like total revenue and hospital prices, these factors have grown more rapidly during the period 1967-71 than in the earlier years of the decade.

<sup>5</sup> See *Selected Data on Charge Patterns in Short-Stay General Hospitals Under Medicare* (Health Insurance Note No. 31), Office of Research and Statistics, Social Security Administration, 1971.

<sup>6</sup> See Saul Waldman, *The Effect of Changing Technology on Hospital Costs* (Research and Statistics Note No. 4), Office of Research and Statistics, Social Security Administration, 1972.

<sup>7</sup> See Karen Davis, "Hospital Costs and The Medicare Program," *Social Security Bulletin*, September 1973.

TABLE 5.—Employment of labor and capital in nongovernmental nonprofit and for-profit community hospitals, 1961-71

Year	Personnel per 100 census <sup>1</sup>	Average annual earnings per employee	Plant assets per census	Annual percentage rate of change		
				Personnel per 100 census	Average annual earnings per employee	Plant assets per census
Nonprofit						
1961.....	240	\$3,371	\$18,768	3.4	5.0	3.7
1962.....	241	3,510	19,332	.4	4.1	3.0
1963.....	244	3,665	20,120	1.2	4.3	4.1
1964.....	247	3,861	21,090	1.2	5.4	4.8
1965.....	252	4,044	22,645	2.0	4.7	7.4
1966.....	264	4,114	23,333	4.8	2.5	3.0
1967.....	268	4,509	23,833	1.5	11.2	2.1
1968.....	276	4,938	25,347	3.0	10.1	6.4
1969.....	284	5,397	26,737	2.9	10.7	5.5
1970.....	292	6,012	29,053	2.8	11.9	8.7
1971.....	301	6,627	31,978	3.1	11.3	10.1
Annual average						
1961-65.....	245	3,706	20,457	1.2	4.6	4.8
1967-71.....	285	5,549	27,470	2.9	10.1	7.6
1967-69.....	276	4,966	25,337	2.9	9.4	5.9
1969-71.....	293	6,028	29,272	2.9	10.8	9.4
For-profit						
1961.....	205	\$3,060	\$8,626	4.6	2.7	4.4
1962.....	208	3,124	8,574	1.5	3.0	-.6
1963.....	214	3,299	9,149	2.9	6.2	6.7
1964.....	212	3,841	10,334	-.9	13.8	13.0
1965.....	218	3,736	9,473	2.8	-1.7	-8.3
1966.....	234	3,590	8,098	7.3	-2.2	-14.5
1967.....	233	4,065	9,380	-.4	12.9	15.8
1968.....	237	4,485	8,758	1.7	6.0	-6.6
1969.....	243	5,071	10,703	2.5	12.9	22.2
1970.....	256	5,610	12,659	5.3	13.0	18.3
1971.....	262	6,114	14,462	2.3	10.7	14.2
Annual average						
1961-65.....	212	3,443	9,279	1.5	5.1	2.4
1967-71.....	247	5,130	11,270	3.0	10.7	11.4
1967-69.....	238	4,555	9,624	2.1	11.7	6.8
1969-71.....	254	5,621	12,641	3.8	9.8	16.2

<sup>1</sup> Full-time equivalents, full-time employees plus full-time equivalents of part-time employees.

Source *Hospitals* (annual Guide Issues), American Hospital Association.

Salaries, for example, increased about 5 percent a year in both types of hospitals between 1961 and 1965; from 1967 to 1971 the rate of increase was approximately 11 percent per year. Employees per 100 census and plant assets per census also showed essentially the same pattern of growth during these periods in both types of hospitals.

Trends in factor input patterns, factor prices, and prices for hospital care are all reflected in the trends of revenue, expenses, and net income per patient day. Revenue per patient day in nonprofit hospitals increased nearly 163 percent between 1961 and 1971 (table 6). Per diem expenses increased slightly less, yielding an increase in net income per patient day from 71 cents in 1961 to \$2.63 in 1971, or 270 percent. Percentage increases in revenues and expenses per patient day in for-profit hospitals were nearly identical to those in nonprofit hospitals. As a result, their net

income per day increased more than 200 percent from \$2.09 in 1961 to \$6.43 in 1971.

Because average length of stay increased during most of the period, revenue, expense, and net income per admission grew even more. Revenue and expense per admission in nonprofit hospitals rose approximately 184 percent and 181 percent, respectively, with the result that net income per admission nearly quadrupled during this period. Increases in for-profit revenue and expense per admission during the same period were even higher (about 200 percent), so that net income per admission went up 250 percent—from \$12 in 1961 to \$43 in 1971.

The comparison between levels of net income per patient day or per admission in nonprofit and for-profit hospitals is interesting. Although the percentage increase of net income per day in nonprofit hospitals was higher than in for-profit hospitals, the latter group has always had

TABLE 6.—Revenue, expense, and net income per patient day and per admission for nongovernmental nonprofit and for-profit community hospitals, 1961–71

Year	Nonprofit			For-profit		
	Revenue	Expense	Net Income	Revenue	Expense	Net Income
Per patient day						
1961	\$36.75	\$36.04	\$0.71	\$35.38	\$33.29	\$2.09
1962	37.74	37.77	-.03	36.47	34.85	1.62
1963	40.83	39.87	.96	39.88	37.98	1.90
1964	43.16	42.35	.81	44.81	42.90	1.91
1965	46.95	45.40	1.55	47.30	43.73	3.57
1966	50.31	48.74	1.57	50.13	46.10	4.03
1967	57.11	54.99	2.12	56.59	51.85	4.74
1968	64.21	62.18	2.03	60.57	55.65	4.92
1969	73.33	70.99	2.34	69.78	64.50	5.28
1970	84.04	81.80	2.24	83.16	76.80	6.36
1971	96.47	93.84	2.63	93.68	87.25	6.43
Annual average						
1961-65	41.27	40.45	.82	41.17	38.92	2.25
1967-71	75.43	73.15	2.28	73.28	67.71	5.57
1967-69	65.06	62.90	2.16	62.42	57.43	4.99
1969-71	84.68	82.28	2.40	82.42	76.38	6.04
Per admission						
1961	\$275.41	\$270.06	\$5.35	\$206.29	\$194.09	\$12.20
1962	284.96	285.13	-.17	216.26	206.65	9.61
1963	310.29	303.02	7.27	238.75	227.40	11.35
1964	330.68	324.39	6.19	278.81	266.91	11.90
1965	361.57	349.61	11.96	299.23	276.62	22.61
1966	398.38	385.99	12.39	324.24	298.15	26.09
1967	469.05	451.65	17.40	386.78	354.38	32.40
1968	541.89	524.78	17.11	426.57	391.92	34.65
1969	616.40	596.74	19.66	487.08	450.26	36.82
1970	694.63	676.12	18.51	569.39	525.82	43.57
1971	780.88	759.62	21.26	624.28	581.42	42.86
Annual average:						
1961-65	313.79	307.56	6.23	249.83	236.18	13.65
1967-71	624.64	605.80	18.84	503.34	465.06	38.28
1967-69	543.49	525.41	18.08	433.96	399.32	34.64
1969-71	698.85	679.02	19.83	562.54	521.34	41.20

Source: *Hospitals* (annual Guide Issues), American Hospital Association.

higher net income and the gap between them has narrowed only slightly.

The figures that follow show the average annual rates of increase in revenue, expenses, and net income per day and per admission for se-

Period	Nonprofit			For-profit		
	Revenue	Expense	Net Income	Revenue	Expense	Net Income
Per patient day						
1961-65	6.3	5.9	22.0	7.5	7.4	14.3
1967-71	14.0	14.3	5.5	13.4	13.9	7.9
1967-69	13.3	13.6	5.1	11.0	11.5	5.4
1969-71	14.7	15.0	6.0	15.9	16.3	10.5
Per admission						
1961-65	7.0	6.7	22.0	9.8	9.3	16.7
1967-71	13.6	13.9	5.1	12.7	13.2	7.2
1967-69	14.6	14.9	6.3	12.2	12.7	6.6
1969-71	12.6	12.8	4.0	13.2	13.6	7.9

lected periods from 1961 to 1971. Revenue and expense per patient day exhibited much the same pattern of growth as total revenues and total expenses: Both increased much more rapidly during the later half of the decade than in the early years. In contrast, net incomes of both nonprofit and for-profit hospitals rose much more rapidly during the first half of the decade than in the later years. Nonprofit net income per day went up at an average annual rate of 22 percent between 1961 and 1965 and 5.5 percent a year from 1967 to 1971. The net income experience of for-profit hospitals was similar: The rate of increase per patient day dropped from 14.3 percent a year in the early period to an annual rate of 7.9 percent between 1967 and 1971. As a result the gap between nonprofit and for-profit net income per day declined during the early years, but increased again after 1965 and especially from 1969 to 1971.

The financial position of hospitals can be looked at another way with the help of net income ratios—net income as a proportion of total revenue and as a proportion of plant assets. Net income ratios, which are essentially measures of the rate of return earned by hospitals, are estimated for nonprofit and for-profit hospitals in table 2. Examination of these data yields two interesting findings: (1) Rates of return were much higher from 1967 to 1971 than they were in the earlier period and (2) for-profit hospitals have consistently had rates of return at least twice as high as those of nonprofit hospitals.

Clearly, the financial position of hospitals improved considerably over the period. In nonprofit hospitals net income as a percent of plant assets increased from an average of 1.5 percent a year between 1961 and 1965 to an average of 3.0 percent during the period from 1967 to 1971. Similarly, for-profit hospitals increased their average rate of return from 8.9 percent a year during the early years to an average of 18.1 percent per year between 1967 and 1971.

An earlier study showed that net incomes of nongovernmental community hospitals were much higher in the period from 1967 to 1969 than in the first part of the decade.<sup>8</sup> Comparison of the net income data for recent years with the overall average for the years 1967–71 shows whether this trend has continued. Data from tables 2 and

<sup>8</sup> See Karen Davis, Staff Paper No. 6, *op. cit.*



5 indicate that net incomes per patient day in both nonprofit and for-profit hospitals did continue to increase, but financial position as measured by the rate of return on either total revenue or plant assets actually declined slightly in the 2 latest years of the period. Even with a slight decrease, however, rates of return of 3 percent in nonprofit hospitals and 18 percent in for-profit hospitals are reasonable by the standard of past experience.

It is also apparent that for-profit hospitals have consistently earned a rate of return more than twice as high as nonprofit hospitals and at the same time had lower revenues and expenses per patient day. In the following section an attempt is made to illuminate, to the extent that highly aggregated data permit, the factors that seem responsible for such differences in the financial position of hospitals, on the basis of net income data by bed size and ownership in 1971.

#### **NET INCOME, BED SIZE, AND OWNERSHIP IN 1971**

Neither the nonprofit nor the for-profit hospitals—for which overall national average trends in net income and related factors in the past decade have been presented—are a homogeneous group of institutions. Indeed, nonprofit hospitals range from institutions having only six beds and providing strictly basic medical services to enormous teaching institutions with more than 1,000 beds that provide the most sophisticated and technologically up-to-date services available anywhere in the world. For-profit hospitals also vary considerably in terms of size and complexity of services, although they almost never have more than 400 beds and rarely engage in teaching or research.

Because hospitals are so heterogeneous, the national average trend data may hide important relationships or mislead in other ways. Comparisons between the two groups may be particularly dangerous because nonprofit hospitals tend to be so much larger than for-profit hospitals. If bed size is an important dimension in terms of the types of services delivered and the cost of producing services, then it is important to use net income data distributed by bed size so that hospitals of similar size may be com-

pared. To make such comparisons simpler, an overall weighted average for nonprofit hospitals with less than 400 beds has been computed for most of the data in this section. Using the for-profit bed distribution by size as a set of weights for the nonprofit data yields an approximation of the average value that would have prevailed if beds in both types of hospitals had the same distribution in 1971.

As before, relative differences in the financial position of hospitals by bed size or ownership are determined by the interaction of unit prices and average revenues received from third-party payment systems, utilization, and unit costs of producing services. Table 7 shows data on the revenue, expenses, and net income of nonprofit and for-profit hospitals by bed size in 1971.

The net income ratios or rates of return are particularly interesting. The rate of return on plant assets in nonprofit hospitals rises from zero percent for hospitals with 6–24 beds to 3.6 percent for hospitals with 100–299 beds and declines in the larger bed-size categories. The rate of return in for-profit hospitals, on the other hand, ranges from 11.5 percent in hospitals with 25–49 beds to 21.2 percent in those with 200–299 beds, with no apparent pattern related to increasing bed size. In addition, as noted earlier, for-profit hospitals have a rate of return at least twice as high as nonprofit hospitals. This relationship occurs for every bed-size category for which comparable data exist.

The prices that are charged by hospitals and the revenues that are received from third-party payers may help to explain the patterns of net income observed here. No data are available on the variation in rates paid by third parties to hospitals in different bed-size categories, but there is some evidence on semiprivate room charges.

Data on room-and-board charges in nonprofit and for-profit hospitals, by bed-size category as of January 1, 1972, are shown in the tabulation at the top of page 12; they are estimated from the *Survey of Hospital Charges* of the American Hospital Association and the Health Insurance Council. Since 14 percent of the hospitals surveyed did not respond, there may be some bias in the results. The estimates indicate, however, that hospital charges, with one exception, increase uniformly with bed size. In addition,

Bed size	Semiprivate room charges per day	
	Nonprofit	For-profit
All sizes.....	\$52.98	\$53.21
6-24.....	36.40	40.95
25-49.....	38.81	43.49
50-99.....	43.65	48.56
100-199.....	48.31	55.20
200-299.....	54.84	67.15
300-399 <sup>1</sup> .....	55.47	54.72
400-499.....	56.55	-----
500 or more.....	59.82	-----
6-399 average <sup>2</sup> .....	46.07	52.07

<sup>1</sup> For for-profit hospitals, 300 or more, only 1 hospital of this type had more than 400 beds.

<sup>2</sup> Estimated as if hospitals of both types that reported charges had the same distribution of beds by size as that for all for-profit hospitals.

Source: Estimated from data in table A18 of the *Survey of Hospital Charges as of January 1, 1972*, American Hospital Association and the Health Insurance Council, 1972.

for-profit hospital charges are higher in nearly every bed-size category; average semiprivate room rates in hospitals of comparable size are thus \$6 higher in for-profit hospitals than in nonprofit hospitals. Since hospitals typically charge separately for ancillary services, however, these data can only suggest that one reason for higher rates of return in for-profit hospitals may be that these hospitals charge higher prices for services.

If prices are actually higher in for-profit hospitals, this difference may be related to the locations of such hospitals. If for-profit hospitals are more likely than nonprofit hospitals to be located in urban areas where wage rates and per capita incomes are higher, then they may be expected to have higher costs and charge higher prices. The distribution of beds in nonprofit and for-profit hospitals in metropolitan and nonmetropolitan areas by bed size, as shown below, in-

Bed size	Nonprofit			For-profit		
	Total	Metro-politan	Non-metro-politan	Total	Metro-politan	Non-metro-politan
All sizes.....	100 0	76.5	23.5	100 0	77.3	22.7
6-24.....	100 0	10.7	89.3	100 0	29.7	70.3
25-49.....	100 0	17.5	82.5	100 0	44.4	55.6
50-99.....	100 0	33.5	66.5	100 0	72.4	27.6
100-199.....	100 0	55.1	44.9	100 0	88.4	11.6
200-299.....	100 0	84.1	15.9	100 0	91.8	8.2
300-399.....	100 0	88.1	11.9	100 0	100.0	0
400-499.....	100 0	98.2	1.8	-----	-----	-----
500 or more.....	100 0	98.5	1.5	-----	-----	-----
6-399 average <sup>1</sup> .....	100 0	67.1	32.9	100 0	77.3	22.7

<sup>1</sup> Estimated as if hospitals of both types had the same distribution of beds by size as that for nonprofit hospitals.

Source: *Survey of Hospital Charges as of January 1, 1972*, American Hospital Association and the Health Insurance Council, 1972.

dicates that 77 percent of the beds in for-profit hospitals are located in metropolitan areas. Only 67 percent of the beds in nonprofit hospitals of comparable size (with 6-399 beds) are in such areas.

Higher charges in for-profit hospitals may also be related to differences in the range and complexity of services and case composition in the two types of hospitals. The tabulation that fol-

Service or facility	Percent of all hospitals		Percent of hospitals with less than 400 beds <sup>1</sup>	
	Nonprofit	For-profit	Nonprofit	For-profit
Hospitals reporting (response rate).....	96.8	77.5	96.4	83.6
Emergency department.....	90.7	72.3	89.2	78.8
Blood bank.....	67.5	47.7	62.5	60.2
Histopathology laboratory.....	56.0	30.5	46.9	45.4
Postoperative recovery room.....	81.4	69.5	77.8	82.4
Pharmacy <sup>2</sup> .....	87.9	72.1	85.6	83.5
Premature nursery.....	47.3	18.9	39.1	26.9
Electroencephalography.....	42.2	29.6	30.1	46.8
Intensive care unit.....	61.7	39.1	53.0	54.8
Psychiatric services (inpatient).....	18.3	3.3	10.0	6.6
Renal dialysis (inpatient).....	12.6	3.4	5.9	5.2
Physical therapy.....	73.2	47.0	67.6	60.9
X-ray, therapeutic.....	43.0	17.7	32.6	26.9
Inhalation therapy.....	68.4	55.2	61.4	69.9
Radioisotope, diagnostic.....	49.7	28.9	38.7	42.7
Radioisotope, therapeutic.....	27.9	8.4	17.1	16.4
Cobalt therapy.....	17.2	4.8	8.6	10.0
Radium therapy.....	35.4	11.5	24.1	19.3
Cardiac care unit.....	55.4	32.0	48.2	43.9
Open heart surgery.....	10.1	.9	3.7	1.9
Outpatient department.....	33.9	17.7	25.8	14.3
Home-care department.....	9.4	.5	7.2	1.2
Rehabilitation unit.....	7.7	.5	4.2	1.0
Extended-care unit.....	11.1	2.1	10.9	3.5
Social work department.....	42.5	12.9	32.8	20.4
Family planning.....	7.4	1.4	3.9	1.7

<sup>1</sup> Estimated as if both types of hospitals had the same distribution of beds by size as for-profit hospitals.

<sup>2</sup> Includes pharmacies with either a full-time or part-time pharmacist.

Source: *Hospital Statistics, 1971*, American Hospital Association, 1972.

lows shows the percentage of hospitals reporting the availability of 25 different facilities or services and the estimated percentage of beds in hospitals of comparable size that have such services available, by ownership. The percentage of beds in nonprofit hospitals with a given service available is, in general, higher than it is in for-profit hospitals. The difference is usually not large, however, and in six instances the for-profit beds are more likely to have the service available. If the presence of facilities and services implies anything about the case-mix of a hospital, then it appears that nonprofit and for-profit hospitals of the same size provide essentially similar basic medical care.

On the other hand, the data imply that non-

profit and for-profit hospitals tend to play somewhat different roles in the community. For-profit hospitals are much less likely to provide such community services as outpatient care, emergency services, psychiatric care, rehabilitation services, home care, social work, and family planning. These differences are not likely to contribute much to the explanation of the higher charges in for-profit hospitals. They may help to explain the higher rates of return earned by for-profit hospitals—if community services tend to be relatively unprofitable in comparison with basic inpatient services.

The shorter average length of stay in for-profit hospitals has also been cited as a possible indication that these hospitals treat less serious and possibly less expensive cases than nonprofit hospitals do.<sup>9</sup> A brief review of the data in the tabulation that follows reveals the fact, however, that the majority of for-profit hospitals and beds are located in regions of the country where

<sup>9</sup> See Karen Davis, Staff Paper No. 6, *op. cit.*, page 23.

Region and division	Percentage distribution of beds		Average length of stay	
	Nonprofit	For-profit	Nonprofit	For-profit
United States.....	100 0	100 0	8.1	6.6
Northeast				
New England.....	7.4	2.2	8.2	10.2
Middle Atlantic.....	21.5	17.2	9.3	7.7
North Central				
East North Central.....	23.2	1.8	8.5	7.7
West North Central.....	10.7	2.2	8.4	7.2
South				
South Atlantic.....	12.0	14.2	7.8	7.1
East South Central.....	4.6	9.5	7.5	6.8
West South Central.....	6.9	23.8	7.0	6.2
West				
Mountain.....	3.9	2.6	6.8	6.0
Pacific.....	9.9	26.5	6.6	5.7

Source *Hospital Statistics, 1971*, American Hospital Association, 1972.

length of stay is generally shorter than elsewhere. More than three-fourths of all for-profit hospital beds are located in the South and West. Indeed, 51 percent of all beds are located in just three States—California, Texas, and Louisiana.

In 1971, the overall average length of stay in all nonprofit community hospitals was 8.1 days, and the corresponding figure in for-profit hospitals was 6.6 days—a difference of 1.5 days. With

TABLE 7.—Revenue, expense, and net income for nongovernmental nonprofit and for-profit community hospitals, by bed size, 1971

Bed size	Total revenue		Total expense		Net income		Plant assets (in millions)	Net income ratios	
	Amount (in millions)	Percentage distribution	Amount (in millions)	Percentage distribution	Amount (in millions)	Percentage distribution		Total revenue	Plant assets
	Total								
All sizes.....	\$18,104	100.0	\$17,558	100.0	\$546	100 0	\$15,810	3 0	3.5
6-24.....	72	.4	69	.4	3	.5	66	4.2	4.5
25-49.....	475	2.6	459	2.6	16	2.9	364	3.4	4.2
50-99.....	1,364	7.5	1,311	7.5	53	9.7	1,148	3.9	4.6
100-199.....	3,243	17.9	3,117	17.8	126	23.1	2,909	3.9	4.3
200-299.....	3,454	19.1	3,332	19.0	122	22.3	3,034	3.5	4.0
300-399.....	3,189	17.6	3,090	17.6	99	18.1	2,896	3.1	3.4
400-499.....	2,194	12.1	2,146	12.2	48	8.8	1,990	2.2	2.4
500 or more.....	4,113	22.7	4,034	23.0	79	14.5	3,381	1.9	2.3
	Nonprofit								
All sizes.....	\$16,801	100.0	\$16,344	100.0	\$457	100 0	\$15,259	2 7	3 0
6-24.....	31	.2	31	.2	0	0	49	0	0
25-49.....	293	1.7	286	1.7	7	1.5	306	2.4	2.3
50-99.....	997	5.9	969	5.9	28	6.1	1,013	2.8	2.8
100-199.....	2,816	16.8	2,719	16.6	97	21.2	2,715	3.4	3.6
200-299.....	3,272	19.5	3,164	19.4	108	23.6	2,968	3.3	3.6
300-399.....	3,099	18.4	3,009	18.4	90	19.7	2,841	2.9	3.2
400-499.....	2,194	13.1	2,146	13.1	48	10.5	1,990	2.2	2.4
500 or more.....	4,099	24.4	4,020	24.6	79	17.3	3,376	1.9	2.3
	For-profit								
All sizes.....	\$1,303	100 0	\$1,214	100 0	\$89	100 0	\$551	6 8	16.2
6-24.....	41	3.1	38	3.1	3	3.4	17	7.3	17.6
25-49.....	182	14.0	173	14.3	9	10.1	78	4.9	11.5
50-99.....	367	28.2	342	28.2	25	28.1	135	6.8	18.5
100-199.....	427	32.8	398	32.8	29	32.6	194	6.8	14.9
200-299.....	182	14.0	168	13.8	14	15.7	66	7.7	21.2
300 or more.....	104	8.0	95	7.9	9	10.1	60	8.7	15.0

Source: *Hospital Statistics, 1971*, American Hospital Association, 1972.

the exception of the Middle Atlantic region, however, the difference between average length of stay in nonprofit and for-profit hospitals was 0.9 days or less in the geographic divisions with a concentration of for-profit hospital beds (South Atlantic, East South Central, West South Central, and Pacific). If these data could be corrected for bed-size differences, the length-of-stay differences would be even smaller since average length of stay in nonprofit hospitals of the same size as for-profit hospitals is 7.3 days—only 0.7 days above the for-profit average stay, with location not taken into account. Despite any real differences in case-mix that may exist, location and size differences seem to account for most of the difference in length of stay between nonprofit and for-profit hospitals.

The direct relationship between hospital charges and bed size, on the other hand, is probably the result of differences between large and small hospitals in the range of services offered and the case-mix treated. The proportion of hospitals reporting the availability of services (histopathology laboratory, intensive care unit, etc.) or facilities increases dramatically with size. Case-mix differences are also suggested by the fact that average length of stay in both nonprofit and for-profit hospitals rises uniformly with bed size.

The fact that hospital charges increase with

bed size may also be related to location. Data from the *Survey of Hospital Charges* suggest that hospitals with 100 or more beds are more likely to be located in metropolitan areas than in nonmetropolitan areas, and the likelihood increases rapidly in the higher bed-size categories of both nonprofit and for-profit hospitals.

Utilization patterns also have an impact on the financial position of hospitals of different sizes (table 8). Occupancy rates, like average length of stay, are higher in larger hospitals. Earlier in the article, it has been suggested that, with other things equal, longer stays and higher occupancy both tend to reduce expenses per patient day. Because other important factors are operating at the same time, however, these effects cannot be seen in the expense data.

Differences between nonprofit and for-profit hospitals in terms of average length of stay and occupancy rates may also contribute to net income differences between them. For-profit hospitals as a group have a shorter average length of stay and higher occupancy rates (6.6 days and 71.0 percent) than nonprofit hospitals of comparable size (7.3 days and 70.8 percent).

Another set of factors undoubtedly has a much more important effect on the unit costs in hospitals of different size. Table 9 shows the number of employees per 100 adjusted average daily census, average annual earnings, and plant assets

TABLE 8.—Hospital utilization statistics for nongovernmental nonprofit and for-profit community hospitals, by bed size, 1971

Bed size	Patient days		Admissions		Outpatient visits		Average length of stay	Occupancy rate
	Number (in thousands)	Percentage distribution	Number (in thousands)	Percentage distribution	Number (in thousands)	Percentage distribution		
Nonprofit								
All sizes.....	174,166	100.0	21,515	100.0	103,016	100.0	8.1	79.0
6-24.....	422	.2	64	.3	297	.3	6.4	47.2
25-49.....	4,064	2.3	614	2.9	2,888	2.8	6.7	61.1
50-99.....	13,428	7.7	1,810	8.4	6,466	6.3	7.4	68.8
100-199.....	32,444	18.6	4,381	20.4	18,419	17.9	7.4	74.9
200-299.....	34,477	19.8	4,387	20.4	22,740	22.1	7.8	80.3
300-399.....	31,249	17.9	3,806	17.7	17,632	17.1	8.2	81.7
400-499.....	21,379	12.3	2,531	11.8	13,390	13.0	8.5	84.0
500 or more.....	36,703	21.1	3,922	18.2	21,193	20.6	9.3	84.4
For-profit								
All sizes.....	13,912	100.0	2,088	100.0	4,858	100.0	6.6	71.0
6-24.....	404	2.9	91	4.4	301	6.2	4.3	61.0
25-49.....	2,244	16.1	358	17.1	1,301	26.8	6.1	64.4
50-99.....	3,993	28.7	639	30.6	1,359	28.0	6.1	71.1
100-199.....	4,545	32.7	636	30.5	1,154	23.8	7.1	71.5
200-299.....	1,786	12.7	234	11.2	528	10.9	7.6	78.5
300 or more.....	959	6.9	130	6.2	215	4.4	7.4	78.8

Source: *Hospital Statistics, 1971*, American Hospital Association, 1972.

TABLE 9.—Employment of labor and capital in nongovernmental nonprofit and for-profit community hospitals, by bed size, 1971

Bed size	Nonprofit			For-profit		
	Personnel per 100 adjusted daily census	Average annual earnings per employee	Plant assets per adjusted daily census	Personnel per 100 adjusted daily census	Average annual earnings per employee	Plant assets per adjusted daily census
All sizes.....	275	\$6,627	\$29,164	245	\$6,114	\$13,500
6-24.....	272	5,034	36,444	278	5,529	13,943
25-49.....	242	5,369	24,301	239	5,403	11,478
50-99.....	244	5,650	25,229	241	5,961	11,480
100-199.....	266	6,060	28,002	245	6,131	14,852
200-299.....	271	6,636	28,621	255	6,959	12,957
300-399 <sup>1</sup> .....	274	6,794	30,241	247	7,036	21,461
400-499.....	281	6,927	31,148			
500 or more.....	298	7,198	30,625			
6-399 average <sup>2</sup> .....	257	5,896	27,033	245	6,114	13,500

<sup>1</sup> For for-profit hospitals, 300 or more, only 1 hospital of this type had more than 400 beds.

<sup>2</sup> Estimated as if hospitals of both types had the same distribution by bed size as that for nonprofit hospitals.

Source: *Hospital Statistics 1971*, American Hospital Association, 1972

per adjusted daily census by bed size.<sup>10</sup> These data indicate that factor input levels generally increase with bed size in both nonprofit and for-profit hospitals. In addition to using more employees per day of care, larger hospitals pay higher average salaries and use more capital equipment than smaller hospitals do. These patterns of input use are almost certainly related to the greater range and complexity of services offered by larger hospitals. The higher salaries with greater bed size, on the other hand, probably result from the tendency of large hospitals to be located in metropolitan areas. Of course, some difference between large and small hospitals in terms of the skill-mix of employees may also contribute to the higher salaries in the larger hospitals.

The overall averages for hospitals with less than 400 beds suggest that for-profit hospitals do not hire as many employees although they do pay higher salaries than nonprofit hospitals of comparable size. The predominant location of for-profit hospitals in urban areas may account for these differences. The average plant assets figures, however, show that these hospitals own plant and equipment worth only half as much as that owned by comparable nonprofit hospitals. This puzzling relationship, in view of the comparison of facilities and services made earlier, is discussed later.

<sup>10</sup> Adjusted average daily census is an alternative measure of the daily output of hospitals, similar to average daily census. Adjusted census figures take both the number of patient days and the number of outpatient visits into account. Average census figures are based on patient days alone and therefore understate average output.

All the factors described above are reflected in revenue, expense, and net income per adjusted patient day and per adjusted admission (table 10).<sup>11</sup> Revenue and expense per adjusted patient day and per adjusted admission both increase uniformly with bed size in nonprofit and for-profit hospitals. The range is substantial; for the nonprofit hospitals, the difference in per diem revenue between the smallest hospitals (\$63) and hospitals with 500 or more beds (\$102) is nearly \$40. Because average length of stay increases with size, the difference in revenue per adjusted admission is relatively even larger (\$540) with the amounts ranging from \$413 for the smallest group to \$953 for the largest.

Although net income per day increases in a nearly uniform pattern in for-profit hospitals, the highest levels are earned in the middle bed-size categories of nonprofit hospitals, with both very large and very small nonprofit hospitals earning low or even negative net income per adjusted patient day. For-profit hospitals also receive levels of net income per day or per admission at least twice as high as nonprofit hospitals in every comparable size category.

At the same time, for-profit hospitals have higher revenues and expenses per adjusted patient day than do nonprofit hospitals of similar size. In addition, though for-profit hospitals have a shorter average length of stay than nonprofit hospitals, their revenue and expenses per ad-

<sup>11</sup> "Adjusted" patient days and "adjusted" admissions are alternative measures of the annual output of services in hospitals. Both measures are adjusted in the sense that they take outpatient visits into account in addition to inpatient days or admissions.

TABLE 10.—Revenue, expense and net income per adjusted patient day in nongovernmental nonprofit and for-profit community hospitals, by bed size, 1971

Bed size	Nonprofit			For-profit		
	Revenue	Expense	Net income	Revenue	Expense	Net income
Per adjusted patient day						
All sizes.....	\$87.98	\$85.58	\$2.40	\$87.44	\$81.44	\$6.00
6-24.....	63.11	63.17	-.06	89.77	83.91	5.86
25-49.....	63.80	62.23	1.57	73.00	69.45	3.55
50-99.....	68.05	66.17	1.88	85.36	79.44	5.92
100-199.....	79.55	76.81	2.74	89.36	83.23	6.13
200-299.....	86.15	83.31	2.84	97.65	90.28	7.37
300-399 <sup>1</sup> .....	90.36	87.73	2.63	102.97	93.66	9.31
400-499.....	94.07	92.00	2.07	-----	-----	-----
500 or more.....	101.87	99.90	1.97	-----	-----	-----
6-399 average <sup>2</sup> .....	74.32	72.12	2.20	87.44	81.44	6.00
Per adjusted admission						
All sizes.....	\$712.19	\$692.80	\$19.39	\$682.37	\$542.38	\$39.99
6-24.....	412.89	413.26	-.37	398.08	372.07	26.01
25-49.....	423.11	412.67	10.44	456.19	433.96	22.23
50-99.....	504.67	490.73	13.94	532.87	495.91	36.96
100-199.....	589.07	568.80	20.27	638.05	594.24	43.81
200-299.....	676.56	654.24	22.32	737.84	682.16	55.68
300-399.....	741.74	720.15	21.59	760.51	691.71	68.80
400-499.....	795.16	777.63	17.53	-----	-----	-----
500 or more.....	952.73	934.30	18.43	-----	-----	-----
6-399 average <sup>2</sup> .....	548.84	532.52	16.32	582.37	542.38	39.99

<sup>1</sup> For for-profit hospitals, 300 or more, only 1 hospital of this type had more than 400 beds

<sup>2</sup> Estimated as if both types of hospitals had the same distribution of beds by size as that for for-profit hospitals

Source: *Hospital Statistics, 1971*, American Hospital Association, 1972.

justed admission remain slightly higher than those for similar nonprofit hospitals.

In an effort to explain the higher net incomes of for-profit hospitals, it has been suggested that these hospitals may operate more efficiently than nonprofit hospitals.<sup>12</sup> Support for this hypothesis may be drawn from the finding that for-profit hospitals use less labor and have lower plant asset values than nonprofit hospitals. On the other hand, though the hypothesis may be valid, the fact that for-profit hospitals have higher expenses per day and per admission does not seem to support it.

A study supported in part by the Social Security Administration, using regression analysis on individual community hospital data for 1965-67, also found that for-profit hospitals had higher costs per patient day. The authors of the study argue, however, that, since these hospitals have a shorter average length of stay, they may utilize their facilities more intensively (and consequently with higher per diem costs) but still pro-

duce hospital care at lower total cost than nonprofit hospitals.<sup>13</sup>

Other factors affecting the financial position of hospitals relate to the sources of hospital revenues and the distribution of expenses by type of expense. Net revenue represents the funds actually received. Gross revenue is the amount that would have been received if all patients had paid actual incurred charges.

The data on patient revenue as a percent of total revenue show that hospitals receive more than 90 percent of actual revenue from payments made by or on behalf of patients (table 11). The loss ratios are of particular interest here because these data show the percentage of gross patient revenue lost as a result of contractual allowances, discounts, bad debts, and free care.

One plausible reason for net income differences between hospitals by size or by ownership may be that hospitals with low net income may give more charity care or have higher bad debts than hospitals in better financial position. If such a relationship exists, it is not readily apparent. These data show that percentage losses are directly related to size of hospital and that for-profit hospitals have somewhat higher losses than nonprofit hospitals of comparable size. Neither finding is consistent with expectations based on the net income patterns observed earlier.

The other side of the financial position of hospitals involves the types of expenditures made by hospitals. Both payroll and nonpayroll expenses per day increase with bed size, but payroll as a percentage of total expense does not appear to be closely related to size of hospital (table 12). These data do indicate, however, that payroll costs account for a much lower percentage of total expenses in for-profit hospitals than in nonprofit hospitals of the same size. About 50 percent of total expenses in these hospitals is spent for payroll, compared with 58 percent in nonprofit hospitals.

The category of nonpayroll costs includes many different expense items: Supplies (drugs, bandages, surgical tools, linens, raw food, etc.); rent, interest, and depreciation; employee health and welfare benefits; payments for contract services (laundry service, food service, computer time-

<sup>13</sup> Ralph E Berry and John W. Carr, *Efficiency in the Production of Hospital Services* (final report submitted to the Social Security Administration, June 1973).

<sup>12</sup> Karen Davis, Staff Paper No. 6 *op. cit.*, page 23

TABLE 11.—Revenue per adjusted patient day for nongovernmental nonprofit and for-profit community hospitals, by source of revenue and bed size, 1971

Bed size	Gross patient revenue <sup>1</sup>					Net revenue					Loss ratio <sup>3</sup>
	Total	Inpatient		Outpatient		Total	Patient		Other <sup>2</sup>		
		Amount	Percent of total	Amount	Percent of total		Amount	Percent of total	Amount	Percent of total	
Nonprofit											
All sizes.....	\$93 28	\$84 91	91 0	\$3 37	9 0	\$87 98	\$83.30	94.7	\$4 68	5.3	10.7
6-24.....	54 37	49 27	90 6	5 10	9 4	63 11	51.51	81.6	11.60	18 4	5 3
25-49.....	61 68	55 96	90 7	5 72	9 3	63 80	57 43	90 0	6 37	10 0	6 9
50-99.....	70 07	64 36	91 9	5 71	8 1	68 05	64 34	94 5	3 71	5 5	8 2
100-199.....	83 72	76 62	91 5	7 10	8 5	79 55	75 82	95 3	3 73	4 7	9 4
200-299.....	92 03	83 49	90 7	8 54	9 3	86 15	82 12	95 3	4 03	4 7	10 8
300-399.....	96 81	87 98	90 9	8 84	9 1	90 36	86 20	95 4	4 16	4 6	11 0
400-499.....	99 90	91 22	91 3	8 68	8 7	94 07	89 19	94 8	4 88	5 2	10 7
500 or more.....	108 55	98 51	90 8	10 04	9 2	101 87	95 36	93.6	6 51	6 4	12.2
6-399 average <sup>4</sup> .....	76,65	69.99	91 3	6 66	8 7	74.32	69 79	93 9	4 53	6 1	8.9
For-profit											
All sizes.....	\$96 05	\$91.11	94 9	\$4.94	5.1	\$87 44	\$85 59	97.9	\$1.85	2.1	10 9
6-24.....	87 85	82 63	94 1	5 22	5 9	89 77	85 66	95 4	4 11	4 6	2 5
25-49.....	74 13	68 68	92 6	5 45	7 4	73 00	71 26	97.6	1 74	2 4	3 9
50-99.....	89 96	85 06	94 6	4 90	5 4	85 36	83 61	97 9	1 75	2 1	7 1
100-199.....	99 37	94 88	95 5	4 49	4 5	89 36	87 97	98 4	1 39	1 6	11 5
200-299.....	122 04	116 76	95 7	5 28	4 3	97 65	95 66	97 9	2 09	2 1	21 7
300 or more.....	115 98	110 86	95.6	5 12	4 4	102 97	99 74	96 9	3 23	3 1	14 0
6-399 average <sup>4</sup> .....	96 05	91.11	94 9	4 94	5.1	87.44	85 59	97.9	1 85	2 1	10 9

<sup>1</sup> Amount that would have been received if all patients paid actual charges for care.

<sup>2</sup> Amount received from appropriations, contributions, and governmental grants

<sup>3</sup> Percentage losses of gross patient revenue due to contractual allowances,

discounts, bad debts, and free care. Represents 100 (100—net patient revenue/gross patient revenue)

<sup>4</sup> Estimated as if hospitals of both types had the same distribution of beds by size as that for for-profit hospitals

sharing, etc.); and miscellaneous other expenses. A recent study found that in 1966 the category of rent, interest, and depreciation accounted for 10.8 percent of the total expenses of for-profit hospitals—nearly double the share of such expenses in nonprofit hospitals.<sup>14</sup> No data are available to show whether this relationship still applied in 1971, but there is little reason to believe that this component of nonpayroll expense has declined for either type of hospital in the interim.

A brief review of earlier findings may help to explain the differences between the expense patterns of nonprofit and for-profit hospitals. The data indicate that for-profit hospitals earn much higher rates of return than nonprofit hospitals of comparable size but have higher revenues and expenses per day of care while appearing to provide services approximately similar in range and complexity. Yet the higher expenses of for-profit

hospitals are puzzling since they employ fewer personnel and have a much lower dollar value of plant assets than nonprofit hospitals. Indeed, payroll expenses per adjusted patient day in nonprofit and for-profit hospitals are nearly identical. The entire difference in per diem total expenses thus results from differences in per diem nonpayroll costs, which are about 33 percent higher in for-profit hospitals than in similar nonprofit hospitals.

In part, this pattern may be related to differences in incentives for nonprofit and for-profit hospitals. For-profit hospitals pay Federal income taxes like other similarly organized business firms; nonprofit hospitals are tax-exempt charitable organizations. As a result, for-profit hospitals may find it advantageous to rent rather than purchase much of their equipment. They may also be more likely to make use of accelerated depreciation. Either practice would help to account for the large differences in the value of plant assets reported by the two types of hospitals of comparable size. In addition, for-profit hospitals may be more inclined to use borrowed

<sup>14</sup> Karen Davis, *Community Hospitals: Inflation in the Pre-Medicare Period* (Research Report No. 41), Office of Research and Statistics, Social Security Administration, 1972.

TABLE 12—Expenses per adjusted patient day of nongovernmental nonprofit and for-profit community hospitals, by type of expense and bed size, 1971

Bed size	Nonprofit				For-profit			
	Total expense	Payroll		Nonpayroll	Total expense	Payroll		Nonpayroll
		Amount	Percent of total			Amount	Percent of total	
All sizes.....	\$85.58	\$49.91	58.3	\$35.67	\$81.44	\$41.03	50.4	\$40.41
6-24.....	63.17	37.58	59.5	25.59	83.91	42.18	50.0	41.75
25-49.....	62.23	35.66	57.3	26.57	69.46	35.31	50.9	34.14
50-99.....	66.17	37.83	57.2	28.34	79.44	39.28	49.4	40.16
100-199.....	76.81	44.24	57.6	32.57	83.23	41.12	49.4	42.11
200-299.....	83.31	49.32	59.2	33.99	90.28	48.59	53.8	41.69
300-399 <sup>1</sup> .....	87.73	51.03	58.2	36.70	93.66	47.70	50.9	45.96
400-499.....	92.00	53.35	58.0	38.65	-----	-----	-----	-----
500 or more.....	90.90	58.68	58.7	41.22	-----	-----	-----	-----
6-399 average <sup>2</sup> .....	72.12	41.65	57.8	30.47	81.44	41.03	50.4	40.41

<sup>1</sup> For for-profit hospitals, 300 or more, only 1 hospital of this type had more than 400 beds.

<sup>2</sup> Estimated as if both types of hospitals had the same distribution of beds by size as that for nonprofit hospitals.

Source: *Hospital Statistics, 1971*, American Hospital Association, 1972.

funds and contractual services (food service, laundry service, etc.) than nonprofit hospitals. Greater use of any of these common business practices would explain the higher nonpayroll expenses of for-profit hospitals.<sup>15</sup>

Since for-profit hospitals have higher average expenses, the explanation of their higher rates of return must lie in the fact that they are able to generate much higher average revenues—perhaps by obtaining higher prices for services and/or higher average reimbursements from third-party payment systems. Although the exact mechanism is not clear, the ability of for-profit hospitals to generate higher average revenue may depend to some degree upon the structure of the local market for hospital services. These hospitals may concentrate, for example, on providing services that are in high demand and avoid relatively high-cost services less frequently used or less profitable.

This hypothesis may be supported by the fact, established earlier, that for-profit hospitals are less likely to provide such community services as outpatient or emergency services, rehabilitation care, social work, or family planning. They may be able to do this for two reasons: (1) Managers of for-profit hospitals probably have more control over decisions on the role of the hospital or

the services to be provided than their counterparts in nonprofit hospitals and (2) the market for hospital services may be fairly noncompetitive, at least in terms of price, since the physician tends to play a more important role in the choice of hospital than the patient.

## SUMMARY AND CONCLUSIONS

In the analysis of trends in financial position, a number of factors appear to have had a strong influence on net income during this period. Among these, shifts in the sources of revenues and increases in the range and complexity of services offered by hospitals seem significant. The growth of private health insurance and public insurance programs, with consequent lower losses due to bad debts and charity care, may have contributed to more stable income for hospitals and simultaneously altered the utilization patterns of hospitals with effects on both case-mix and unit costs. Increases in the range and complexity of services also played an important role by affecting not only the factor input use of hospitals but the case-mix and utilization patterns as well.

As a result of these and other factors, the net income of hospitals improved substantially during the period 1967-71. Net income as a rate of return on plant assets in nonprofit hospitals increased from 1.4 percent in 1961 to 3.0 percent in 1971. During the same period the rate of return in for-profit hospitals nearly doubled—from 8.9 percent in 1961 to 16.2 percent in 1971.

<sup>15</sup> It is possible that some for-profit hospitals have treated their Federal business income tax as an expense item and included the amount as part of the nonpayroll expense and total expense figures sent to the American Hospital Association in response to the Guide Issue survey.



Since both nonprofit and for-profit hospitals are heterogeneous groups of institutions, highly aggregated data may hide important relationships that can have a bearing on financial position. Variations in net income by bed size of hospital were studied in an attempt to shed additional light on the factors that influence the financial status of hospitals.

The data for 1971 indicate that differences in net income result from the simultaneous interaction of a host of factors from relative prices to the relative efficiency of hospital operation. Among the various factors identified, the range and complexity of services, geographical location, and ownership seemed to be most important.

The range and complexity of services has a strong influence on unit costs through input requirements both for personnel and for plant and equipment. Geographical location also affects costs substantially because factor prices differ between regions of the country and between urban and rural areas. In addition, location affects revenues because per capita income varies from place to place. Finally, the characteristics of medical practice differ between one location and

another with a resulting impact on unit costs through differences in treatment methods and average length of stay.

Hospital ownership also has an impact on the financial position of hospitals. For-profit hospitals have much higher rates of return than nonprofit hospitals of similar size. This difference may be related to the ability of for-profit hospitals to generate higher average revenues through higher prices or higher reimbursements from third-party payment systems. These hospitals also allocate their expenditures differently, with much higher nonpayroll costs than nonprofit hospitals, perhaps in response to the incentives in the tax system.

Ultimately, of course, the net income of hospitals is one result of a process that involves all the daily decisions of thousands of different individuals. The decisions of each individual physician on the tests and treatments ordered in each case, as well as the average length of stay, all have an impact on the financial position of the hospital. The factors identified above both influence and are influenced by the behavior of physicians and patients in the market for hospital care.