

COSTS OF CARE AND ADMINISTRATION AT FOR-PROFIT AND OTHER HOSPITALS IN THE UNITED STATES

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ABSTRACT

Background In fiscal year 1990, administration accounted for 24.8 percent of total hospital costs in the United States — nearly twice the share in Canada. Studies from the 1970s and early 1980s found high costs, especially for administration, at for-profit hospitals.

Methods We calculated administrative costs for 6227 nonfederal hospitals and the total costs of inpatient care for 5201 acute care hospitals in the United States for fiscal year 1994 on the basis of data the hospitals submitted to Medicare. We analyzed similar data for fiscal year 1990. Using multivariate analysis, we assessed the effect of hospital ownership (private not-for-profit, for-profit, and public) on administrative costs, controlling for hospital type, census region, hospital size, and the proportion of revenues derived from outpatient services. We adjusted inpatient costs for local wage levels, hospitals' reporting periods, and case mix.

Results Administrative costs accounted for an average of 26.0 percent of total hospital costs in fiscal year 1994, up 1.2 percentage points from 1990. They increased by 2.2 percentage points, to 34.0 percent, for for-profit hospitals; by 1.2 percentage points, to 24.5 percent, for private not-for-profit hospitals; and by 0.6 percentage point, to 22.9 percent, for public hospitals. In 1994, administration accounted for 37.5 percent of total costs at psychiatric hospitals (44.4 percent at for-profit hospitals) and 33.0 percent of total costs at rehabilitation hospitals (37.7 percent at for-profit hospitals). In a multivariate analysis, for-profit ownership was associated with a 7.9 percent absolute (34 percent relative) increase in the proportion of hospital spending devoted to administration as compared with public hospitals and a 5.7 percent absolute (23 percent relative) increase as compared with private not-for-profit hospitals. Among acute care hospitals, for-profit institutions had higher adjusted costs per discharge (\$8,115) than did private not-for-profit (\$7,490) or public (\$6,507) hospitals. Much of the difference was due to higher administrative costs (\$2,289, \$1,809, and \$1,432 per discharge, respectively).

Conclusions Administrative costs as a percentage of total hospital costs increased in the United States between 1990 and 1994 and were particularly high at for-profit hospitals. Overall costs of care were also higher at for-profit hospitals. (N Engl J Med 1997; 336:769-74.)

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IN 1990, administration consumed, on average, 24.8 percent of total hospital spending in the United States¹ — nearly twice the share in Canada.² Many assume that the growth of for-profit hospitals in the United States is attributable to lower costs and greater efficiency³ and that competitive pressures are wringing administrative excess from hospitals. Studies based on figures from the 1970s and early 1980s, however, found higher total costs at for-profit hospitals, largely because they charged more for ancillary services and spent more on administration.⁴⁻¹¹ Recent data on these issues are scant.

METHODS**Sources of Data**

Each year, hospitals that receive Medicare payments must file a detailed report on their characteristics, revenues, and expenses. In response to a request filed under the Freedom of Information Act, the Health Care Financing Administration (HCFA) supplied us with a data tape of hospital expenses from Worksheet A of the Medicare Cost Reports for 6235 hospitals for the fiscal year beginning after September 30, 1992, and before October 1, 1993 (fiscal year 1994). We linked these data to HCFA's Medicare Minimum Data Set (Prospective Payment System X) for this same period, which details hospital ownership, hospital type (e.g., short-term general, psychiatric), number of beds, revenues, and income.

A total of 6227 hospitals provided data on cost categories in Column 7 of Worksheet A, which we used to calculate administrative costs. We excluded two hospitals (0.03 percent) that were missing data on ownership and hospital type from analyses of these variables.

Classification of Costs as Administrative, Clinical, or Other

We analyzed administrative costs for fiscal 1994 using methods we had previously used to analyze the data from fiscal 1990.¹ Table 1 lists the categories hospitals use to tabulate expenses in Medicare's Worksheet A and indicates our classification of these categories into four groups: administrative, clinical, mixed administrative and clinical, and other (e.g., gift shop). We based our interpretation of the categories on the *Medicare Provider Reimbursement Manual* and supplemented it with information from consultations with the financial officer responsible for our hospital's Medicare Cost Report and with members of the staff of HCFA's Maryland and Boston-area offices. The 1994 Worksheet A subdivided capital costs into more categories than did the 1990 Worksheet A and reported cost figures for different types of in-

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tensive care units individually. However, these changes did not shift any expenses among our four groups.

Medicare requires hospitals to adjust Worksheet A figures to reflect true costs more closely. For instance, a chain of hospitals might have a single, centralized purchasing department. The costs incurred by this purchasing department would be allocated among individual hospitals, and a share would appear on each hospital's Worksheet A. Similarly, the costs of outside contractors and the costs of services provided to public hospitals by other public agencies are reflected in the data. However, profits, income taxes, many advertising expenditures, and expenses for a few entrepreneurial activities (e.g., expenditures by a hospital's parent corporation for developing an integrated delivery system or a health maintenance organization) cannot be billed to Medicare, do not appear on Worksheet A, and are excluded from our analysis. Some property taxes may be included in capital costs, but none should appear in the categories we classified as administrative.

We allocated expenses from the mixed administrative and clinical categories — capital spending, interest (most interest costs are reported under "capital" categories), building maintenance, and employee-benefit costs (except benefits-department salaries) — between our administrative and clinical categories. We assumed that the proportion of the costs of the mixed categories that was attributable to administration was the same as the share of overall costs (excluding the mixed categories) devoted to administration. We calculated the proportion of costs consumed by administration in each hospital by adding the total costs in the administrative categories to the allocated share of the costs of the mixed categories and dividing the sum by total hospital costs less costs in the categories classified as "other." To assess the sensitivity of our findings to our methods of allocating the costs of the mixed categories, we recalculated administrative costs, using the extreme assumption that no capital or maintenance costs were attributable to administration.

Analysis of Hospital Ownership

We classified hospital ownership into three categories: private not-for-profit (3382 hospitals), for-profit (1288), and public (1555). We analyzed data according to six hospital types: general short-term care (5201 hospitals), general long-term care (98), cancer (9), psychiatric (627), rehabilitation (207), and other (e.g., pediatric and Christian Science) (83).

We used a linear multivariate model¹² to assess the effect of the type of hospital ownership on the proportion of spending devoted to administration, after controlling for hospital type, census region, proportion of revenues derived from outpatient services, and number of beds stratified according to hospital type. The model generates estimates of the percentage of costs devoted to administration for various groups of hospitals with the use of the following equation:

$$\text{percentage for administration} = \text{intercept} + \beta_o + \beta_T + \beta_C + \beta_P + \beta_B$$

where β_o , β_T , β_C , β_P , and β_B are, respectively, the beta coefficients for hospital ownership, hospital type, census region, percentage of revenues derived from outpatient services, and number of beds (stratified according to hospital type). The intercept is a constant, and the beta coefficients represent the percent absolute increase or decrease in the proportion of hospital spending devoted to administration related to specific factors, such as ownership.

Analysis of Inpatient Costs at Acute Care Hospitals

In addition, we calculated total hospital inpatient costs and administrative costs per inpatient day and per discharge for acute care hospitals. Since hospitals' fiscal years start on different dates, we adjusted each hospital's cost figures according to the midpoint of its fiscal year, using inflation-adjustment factors supplied by the HCFA. We then adjusted the cost figures using the HCFA's case-mix index, which reflects the average severity of the Medicare cases treated at each hospital. Finally, we adjusted for local variations in labor-related costs by applying the HCFA's wage index to 71.246

percent of hospital costs, as prescribed by the HCFA's adjustment methods.¹³

Because administrative costs are not reported separately for inpatient and outpatient operations, we calculated inpatient administrative costs by multiplying the hospital's adjusted inpatient costs by the proportion of its total expenses devoted to administration. Because this method assumes that the share of administrative costs is equal for inpatient and outpatient operations, we examined the correlation between the proportion spent for administration and the share of total revenues derived from outpatient operations. Administration's share was higher at hospitals that derived more of their revenues from outpatient services ($r=0.11$), suggesting that outpatient services have slightly higher administrative costs. For-profit acute care hospitals derived less of their revenues from outpatient care (29.7 percent) than did not-for-profit (34.1 percent) or public (38.7 percent) hospitals. Hence, our comparisons of administrative costs per inpatient day and per discharge may slightly underestimate the actual costs at for-profit institutions.

We based our previous analysis of fiscal year 1990 hospital administrative costs¹ solely on data from Worksheet A. For the present study, we linked this data with data from the Medicare Minimum Data Set (Prospective Payment System VI) and reanalyzed it using the same methods as for the 1994 data. Finally, we analyzed changes in individual hospitals' administrative costs for the 5780 hospitals that operated under the same Medicare provider number in both years and that provided all relevant data.

RESULTS

Administration accounted for an average of 26.0 percent of total hospital costs in fiscal year 1994, up from 24.8 percent in fiscal year 1990. Administration's share increased by at least 1 percentage point in 25 states and in the District of Columbia and fell by at least that much in 2 states and in Puerto Rico (Table 2). The proportion spent on administration varied according to hospital type, ranging from 24.3 percent at short-term general hospitals to 37.5 percent at psychiatric hospitals (Table 3). Administrative expenditures totaled \$61.8 billion in 1994, a figure that excludes administration at Department of Veterans Affairs and other federal hospitals, as well as overhead that cannot be charged to Medicare.

At for-profit hospitals, administrative costs averaged 34.0 percent of total costs in 1994 (as compared with 31.8 percent in 1990); at private not-for-profit hospitals they averaged 24.5 percent (as compared with 23.3 percent in 1990); and at public hospitals they averaged 22.9 percent (as compared with 22.3 percent in 1990). The percentage devoted to administration at for-profit hospitals was higher than at private not-for-profit hospitals and public hospitals for each type of hospital (Table 3). For-profit psychiatric hospitals spent 44.4 percent of their total expenditures on administration, and rehabilitation hospitals 37.7 percent.

Alternative methods of allocating capital and maintenance costs had little effect on our finding of higher administrative costs at for-profit hospitals. Even under the extreme assumption that no capital or maintenance costs were attributable to administration, administrative costs would have been 28.6 percent at for-profit hospitals, as compared with 20.5

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TABLE 1. PERCENT DISTRIBUTION OF HOSPITAL COSTS IN 1994 ACCORDING TO THE CATEGORIES USED IN MEDICARE COST REPORTS.

CATEGORY	% OF TOTAL HOSPITAL COSTS	CATEGORY	% OF TOTAL HOSPITAL COSTS
Classified as administrative		Classified as clinical (cont.)	
Administrative and general	15.20	Radiology, diagnostic	3.88
Nursing administration	1.63	Radiology, therapeutic	0.12
Central services and supply	0.87	Radioisotope	0.16
Medical records and library	1.57	Laboratory	5.05
Employee-benefits department (salary costs only)	0.36	Whole blood and packed red cells	0.12
Administrative and general — home health	0.41	Blood storing, processing, and transportation	0.17
Skilled-nursing facility utilization review	0.00	Intravenous therapy	0.15
Classified as mixed administrative and clinical		Respiratory therapy	1.43
Capital-related costs — buildings and fixtures	5.19	Physical therapy	1.43
Capital-related costs — movable equipment	3.45	Occupational therapy	0.35
Employee benefits (except benefits-department salaries)	7.79	Speech pathology	0.13
Maintenance and repairs	1.14	Electrocardiology	0.51
Operation of plant	3.22	Electroencephalography	0.05
Interest	0.00	Medical supplies charged to patients	2.79
Classified as clinical		Drugs charged to patients	3.04
Laundry and linen	0.71	Renal dialysis	0.17
Housekeeping	1.72	Other ancillary services	0.75
Dietary	2.81	Outpatient clinics	1.18
Cafeteria	0.27	Emergency	2.53
Maintenance of personnel	0.01	Other outpatient services	0.26
Pharmacy	1.45	Home program dialysis	0.01
Social services	0.40	Ambulance services	0.36
Other overhead	0.26	Durable medical equipment rented or sold	0.02
Nonphysician anesthetists	0.22	Home health agency (except administration)	0.98
Interns and residents — salary, fringes, and unapproved teaching program costs	0.30	Organ acquisition	0.02
Adults and pediatrics (general routine care)	12.57	Ambulatory surgical center (distinct part)	0.01
Intensive care unit	1.72	Hospice	0.08
Coronary care unit	0.27	Other	0.07
Nursery	0.44	Classified as other	
Skilled-nursing facility	1.37	Nursing school	0.07
Intermediate care facility	0.34	Interns and residents — other approved teaching-program costs (except house-staff salaries)	0.20
Other long-term care	0.44	Paramedical-education programs	0.02
Other inpatient units	1.18	Gift, flower, and coffee shops and canteen	0.16
Operating room	3.57	Research	0.15
Recovery room	0.22	Physicians' private offices	0.45
Delivery room and labor room	0.61	Unpaid workers	0.22
Anesthesiology	0.31	Other nonreimbursable cost centers	0.89

percent at not-for-profit and 19.3 percent at public hospitals.

The higher administrative costs at for-profit hospitals were not due to a small number of high-cost hospitals; the entire distribution of administrative costs was shifted upward for the for-profit hospitals. For instance, the 25th, 50th, 75th, and 95th percentiles of the percentage of total spending devoted to administration at for-profit hospitals were, respectively, 25.7 percent, 32.1 percent, 40.5 percent, and 55.7 percent. Among not-for-profits, the comparable figures were 20.5 percent, 23.7 percent, 27.5 percent, and 34.8 percent; among public hospitals they were 19.0 percent, 22.2 percent, 25.8 percent, and 33.2 percent.

At short-term general hospitals, 1994 administrative costs averaged, respectively, 28.6 percent, 24.1 percent, and 22.5 percent of total costs at for-profit, not-for-profit, and public institutions. The administrative costs at for-profit hospitals were higher in

each census region and within each quartile of hospital size (data not shown). The proportion spent on administration fell as the number of beds increased, from 25.5 percent at short-term general hospitals with fewer than 63 beds (lowest quartile), to 22.7 percent at those with more than 258 beds (highest quartile).

In the multivariate model (Table 4), psychiatric and rehabilitation hospitals had strikingly higher administrative costs, with absolute increases of 14.1 percent and 9.9 percent, respectively, over short-term general hospitals. Hospitals in the Pacific region had the highest administrative costs.

For-profit ownership was associated with a 7.9 percent absolute (34 percent relative) increase in the proportion of hospital spending devoted to administration as compared with public hospitals and a 5.7 percent absolute (23 percent relative) increase as compared with not-for-profit hospitals, after control for four other variables: hospital type, number of

TABLE 2. HOSPITAL ADMINISTRATION AS A PERCENTAGE OF TOTAL HOSPITAL SPENDING, ACCORDING TO STATE, 1990 AND 1994.

STATE	ADMINISTRATION AS % OF HOSPITAL SPENDING	
	1990	1994
North Dakota	21.5	20.4
Nebraska	21.2	21.0
Minnesota	20.5	21.1
Mississippi	21.5	22.0
South Dakota	21.7	22.5
Rhode Island	22.6	22.5
Wisconsin	22.4	22.5
Iowa	22.1	22.6
Montana	23.4	23.0
New York	25.1	23.3
North Carolina	22.9	23.3
New Jersey	21.5	23.5
South Carolina	23.2	23.6
Vermont	24.5	24.1
Alabama	22.9	24.2
Delaware	22.0	24.3
Idaho	24.5	24.4
Pennsylvania	23.6	24.4
Ohio	23.3	24.4
New Hampshire	24.8	24.5
Georgia	23.5	24.9
Wyoming	24.5	25.1
Arkansas	24.8	25.2
Kansas	24.0	25.3
Washington	25.4	25.6
Maryland	21.6	25.6
Connecticut	22.9	25.9
Kentucky	23.9	25.9
Oregon	24.6	26.1
Puerto Rico	28.7	26.1
Michigan	24.4	26.1
Virginia	24.1	26.4
Louisiana	27.0	26.7
Colorado	27.7	26.9
Oklahoma	25.3	27.0
District of Columbia	26.0	27.1
Illinois	24.5	27.3
Texas	26.1	27.3
Maine	25.7	27.4
Utah	26.3	27.4
Massachusetts	25.5	27.5
Missouri	23.8	27.5
Indiana	24.5	27.9
Nevada	28.5	28.1
West Virginia	25.9	28.5
California	27.4	29.2
Arizona	29.6	29.4
Tennessee	24.9	29.5
New Mexico	29.5	29.6
Florida	27.8	30.3
Alaska	29.4	30.8
Hawaii	30.6	31.1
United States, total	24.8	26.0

beds stratified according to hospital type, census region, and the proportion of revenues derived from outpatient services (Table 4).

Between 1990 and 1994, administrative costs rose, on average, 2.5 percentage points at the 75 hospitals in our data set that switched to for-profit ownership. In contrast, administrative costs rose by only 0.4 percentage point at the 105 hospitals that were for-profit in 1990 but not-for-profit or public in 1994. Among facilities whose ownership status did not change, administrative costs rose 1.2 percentage points at for-profit hospitals, 1.0 percentage point at not-for-profit hospitals, and 0.8 percentage point at public hospitals.

Inpatient costs at short-term general hospitals (adjusted for case mix, local wage levels, and the starting date of each hospital's fiscal year) averaged \$1,053 per inpatient day and \$7,319 per discharge. For-profit hospitals had higher costs per inpatient day (\$1,403) and per discharge (\$8,115) than not-for-profit hospitals (\$1,040 and \$7,490) or public hospitals (\$895 and \$6,507). The unadjusted cost figures showed even greater disparities between for-profit and other hospitals (data not shown).

Adjusted administrative costs at short-term general hospitals averaged \$262 per inpatient day and \$1,778 per discharge: \$396 per inpatient day and \$2,289 per discharge at for-profit hospitals; \$255 and \$1,809 at private not-for-profit institutions; and \$205 and \$1,432 at public hospitals. Administrative costs accounted for 76.8 percent of the total cost difference per discharge between for-profit and not-for-profit hospitals and for 53.3 percent of this difference between for-profit and public hospitals.

For-profit short-term general hospitals had lower wage and salary costs (40.9 percent of total costs, vs. 47.6 percent at not-for-profit and 48.7 percent at public hospitals) and lower employee-benefit costs (6.7 percent of total costs, vs. 8.1 percent at not-for-profit and 8.0 percent at public hospitals). The for-profit hospitals' lower compensation costs for clinical personnel (classified according to the method used for Table 1) accounted for virtually all of this difference (data not shown).

DISCUSSION

We found that for-profit hospitals spend 23 percent more on administration than do comparable private not-for-profit hospitals and 34 percent more than public institutions and have higher total costs per inpatient day and per discharge. The percentage of hospital costs devoted to administration increased between 1990 and 1994 for hospitals in all three ownership categories.

The data that we analyzed covered virtually all non-federal U.S. hospitals. Although hospitals may tailor cost reporting to maximize Medicare reimbursement, these incentives do not generally reward the infla-

tion of administrative categories at the expense of clinical ones. Furthermore, extensive regulations, routine audits, and the threat of penalties limit inaccuracies. Internal consistency checks reveal few errors.¹⁴ The standards for classification and reporting of expenses underwent no significant change between 1990 and 1994.

The hospital cost figures we used may understate total overhead. We omitted profits (\$123 per inpatient day at hospitals in the largest for-profit chain in the third quarter of 1995¹⁵), much of the \$1.75 billion hospitals spent for marketing in 1994 (according to an estimate based on a survey of 201 hospitals),¹⁶ and the entrepreneurial expenses that Medicare excludes from reimbursement.

We found no evidence that tax exemptions for not-for-profit and public hospitals accounted for their lower administrative costs. No property taxes should have been included in our administrative categories. Corporate income taxes cannot be charged to Medicare and hence should not have appeared in the figures we analyzed. Although for-profit hospitals pay sales taxes on supplies and equipment, they pay less in Medicare and Social Security taxes since their payrolls are lower. In any event, most sales and payroll taxes would appear in our clinical categories.

Because the bulk of administrative costs are lumped in the "administrative and general" category in Medicare cost reports, we know little about what was purchased. Without reliable global measures of hospital quality, we cannot assess the relation between administrative costs and quality. Although we used Medicare's standard methods to adjust inpatient costs for case mix and local wage rates, unmeasured differences in the severity of illness or physicians' practice styles could account for some of the patterns we observed.

Most previous studies comparing for-profit and not-for-profit hospitals date from the 1970s and early 1980s,⁴⁻¹¹ before diagnosis-related groups (DRGs) signaled the end of cost-based hospital payment. These studies found higher costs and profits but reduced staffing and lower spending for medical education among for-profit institutions.^{4-7,10,11} The higher costs were due to more administration and higher charges for pharmaceuticals, supplies, and other inpatient ancillary services.^{5-7,9} More recent studies of psychiatric and rehabilitation hospitals, which are exempt from DRGs, have also found higher costs, higher profits, and reduced staffing among for-profit hospitals.¹⁷⁻¹⁹ Scant recent data on acute care hospitals, mostly from Florida, suggest that the pattern of higher profits and reduced staffing at for-profit hospitals has persisted^{20,21}; by some technical measures of efficiency, they are even less efficient than they were.²²

Why is hospital administration growing, especially at for-profit institutions that are favored by the market? For all hospitals, success increasingly requires

TABLE 3. HOSPITAL ADMINISTRATION AS A PERCENTAGE OF TOTAL HOSPITAL COSTS, ACCORDING TO TYPE OF HOSPITAL AND OWNERSHIP, 1994.

HOSPITAL TYPE	FOR-PROFIT	PRIVATE			TOTAL
		NOT-FOR-PROFIT	PUBLIC	TOTAL	
percent (number of hospitals)					
Short-term general	28.6 (751)	24.1 (3115)	22.5 (1335)	24.3 (5201)	
Long-term general	29.9 (42)	24.2 (37)	27.4 (19)	27.3 (98)	
Cancer	—	27.3 (6)	24.5 (3)	26.4 (9)	
Psychiatric	44.4 (366)	33.6 (101)	24.3 (160)	37.5 (627)	
Rehabilitation	37.7 (123)	25.6 (70)	28.1 (14)	33.0 (207)	
Other	33.2 (6)	27.4 (53)	25.9 (24)	27.4 (83)	
All types combined	34.0 (1288)	24.5 (3382)	22.9 (1555)	26.0 (6225)	

TABLE 4. MULTIVARIATE ANALYSIS OF THE EFFECTS ON THE PERCENTAGE OF HOSPITAL REVENUES DEVOTED TO ADMINISTRATION OF HOSPITAL OWNERSHIP, TYPE OF HOSPITAL, CENSUS REGION, PERCENTAGE OF REVENUES FROM OUTPATIENT CARE, AND NUMBER OF BEDS STRATIFIED ACCORDING TO TYPE OF HOSPITAL.*

HOSPITAL CHARACTERISTIC	BETA COEFFICIENT	STANDARD ERROR	P VALUE
Intercept	20.48	0.40	
Ownership			
Public	—	—	—
Private not-for-profit	2.20	0.22	<0.001
For-profit	7.92	0.27	<0.001
Type			
Short-term general	—	—	—
Long-term general	1.63	0.94	0.08
Cancer	1.36	3.27	0.68
Psychiatric	14.05	0.43	<0.001
Rehabilitation	9.92	0.90	<0.001
Other	3.27	0.92	<0.001
Census region			
West North Central	—	—	—
New England	1.48	0.46	0.001
Middle Atlantic	0.19	0.37	0.60
South Atlantic	1.06	0.32	<0.001
East North Central	1.53	0.32	<0.001
East South Central	0.85	0.37	0.02
West South Central	0.67	0.32	0.04
Mountain	1.20	0.39	0.002
Pacific	3.11	0.34	<0.001
Other (e.g., Guam and Puerto Rico)	-0.99	1.01	0.33
Percentage of revenues derived from outpatient services	0.04	0.01	<0.001
No. of beds (per bed)			
Short-term general hospitals	-0.0050	0.0005	<0.001
Long-term general hospitals	-0.0026	0.0042	0.54
Cancer hospitals	0.0019	0.0120	0.87
Psychiatric hospitals	-0.0199	0.0019	<0.001
Rehabilitation hospitals	-0.0451	0.0080	<0.001
Other hospitals	-0.0022	0.0018	0.23

*Dashes indicate reference categories. R² for model=0.43. The R² represents the fraction of the total variation in the percentage spent for administration (dependent variable) that is explained by the linear relation to the independent variables. The intercept is a constant. The beta coefficients represent the absolute percent increase or decrease in the proportion of hospital spending devoted to administration that is related to specific characteristics, such as hospital ownership or type.

business acumen, coordination, and control of the clinical work force. For-profit hospitals have led the way in curtailing lengths of stay, though surprisingly this does not translate into lower costs per admission. The shorter stays and lower occupancy rates at for-profit hospitals²³ may increase the share of costs devoted to administration if clinical staffing is cut more than administration when beds are empty.

It may be incorrect to equate market success with efficiency.³ Business strategies unrelated or even detrimental to efficiency can bolster profitability and market share. For instance, hospitals can enrich their mix of payers through selective marketing, providing financial incentives for physicians, or locating facilities in affluent neighborhoods; increase revenues by "upcoding" DRGs, meticulously adhering to managed-care approval procedures, or vigorously pursuing collections; and cut costs by curtailing research and education programs. Being large and having abundant access to capital enhance hospitals' leverage with suppliers, physicians, insurers, and politicians and provide them the wherewithal to weather price wars and recoup losses after competitors fail or are purchased. National hospital chains have fewer local ties that could inhibit their closing unprofitable services and facilities or avoiding financially unattractive patients and physicians.

Contrary to the rhetoric of the market, market forces are apparently "upsizing" administration. Between 1990 and 1994, the overhead of health insurers and HMOs rose \$20.1 billion,²⁴ from 12.8 percent²⁵ to 14.8 percent²⁴ of premiums; the number of administrative and clerical personnel in practitioners' offices increased from 613,000 to 819,000 full-time equivalents (Current Population Survey: unpublished data); and hospital administrative staffing soared.²⁶ Even before these recent rises in expenditures for administration, the U.S. General Accounting Office calculated that the administrative savings that would result from a shift to national health insurance would fully fund universal coverage.²⁷ Since the gap between health care costs in the United States and those in the rest of the world is widening²⁸ and the ranks of the uninsured and underinsured are swelling,^{29,30} perhaps it is time to ask whether our experiment with market medicine has failed.

REFERENCES

1. Woolhandler S, Himmelstein DU, Lewontin JP. Administrative costs in U.S. hospitals. *N Engl J Med* 1993;329:400-3.
2. Woolhandler S, Himmelstein DU. The deteriorating administrative efficiency of the U.S. health care system. *N Engl J Med* 1991;324:1253-8. [Erratum, *N Engl J Med* 1994;331:336.]
3. Hasan MM. Let's end the nonprofit charade. *N Engl J Med* 1996;334:1055-7.
4. Pattison RV, Katz HM. Investor-owned and not-for-profit hospitals: a comparison based on California data. *N Engl J Med* 1983;309:347-53.
5. Pattison RV. Response to financial incentives among investor-owned and not-for-profit hospitals: an analysis based on California data, 1978-1982. In: Gray BH, ed. *For-profit enterprise in health care*. Washington, D.C.: National Academy Press, 1986:290-302.
6. Watt JM, Derzon RA, Renn SC, Schramm CJ, Hahn JS, Pillari GD. The comparative economic performance of investor-owned chain and not-for-profit hospitals. *N Engl J Med* 1986;314:89-96.
7. Watt JM, Renn SC, Hahn JS, Derzon RA, Schramm CJ. The effects of ownership and multihospital system membership on hospital functional strategies and economic performance. In: Gray BH, ed. *For-profit enterprise in health care*. Washington, D.C.: National Academy Press, 1986:260-89.
8. Gray BH, McNeerney WJ. For-profit enterprise in health care: the Institute of Medicine Study. *N Engl J Med* 1986;314:1523-8.
9. Investor ownership and the costs of medical care. In: Gray BH, ed. *For-profit enterprise in health care*. Washington, D.C.: National Academy Press, 1986:74-96.
10. Ermann D, Gabel J. Investor-owned multihospital systems: a synthesis of research findings. In: Gray BH, ed. *For-profit enterprise in health care*. Washington, D.C.: National Academy Press, 1986:474-91.
11. Coelen CG. Hospital ownership and comparative hospital costs. In: Gray BH, ed. *For-profit enterprise in health care*. Washington, D.C.: National Academy Press, 1986:322-53.
12. SAS software, version 6.04. Cary, N.C.: SAS Institute, 1987.
13. Proposed rules. *Fed Regist* 1996;61(106):27453.
14. Office of Statistics and Data Management. PPS X Minimum data set quality analysis report. No. 4774. Baltimore: Bureau of Data Management and Strategy, 1995.
15. 10Q Report filed with the Securities and Exchange Commission November 19, 1995. Louisville, Ky.: Columbia HCA Healthcare, 1995.
16. Jaklevic MC. Hospitals' advertising spending up 11.4%. *Mod Healthcare* 1995;25(14):56.
17. McCue MJ, Thompson JM. The ownership difference and relative performance of rehabilitation specialty hospitals. *Arch Phys Med Rehabil* 1995;76:413-8.
18. McCue MJ, Clement JP. Relative performance of for-profit psychiatric hospitals in investor-owned systems and nonprofit psychiatric hospitals. *Am J Psychiatry* 1993;150:77-82.
19. McCue MJ, Clement JP, Hoerger TJ. The association of ownership and system affiliation with the financial performance of inpatient psychiatric hospitals. *Inquiry* 1993;30:306-17.
20. Sear AM. Comparison of efficiency and profitability of investor-owned multihospital systems with not-for-profit hospitals. *Health Care Manage Rev* 1991;16(2):31-7.
21. Sorrentino EA. Hospital mission and cost differences. *Hosp Topics* 1989;67(3):22-5.
22. Ozcan YA, Luke RD, Haksever C. Ownership and organizational performance: a comparison of technical efficiency across hospital types. *Med Care* 1992;30:781-94.
23. Hospital stat: emerging trends in hospitals: 1995-96 edition. Chicago: American Hospital Association, 1995.
24. Levit KR, Lazenby HC, Sivarajan L. Health care spending in 1994: slowest in decades. *Health Aff (Millwood)* 1996;15(2):130-44.
25. Levit KR, Sensenig AL, Cowan CA, et al. National health expenditures, 1993. *Health Care Financ Rev* 1994;16(1):247-94.
26. Himmelstein DU, Lewontin JP, Woolhandler S. Who administers? Who cares? Medical administrative and clinical employment in the United States and Canada. *Am J Public Health* 1996;86:172-8.
27. Canadian health insurance: lessons for the United States. Gaithersburg, Md.: General Accounting Office, 1991. (Publication no. GAO/HRD-91-90.)
28. OECD health data 96/Eco-santé OCDE 96: a Windows environment software package for the comparative analysis of 27 health care systems: user's manual. Paris: Organization for Economic Cooperation and Development, 1996.
29. Bureau of the Census, Bennefield RL. Health insurance coverage: 1995. Current population reports: household economic studies. Series P60. No. 195. Washington, D.C.: Government Printing Office, 1996.
30. Short PF, Banthin JS. New estimates of the underinsured younger than 65 years. *JAMA* 1995;274:1302-6.

CORRECTION

Costs of Care and Administration at For-Profit and Other Hospitals in the United States

Costs of Care and Administration at For-Profit and Other Hospitals in the United States . On page 773, the sentence that begins eight lines from the bottom of the left-hand column should have read, "Scant recent data on acute care hospitals, mostly from Florida, suggest that the pattern of higher profits and reduced staffing at for-profit hospitals has persisted^{20,21}; by some technical measures of efficiency, they are *even less efficient than not-for-profit hospitals*," not "even less efficient than they were," as printed. We regret the error.