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WORKSHOP IN HEALTH ADMINISTRATION STUDIES

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"Issues in Capital Finance: Implications for Health Care Organizations"

for

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HEALTH-CARE REVENUE BONDS

CreditReview

Hospital industry in transition

The rapid transformation of the health-care industry is straining hospital operations. The transition to a national payment rate for Medicare services redistributes resources based on geography, and from rural to urban hospitals. Declining inpatient admissions, excess capacity, and unfavorable reimbursement have a particularly severe impact on small rural hospitals. Competition has forced urban hospitals to take defensive measures to maintain market share. In the process, their cash flow and liquidity often deteriorate.

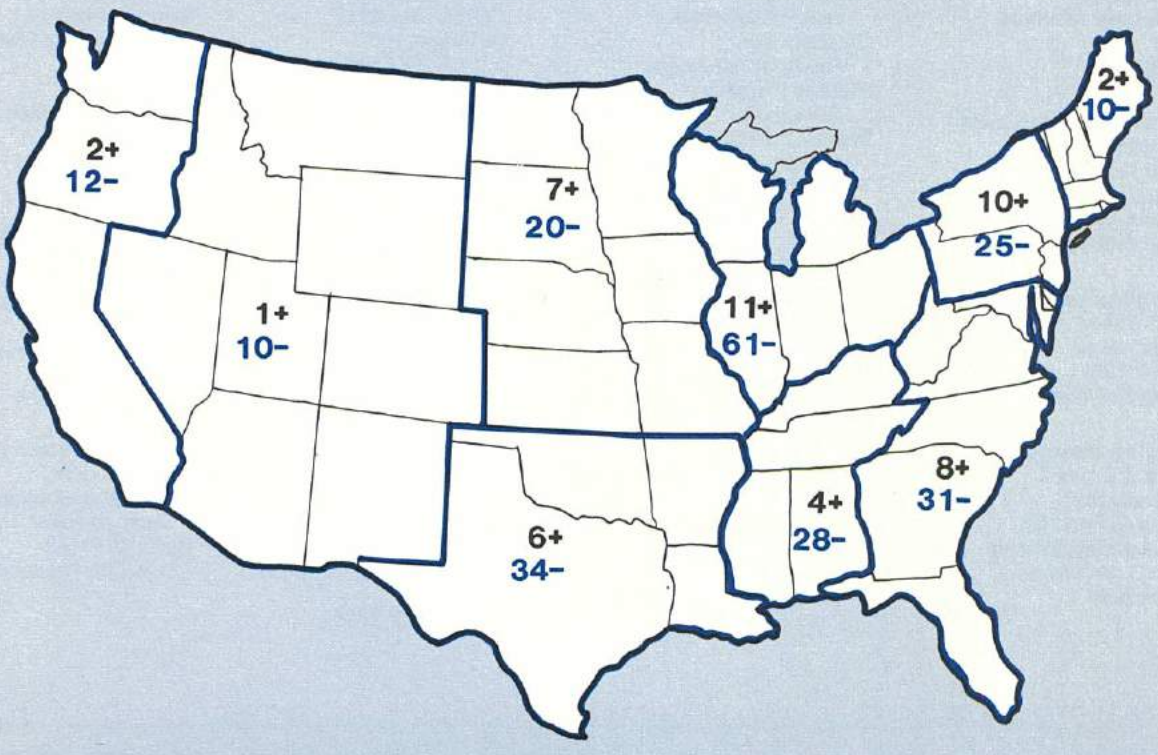
Hospital ratings are being lowered at an accelerating pace, as Medicare reimbursement lags behind inflation and competition intensifies. During the past two years, six nonprofit hospital ratings have been lowered for every upgrade. By comparison, four downgrades occurred for every upgrade during 1984 and 1985. The downgrades mirror the heightened vulnerability of small hospitals and regional economic trends.

Hospital bond ratings have been under pressure for the past five years. Approximately 22% of all hospital credit ratings have been lowered since 1983, and only 5% have been raised *(see chart A on page 24)*. Rating changes have affected the debt of 259 hospitals and hospital systems.

The increased industry risk has resulted in a shrinkage of the 'A' category. By the end of 1987, the percentage of ratings in the 'A' category was 65%, compared to 73% at the end of 1983 *(see chart B on page 24)*. In contrast, the proportion of

(continued on page 24)

Hospital bond rating changes by region (1983–1987)



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Health-care revenue bonds
April 18, 1988

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CreditComment

Health-care rating process

In 1987, S&P rated $7.7 billion in health-care financings, bringing the total to $25 billion in rated health-care debt outstanding. Both tax-exempt and taxable bond issues for not-for-profit hospitals, health maintenance organizations, and nursing homes are rated in S&P's municipal finance department. Last year, S&P also expanded its existing rating services to include preliminary and underlying ratings, as well as credit opinions (*see page 10 for a more complete description of this new service.*)

Rating procedure

S&P conducts a comprehensive analysis of each health-care institution to determine a credit rating. The evaluation focuses on the institution's financial and operating performance, management quality, and various institutional and service area characteristics.

A site visit is usually part of the rating process. However, these meetings may also be held at S&P's New York offices if a site visit is not deemed necessary. It is advisable to schedule a rating meeting at least three weeks prior to the bond sale or pricing date. All required documents must be submitted to S&P at least one week before the rating meeting *(see box below)*. The rating will be available within one week of the rating meeting, assuming all necessary information has been supplied. If bonds are not sold within 60 days, the rating will be withdrawn. In that case, a new rating must be obtained when bonds are rescheduled for sale. S&P must also rate any subsequent parity debt, or the initial rating may be withdrawn. Finally, S&P should be informed of any senior lien debt or other material financings.

Documentation requirements for health-care ratings

—Five years of audited financial statements.
—Management letters.
—Interim statements for the current and prior years.
—Utilization statistics for five years.
—Interim utilization statistics for the current and prior years.
—Feasibility study.
—Official statement.
—Legal documents including master trust indenture, bond resolution or series trust indenture, lease or loan agreement.

The rating is subject to review until bonds mature, are redeemed, or are refunded. Ratings may be raised or lowered during the annual review process, or whenever credit quality changes significantly.

Financial performance

The assessment of trends is key in determining an appropriate credit rating. Declining admissions alone may not be negative factor if market share is maintained, and occupancy does not fall much below industry norms. Utilization rates and profitability for the last five years are reviewed, with particular emphasis on any significant fluctuations. Sensitivity to reimbursement pressures, changing physician practice patterns, and competition is assessed, along with management's ability to respond to these pressures.

Trends are equally important in income statement analysis. A premium is placed on consistency of performance. One bad year is not necessarily a negative factor, unless it is determined to be the beginning of a permanent shift. Income statement analysis focuses upon revenue growth, sources of income, and profitability. Key financial indicators are historic pro forma debt service coverage, operating and excess margins, and debt service as a percent of net revenues. Liquidity and capitalization are also important to the credit review. Cash accumulation, the level and quality of accounts receivable, and historic use of debt are evaluated. Key balance sheet ratios are days cash on hand, cash flow to total debt, the cushion ratio, and debt to capitalization.

Typical 'A' category hospital issues— 1986 median

First full year following project completion	
Coverage of maximum annual debt service (x)	3.01
Operating income as a % of net operating revenues*	2.59
Excess income as a % of total revenues*	5.55
Maximum debt service as a % of total revenues*	5.71
Cushion ratio (x)	5.79
Debt to plant (%)	76.74
Debt to capitalization (%)	43.31
Return on assets (%)	4.3
Cash flow	20.0
Days cash on hand	88.6
Capital expense (%)	11.3

*Total revenues: net operating revenues plus nonoperating revenues.

A feasibility study is required in most health-care ratings because of the complexity of reimbursement regulations, heightened competition, changes in physician, and consumer patterns. The forecast period should extend two years beyond project completion or the refinancing date. For refundings and refinancings, a shorter period is sufficient. In most cases, the feasibility study should be prepared by a nationally recognized firm with experience in health care. However, a study prepared by hospital management is acceptable in some refinancings, or when historic pro forma coverage for the two most recent fiscal years is at least 1.5 times (x) future maximum annual debt service.

Assumptions supporting the utilization and financial forecasts should address the impact of current and proposed reimbursement regulations. Appropriate sensitivity analyses should be provided. In addition, the impact of future financings, if planned, should be addressed. The first full year after project completion is particularly important. During that year, the institution expenses depreciation as well as interest, since any capitalized interest expires as the new plant comes on line. In 1986, median debt service coverage for an 'A' rated hospital was three times for the first full year. The table above summarizes the standard financial ratios used to evaluate health-care credits. The ratios represent the median for all 'A' credits rated in 1986, using the first full year after project completion.

Management evaluation

Management's role in determining an institution's operational success is evaluated. S&P uses the rating meeting as a forum to discuss with senior management its operational policies as well as strategic plans. S&P focuses on management's ability to anticipate and react to new developments in both reimburse-

(continued on next page)

S&P reviews the composition of the board of trustees and its role in setting financial guidelines and goals. If physicians are not represented on the board, S&P evaluates mechanisms for their involvement in policymaking. Resumes of all key administrative members are reviewed, and any recent turnover is noted.

Institutional considerations

The size of an institution, as well as the types and levels of services provided, are important to its competitive and financial position. Size becomes a rating issue when it affects an institution's ability to compete. Major teaching hospitals, regional referral, and large medical centers have broader regional bases, so they are often viewed more favorably than smaller or specialty institutions. Small institutions, by definition, are more limited in terms of services offered, number of patients, and geographic reach. In effect, they lack elements of diversification that can benefit the larger institution. To the extent that health-care markets and regional economies change, there is protection inherent in a broader scope of business. This consideration is balanced against the performance and prospects of a given institution.

The competitive environment is particularly important, including the relative strength of neighboring institutions, their market share, and future plans. Population trends, unemployment, and on hospital utilization. The impact of alternative delivery systems also is assessed.

S&P also reviews the size of the institution's medical staff, the average age, and level of board certification. Physician recruitment and admitting patterns are discussed. Other staffing is reviewed with a focus upon nursing, in light of the current national nursing shortage.

Legal review

S&P reviews all bond documents as part of the rating process. In the past, S&P required specific covenants for a bond issue to be rated. S&P is shifting its focus from requiring specific covenants to relating covenants to the underlying strength of the credit being rated. The importance of any individual covenant will depend on the relative strengths of that specific institution. In S&P's view, covenants should be designed to protect bondholder interests but also to provide enough flexibility for management to take advantage of business opportunities and to respond to industry changes.

Management's competence, stated intentions, and the reasonableness of its long-term goals remain the keystone of S&P's analysis. S&P will not structure bond covenants, but will continue to adhere to its published criteria regarding the debt service reserve fund and permitted investments *(see page 12)*.

Multihospital system ratings

S&P currently rates 29 not-for-profit multihospital systems. A multihospital system, as defined by S&P, consists of three or more hospitals exhibiting a measure of financial or geographic risk dispersion. The number of hospital systems rated by S&P has not increased over the last three years, despite rapid growth in previous years. However, the composition of some systems, and thus their ratings, have changed as realignment, consolidation, and merger activity among systems across the country has increased.

S&P's approach to rating health-care systems is similar to that used for single-site facilities. In both cases, creditworthiness depends on certain qualitative, quantitative, and legal factors. However, a system's credit standing can be enhanced by risk dispersion, both geographic and financial. In addition, economies of scale can be achieved when financial and managerial resources are consolidated. When rating systems, S&P evaluates the extent to which these credit enhancing qualities exist. The strength of the obligated group, as defined in the master indenture, is particularly important. Key rating considerations also include the system's structure and management's administrative philosophy.

System ratings

	Headquarters	Rating	Date*
Adventist Health System-Sunbelt	Fla.	A	1983
Baptist Hospital Inc.	Ky.	A–	1985
Bon Secours Health System	Md.	A+	1985
Catholic Health Corp.	Neb.	A+	1985
CSJ Health System	Kan.	A–	1985
Evangelical Health Systems	Ill.	AA	1984
Fairfax Hospital Association	Va.	A+	1986
Fairview Hospital and Healthcare Services	Minn.	A+	1982
Franciscan Sisters Health Care	Minn.	A–	1987
Franciscan Sisters of the Poor	N.Y.	A+	1985
Health Central Inc.	Minn.	A	1985
HealthEast	Minn.	BBB–	1987
Holy Cross Health System Corp.	Ind.	A	1983
IHC Hospitals Inc.	Utah	AA	1988
LHS Corp.	Calif.	A	1985
Lutheran Hospitals & Homes Society	N.D.	BBB+	1986
Memorial Hospital Systems	Texas	BBB+	1988
Mercy Health System	Calif.	AA–	1985
Michigan Healthcare Corp.	Mich.	B+p	1987
Samaritan Health Services	Ariz.	A+	1985
Sisters of Charity Health Care Systems	Ohio	A+	1987
Sisters of Charity of Nazareth Health Corp.	Ky.	A	1985
Sisters of Charity of the Incarnate Word	Texas	AA	1988
Sisters of Mercy Health Corp.	Mich.	A–	1984
Sisters of Providence	Wash.	AA–	1987
Sisters of St. Joseph of Peace	Wash.	A–	1987
Sisters of the Third Order of St. Francis	Ill.	A+	1986
St. Josephs Health System	Calif.	A+	1984
Sutter Health System	Calif.	A	1987

*Most recent issue or rating change.

Obligated group

The first step in the rating process is to evaluate the obligated group which covenants to repay the debt issue. The obligated group might not include all the facilities in the system. For example, the initial obligated group often excludes leased and managed facilities, nonhealth-care related ventures, and for-profit corporations. Similarly, the group often excludes hospitals which are unable to refinance existing debt or those which might diminish the group's creditworthiness. In most cases, however, system members and the obligated group are identical.

S&P then assesses any management plans which would change the obligated group's strength. Potential acquisition, divestiture, and diversification strategies are particularly important. Plans to divest an important revenue-producing entity, or to absorb a losing operation, can affect the obligated group's financial strength. Many systems also guarantee the debt of weaker institutions, either as a diversification strategy or to buoy an affiliated institution in distress. As a result, S&P examines the downside risk of guarantees. S&P also evaluates potential transfers of cash or other assets out of the obligated group. Sheltering assets may be attractive for some purposes but often weaken the balance sheet.

Finally, S&P reviews the system's activity outside the obligated group. Multihospital systems often have opportunity to engage in health-related services, alternative delivery systems, as well as speculative nonhealth-related projects. Although these activities may take place in subsidiaries excluded from the obligated group, S&P evaluates the scope of such ventures and assesses their impact on the system's creditworthiness.

System composition

The primary focus of multihospital ratings is the obligated group. However, the system's underlying components are also important. Answers to the following questions are critical to system evaluation:

- —In a system where members are geographically dispersed, are their respective economic and competitive markets favorable?
- —What is the bed size, geographic location, and market position of the group's major players?
- —Does the system depend on any one regulatory, competitive, or economic environment?
- —Are the scope and types of services varied throughout the system?

In addition to the items outlined above, S&P evaluates each hospital's percentage contribution to gross revenues and profits, financial and admission trends, and overall profitability. These factors demonstrate the degree of financial, geographic, and risk dispersion present in the system.

Board and management structure

The organizational structures of hospital systems vary considerably, due to board philosophy as well as more practical factors such as the system's size and geographic scope. These factors translate directly into the level of corporate control and the degree to which centralized services are available to subsidiaries. Corporate management typically reviews proposed budgets, monitors ongoing financial performance, approves major capital expenditures, and coordinates systemwide strategic planning. Other centralized services may include cash management, productivity analysis, group purchasing, and personnel management.

Regardless of a system's organizational structure, management must be able to control the dynamics associated with a large corporation. Typically, a health-care system has greater financial resources than a single hospital and, consequently, greater financial flexibility. Rating benefits derived from this flexibility depend directly on the system's ability to manage these resources. If growth is being pursued aggressively, how much debt is being used to finance new projects, and are the plans prudent? Conversely, if the system is overbedded or operating unprofitable ventures, is the flexibility being used as a cushion to delay decisions? These issues highlight management ability as well as financial planning capabilities of the system.

New system ratings (1986–1987)

	Year	Acute care hosp.	Acute care beds	Location	Rating
Franciscan Sisters Health Care	1987	9	1,234	WI, MN, ND	A–
HealthEast	1987	4	1,085	MN	BBB–
Sisters of the Third Order of St. Francis	1986	6	1,611	IL, MI	A+
Sisters of St. Joseph of Peace	1986	6	790	AK, OR, WA	A–

In addition to the fundamental rating factors, the analysis focuses on features which are unique to systems and their impact on creditworthiness. The presence of a single credit-enhancing feature will not necessarily improve a rating. On the other hand, a system need not exhibit all the characteristics discussed above to obtain a better rating. The rating ultimately reflects any credit-enhancing attributes that exist for bondholders' benefit.

Multihospital system ratios

Ratio analysis is one part of the rating process. Presented below are financial medians for not-for-profit multihospital systems for 1985 and 1986. In general, these ratios mirror recent trends of lower occupancy and profitability seen throughout the health-care industry.

A lack of correlation between some ratios and the rating category occurs because of sample size, and because these ratios do not reflect qualitative factors integral to the rating process. Additional considerations such as risk dispersion, centralized management, and economies of scale which may enhance a system rating also are not captured.

Not-for-profit multihospital system ratios

Medians by rating category

	AA		AA–		A+		A		A–		BBB+		BBB–	
	1986	1985	1986	1985	1986	1985	1986	1985	1986	1985	1986	1985	1986	1985
Sample size	3	3	2	2	11	11	6	6	5	5	1	1	1	1
Beds	2,364	2,328	2,842	2,770	1,459	1,460	1,163	1,197	1,234	1,259	1,872	2,043	930	930
Average length of stay (days)	6.95	7.09	6.31	6.22	6.30	6.40	5.80	5.66	6.80	6.80	5.30	5.28	5.90	6.10
Occupancy (%)	68.26	65.40	64.37	63.50	65.00	65.80	63.01	63.22	59.70	62.59	43.20	44.46	62.65	67.44
Total oper. & nonoper. rev. (000s)	481,033	434,115	605,873	551,631	240,762	229,934	211,273	189,869	164,540	147,945	249,639	253,265	170,673	153,800
Operating margin (%)	5.89	8.08	5.32	6.32	4.23	6.94	3.29	5.59	4.30	4.10	(0.08)	0.87	(3.67)	1.37
Excess margin (%)	8.15	10.18	6.79	7.96	6.66	8.61	4.38	6.79	5.85	5.34	0.87	2.78	(1.77)	3.43
Debt service coverage (x)	3.26	3.46	2.60	2.40	2.89	3.00	2.05	2.08	2.56	1.77	1.68	2.16	0.82	1.00
Debt service/revenues (%)	5.53	5.72	6.14	6.73	5.18	5.54	6.68	7.28	7.06	7.81	5.42	5.34	10.82	12.00
Quick ratio (x)	2.59	2.84	2.47	2.45	2.28	2.94	1.91	1.92	2.33	2.17	2.35	2.45	1.65	2.04
Cash on hand (days)	151.48	87.90	64.93	64.70	86.71	83.25	52.47	53.53	72.36	52.75	47.09	40.32	39.91	69.00
Cushion ratio (x)	6.44	3.50	2.68	2.33	3.92	3.80	2.44	1.55	2.64	2.19	2.25	1.92	0.97	1.44
Debt/plant (%)	82.37	80.81	84.68	85.41	91.73	83.95	84.48	99.95	74.92	62.32	105.20	94.46	100.09	74.82
Debt/capitalization (%)	47.30	41.88	45.42	46.82	51.39	47.15	52.13	53.31	50.36	39.13	63.25	58.39	59.49	50.24
Days in accounts receivable	59.31	56.63	71.26	70.04	70.24	66.75	68.25	68.89	69.23	64.23	66.24	66.51	66.92	69.24
Return on assets (%)	5.13	8.44	5.19	6.15	5.28	7.59	3.20	4.98	6.33	5.49	0.96	3.16	(1.35)	2.68
Return on equity (%)	12.04	17.63	11.35	13.56	11.28	15.32	8.18	12.54	12.63	10.34	3.16	8.89	(3.81)	6.22
Cash flow/total debt (%)	17.40	27.40	19.25	19.97	15.69	22.58	12.02	15.96	22.46	22.13	8.80	12.73	4.59	11.70

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Glossary

Average length of stay (ALOS): patient days ÷ admissions
Board-designated funds: unrestricted reasonably liquid investments
Cash flow to total debt: [(excess income + depreciation expense) ÷ (current liabilities + long-term debt)] × 100
Contractual allowances: difference between charges and the amount actually reimbursed by third-party payors
Contractual allowance (%): (contractual allowances ÷ gross revenues) × 100
Cushion ratio: (cash and investments + board-designated funds) ÷ maximum annual debt service
Days cash on hand: (cash and investments + board-designated funds) ÷ [(operating expense − depreciation expense) ÷ 365]
Days in accounts receivable (DAR): (net accounts receivable × 365) ÷ net patient revenues
Debt/capitalization: [long-term debt ÷ (fund balance + long-term debt)] × 100
Debt/plant: (long-term debt ÷ net property plant and equipment) × 100
Debt service coverage: net available ÷ maximum annual debt service
Debt service as % of revenues: [maximum annual debt service ÷ (total operating revenues + net nonoperating revenues)] × 100
Excess income: operating income + net nonoperating revenues
Excess margin: [excess income ÷ (total operating revenues + net nonoperating revenues)] × 100
Expenses: operating expenses including interest, depreciation, and amortization
Gross revenues: gross revenues from patient services
Net available: excess income + interest + depreciation + amortization
Net patient revenues: gross revenues − (contractual allowances + provision for charity and uncollectible accounts)
Occupancy (%): [patient days ÷ (beds in service × 365)] × 100
Operating income: total operating revenues − expenses
Operating margin: (operating income ÷ total operating revenues) × 100
Quick ratio: (cash and investments + board-designated funds + accounts receivable) ÷ current liabilities
Return on assets: (excess income ÷ total assets) × 100
Return on equity: (excess income ÷ fund balance) × 100
Total operating revenues: net revenues + other operating revenues

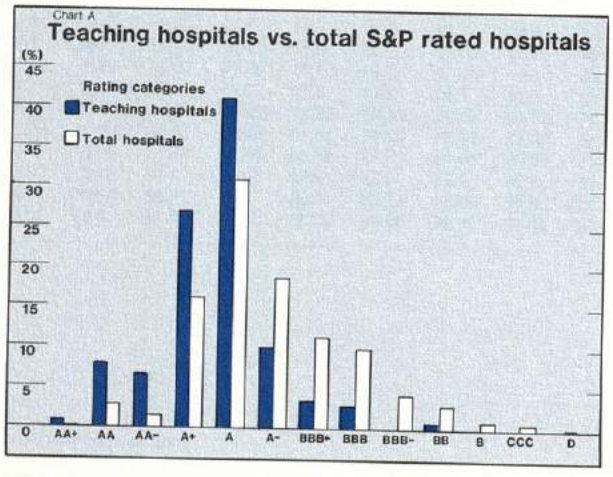
Teaching hospital ratings

Health-care institutions nationwide face increasing financial pressures as Medicare reimbursement and inpatient utilization rates continue to fall. Teaching hospitals are affected by these negative trends, but they still outperform other health-care facilities. More favorable reimbursement treatment enables teaching hospitals to maintain relatively stable bottom lines and good cash positions. Consequently, they have higher overall credit ratings and have been less susceptible to downgrades than nonteaching institutions. These conclusions are based upon a sample of S&P's 102 currently rated teaching hospitals. Positive trends in credit ratings, utilization, and financial performance were noted. However, as Congress continues to reduce health-care spending, teaching hospitals might be subject to further cutbacks, possibly affecting their future financial stability.

Strong credit ratings

Approximately 93% of all rated teaching hospitals are in the 'A' category or better *(see chart A)*, which indicates their relatively strong creditworthiness. The 'AA' category accounts for 15% of teaching hospitals, three times the percent of all S&P rated hospitals (4%). In addition, 78% of teaching hospitals fall in the 'A' range, well above the 65% average for all hospitals.

Chart A
Teaching hospitals vs. total S&P rated hospitals



Teaching institutions have faced fewer downgrades than other health-care facilities. Three teaching hospital ratings were lowered for every upgrade, while health-care institutions overall experienced a five to one ratio of downgrades to upgrades.

Historically, institutional characteristics of teaching hospitals, relatively stable utilization rates, and favorable Medicare reimbursement for education have resulted in stronger credit ratings. However, proposed cutbacks in medical education payments could have an adverse effect on the financial performance and credit quality of teaching hospitals nationwide.

Reductions in medical education reimbursement

Medicare continues to reimburse teaching hospitals for the direct and indirect costs assocated with medical education. However, the Reagan administration proposes to cut indirect medical education (IME) in its attempt to trim Medicare spending in fiscal year 1989. In addition, both the administration and the Health Care Financing Administration (HCFA) have developed separate plans to reduce Medicare payments for direct medical education (DME).

—*Indirect medical education.* The administration is cutting IME reimbursement aggressively. The teaching add-on factor was initially set at 11.59% for each 0.1 in the ratio of interns and residents to beds when Medicare's Prospective Payment System (PPS) was enacted in 1983. Since then, the IME factor has been adjusted downward continually. For discharges on or after May 1, 1986, the factor dropped to approximately 8.1%. Another adjustment downward to 7.7% is anticipated for discharges on or after Oct. 1, 1988. Despite these reductions, the current administration proposes a further cut in the IME factor to 4.05% for discharges on or after Oct. 1, 1989, thereby generating approximately $920 million in savings for 1989.

—*Direct medical education.* Currently, DME reimbursement is based on reasonable costs incurred by the teaching facility for approved medical programs. The administration expects to chip away at this all inclusive payment approach by eliminating reim-

bursement for two DME components: teaching physician supervision and classroom space. These exclusions would generate savings of approximately $50–$60 million in 1989.

HCFA expects to cut DME reimbursement by implementing a new payment methodology. New draft rules are anticipated in spring 1988, saving approximately $645 million in 1988, plus $2.7 billion or more over the next four years. Under HCFA's proposal, hospitals would no longer be reimbursed for their actual costs. Instead, payments would reflect a predetermined amount for each hospital, retroactive to July 1, 1985. Similar to Medicare's Diagnostic Related Groups (DRGs), the new method would utilize a base year for determining actual allowable costs per full time equivalent resident. These base year costs would then be adjusted for inflation. This proposed change would adversely affect the financial performance of teaching hospitals with large residency programs and high Medicare utilization. Hospitals might be able to offset these reimbursement reductions somewhat, by tightening their budgets further and renewing their efforts at cost control.

As fewer dollars are channeled into teaching hospitals, their ability to expand medical education programs becomes limited. Teaching hospitals will need to look to other sources such as foundations, fund raisings, and grants to finance medical education costs.

Slight inpatient declines

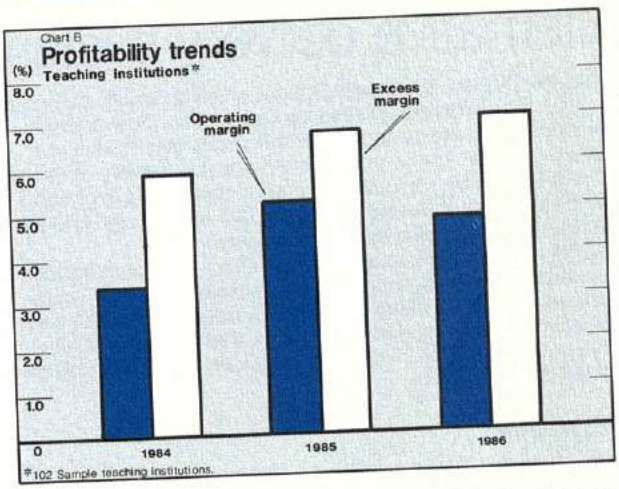
Inpatient declines at teaching hospitals are not as severe as those experienced at other hospitals. Admissions fell only 2.8% from 1984 to 1985 and 1.3% from 1985 to 1986. This relatively favorable performance reflects strong institutional characteristics such as the broad scope of services offered and the regional draw for patients at many teaching hospitals. Shifts to outpatient utilization, peer review organizations, preadmission approvals, mandatory second opinions, and other factors continue to change admission patterns at teaching hospitals. Data for 1987 suggest inpatient declines may be stabilizing and even increasing at some teaching hospitals.

Financial statistics (medians)

	—Fiscal years—		
	1986	1985	1984
Operating margin (%)	4.8	5.2	3.8
Excess margin (%)	7.0	6.8	5.9
Max. debt service cov. (%)	3.5	2.9	2.5
Max. debt service as a % of rev.	5.4	5.9	6.5
Current ratio (x)	1.9	2.0	2.0
Cash on hand (days)	108	81	70
Cash flow to total debt (%)	21.8	23.8	22.1

*102 sample teaching institutions.

Chart B
Profitability trends
Teaching institutions*



The average length of stay (ALOS) in teaching hospitals is relatively stable and higher than other health-care entities. The ALOS was 7.8 days in 1985 and 7.4 days in 1986; other hospitals' ALOS was 6.6 and 6.4 in these same years. The complexity and severity of cases seen at teaching hospitals account for this variance.

Financial profile

Teaching hospitals exhibit a strong capacity to service their debt as evidenced by favorable debt service indicators and excess margins *(see chart B)*. In 1986, for example, median coverage was 3.5 times and excess margin was 7%. On an operating basis, margins increased a healthy 37% from 1984 to 1985, but fell off in 1986. Greater revenue deductions from tighter reimbursement and an increasing volume of uncompensated care have squeezed operating profits. In addition, teaching hospitals have moderate to light debt burdens as indicated by a median 5% debt service to revenues in 1986. Most teaching institutions have maintained stable balance sheets. Cash positions are strong with days cash on hand an impressive 108 days in 1986.

Most teaching institutions have performed well under PPS, but this favorable trend might not continue. Tighter reimbursement for medical education, the escalating costs of new technology, a shortage of nurses, and national DRG reimbursement rates could weaken the financial stability of these institutions.

Alternative delivery systems affect hospitals

Alternative delivery systems (ADS) are growing rapidly, adding a measure of cost consciousness and competition to the health-care industry. These systems offer a financial mechanism and an organizational framework to coordinate the delivery of health services to a defined population. Their market share is growing significantly, as both the private and public sectors use ADS as tools to contain spiraling health-care costs.

S&P's recent hospital bond ratings reflect ADS' penetration of the health-care industry, and their increasing share of hospitals' revenue base in many cities. This article defines ADS, and then evaluates their market penetration, their contractual relationships with hospitals, and the implications of these trends for hospital revenue bonds.

ADS defined

ADS were developed in response to perceived problems and opportunities in the traditional health-care industry. In the past, almost all health services were offered on a fee-for-service basis, with indemnity insurance covering the costs. The traditional model offers fewer incentives to control costs and minimal coordination between services. By comparison, ADS are designed to eliminate unnecessary services and ensure that care is rendered appropriately. Most ADS incorporate a managed care component ("gatekeeper mechanism") to authorize and coordinate use of hospital and other nonprimary care services. Financial arrangements with providers (hospitals and physicians) and subscribers/enrollees are designed to induce cost efficiency and spread risks among system participants.

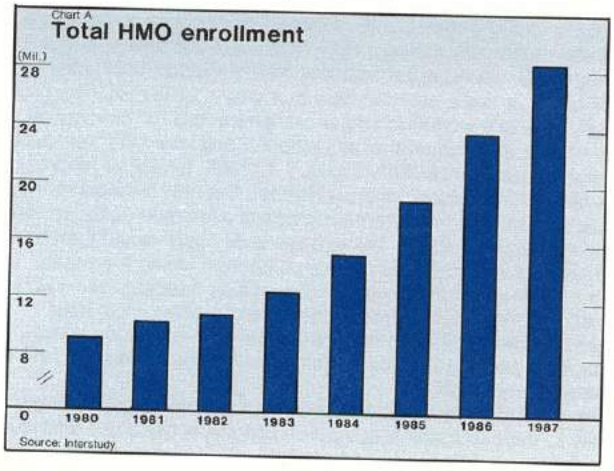
The two principle forms of ADS are health maintenance organizations (HMOs) and preferred provider organizations (PPOs). Other forms of alternative delivery systems are being offered by commercial insurers, existing HMOs and PPOs, and hospital systems, to preserve market share and retain or attract physicians. These newer products often combine the features of HMOs and PPOs, offer subscribers multiple options, or emphasize the insurance function. Due to the relative newness of these other products, this article focuses on HMOs and PPOs.

As a form of prepaid health insurance, HMOs provide a comprehensive array of health benefits to a voluntarily enrolled population. HMO members pay a fixed, monthly premium and are covered for any number of physician office visits and authorized hospital stays during the month. Most HMOs do not own hospitals. Instead, they contract with hospitals to provide inpatient care.

Four different HMO models—staff, group, network, and individual practice association (IPA) models—establish various contractual and financial arrangements with participating physicians and hospitals *(see box)*.

A PPO is a formal contractual arrangement between purchasers of health-care benefits (insurers and employers) and health-care providers (physicians and hospitals). While subscribers can use providers outside the select "preferred" panel, financial incentives discourage out-of-plan utilization (i.e., no deductible or copayments). Providers have limited financial risks beyond the agreed upon fee. Unlike HMOs, PPOs are not subject to federal and state regulation, which may account for their recent surge in popularity.

Chart A



Market share gains

In existence for 40 years, HMOs gained wide popularity during the 1980s because of dramatic changes in the health-care environment. Medicare adopted a prospective payment system and commercial insurers and employers increased their efforts to contain health-care cost increases. Between 1984 and 1987, the number of HMO plans more than doubled to 662 from 306. According to Interstudy, almost 29 million people are enrolled in HMOs today *(see chart A)*.

Esimates of nationwide HMO penetration range from 5% to 13%. Some industry reports project that 40% of the insured population will be HMO enrollees in the 1990s. Although Medicare enrollment accounts for only approximately 5% of total HMO enrollment today, this segment of the population may turn to HMOs if regulation changes make federal reimbursement more beneficial to HMOs. Although HMO enrollment growth has been strong, increased price competition from indemnity insurers may slow future membership gains somewhat.

Table 1
Distribution of plans and enrollment by model type*

Model type	Enrollment (%)	% of plan	Avg. enrollment per plan
IPA	39.6	63.0	27,162
Group	25.5	11.1	98,458
Network	24.1	16.2	64,442
Staff	10.8	9.7	48,114

*As of June 30, 1987, 662 plans.
Source: Interstudy.

HMO model types

Group model HMOs use "closed panel" arrangements in which physicians contract with the HMO to serve its enrollees solely. Ambulatory care is provided at designated site(s) owned by the HMO. Inpatient care is provided at hospitals owned by or under contract with the HMO. *The staff model* is similar, except that physicians are salaried employers of the HMO rather than subcontractors. With the *network model,* a derivation of the group model, the HMO contracts with a number of geographically diverse physicians group practices. This type of HMO usually has an "open panel" arrangement with its participating physicians, allowing them to see patients not enrolled in the HMO as well. Finally, under the *IPA model,* the HMO contracts with individual physicians and groups to provide services to enrollees at their respective practice sites. The HMO places minimal limitations on treatment of nonenrollees. An IPA model HMO attempts to form an extensive provider network, to penetrate a broader geographic service area, and maximize enrollees' choice of providers.

PPOs experienced significant growth in the mid-1980s and expanded, for the most part, into the same markets penetrated by HMOs *(see table 2)*. Due to the diverse organizational structures of PPOs and the absence of federal and state regulations, precise statistics on the number of PPO subscribers and plans are difficult to obtain. However, based on data compiled by the American Medical Care & Review Association Inc., between 30 to 38 million people enrolled in almost 650 PPO plans. Statistics compiled for 43 states, Puerto Rico, and Washington, D.C. indicate that approximately one-third of total PPO enrollment is in California. Other states with 1.5 million enrollees or more include Florida, Illinois, Colorado, and New York.

Table 2
States with largest HMO enrollment

California	7.1
New York	2.0
Illinois	1.5
Michigan	1.4
Ohio	1.1
Massachusetts	1.1
Wisconsin	1.1
Texas	1.0
All other	12.2
Total	28.6

Source: Interstudy.

Hospital contracting

Many hospitals have strong incentives to contract with alternative delivery systems. In some cities, HMOs and PPOs are now dominant forces in the health-care market. Confronted with excess bed capacity and increased competition for admissions, hospitals view HMOs and PPOs as a key source of patients. In turn, ADS are recruiting hospitals aggressively for their provider networks.

Despite these incentives, not all contracts with ADS are favorable to the hospital. The various contracts currently in use have different risks and benefits for the hospital. The reimbursement arrangement determines how the hospital and ADS share financial risk. The following types of contracts predominate:

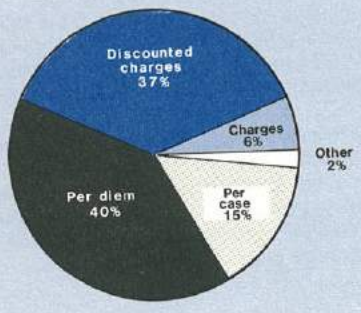
—*Discounted charges.* The ADS receives a discount off the hospital's regular charges for services rendered. The hospital is at risk if the discounted price falls below actual costs. In many cases, hospitals offer steep discounts to attract patients. Discounting is most successful if the contract guarantees the hospital a specific minimum revenue or volume, and if the hospital is an exclusive HMO/PPO provider. According to the American Hospital Association, full or discounted payment is the most prevalent payment mechanism among 868 hospitals responding to a 1986 survey.

—*Per diems.* The hospital offers the ADS an average daily rate based on a predetermined estimate of the volume and mix of services. If the actual intensity of care is higher (and thus more expensive) than estimated, the hospital might lose money. Conversely, if the acuity level for HMO/PPO patients is below the expected average, the hospital can benefit. These contracts are most successful if the hospital has a good cost accounting system, plus strong utilization controls over the use of ancillary resources.

—*Capitation.* The hospital receives a fixed payment each month for a predetermined group of ADS members. The payment is not adjusted for the frequency of use by patients; it is an actuarily-based cost estimate for a defined population. These payments might not cover the hospital's actual costs during any particular month. Capitation payments allow the HMO/PPO to predict exact costs, but the hospital is a risk for the cost of all unanticipated use of resources.

—*Per case.* The hospital contracts with the system to provide care at a fixed rate per case or discharge, in a manner similar to the DRG methodology. Payments are not adjusted for length of stay, but are based on an average cost per diagnosis *(see table 3 and chart B)*.

Chart B
Preferred provider organization compensation arrangements



Source: "The State of PPOs-Results from a National Survey",Health Affairs,Winter 1985.

Impact on hospital bond ratings

Alternative delivery systems become a rating factor when the HMO or PPO has a strong market presence in the hospital's service area, or when its contribution to the hospital's revenue mix is sizable. Rating implications are positive when the contractual relationship preserves or enhances the hospital's market share, service volume, and hospital profitability, and when the relationship does not erode medical staff loyalty.

Table 3
HMO payment methods used in hospital contracts

Payment type	Hospitals reporting (%)
Full charges	27.1
Discounted charges	25.0
Per diem	30.0
Fixed rate (per case)	7.8
Capitation	4.1
Other	6.0

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S&P evaluates these contracts to determine their impact on the rated hospital's finances and operations. To date, several hospital revenue bond ratings have been lowered due to weaker financial performance caused by unprofitable HMO contracts. In these cases, ADS have been able to negotiate prices well below the hospital's cost structure.

In the future, contracts with HMOs and PPOs may become more favorable to the hospital. Hospitals are becoming more familiar with the contracting process, and more accurate in pricing services. Their negotiating position also should improve in cities where utilization declines are stabilizing and where HMOs and PPOs are competing among themselves for providers and enrollees.

Hospital characteristics which affect contract negotiations include the size and composition of its medical staff, the types of services available, the hospital's ability to price these services accurately, and the marginal business volume generated by the alternative delivery system.

(continued on next page)

Nonprofit HMO revenue bond ratings

S&P will rate taxable or tax-exempt debt issued by nonprofit HMOs in its health-care finance group. Currently, S&P maintains public ratings on the debt issued by two nonprofit HMOs: Kaiser Permanente Medical Care Program ('AA') and Group Health Cooperative of Puget Sound ('A–'). In addition, S&P has given private rating opinions on debt isssued by Health Insurance Plan of Greater New York and Harvard Community Health Plan in Massachusetts. *For more information on private ratings, see below.*

To be eligible for an investment grade rating, the HMO should have enrollment of 100,000 members and have been in operation for at least five years. The rating process will be consistent with S&P's approach to rating not-for-profit hospitals (*see page 3*). Documents should highlight the following areas: organizational structure and history, membership growth and composition, medical staff characteristics, competition, utilization review and quality assurance programs, benefits package and pricing, hospital contracts, future plans, and other relevant topics.

In assessing the rating impact, S&P focuses on the current and future strategy for formulating relationships with the alternative delivery system. Where applicable, S&P discusses the following with hospital management:

- Does the hospital have an adequate understanding of the ADS with respect to the size and demographics of the enrolled population, its fiscal solvency, and the existing provider network?
- What are the terms of the contractual arrangement?
- What operational changes must be implemented to accommodate the contract, and what are the associated costs and investments?
- What effects will these contracts have on the hospital's competitive position in the local health-care market?
- What is the medical staff's response to the contract?
- Finally, and most critical, how will these contracts affect hospital service volume and profitability?

These issues become increasingly important to long-term credit ratings as ADS continue to assume prominence in their capacity as health service brokers and providers.

Bond rating services expanded

In response to requests, S&P introduces three services for municipal and other nonprofit issuers: preliminary ratings, underlying ratings, and credit opinions. In the past, informal credit assessments were offered on a limited basis to issuers contemplating the sale of debt, as part of S&P's overall service. The new services expand these assessments, by offering them on a more widespread basis to both issuers and investors.

Preliminary ratings

For issuers that are about to publicly sell debt, have developed full documentation, and want to know what an issue would be rated, S&P offers a preliminary rating service. It provides the issuer with a full credit rating preview prior to the sale, including an S&P rating on either a private placement or public basis. Policies governing these preliminary ratings parallel those for S&P's existing ratings:

- Documentation requirements will be the same as for a new issue rating.
- Issuers will be permitted to refuse a preliminary rating, as long as they do not sell the rated securities publicly. If they do, S&P would publish its preliminary rating for the issue.
- Ratings will be provided only upon request.

This service may be of interest to issuers that have fully structured a debt issue, but are interested in assessing alternative financing and marketing strategies. In particular, preliminary ratings may be of use to issuers considering third-party financial guarantees, but still are interested in establishing their credit strength on a stand-alone basis. In such cases, a preliminary rating will give an assessment of the issuer's credit strength without giving effect to the financial guarantee.

Fees would follow S&P's existing schedules for public and private placement ratings. If an issuer were to get a preliminary rating and then sell publicly, the issuer would receive a credit for the preliminary rating's fee.

Underlying ratings

Underlying ratings resemble preliminary ratings, but this service focuses on issues that already sold in the public market with a third-party financial guarantee, such as a bank letter of credit or bond insurance. S&P's underlying rating assesses the capacity of the issuer or other obligor to pay debt service on a stand-alone basis, without giving effect to the third-party guarantee.

Underlying ratings may be of interest to both issuers and investors wanting to establish the credit strength that an outstanding issue would have without the financial guarantee, since this strength may vary from issue to issue. Policies governing underlying ratings will be the same as those for preliminary ratings, including fees.

Credit opinions

For issuers that are still considering various structures for a proposed financing, have not yet developed full documentation, and are interested in the potential credit strength provided by the alternatives, S&P has developed a general service to provide informal credit opinions. These assessments of alternative structures do not constitute ratings, but rather represent a general indication of the rating category into which an issue would fall if it were structured as indicated. S&P in all cases only would be responding to issue structures as presented, and in no sense would act as a financial advisor or consultant.

Policies governing this service establish the difference between these assessments and actual ratings:

- Credit opinions will not be published, but rather would be expressed in a letter to the party requesting the opinion.
- Opinions may be qualified, depending on the documentation provided to S&P, and in no sense would serve as a rating.
- Fees for this service will be based on time spent by S&P staff in developing the credit opinion.

This service may be particularly useful for issuers or advisers that are beginning to develop an issue. They would be interested in S&P's opinion of the credit strength that may be provided by alternative debt issuance structures.

Not-for-profit hospital ratios

Financial medians for not-for-profit hospitals are confirming trends that have developed in the health-care industry during the past several years *(see table of industry ratios below)*. Admissions, length of stay, and occupancy have continued to decline in 1986. In response, many hospitals are reducing the number of beds in service and converting existing facilities to provide increased outpatient care.

As in previous years, there is no obvious correlation between some financial ratios and the rating category, due to some anomalies in the data. Anomalies between historical and projected figures reflect smaller sample sizes for the projected data, and the differing types of financings. Also, the lack of correlation occurs because financial ratios do not reflect factors such as competition, economic trends, institutional characteristics, and the caliber of management. Such qualitative factors are part of the rating process, and in times of rapid change and uncertainty, they take on increasing importance in assessing a hospital's creditworthiness. *For comparison, 1985's ratios appear in the May 19, 1986 CreditWeek and 1984's are in the June 10, 1985 edition.*

Not-for-profit hospital industry ratios*	AA	A+	A	A–	BBB+	BBB	BBB–
Medians by rating catetory							
Sample size	3	21	30	13	10	14	3
Historical	2	18	29	9	10	8	2
Projected							
Beds	614	586	380	336	189	142	128
Historical	619	592	338	296	180	160	456
Projected							
Length of stay (days)	7.49	7.47	6.35	6.15	5.65	5.76	5.70
Historical	7.52	7.15	6.36	5.86	5.60	5.90	6.66
Projected							
Occupancy (%)	73.09	73.98	67.80	60.40	62.94	56.95	54.60
Historical	71.85	73.15	67.75	61.00	62.10	57.85	53.03
Projected							
Net patient revenue ($000)	197,308	105,864	55,485	50,708	22,489	20,442	14,580
Historical	161,434	112,984	63,816	37,729	25,444	29,790	85,452
Projected							
Operating margin (%)	7.90	6.82	5.92	4.99	5.26	3.20	0.86
Historical	6.53	3.77	2.59	3.71	3.44	3.84	1.26
Projected							
Excess margin (%)	10.38	8.59	8.05	6.97	7.61	5.86	2.71
Historical	11.05	6.88	5.55	5.23	4.68	5.05	4.18
Projected							
Debt service coverage (x)	3.73	3.57	2.57	2.68	2.34	2.09	1.72
Historical	4.38	3.46	3.01	3.15	2.21	2.24	1.93
Projected							
Debt service/revenues (%)	3.42	5.21	6.22	5.81	8.80	7.41	8.05
Historical	4.14	5.46	5.71	5.02	7.59	8.75	6.24
Projected							
Quick ratio	1.92	2.66	3.10	2.18	2.81	2.43	2.09
Historical	7.43	3.40	3.95	2.49	2.97	2.36	4.09
Projected							
Cash flow	19.59	28.24	20.95	22.46	13.68	15.45	13.16
Historical	29.10	23.69	18.23	21.97	14.39	12.50	9.72
Projected							
Days cash on hand	95.57	89.94	99.58	69.27	86.49	96.84	65.83
Historical	279.45	115.27	127.20	92.11	84.92	83.71	94.57
Projected							
Cushion ratio	6.71	4.60	3.68	2.85	2.15	2.07	2.05
Historical	13.55	6.36	5.79	4.16	2.83	1.82	2.84
Projected							
Debt/plant (%)	45.04	60.71	85.91	71.66	86.23	81.59	60.10
Historical	61.65	68.26	76.74	97.82	95.84	92.03	121.10
Projected							
Debt/capitalization (%)	33.07	33.08	44.77	44.72	54.28	48.47	41.65
Historical	27.21	35.02	43.31	52.68	55.01	59.98	57.04
Projected							
Days accounts receivable	48.59	74.02	60.73	71.94	67.89	56.00	67.66
Historical	56.15	74.26	65.21	71.83	70.43	60.00	75.88
Projected							
Return on assets (%)	8.58	6.54	7.36	5.67	4.44	3.30	2.03
Historical	5.87	5.21	4.30	5.23	4.04	3.58	2.99
Projected							
Capital expense (%)	6.25	7.99	8.68	10.78	10.46	11.22	11.44
Historical	8.81	8.39	11.29	9.75	13.50	12.87	9.99
Projected							

*Historical—last audited fiscal year. Projected—first full year after project completion or first full year after refinancing. Based on hospitals rated during 1986. Projected ratios are based on financial forecasts for hospitals rated during 1986. Hospital systems with three or more facilities, and hospitals with credit-enhanced debt issues are excluded from calculations.

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Glossary

Board-designated funds: unrestricted reasonably liquid investments
Capital expense: [(interest + depreciation) ÷ operating expenses] × 100
Cash flow: [(excess income + depreciation expense) ÷ (current liabilities + long-term debt)] × 100
Contractual allowances: difference between charges and the amount actually reimbursed by third-party payors
Cushion ratio: (cash and investments + board-designated funds) ÷ maximum annual debt service
Days cash on hand: (cash and investments + board-designated funds) ÷ [(operating expense − depreciation expense) ÷ 365]
Days in accounts receivable (DAR): (net accounts receivable × 365) ÷ net patient revenues
Debt/capitalization: [long-term debt ÷ (fund balance + long-term debt)] × 100
Debt/plant: (long-term debt ÷ net property plant and equipment) × 100
Debt service coverage: net available ÷ maximum annual debt service
Debt service as % of revenues: [maximum annual debt service ÷ (total operating revenues + net nonoperating revenues)] × 100
Excess income: operating income + net nonoperating revenues
Excess margin: [excess income ÷ (total operating revenues + net nonoperating revenues)] × 100
Expenses: operating expenses including interest, depreciation, and amortization
Gross revenues: gross revenues from patient services
Length of stay: patient days ÷ admissions
Net available: excess income + depreciation + amortization + interest
Net patient revenues: gross revenues − (contractual allowances + provision for charity and uncollectible accounts)
Occupancy (%): [patient days ÷ (beds in service × 365)] × 100
Operating income: total operating revenues − expenses
Operating margin: (operating income ÷ total operating revenues) × 100
Quick ratio: (cash and investments + accounts receivable + board-designated funds) ÷ current liabilities
Return on assets: (excess income ÷ total assets) × 100

Debt service reserve fund refined

The Tax Reform Act of 1986 makes it more difficult for state, local, and revenue bond issuers to establish debt service reserve funds out of tax-exempt issue proceeds and restricts some investment returns on such funds. In light of the new restrictions, S&P reviewed the need for debt service reserve funds and addressed credit rating implications should such a fund be absent or smaller than in the past.

In a few limited instances, stronger municipal credits with proven financial resources will not be negatively affected by the absence of a debt service fund. However, ratings of issuers with relatively few financial resources, uneven revenue streams, or revenues susceptible to sudden change are likely to be hurt by a reserve fund's absence. The financing's tax status has no bearing on whether the reserve fund is needed.

The definition of a fully funded debt service reserve is refined to reflect limitations issuers are now facing. All municipal financings to be rated by S&P should conform to the new guidelines *(see box on page 13)*. A simple response regarding debt service reserve cannot address all types of revenue debt financing. What follows is a sector-by-sector discussion, outlining where debt.service reserve funds will be needed and to what degree.

Health care

Medicare and some state Medicaid programs offset the interest earned on funds held in health-care financings' debt service reserve by reducing the amount of reimbursement to hospitals. This is typically done by subtracting any arbitrage earned on debt service reserve funds. Thus, many hospitals are ultimately forced to use their own equity to fund a debt service reserve which will never produce any interest. In the process, the reserve becomes a nonperforming, nonliquid asset.

Consequently, S&P modified criteria concerning debt service reserves for higher rated health-care financings. The lack of a debt service reserve will no longer be a rating factor for all 'AA' category credits and for those 'A+' credits that exhibit very strong cash flow and liquidity. Criteria remain the same for all other credits. The lack of a debt service reserve or one that is less than fully funded is likely to negatively affect the rating. For example, an 'A' rating could be lowered to 'A−'. Moreover, in the case of an issue that initially qualifies for financing without a debt service reserve and is subsequently downgraded, the lack of a reserve fund may result in a further rating reduction.

Utilities

A fully funded debt service reserve will continue to be looked for in utility financings. Full funding is important because utility systems or projects can be exposed to revenue fluctuations on short notice. They typically serve geographically limited service areas, may depend on a single facility to generate revenues, and may be subject to competition for services, to sudden changes in fuel prices, and to environmental regulations. As a result, the utility's characteristics, combined with the reserve's structure, influence the bond rating. The absence of a required reserve fund typically results in an adjustment of one full category down for most utility systems.

Debt service reserves are most important for utility systems or projects that exhibit a concentration of assets or customer base, shallow service area economy, cash flow constraints, lack of an operating history, or competition for services. To achieve the highest potential rating, a utility with these characteristics will need a fully funded reserve. For example, a project financing for an electric generating station may receive a debt rating in the 'BBB' category rather than the 'A' category, if the debt service reserve is not fully funded by the time the project is operational. However, the rating on a water system with a successful operating history in a strong service area and a record of strong financial performance may not be affected by a debt service reserve that is funded only to 10% of principal.

Special revenues

Airports, parking, and toll revenue debt. The absence of a fully funded debt service reserve will likely hurt the credit ratings of these financings. Pledged revenues in most instances are variable and may be affected by outside influences such as weather, litigation, and construction. The scope of necessary reserves will vary with the project's nature and construction schedule.

Gasoline or sales tax financings. Unless historic coverage and additional bond tests are very strong, the absence of a fully funded debt service reserve may require a downward rating adjustment from what would otherwise prevail.

College and university financings. Cash flow considerations in colleges and universities are usually less of a problem than in other municipal enterprises. Tuition revenue inflows are

seasonal, but unrestricted endowments or other funds on hand often mitigate a reserve fund's absence. Bonds secured strictly by enterprise revenues will continue to require a fully funded debt service reserve fund. Where the debt is a general obligation of a private institution, a debt service reserve generally is not needed if a college historically has met two ratios for each of the last three years. First, unrestricted college monies divided by unrestricted current fund expenses and mandatory transfers should be greater than 25%. Second, maximum annual debt service divided by unrestricted monies should be less than 40%. Public universities that enjoy stable public funding support have less need to guard against revenue volatility. Hence, these ratios for public universities can be more lenient at 5% and 50%, respectively. In S&P's view, meeting the two ratios demonstrates enough liquidity to mitigate the absence of a debt service reserve.

Lease-secured debt

For lease-secured debt issues subject to a government lessee's annual or biennial budgetary process, the need for a debt service reserve fund is expected to continue. Because these financings rely on appropriations for eventual payment of debt service, any delay in the lessee's budgetary process might result in a late lease payment. Should that occur, debtholders would be protected by a debt service reserve being in place and available to advance the money needed. Reserve funds also are critical in protecting against late payment in the event damage or destruction occurs to the leased property. Because lease transactions are generally not considered as binding debt obligations under most state statutes, state law often dictates whether or not lease rental payments can continue during nonuse periods.

Although reserve funds typically are funded up front from debt proceeds at a level equal to maximum annual debt service, S&P will continue to consider smaller reserve funds on a case-by-case basis. For example, credit quality remains unaffected for lease financings utilizing a combination of advance funding with a smaller debt service reserve fund. An issuer may consider using a six-month debt service reserve fund coupled with a six-month advance lease rental requirement. In this case, lease payments would be on deposit with a trustee six months before debt service was due, which combined with the actual reserve fund, would produce the equivalent of a one-year reserve fund.

Monthly funding of lease rental payments also may reduce the need for a fully funded debt service reserve. Insurance policies or other credit enhancements available to provide reserve fund monies as needed will be considered adequate alternatives to the traditional debt service reserve fund. For those lease financings secured ultimately by a lessee's general obligation pledge or unconditional obligation to make all lease rental payments for debt service, a debt service reserve fund would likely not have a bearing on credit quality.

Moral obligation financings

By definition, a fully funded debt service reserve must be in place at the time of a financing in which S&P's rating will be based upon provisions of the replenishment mechanism for the reserve fund. Should the tax law cause a hardship on the ability to fund the reserve from bond proceeds, the issuer or the sponsoring entity (state or other government) may provide the reserve from other available resources, including a separate financing. Also, insurance or other credit enhancement may be used to cover the needs of the debt service reserve, but the replenishment mechanism would have to be in place.

Definition of a fully funded reserve

A debt service reserve fund is fully funded when:

(1) It is funded at closing to an amount equal to maximum annual debt service; or

(2) It is funded at closing to an amount equal to average annual debt service when debt service is essentially level and the amount does not differ significantly from maximum annual debt service; or

(3) It is funded at closing with a letter of credit (LOC) or insurance policy equal to full funding, and:

- (A) The bank or insurer is rated by S&P at least investment grade.
- (B) The bank or insurer does not have a senior security lien.
- (C) The term of the LOC or insurance policy is at least five years.
- (D) Six months prior to the expiration of the LOC or insurance policy, the debt service reserve will be fully funded or a substitute LOC or insurance policy will be in place.
- (E) If the rating on the bank or insurer falls below investment grade, a replacement or a fully funded debt service reserve must be in place within 12 months.

There have been, and will continue to be, exceptions. For example, there have been issues for which the debt service reserve was partially funded at closing and subsequently built up to full funding over the course of several years. The appropriateness of such alternative funding methods will continue to be evaluated on a case-by-case basis.

The debt service reserve should be valued annually at the lower of cost or market. Replenishment should occur within 24 months if funds are used to make a debt service payment. Replenishment should occur within four months if the market value falls below 90% of full funding.

Qualified investment criteria update

S&P recently updated the list of qualified investments for structured financings. The language was slightly modified in some areas, while the repurchase agreements write-up was revised to reflect current laws and regulations *(see item 9 in table)*. The list has a broad application, providing guidance for both corporate and municipal issuers investing regularly in funds requiring high credit quality, low-risk securities. This includes investments in project/structured financings and in escrow, debt service reserve, and construction funds. Before investing, each security should be analyzed to ascertain that its characteristics match investment needs.

Although all of the listed securities are of high credit quality and low risk, they are not all alike. Some are backed by the full faith and credit of the U.S. government. Others are backed by government-sponsored agencies with implicit government support. Still others are issued by private corporations carrying the 'AAA' rating.

Each security listed also has its own structural characteristics. Maturity, liquidity, and call features take on differing degrees of importance depending on the use of invested funds. For example, funds that are used or may be called upon to meet current debt service should mature by the payment date. Securities being relied on to generate enough cash flow to meet bond payments should only be pledged to bonds whose payment and call features mirror those of the pledged securities. To receive S&P's 'AAA' rating for defeased tax-exempt bonds, only U.S. government obligations *(see item 1)* whose cash flow matches the refunded bonds are acceptable.

Securities which have little or no principal value or are sold at a premium should be reviewed carefully prior to investing. The interest-only "stripped" mortgage security is one example. Prepayment on the mortgage pool may result in holders losing a portion of their initial investment. In no event will a security be a

(continued on next page)

qualified investment if it is structured in such a way that there is a risk of return of the initial investment.

This list will be reviewed and updated on a periodic basis. Certain securities can be added or removed as S&P believes appropriate.

Qualified investments for 'AAA' structured financings

1. Obligations of, or guaranteed as to principal and interest by, the U.S. or any agency or instrumentality thereof when such obligations are backed by the full faith and credit of the U.S. These include, but are not necessarily limited to:
   - —U.S. Treasury obligations
     - All direct or fully guaranteed obligations
   - —Farmers Home Administration
     - Certificates of beneficial ownership
   - —General Services Administration
     - Participation certificates
   - —U.S. Maritime Administration
     - Guaranteed Title XI financing
   - —Small Business Administration
     - Guaranteed participation certificates
     - Guaranteed pool certificates
   - —Government National Mortgage Association (GNMA)
     - GNMA-guaranteed mortgage-backed securities
     - GNMA-guaranteed participation certificates
   - —U.S. Department of Housing & Urban Development
     - Local authority bonds
   - —Washington Metropolitan Area Transit Authority
     - Guaranteed transit bonds
2. Federal Housing Administration debentures.
3. Obligations of government-sponsored agencies which are not backed by the full faith and credit of the U.S. government:
   - —Federal Home Loan Mortgage Corp. (FHLMC)
     - Participation certificates
     - Debt obligations
   - —Farm Credit Banks (Federal Land Banks, Federal Intermediate Credit Banks, and Banks for Cooperatives)
     - Consolidated systemwide bonds and notes
   - —Federal Home Loan Banks (FHL Banks)
     - Consolidated debt obligations
     - Letter of credit (LOC)-backed issues
   - —Federal National Mortgage Association (FNMA)
     - Debt obligations
     - Mortgage-backed securities (Excluded are stripped mortgage securities which are valued greater than par on the portion of unpaid principal).
   - —Student Loan Marketing Association (SLMA)
     - Debt obligations
     - LOC-backed issues
4. Federal funds, unsecured certificates of deposit, time deposits, and banker's acceptances (having maturities of not more than 365 days) of any bank, the short-term obligations of which are rated 'A-1+' by S&P.
5. Deposits which are fully insured by the Federal Savings and Loan Insurance Corp. (FSLIC) or Federal Deposit Insurance Corp. (FDIC).
6. Debt obligations rated 'AAA' by S&P. Excluded are securities that do not have a fixed par value and/or whose terms do not promise a fixed dollar amount at maturity or call date.
7. Commercial paper (having original maturities of not more than 365 days) rated 'A-1+' by S&P.
8. Investment in money market funds rated 'AAAm' or 'AAAm-G' by S&P.
9. Repurchase agreements:

A. With any institution with debt rated 'AAA' or commercial paper rated 'A-1+' by S&P.
B. With any corporation or other entity that falls under the jurisdiction of the Bankruptcy Code provided that:
   a. The term of such repurchase agreement is less than one year or due on demand.
   b. The trustee or a third party acting solely as agent for the trustee has possession of the collateral.
   c. The market value of the collateral is maintained at acceptable levels *(see box for example)*.
   d. Failure to maintain the requisite collateral levels will require the trustee to liquidate the collateral immediately.
   e. The repo securities must be either obligations of, or fully guaranteed as to principal and interest by, the U.S. or any U.S. agency, certificates of deposit or bankers' acceptances.
   f. Repo securities are free and clear of any third-party lien or claim.

C. With financial institutions insured by the FDIC or FSLIC, or any broker-dealer with "retail customers" which falls under the jurisdiction of the Securities Investors Protection Corp. (SIPC):
   a. The market value of the collateral is maintained at acceptable levels.
   b. The trustee or a third party acting solely as agent for the trustee has possession.
   c. The trustee has a perfected first priority security interest in the collateral.
   d. Collateral is free and clear of third-party liens and in the case of SIPC broker was not acquired pursuant to a repro or reverse repo.
   e. Failure to maintain the requisite collateral percentage will require the trustee to liquidate collateral.

Qualified investments for 'AA' bonds include all of the preceding and investments rated 'AA' or higher where the 'AAA' rating is noted above; qualified investments for 'A' rated bonds include all of the preceding and investments rated 'A' or higher where the 'AAA' rating is noted above, and 'A-1' or higher where the 'A-1+' is noted above. In addition, investments in money market funds rated 'AAm' or 'AAm-G' or higher are permitted for 'AA' rated bonds; investments in money market funds rated 'Am' or 'Am-G' or higher are permitted for 'A' rated bonds.

Collateral levels for U.S. government securities*

	Remaining maturity				
	1 yr. or less	5 yrs. or less	10 yrs. or less	15 yrs. or less	30 yrs. or less
Frequency of valuation	'AAA' collateral levels (%)				
Daily	103	106	107	109	116
Weekly	104	112	114	120	125
Monthly	107	123	130	133	143
Quarterly	108	125	135	140	150
Frequency of valuation	'AA' collateral levels (%)				
Daily	102	105	106	108	114
Weekly	103	111	112	114	120
Monthly	106	118	123	128	138
Quarterly	107	120	130	133	140
Frequency of valuation	'A' collateral levels (%)				
Daily	102	105	106	107	113
Weekly	103	110	111	113	118
Monthly	106	116	119	123	130
Quarterly	106	118	128	130	135

*Acceptable levels for other collateral available upon request.

Assumptions: (1) On each valuation date the market value of the collateral will be an amount equal to the requisite collateral percentage of the obligation (including unpaid accrued interest) that is being secured. (2) The following restoration periods were assumed: one business day for daily valuations, two business days for weekly valuations, and one month for monthly and quarterly valuations. The use of different restoration periods may therefore affect the requisite collateral percentage. (3) Failure to maintain the requisite collateral percentage after the restoration period will require the trustee to terminate the repo and, if not paid by the counter party in federal funds against transfer of the repo securities, liquidate the collateral.

For-profit hospital ratings lowered

S&P rates for-profit health-care institutions in its industrial/utility group. The following summarizes recent rating change activity in this area.

Financial aggressiveness in the face of rising business risks has led to rating reductions for Humana Inc.'s senior debt to 'A–' from 'A' and National Medical Enterprises' to 'BBB' from 'BBB+'. That means that all four of the major for-profit providers of health-care services have now experienced downgrades recently in response to the riskier health-care environment *(see table)*. The latest actions follow rating reductions for American Medical International Inc. *(see Feb. 29 CreditWeek)* and Hospital Corp. of America *(see Oct. 5, 1987 CreditWeek)*. The downgrades of these four hospital management companies affected a total of $5.4 billion in debt.

The rating actions reflect three key issues affecting hospital companies' creditworthiness. First, the government and third-party payors continue to limit increases in reimbursement. Second, costs of providing care in a hospital setting are rising faster than levels of reimbursement. Third, many companies are carrying burdensome debt leverage, averaging in the high 60% area. Such financial leverage is not justified in light of the industry's increased risk, which is making cash flow less predictable. With only half of their beds occupied, for-profit hospitals have a formidable challenge to bring facility utilization closer to the 65% national average. Even if occupancy can be increased, rising operating costs, aggravated by the nationwide nursing shortage, dim prospects for improved profitability. The deteriorating business environment has had an even more pronounced effect on smaller, speculative grade health-care credits, such as Summit Health Ltd. ('B–' subordinated) and American Health Care Management Inc. ('D' long-term debt).

National Medical Enterprises

National Medical Enterprises' senior debt ratings are lowered to 'BBB' from 'BBB+' and subordinated debt ratings are reduced to 'BBB–' from 'BBB' *(see March 7 CreditWeek)*. About $1.3 billion of debt is affected. National Medical Enterprises' acute care hospitals and nursing homes face continuing margin pressures as operating costs, aggravated by a nationwide nursing shortage, increase faster than reimbursement. In this riskier business enviroment, the company is likely to keep financial leverage in the low 70% range (adjusted for operating leases) for the foreseeable future, as the company continues to follow a strategy of rapidly expanding its relatively profitable specialty hospital business. Despite increasing demand for medical services by an aging population, both long-term and acute care will continue to be low-margined businesses. Increasing competition in National Medical Enterprises' specialty hospital segment could reduce the company's margin in the future. The diversity of National Medical Enterprises' activities provides some comfort in a riskier business environment.

Rating actions since September 1987

	Senior debt	
	To	From
American Medical International Inc.	BBB–	BBB+
Hospital Corp. of America	BBB+	A
Humana Inc.	A–	A
National Medical Enterprises Inc.	BBB	BBB+

Humana

Ratings on Humana's senior debt are lowered to 'A–' from 'A' and subordinated debt to 'BBB+' from 'A–'. The 'A-2' commercial paper rating is affirmed *(see March 7 CreditWeek)*. About $720 million of long-term debt is affected. As health-care cost containment pressures and nursing shortages continue, low facility utilization and pricing pressures will impact Humana, still the most profitable hospital management company. Moreover, while making some progress, management has yet to demonstrate success in eliminating losses in the company's health maintenance organizations (HMOs), which totaled $66 million pretax in 1987. Competive pressure to limit premium increases will continue until the weaker HMOs exit the business. Also, the company's acquisition of Medicare HMO contracts is a risky strategy that hinges on Humana's ability to reduce excess use of health-care services by an older enrollee population.

Clackamas County Hospital Facility Authority, Oregon
Anchorage, Alaska
(Sisters of Providence project)

Reviewed: rating affirmed

Rationale: The 'AA−' rating is affirmed on $14.3 million Sisters of Providence project series 1987 bonds due 2017, co-issued by Clackamas County Hospital Facility Authority, Oreg. and Anchorage, Alaska. Outstanding system debt totals $315 million. The rating was lowered from 'AA' on Nov. 23, 1987 as a result of declining systemwide profitability due to reimbursement constraints and problems in Providence Hospital-Anchorage and Providence Hospital-Oakland, Calif., two key facilities. Excess margins have declined to 5.7% in 1986 from 11.2% in 1984 and are projected to average 4.7% through 1991. In conjunction with declining margins, the system has become increasingly dependent on five profitable facilities to provide most of its operating income. Decreased profitability has had a negative impact on cash balances, which were $22 million less than projected in 1986, and has increased the need for system borrowing. As forecasted, the system will issue $54.9 million in parity bonds during 1987. During 1988–1991 approximately $90 million of unanticipated long-term debt will also be issued. This increased debt, coupled with an aggressively short amortization schedule of seven to 20 years, significantly burdens system finances. In light of this schedule, however, debt service as a percent of revenue remains relatively moderate at 6.3%, and pro forma debt service coverage is adequate at 2.5 times (x) in 1987. Despite declines in system profitability, other factors support the project's rating at the 'AA−' level. Admissions increased almost 5% from 1985–1986, and are projected to increase by an additional 2.8% in the forecast period. Since 1984, market share has grown in eight of the 12 areas served by the system with further increases projected, even in the most competitive service areas. Other system characteristics, including excellent management talent and depth, geographic dispersion, and size remain positive factors.

Obligated group: Sisters of Providence, a nonprofit healthcare system, operates facilities in Alaska, Washington, Oregon, and California. Affiliated with the Sisters of Providence religious order in Montreal, Canada, the system is managed through three corporations: Sisters of Providence in Washington, Sisters of Providence in Oregon, and Sisters of Providence in California. The obligated group, which remains substantially unchanged since 1985 and comprises most of the system's facilities, consists of 15 acute care facilities totaling over 3,600 beds, one long-term care center, two educational facilities, and four ancillary corporations. The system has excellent geographic dispersion, which has enabled it to withstand industry and economic changes occurring over the last several years.

Top contributors to operating income

	Licensed beds	% Obligated group rev. 1984	% Obligated group rev. 1986
Washington corporation			
Providence, Anchorage	337	11.7	11.5
Providence Medical Ctr., Seattle	376	10.7	9.9
Oregon corporation			
Providence Medical Ctr., Portland	483	11.2	11.0
St. Vincent, Portland	451	12.5	12.0
Providence, Medford	168	3.3	3.0
California corporation			
St. Joseph, Burbank	498	19.2	18.7

Capital program: Over the next five years, the system will issue approximately $115 million of debt. There will be additional series 1987 issues totaling $40.6 million, as well as another $90 million which will be issued biennially through 1991. Funds will be used for capital projects, including construction and renovation at nine hospitals and five ancillary corporations. There will be no increases to licensed bed capacity at any of the facilities. The total equity contribution for series 1987 and additional debt through 1991 is minimal.

Sisters of Providence project financial statistics

	—Year ended Dec. 31—			
	—Actual—		—Projected—	
	1984	1986	1990	1991
Admissions (patients)	130,846	130,153	136,448	136,780
Gross revenues (mil. $)	745.7	898.1	1,244.2	1,328.4
Operating margin (%)	10.3	4.9	4.3	3.8
Excess margin (%)	11.2	5.7	4.8	4.5
Pro forma cov. (x)	2.3	2.1	2.9	3.0
Cash/board-des. funds (mil. $)	82.9	63.2	114.0	138.8
Total long-term debt (mil. $)	163.1	330.8	415.4	404.5
Debt/capitalization (%)	29.0	39.9	37.7	35.6

Finances: Since 1984, the system has experienced shifts in the contribution to operating income from the three corporations as well as among the top five most profitable facilities. Sisters of Providence in Washington, which contributed approximately 31% of operating income in 1984, contributed only 22% in 1986 due to the effect of a sluggish economy on the Alaskan operations. As a result, Providence Hospital in Anchorage was no longer a top five contributor to operating income in 1986. Providence Hospital in Medford, Oregon which was not a large contributor in 1984, is now one of the top five most profitable facilities. The California corporation contributed 32% to operating income and Oregon, 46%. Problems with indigent care reimbursement at Providence Hospital in Oakland, Calif. caused a loss from operations in 1986. This was offset, however, by St. Joseph Hospital in Burbank, the most profitable hospital in the system. St. Joseph contributed almost 36% of total system operating income in 1986. The system's operating and excess margins have declined in concert with industrywide trends and are expected to level at approximately 4.3% and 4.7%, respectively. Cash balances were good in 1984 and are projected to increase during the forecast period from 1986 levels, which were significantly below projections. Series 1987 will provide most of this increase by reimbursing the system $32 million for prior capital expenditures. After this reimbursement occurs in 1987, cash flow is projected to equal approximately 21% of total debt. Debt as a percentage of total capitalization remains low at 35.57% in 1991, even after the additional $115 million in debt is issued. Coverage is expected to reach 3.0x in 1991, while debt service as a percent of revenues declines to a very manageable 5% in the same year.

Cuyahoga County, Ohio
Mount Sinai Medical Center

Reviewed: rating affirmed

Rationale: The 'A—' rating is affirmed on Mount Sinai Medical Center's $114 million hospital refunding and improvement revenue bonds series 1987A and B due 2014, issued through Cuyahoga County, Ohio. The rating is based on excellent management, increasing utilization, and efficient operations. The hospital is located in the University Circle area of Cleveland and maintains an impressive market share in a highly competitive environment. Although debt is substantial, conservative projections indicate maximum annual debt service coverage for fiscal 1989 at 2.4 times (x). Series A proceeds of $96 million will refund series 1983 bonds and the $18 million bond proceeds from the series B issue will repay the hospital for property acquisitions and construction already incurred, and fund future capital needs in fiscals 1987 and 1988. Subsequent to issuance of the 1987 bonds and pursuant to an affiliation agreement with Ridgecliff Hospital in Lake County, Ohio, Mount Sinai Medical Center will defease Ridgecliff Hospital's outstanding $8.2 million revenue bonds dated Oct. 1, 1985. Ridgecliff Hospital is a 160-bed freestanding psychiatric and chemical dependency hospital located 18 miles east of Cleveland in Willoughby, Ohio. Through this affiliation, Mount Sinai expects to expand its psychiatric and substance abuse services.

Issuer: Cuyahoga County will be the financing vehicle for this bond sale. The 1987 bonds constitute special obligations of the county and are payable solely from payments required to be made pursuant to a lease with the county by Mount Sinai Medical Center. Mount Sinai is a 445-bed, not-for-profit tertiary care teaching hospital located in Cleveland, Ohio. The hospital, founded in 1903, is affiliated with Case Western Reserve University School of Medicine and provides clinical training each year to approximately 100 students.

Operations: Mount Sinai Medical Center is managed by a well-qualified administrative team, which is reflected in sound operations and financial growth. After a history of operating losses, the hospital made a dramatic turnaround in fiscal 1985 and experienced a gain from operations of approximately $3 million and a $6.5 million profit. Currently, 475 active members are on the medical staff, accounting for 99% of discharges. Average age of the active medical staff is a moderate 47, and 68.2% of hospital admissions come from doctors under 50. The dedicated medical staff is actively involved with hospital affairs. The hospital's primary service area is the eastern portion of Cuyahoga County, which accounts for approximately 75% of admissions. The hospital is in a very competitive area, yet market share has grown from 1981–1985. Health maintenance organization (HMO) activity is present in the area and the hospital contracts with two HMOs, which accounted for approximately 2.5% of the hospital's patient days in 1986. Revenue composition has remained fairly constant, with Medicare averaging 42% of total patient revenues over the past three years. Medicaid and general relief account for approximately 20% of total patient revenues although the hospital receives funds from The Jewish Community Federation of Cleveland to cover a portion of costs associated with care to the poor. This financial support is expected to continue in the future.

Finances: Admissions increased approximately 9% since fiscal 1982 along with a corresponding 30% increase in outpatient clinic visits. During this period, the hospital's gross patient revenues increased 46.8% while expenses increased only 36.6%. Operating performance improved by posting an operating margin of 1.6% in 1985 and 2.6% in 1986. Profit margins for the same period were 4.3% in 1985 and 5.4% in 1986. Historical pro forma coverage of new maximum debt service is 2.37x in fiscal 1986. Maximum debt service as a percent of revenues remains a high 8.5% for fiscal 1986. The balance sheet indicates a strong cash position with a $47 million cash balance in fiscal 1986. Debt ratios have been historically high and are projected to continue. Fiscal 1986 showed a debt to plant ratio of 103.1% and a debt to capitalization ratio of 65.5%. Projections indicate increasing admissions. Occupancy is projected to average 75.8% between fiscals 1987–1989. The hospital also expects to experience an increase in outpatient clinic visits. Financial performance should remain stable. Projections indicate excess revenues over expenses will average approximately $5 million during the forecasted period. Coverage for fiscal 1989 is anticipated to reach 2.36x. Balance sheet projections assume an improving liquidity position along with continued high leverage throughout the projected period.

Financial statistics	—Year ended Dec. 31—			
	1988*	1987*	1986	1985
Gross rev. (mil. $)	168,736	161,347	151,747	141,093
Oper. margin (%)	1.5	0.7	2.6	1.6
Net income (%)	3.9	3.9	5.3	4.3
Cash flow/total debt (%)	9.7	9.2	12.2	10.6
Return on equity (%)	9.4	10.0	13.0	11.4
Max. debt service cov. (x)	2.19	2.26	2.37	2.17
Capital structure				
Max. debt service/total rev. (%)	8.3	8.5	8.5	9.2
Debt/plant (%)	137.6	134.5	103.1	103.6
Debt/capitalization (%)	70.0	72.3	65.5	69.8

*Projected.

Geisinger Authority, Pennsylvania

Reviewed: rating affirmed

Rationale: Geisinger Authority, Pa.'s $77.6 million health system revenue bonds due 2005 are affirmed at 'AA'. Outstanding debt of Geisinger Medical Center, Geisinger Wyoming Valley, and the Marworth substance abuse facility is being refunded and $12.8 million will be reimbursed to the clinic for the research center's construction costs. The Geisinger system focuses on serving 18 counties in central and northeast Pennsylvania and is the region's dominant health-care provider: 927 licensed beds are divided between the medical center, Geisinger Wyoming Valley, and Marworth, with the medical center at Danville being the flagship and major tertiary referral site. The Geisinger system has grown significantly in the last six years with clinic sites expanding to 37 from three, revenues more than doubling, and research projects tripling. The management team is excellent and fiscally conservative as evidenced by strong operating and financial performance.

Issuer: The Geisinger Authority is a body organized by the Board of Commissioners of Montour County, Pa. It is the financing vehicle for this issue. A master trust indenture has been created with the initial members of the obligated group being the medical center (569 beds, tertiary rural referral), Geisinger Wyoming Valley (230 beds, general acute care), Geisinger System Services (management services), Geisinger Clinic (a multi-

(continued on next page)

specialty group practice employing 356 doctors) and Marworth (128 beds at two sites). These members account for over 90% of Geisinger system revenues. Other members not included are the Geisinger Health Plan, Geisinger Medical Management Corp., International Shared Services, and DePuy-Lenape Corp.

Operations: The Geisinger system is a multi-institutional regional system of health care serving two million people in its service area. To deliver and assure availability of services, clinic sites have expanded rapidly and are expected to continue. This has been accomplished by expanding existing practices, establishing new clinic practices, and acquisitions. Health-care delivery is further supported by two inpatient facilities at Danville and Wilkes-Barre, and Marworth's substance abuse program. The medical center is a designated regional referral trauma center supported by the Life Flight helicopter service, assuring that patients are only minutes away from the hospital. As a result of the clinic's expansion, inpatient utilization has been growing steadily contrary to national trends. With the Medicare case mix index, which measures the severity of cases, at 1.44, sophistication and range of services offered is high. The network of clinic sites provides a strong base for the Geisinger Health Plan, a health maintenance organization (HMO) established in 1982 and operating in the 17-county area. Over 50,000 members currently are enrolled and rapid expansion is expected to continue. Education is a strong component of the Geisinger system, with residency training in 15 programs and fellowships in five medical/surgical subspecialties. Currently, 192 residents are enrolled. There is a school of nursing at the medical center offering a diploma program which graduates 80 nurses annually. The research program will be expanding significantly with the recent completion of the research facility. The focus will be on molecular and cellular study of cardiovascular disease and an impressive staff has been assembled. Postdoctoral fellowships are offered to qualified candidates worldwide.

Financial statistics	—Year ended June 30—		
	1985	1986*	1991
Oper. income margin (%)	7.05	6.97	4.69
Excess income margin (%)	9.81	9.90	8.52
Max. debt service coverage (x)	2.68†	2.96†	3.94
Long-term debt (mil. $)	94.00	98.53	77.00
Cushion ratio (x)**	4.14†	5.65†	8.61
Debt to capitalization (x)	44.26	40.59	22.13

Assumptions	
Bonds (mil. $)	77.6
Term (years)	18
Interest rate (%)	7.36

*Last audited fiscal year.
**Cash plus in investments plus board designated funds, all divided by maximum annual debt service.
†Historical pro forma.

Capital program: In 1981, bonds were issued to construct a six-level patient care building at the medical center. The bonds now are being refunded. Bonds issued for construction of the Wyoming Valley facility in 1981 were refunded in 1985 and are again being refunded. Marworth just completed an additional 56-bed adolescent treatment center at Shawnee-on-Delaware. The recently opened 65,000 square-foot research center at Danville completes the current capital program. Capital expenditures funded from operations during the forecast period are anticipated for ongoing renovation, equipment needs, and clinic site expansion.

Finances: Historic financial performance is impressive with operating margins consistently positive, averaging 5.5% for the last five years. The clinic and medical center are the largest contributors to revenues and profits of the obligated group with 89% and 80%, respectively, in 1986. There is five years pro forma coverage of new maximum annual debt service, rising to 2.96 times (x) in 1986, and debt service as a percentage of revenues is manageable at 6.47x in that year as well. The balance sheet is strong, with a moderate debt burden and a significant cash position. Even with the additional debt, the forecast shows cash and board-designated funds reaching $135 million versus $77 million in long-term debt by 1991.

Michigan State Hospital Finance Authority
St. John Hospital

Reviewed: rating affirmed

Rationale: The $109.6 million refunding revenue bonds issued by the Michigan State Hospital Finance Authority are affirmed at 'A'. A major construction program was undertaken in 1982, financed by an FHA-insured issue which this issue refunds. A strong and competent management team is in place, which is evidenced by the positive operating and financial performance. This has been achieved in the difficult Detroit economic environment. St. John is a major teaching and referral facility affiliated with Wayne State University. Thus, the competition is viewed as the other large tertiary Detroit hospitals which are beyond the immediate service area. Debt leverage is significant and is reflected in the rating.

Issuer: The Michigan State Hospital Finance Authority serves as the financing vehicle for this issue. St. John is a 572-bed teaching and referral hospital located in the northeast section of Detroit adjacent to Grosse Pointe and is the sole security for this issue.

Operations: St. John is one of seven separate affiliated corporations which are controlled by St. Clair Health Corp. which, in turn, is under the sponsorship of the Sisters of St. Joseph's in Nazareth, Mich. Some assets have been transferred from St. John to these other affiliates in the past and may occur in the future. Operations for the hospital are strong. Net days in accounts receivable are low at 33.5 in 1985 as is the bad debt allowance at 2.3%. The revenue composition is balanced with 40.6% Medicare, 32.8% Blue Cross, and 12.4% Medicaid. The systems are sophisticated and a software package for care monitoring has been developed and is being marketed. This facility was well prepared for the change to prospective payment by Medicare and has benefited from the change. This is further evidenced by the fact that St. John is the only major hospital in Wayne County to receive a waiver in fiscal 1985 from review by the professional review organization for Medicare. The medical staff is large at 479 and specialized. The average age is 47.9 years, and 73.1% are board certified. There is competition in

Financial statistics	1984	1985*	1990
Operating income margin (%)	3.8	9.9	2.6
Excess income margin (%)	4.5	11.1	5.8
Coverage (x)	.80†	1.58†	2.53
Maximum debt service/revenues (%)	11.5†	10.1†	7.2
Long-term debt (000)	112,787	112,628	100,771
Cushion ratio (x)**	.80†	1.67†	6.40
Debt to capitalization	79.4	71.5	52.3
Assumptions			
Bonds (mil. $)		109.6	
Terms (years)		25	
Interest rate (%)		9.6	

*Last audited fiscal year.
**Cash plus investment plus board designated funds, all divided by maximum annual debt service.
†Historical pro forma.

the service area. However, St. John has managed to increase its market share by 2% since 1981 and expects to continue to expand that share. Although Detroit has experienced economic stress, this hospital has benefited from the support of the affluent Grosse Pointe community which it serves. Utilization trends have been stable with occupancy at 82% in 1985, while the average length of stay has declined over the last five years and is currently 7.6 days.

Capital program: Bonds were issued in 1982 which were FHA-insured to fund construction of a concentrated care building, a parking garage, and to provide for renovations. The new construction was completed on time and under budget. The renovation portion is expected to be completed by January 1989. Upon completion, the hospital will have an entirely modern facility, able to support the sophisticated services offered.

Finances: The hospital's operating margin has been consistently positive over the past five years, averaging 2.9%, although 53% of revenues come from government-supported programs. There was a marked increase in the operating return to 9.9% in 1985 due to the low cost nature of the facility and favorable treatment under the Medicare prospective payment system. There is one year pro forma coverage of the new maximum debt service at 1.58 times (x) for fiscal 1985, projected to be at 2.53x in 1990. Debt service as a percentage of revenues is significant at 10.1% but declines to 7.2% for the same years. The cash position is strong. However, leverage is high with capitalization at 71.5% in 1985 projected to decline to 52.3% by the end of the forecast period.

Missouri Health & Educational Facilities Authority Spelman-St. Luke's Hospital Corp.

Reviewed: rating affirmed

Rationale: The 'A+' rating is affirmed on Missouri Health & Educational Facilities Authority's $10.7 million facilities revenue bonds series 1988 due 2018 (Spelman-St. Luke's Hospital Corp. Project). As part of a joint venture between St. Luke's Hospital of Kansas City and Spelman Memorial Hospital, bond proceeds will be used to construct a 55-bed general acute care hospital in northern Kansas City. The bonds are guaranteed by St. Luke's Hospital and are subordinate to their $43.4 million outstanding series 1984A (rated 'AA') and 1985A bonds (rated 'AA/A-2') insured by Health Industry Bond Insurance. The 'A+' rating reflects St. Luke's status as a regional tertiary center with a dominant market share in a competitive service area. Financially, historic profitability and balance sheet strength are evident with excess margins averaging 15.4% over the last five years and cash totaling over 1.5 times (x) debt in 1987. St. Luke's debt burden is low, with debt comprising only 27% of capitalization in 1986 and historic pro forma coverage of outstanding and guaranteed debt of 7.05x in the same year. A higher rating is precluded by St. Luke's revenue composition (51% Medicare), location as a single-site facility, and declining profitability due to federal reimbursement constraints.

Issuer: St. Luke's Hospital is a 686-bed regional tertiary care and referral center located in an affluent section of Kansas City, Mo. St. Luke's is Kansas City's oldest hospital and has both a dominant market share (11.82% in 1986) and quality reputation in the service area. The hospital is supported by a strong medical staff, influential board of trustees, and an excellent management team. Over 21% of St. Luke's admissions originate outside the state and country, which lessens its reliance on the competitive Kansas City market for patients. St. Luke's has been managed by product line since 1983 with emphases on cardiology (Mid-America Heart Institute), women's and children's health, and oncology. A portion of series 1985A bond proceeds were used to expand the existing oncology program.

Project: Proceeds of series 1988 bonds will be used to build 55-bed Spelman-St. Luke's Hospital located in Platte County, approximately 20 miles north of Kansas City. In cooperation with 128-bed Spelman Memorial Hospital, St. Luke's will guarantee the bonds, make a $3 million equity contribution, and provide a $2 million working capital loan. Spelman will manage the facility and has the actual certificate of need. Platte County is one of Missouri's fastest growing counties, with total population (49,900 in 1985) projected to increase over 65% during 1980–2000. In 1982, Spelman purchased the property where the hospital will be located and, during the competitive certificate of need process, agreed to a joint venture with St. Luke's. Spelman will transfer 36 medical/surgical beds, and expects to lose up to 20% of its patient days to the new facility. It expects an offsetting return through profits from the new hospital and will concentrate on developing specialty services to fill remaining beds. St. Luke's expects increased tertiary referrals from Platte County once the facility is complete. Spelman-St. Luke's Hospital is projected to break even from operations in the early 1990s and debt service coverage on both the series 1988 bonds and the $2 million working capital loan from St. Luke's is expected by fiscal year end 1988.

Finances: St. Luke's conservative fiscal policies have resulted in a strong balance sheet; the debt burden is low and cash balances of $71 million exceeded the $47 million of total long-term debt outstanding in 1986. In addition, an affiliated foundation, which partially supports medical education programs at St. Luke's, has an available fund balance exceeding $21 million in 1987. St. Luke's has tentative plans to finance an expansion and renovation project through debt, donations, and equity. However, even with this additional debt and the series 1988 guarantee, the debt burden is projected to remain low with debt averaging 25% of total capitalization and debt service as a percent of revenues averaging 3.8% during the forecasted period.

(continued on next page)

Financial statistics	—Year ending Dec. 31— Actual 1986	Unaudited 1987
Admissions (patients)	22,798	22,153
Total oper. revenues (mil. $)	150,604	150,329
Oper. income % net oper. revs.	14.54	7.56
Excess income % total revs.	17.64	10.81
Pro forma cov. series 1984A & 1985A, guarantee (x)	7.05	4.41
Cash & board-des. funds (mil. $)	71,109	72,300
Debt to capitalization (%)	27.09	24.02
Cushion ratio (x)	13.58	13.80

Historic profitability peaked in 1985 with operating and excess margins at 19.76% and 22.50%, respectively. Since that time, Medicare reimbursement has tightened and margins have declined. Despite reimbursement constraints, the 1986 excess margin was a strong 10.81%, and forecasts through 1991 project that the excess margin will average 4%. Debt service coverage of outstanding debt, as well as the guarantee and proposed issue, remains above 3.0x throughout the forecasted period.

Montgomery County Higher Education & Health Authority, Pennsylvania
Bryn Mawr Hospital

Reviewed: rating affirmed

Rationale: The 'A' rating is affirmed on Montgomery County Higher Education & Health Authority, Pa.'s $41.6 million Bryn Mawr Hospital project revenue bonds series 1987 due 2019. The 'AA+/A-1+' rating is also affirmed on $14.4 million series 1984 variable rate demand notes. The 'A' rating reflects the hospital's strong balance sheet coupled with significant foundation and endowment funds, a relatively low debt burden, and coverage of over 3.0 times (x) during the first full year following project completion. The hospital is located in a favorable service area and holds a dominant market position. Further strengths are derived through membership in Main Line Health Inc., a local health-care system comprised of Bryn Mawr Rehabilitation, Paoli Memorial, and Lankenau Hospitals.

Issuer: Bryn Mawr Hospital is a 425-bed acute-care facility located in Philadelphia's western suburbs. The hospital has an excellent reputation and is fairly sophisticated, offering several services, which are not often found in community hospitals. Since formation of Main Line Health in 1984, the group has begun to consolidate purchasing, standardize salary scales and benefit packages, jointly negotiate health maintenance organization and preferred provider organization contracts, and plans to offer other centralized services in the future. Although Lankenau Hospital remains Bryn Mawr's primary clinical competitor, the system's long-term cooperative and economic outlook appears positive.

Project: Proceeds will be used to complete the fourth and final phase of a comprehensive capital facilities plan. Series 1984 variable rate demand notes were issued to finance previous phases. This project consists of constructing a 150,000 square-foot west wing tower and loading dock, renovating certain patient care areas, and relocating utility lines. The bed capacity will be reduced at the end of the project to 365 beds from 425; however, obstetric and gynecological beds will increase to 28 beds from 20 and the neonatal intensive care unit will be increased to 20 from eight beds. Funds also will be used to construct a new surgical suite. The hospital will make a $9 million equity contribution from funded depreciation, and interest will be capitalized through project completion in April 1991. Upon this completion, no future financing is anticipated.

Operations: Senior management at Bryn Mawr Hospital is operationally oriented with good tenure. The board of trustees is involved and equally represented among facilities on the Main Line Health board. Although there is a nursing shortage in the Philadelphia area, Bryn Mawr has successfully attracted and retained personnel. The average age of the medical staff is high at 49 years; however, most physicians practice in groups and have been actively recruiting younger staff members. In addition, Bryn Mawr is affiliated with Thomas Jefferson University in Philadelphia and offers four residency teaching programs. Lankenau Hospital, located in Bryn Mawr's primary service area, holds the highest market share at 23.5% in 1987; Bryn Mawr holds 21% and Paoli 11.1%. Together, these three Main Line Health hospitals control 55.6% of the market and 53.5% of the staffed service area beds. The service area is wealthy with high per capita income. The population is projected to grow at a 4% rate overall from 1980–1991. Most of this increase is in the 15–44 age group, which is favorable for Bryn Mawr's planned growth in women's health programs.

Finances: Historically, Bryn Mawr Hospital has been profitable despite declines in admissions due to changes in the federal reimbursement system. The declining admission trend was reversed in 1987, and admissions continue to increase through the first two months of fiscal 1988. Bryn Mawr recorded its most profitable year in 1987, with operating and excess margins of 5.95% and 8.21%, respectively. Pro forma coverage of series

Financial statistics	—Year ended June 30— Actual 1987	Projected 1988	1992
Admissions (patients)	14,169	14,351	15,029
Gross revenues (mil. $)	140.4	163.6	232.8
Operating income % of net revenues	5.95	4.56	1.35
Excess income % of net revenues	8.21	5.61	3.10
Pro forma coverage series 1984 & 1987 (x)	2.35	2.12	3.02
Cash & board-desig. funds (mil. $)	12.7	13.9	36.4
Long-term debt (mil. $)	14.3	57.3	55.7
Debt to capitalization (%)	18.29	45.03	38.86

1984 and 1987 bonds was 2.35x in 1987. The forecast includes a 6% increase in admissions from 1988–1993 due to new programs, population growth, and growth in the existing psychiatric, same day surgery, oncology, and obstetrics programs. The forecasted financial performance reflects reduced reimbursement and increases in interest and depreciation of almost $6.5 million over the five-year projected period. In 1992, the first full year after project completion, Bryn Mawr forecasts $4.4 million in excess income, with coverage on all debt of 3.02x and debt service as a percent of revenues equal to 3.80%. The forecasted balance sheet for 1992 shows $36.4 million in cash and board-designated funds and $55.7 million in debt outstanding. Foundation and endowment funds totaled $15.7 million in 1987, and are projected to increase by $15 million at completion of a fundraising campaign commencing this year.

The Regents of the University of California
UCLA Medical Center

Reviewed: rating affirmed

Rationale: The 'A' rating is affirmed on $111.3 million hospital revenue bonds issued by the Regents of the University of California for the UCLA Medical Center. A major construction program to provide for ambulatory services is planned and is expected to generate increased utilization. The rating reflects the strong historic performance of the medical center in terms of utilization and operating trends. The increasing market share and favorable forecasts result in good financial margins with coverage of the maximum annual debt service expected to reach 4.5 times (x) by 1991 and cash reserves to build to $42.2 million.

Issuer: The bonds are limited obligations of the Regents and are secured by the revenues of the UCLA Medical Center. The state of California vests full power of governance of the university to the regents. They, in turn, delegate the authority of hospital governance to the president who has charged the responsibility to the chancellor of UCLA. The chancellor has appointed an advisory group of 25 business and community leaders who meet regularly with the hospital administration but have no direct authority. The medical center is part of the Center for Health Sciences which also includes schools of medicine, nursing, dentistry and public health, and occupies a 22-acre site on the UCLA camput. The hospital alone has 711 acute-care beds for adults and children housed in a 12-story structure. The medical center is a major teaching and referral center serving not only southern California and the nation, but 62 foreign countries as well. They are known for the programs in in-vitro fertilization, lithotripsy, cardiac care, and long-term care initiatives.

Capital program: The construction program is an ambulatory-care complex to be located on an 11.7 acre site adjacent to the medical center. The bond issue of $111.3 million will fund construction of two components: an outpatient care center and a mental health center. Related projects include a clinical faculty office building and a parking garage financed separately and renovation and expansion of the operating rooms to be financed by the medical center for operations. Total cost for the entire project is $170 million, with construction expected to be completed by 1990. When finished, the facilities will support the teaching function in family medicine, provide the clinic space necessary to aggressively pursue managed care contracts, and relieve current space constraints of the surgical program. To accomodate the expandingr load of patients being served on an outpatient basis, accessibility and convenience will be stressed.

Operations: Historically, the medical center has experienced stable utilization. Admissions have increased 4% from 1982–1986; however, declining length of stay has resulted in occupancy dropping to 62.1% from 67.9%. There has been significant growth in outpatient visits as well, averaging 8% per year. Within the service area, this growth has resulted in market share increasing to 21.2% in 1986 from 19.7% in 1982. This is significant since the West Los Angeles area where the medical center is located is a particularly competitive area. With the completion of the project and the addition of services, market share is expected to jump to 27% by 1991. Revenue composition has shown a slight drop in the Medicare percentage to 26.7% in 1986 from 28.6% in 1984, with a corresponding 2% rise in the commercial portion to 48.5%. This is projected to rise to 53% by 1991 as the result of increased contracting with health plans. The medical center currently has a contract with the state to administer the Medi-Cal program, which accounts for 17.5% of revenues in 1986; however, this is expected to drop in the forecast period to 14.3% with the shift of obstetrical services to a new county hospital more centrally located to the population being served. Although the medical center is a division of the university, it has always operated as a profitable entity. Financial results have been consolidated historically, but as of 1985, there are separate audits. Management has made it a policy to reinvest earnings in the plant, resulting in low debt historically and marginal cash reserves. The state commits to the medical center on an annual basis monies for clinical teaching support. This amounts to 4% of revenues and is used to support the ambulatory care program.

Finances: The medical center has always experienced positive operating margins, reflective of management policy. The operating margin was 3.69% in 1982, rising to 5% in 1986. There is three years' pro forma coverage of the new maximum annual debt service, reaching 1.94x in 1986. In that same year, debt service as a percent of revenues is moderate at 5.03% and the historically low debt burden is seen in a capitalization ratio of 5.5%. The feasibility study projects increasing utilization based on admissions generated by doctors assumed to occupy the office building, the contracting with managed care programs, and the expanded operating room capacity. Occupancy is expected to rise to 80.15% in 1991, from 64.08% in 1987. The first year after project completion is 1990 and in that year, maximum debt service coverage is good at 3.45x and as a percentage of revenues is low at 3.58%. However, should the expected utilization gains not materialize, the sensitivity analysis shows coverage dropping to 2.5x in that year. The balance sheet reflects the new debt with moderate capitalization of 46.68% in 1987, declining to 36.51% in 1991. The $26 million funding of operating room renovations from internally generated funds is reflected on the balance sheet in the low cash position and a cushion ratio of 0.39 in 1987, which rises to 3.36 by the end of the forecast period. Days cash on hand are low as well at 7.34 in 1987 improving to 44.21 in 1991.

Financial statistics	—Year ended June 30—		
(Mil. $)	1986	1987*	1990**
Gross revenues	300,873	334,914	476,924
Oper. income	12,345	13,502	17,708
Cash & investments	12,811	4,873	13,775
Hospital admissions	24,362	25,200	28,250
Oper. income (%)	5.00	5.08	5.06
Max. debt coverage (x)	1.94	1.97	3.45
Max. debt service/total oper. revs. (%)	5.03	4.71	3.58
Cash flow (%)	55.91	17.10	22.96
Cash cushion (x)	1.02	0.39	1.10
Debt/capitalization (%)	5.50	46.68	40.80

*Projected.
**First year after projected completion.

Sisters of Charity Health Care Systems Inc.

Reviewed: rating affirmed

Rationale: The 'A+' rating is affirmed on Sisters of Charity Health Care Systems Inc.'s $229.3 million of long-term debt. Sisters of Charity is the surviving corporation from a July 1987 merger between the 'A+' rated Sisters of Charity and the 'A+' rated Franciscan Healthcare Corp. of Colorado Springs. A new obligated group was formed in late 1987, and subsequently issued $191.3 million of 'AAA' rated Municipal Bond Insurance Association-insured revenue refunding bonds in January 1988. Debt outstanding under the master trust indenture now totals $454.6 million. Resulting system strengths include improved financial and geographic risk dispersion. Sisters of Charity operates 24 facilities in six states and 12 markets. Consolidations and strategic planning to address duplicative services in certain markets is ongoing, and if successful, could ultimately improve system profitability. In 1986, on a consolidated pro forma basis, Sisters of Charity posted strong operating and excess margins of 5.2% and 7.14%, respectively. Pro forma coverage of maximum annual debt service on total outstanding debt was 2.5 times (x) in 1986. The debt burden is substantial with debt equal to 49.1% of total capitalization. The balance sheet is strengthened, however, by cash balances totaling $178 million in 1986.

Financial statistics*

	—Year ended June 30, 1986—		
	Sisters of Charity	Franciscan Healthcare	Combined
Admissions (patients)	78,987	46,842	125,829
Gross rev. (mil. $)	590,795	249,918	840,713
Oper. margin (%)	5.9	3.4	5.2
Excess margin (%)	7.5	6.2	7.1
Cash/funded depr. (mil. $)	122,163	55,816	177,979
Long-term debt (mil. $)	293,907	97,399	391,306
Debt/cap. (%)	50.5	45.2	49.1

*Pro forma.

Merger: The new obligated group consists of 24 facilities and 12 parent corporations. The service scope is broad with 5,247 licensed acute-care beds, 1,353 skilled nursing care beds, and 1,025 independent living units. The system operates facilities in the west (Colorado, New Mexico, Nebraska) and east (Ohio, Michigan, Kentucky). Prior to consolidation, both Sisters of Charity and Franciscan Healthcare operated facilities in Denver, Albuquerque, and Colorado Springs. The system is now concentrating on developing coordinated services in these markets. The corporate staff consists mainly of existing Sisters of Charity management. The Sisters of Charity team is strong but will be challenged to integrate the corporate philosophies of each system. Although currently decentralized, corporate control is increasing and the system is adopting uniform financial and administrative systems. Consolidated services at varying stages of development include financial and personnel management, group purchasing, strategic planning, marketing, and mission effectiveness. Full benefits from the merger have yet to be realized due to the size and complexity of the new system.

Finances: Admissions have remained relatively stable for the obligated group since 1985. Negligible admission increases are forecasted through 1990. A favorable patient mix with only 36% of total revenues derived from Medicare has contributed to system profitability. Since consolidation, the top five contributors to patient revenue total only 62% of system revenue. Good Samaritan Hospital in Cincinnati provides the highest percentage of system revenues; 15.7% for the 10 months ended November 1987. Previously, Franciscan Healthcare relied on St. Anthony's in Denver for over 50% of its revenue and Sisters of Charity depended primarily on four key facilities to provide system revenue.

Consolidated system operating and excess margins are conservatively projected to remain flat through 1990 at approximately 4.5% and 6.4%, respectively. By 1988, debt service coverage is forecasted to exceed 3.0x maximum annual debt service and debt service payments will consume 4.98% of total operating revenues. Both gross revenues and total assets should exceed $1 billion in both 1987 and 1988. Consolidated system debt as a percent of total capitalization is projected to decline to a more manageable 44% by 1990. Available cash is forecasted to equal 50% of long-term debt outstanding in 1988 and could cover over three months of system operating expenses. Future financing needs are minimal; most major facilities have recently completed major renovation or expansion programs.

Top contributors to net patient revenue*

	Licensed beds	Obl. group lic. beds (%)	Obl. group net pat. rev. (%)
Good Samaritan, Cincinnati	698	13.3	15.7
St. Anthony Hospitals, Denver	698	13.3	14.3
Good Samaritan, Dayton	576	11.0	12.4
Penrose Hospital, Colorado Springs	438	8.3	10.3
St. Joseph Hospital, Michigan	487	9.3	9.4

*As of Nov. 30, 1987.

Washington Health Care Facilities Authority Group Health Cooperative of Puget Sound

Reviewed: ratings affirmed

Rationale: Ratings are affirmed at 'A−' on $42 million outstanding series 1982 and 1982B revenue bonds due 2000 and 2005 issued by Washington Health Care Facilities Authority for Group Health Cooperative of Puget Sound. The rating was lowered from 'A' on Nov. 23, 1987 based on poor 1986 bottom line performance, failure to meet financial projections, and concerns about competition. A lower rating is precluded by strong balance sheet indicators and good management.

Organization: Group Health Cooperative is one of the largest nonprofit health maintenance organizations (HMO) in the U.S. Established in 1945, the cooperative currently provides comprehensive health-care services to more than 320,000 voluntarily enrolled members throughout Washington. Members pay a fixed, periodic (usually monthly) fee for hospital and medical benefits. As a staff model HMO, the cooperative employs approximately 500 physicians who serve as a large multispecialty

group practice. Members receive most of their health care from this salaried medical group, with an option to receive additional services from nonemployee physicians under contract with the cooperative. The cooperative operates two acute care hospitals and 20 outpatient and specialty medical centers. In addition to these facilities, the cooperative is affiliated with 16 other community-based providers and several educational institutions, including the University of Washington.

Organized as a cooperative, members elect a board of trustees which acts as the policy-making body. Key issues are presented by members at an annual meeting and adopted measures are circulated to the entire membership for vote by mail ballot. Management includes both physician and nonphysician employees who report to a chief executive officer. Recently, the cooperative announced that the current chief executive officer will resign in six months and a search is currently under way for a replacement. The transition is expected to be relatively smooth due to the depth and commitment of the management team as well as the cooperative's 42-year successful track record.

Finances: Profitability has declined sharply since the early 1980s due primarily to increased completion from the other HMOs. Bottom line margins have fallen to less than 1% in 1986 from 4.7% in 1984. After increasing steadily for five years, enrollment declined by approximately 3.5% between 1984–1986. Since member dues account for virtually all (90%) of the cooperative's gross revenues, net income is sensitive to enrollment declines. Interim 1987 membership numbers suggest an increase over 1986 but still below 1985 levels. Intense price competition with other HMOs has further hurt profitability by limiting the cooperative's ability to raise rates. Coverage of maximum annual debt service on these bonds and other debt remains good at 2.3 times (x), but well below forecasted levels submitted by management at the end of fiscal 1985. Debt service as a percent of revenues is light at less than 3% in 1986. Management expects to finish 1987 in a breakeven position, which will generate coverage of slightly over 2.0x due to interest and depreciation expense items. The balance sheet shows a significant cash balance of $21 million, equal to roughly 40% of total long-term debt outstanding ($53 million). Cash balances have grown steadily since 1982 and management expects to maintain current levels as a minimum balance. Leverage is moderate with debt to capitalization at 40% in 1986. No additional debt issuances are planned for the near future.

Hospital industry in transition

(continued from front cover)

ratings in the 'BBB' category increased to 26% from 22%. Similarly, 15% of all downgrades resulted in a speculative grade rating, while only 4% of all upgrades resulted in a move to investment grade *(see chart C)*.

Small hospitals vulnerable

Small hospitals are particularly vulnerable to heightened industry risks. During the past five years, hospitals with less than 150 beds experienced 10 downgrades for every upgrade. This ratio was twice the national average (five to one). By comparison, hospitals with over 700 beds had a three-to-one ratio *(see chart D)*.

Large hospitals also account for a disproportionately large share of upgrades. Hospitals with over 700 beds represent only 6% of all rated hospitals, but 10% of all upgrades. In contrast, small hospitals with under 150 beds represent 18% of all rated hospitals but only 12% of all upgrades.

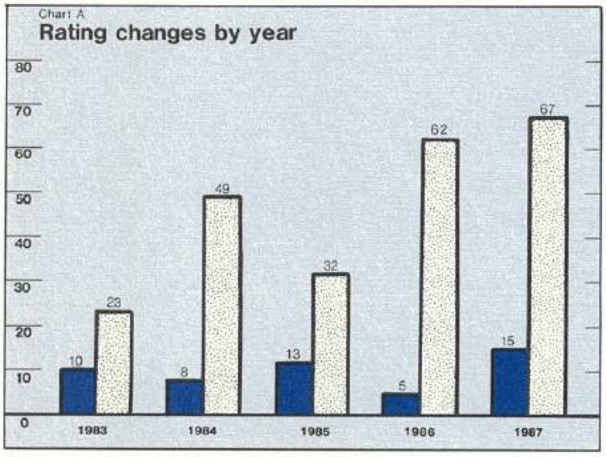
Despite their relatively strong positions, larger hospitals in urban areas are forced to compete for a declining number of patients. They are protecting their market shares by purchasing high tech equipment, renovating their facilities, developing referral networks, building satellite clinics, and acquiring small community hospitals. Such defensive measures often create financial strains. Hospitals are forced to trade cash and liquidity to maintain market share. Tightening reimbursement, particularly for medical education and capital, place additional pressure on cash flow. All of these factors increase large hospitals' vulnerability to downgrades. Last year was the first time that the ratio of downgrades to upgrades for this group (five to zero) exceeded the national average.

Regional trends significant

Demand for hospital services depends largely on regional economic trends such as growth in per capita income, population, labor force, as well as the unemployment rate. As a result, rating trends follow regional patterns *(see map on cover)*.

The East South Central Region had 39% of its ratings lowered during the past five years, nearly twice the national rate. This region, comprised of Alabama, Kentucky, Mississippi, and Tennessee, is the poorest in the U.S. in terms of 1986 per capita income.

The West South Central Region, composed of Ar-



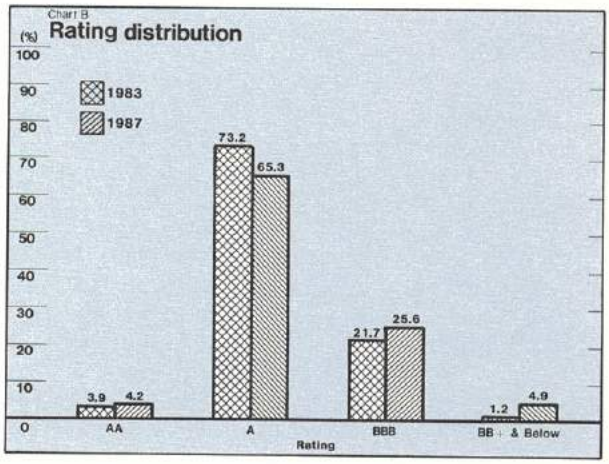
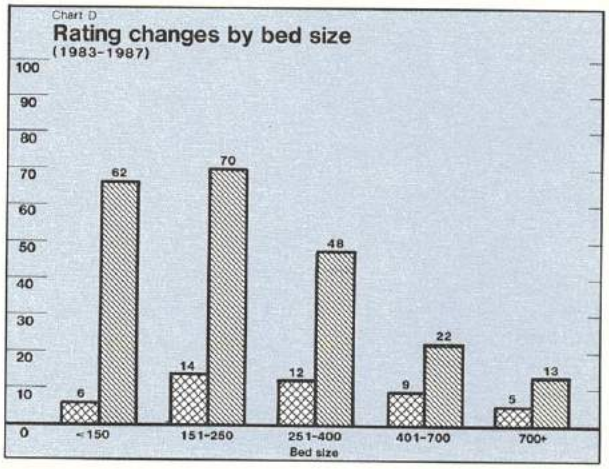


Chart C
Rating changes by category
(1983-1987)

From \ To	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	CCC	CCC-	CC
AA+		1															
AA			4	3													
AA-		2		1													
A+		1	4		29	6	4										
A			1	14		34	17	3	1		1						
A-		1		1	5		31	17	6		1						
BBB+					1	4		11	7		5				1		
BBB						4	5		12		10			4			
BBB-						1	2			2	7	1		1	1		
BB							1	1	1					2	4		
BB-													1				
B														1			
CCC																1	1
D											1			1			



kansas, Louisiana, Oklahoma, and Texas, also had a disproportionately large number of downgrades (34%). The negative rating trend accelerated in 1986 and 1987 as oil prices declined. During that period, 24 ratings were lowered. This region has the second lowest per capita income in the U.S.

In contrast, the New England and Middle Atlantic regions had a relatively low rate of downgrades, at 14% and 15%, respectively. These regions are the wealthiest in the U.S. In the remaining regions, the percentage of downgrades ranged from 17% in the West North Central Region to 24% in the East North Central Region.

Upgrades

Since 1983, S&P has raised only 50 hospital ratings, compared with 209 downgrades. Hospitals with over 250 beds accounted for approximately 57% of all upgrades. Generally, small hospitals whose debt was upgraded had no immediate competitor. Other common factors include a fairly stable admissions trend, low levels of bad debts and contractual deductions, reasonable debt burden, and strong liquidity. In a few instances, the higher rating was attributable to a new management team's ability to improve performance.

The upgrades do not follow a clear regional pattern, with two notable exceptions. Only one upgrade occurred in the Mountain region, and in the Pacific and New England only about 3% of all health-care ratings were raised. Elsewhere, 4%–6% of the ratings were upgraded.

In the past five years, two of three 'D' rated bond issues were raised to 'BB+' and 'BB'. These bond issues represent the debt of Midlands Community Hospital in Sarpy County, Neb., and Hilton Head Hospital in Hilton Head, S.C., respectively. Both hospitals have staved off bankruptcy as a result of favorable economic trends and prudent management. However, their situations are still precarious, indicative of the plight of all small hospitals *(see box)*.

Rapid change is placing strains on the health-care industry, which many hospitals do not have the resources to withstand. As the industry consolidates and excess capacity is removed, the remaining players will be more efficient providers of care, with stronger market positions. Though a great deal of attention is paid to the number of downgrades, almost 80% of ratings have remained stable. The stability of most hospital ratings reflects the essentiality of health-care services and the ability of many hospitals to adjust to a dynamic environment.

'D' rated bonds upgraded

Midlands Community Hospital is a 208-bed facility located 12 miles southwest of Omaha. The hospital was built in 1976 to replace a 100-bed hospital situated in the city. Contrary to their initial assurances, doctors refused to travel out to the new hospital which was built on 80 acres of farm land. As a result, the hospital experienced financial difficulties soon after it opened.

Fortunately, Sarpy County is one of the fastest growing areas in Nebraska, with a young and affluent population. As a result, the hospital was able to continue operating as the county grew and developed. Although principal payments were deferred, the hospital never missed an interest payment. By 1982, hospital admissions were just below 4,500. Prudent management, a favorable payor mix, and a growing economy have resulted in improved profitability and a liquid balance sheet. As of June 30, 1987, coverage was 2.38 times (x) and cash was equivalent to 79 days of operating expenses.

The hospital has turned the corner, but the road ahead is still difficult. The hospital has a high debt burden equivalent to 10% of hospital revenues, debt to capitalization of 76%, and declining inpatient admissions. By 1987, admissions were down almost one-fifth from their 1982 high, as Midlands experienced the strains common to rural facilities.

Hilton Head Hospital was built as a 64-bed facility in 1975, based on expectations of rapid economic and population growth. However, the island economy was hurt by the 1974–1975 recession because of its dependence on tourism. Original population estimates were overly optimistic and forecasted population growth did not materialize. The hospital had difficulty attracting doctors, and experienced financial trouble almost immediately. By 1977, as reserve funds were depleted, the hospital was no longer able to make its interest payments.

Fortunately, growth in tourism resumed after the recession. By 1977, 400,000 tourists visited the island, over five times the number of tourists in 1972.

The hospital's performance has stabilized along with local economic trends. Admissions have been relatively stable, and occupancy is adequate at 52%. As of June 30, 1987, coverage was 2.28x, but cash is low at 18 days of expenses. Leverage is also high, with a debt to capitalization ratio of 92%.

(continued on next page)

Rating changes by region†

	1983		1984		1985		1986		1987		Total 5 yrs.	
	Up	Down	Up	Down	Up	Down	Up	Down	Up	Down	Up	Down
New England	1	0	1	1	0	0	0	5	0	4	2	10
Middle Atlantic	3	2	0	8	5	4	0	4	2	7	10	25
South Atlantic	3	4	2	5	2	4	0	8	1	10	8	31
East North Central	1	5	2	23	2	7	2	12	4	14	11	61
East South Central	2	3	0	3	0	7	0	8	2	7	4	28
West North Central	0	4	0	3	2	2	2	6	3	5	7	20
West South Central	0	0	3	5	1	5	1	10	1	14	6	34
Mountain	0	5	0	1	1	0	0	4	0	0	1	10
Pacific	0	0	0	0	0	2	0	4	2	6	2	12
Total	10	23	8	49	13	31*	5	61**	15	67	51	231

*Excludes one rating downgrade in Puerto Rico (St. Lukes Hospital).
**Excludes Lutheran Hospital & Homes Society, which has hospitals in several regions.

†U.S. regions

New England	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
Middle Atlantic	Pennsylvania, New York, New Jersey
South Atlantic	Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia
East North Central	Illinois, Indiana, Michigan, Ohio, Wisconsin
East South Central	Alabama, Kentucky, Mississippi, Tennessee
West North Central	Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota
West South Central	Arkansas, Louisiana, Oklahoma, Texas
Mountain	Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming
Pacific	Alaska, California, Hawaii, Oregon, Washington

Rating changes by state

	1983		1984		1985		1986		1987	
	Up	Down	Up	Down	Up	Down	Up	Down	Up	Down
Alabama	1	1	0	1	0	4	0	4	0	2
Arizona	0	2	0	1	1	0	0	2	0	0
Arkansas	0	0	0	0	0	0	0	3	1	4
California	0	0	0	0	0	1	0	3	2	3
Florida	2	1	0	2	0	0	0	2	0	4
Idaho	0	0	0	0	0	0	0	1	0	0
Illinois	1	2	1	3	2	2	0	2	1	4
Indiana	0	0	1	2	0	2	1	1	0	1
Iowa	0	3	0	0	0	0	0	1	0	2
Kansas	0	0	0	2	0	1	0	1	2	0
Kentucky	0	1	0	1	0	2	0	1	1	3
Louisiana	0	0	0	0	1	1	0	2	0	1
Maine	0	0	0	0	0	0	0	0	0	1
Maryland	1	0	1	1	0	0	0	0	0	2
Massachusetts	1	0	1	0	0	0	0	3	0	3
Michigan	0	1	0	10	0	0	0	4	2	5
Minnesota	0	0	0	0	1	0	0	2	0	2
Mississippi	0	0	0	1	0	1	0	1	1	0
Missouri	0	1	0	0	0	1	0	0	1	1
Nebraska	0	0	0	0	1	0	2	0	0	0
Nevada	0	0	0	0	0	0	0	1	0	0
New Jersey	1	0	0	2	1	2	0	1	0	4
New Mexico	0	2	0	0	0	0	0	0	0	0
New York	0	0	0	3	0	0	0	1	0	1
North Carolina	0	0	1	0	0	2	0	2	0	1
North Dakota	0	0	0	1	0	0	0	1	0	0
Ohio	0	2	0	5	0	2	1	4	1	4
Oklahoma	0	0	2	1	0	1	0	3	0	4
Pennsylvania	2	2	0	4	4	2	0	2	2	2
Puerto Rico	0	0	0	0	0	1	0	0	0	0
Rhode Island	0	0	0	1	0	0	0	0	0	0
South Carolina	0	0	0	0	2	0	0	0	1	1
South Dakota	0	0	0	0	0	0	0	1	0	0
Tennessee	1	1	0	0	0	0	0	2	0	2
Texas	0	0	1	4	0	3	1	2	0	5
Utah	0	1	0	0	0	0	0	0	0	0
Vermont	0	0	0	0	0	0	0	2	0	0
Virginia	0	2	0	1	0	1	0	1	0	0
Washington	0	0	0	0	0	1	0	1	0	3
West Virginia	0	1	0	1	0	1	0	3	0	2
Wisconsin	0	0	0	2	0	1	0	1	0	0
Total	10	23	8	49	13	32	5	61*	15	67

*Excludes Lutheran Hospital & Homes Society, which has hospitals in several states.

Rating changes by bed size

	1983		1984		1985		1986		1987		Total 5 yrs.	
	Up	Down	Up	Down	Up	Down	Up	Down	Up	Down	Up	Down
Under 150	1	2	0	17	3	7	0	16	2	20	6	62
151–250	2	7	3	14	2	7	2	21	5	21	14	70
251–400	2	8	1	8	3	8	0	12	6	12	12	48
401–700	3	1	1	5	3	6	0	6	2	4	9	22
Over 700	1	2	1	3	1	1	2	2	0	5	5	13
Total	9	20	6	47	12	29	4	57	15	62	46	215
Systems*	1	3	2	2	1	3	1	5	0	5	5	18
Total**	10	23	8	49	13	32	5	62	15	67	51	233

*Includes all hospitals with two or more facilities.

**During the five-year period, 21 hospitals account for 45 downgrades and one hospital accounts for two upgrades. Therefore, 209 hospitals had their debt downgraded and 50 had upgrades.

ANNUAL RATINGS ROUNDUP

Rating changes—1983

UPGRADES

State	Hospital	To	From
FL	Boca Raton Hospital	A+	A
	Leeseburg Regional Medical Center	A–	BBB+
IL	St. Joseph Hospital	BBB+	BBB
MD	Howard Cnty. General Hospital	BBB+	BBB
MA	Beth Israel Hospital	A+	A
NJ	Palisades General Hospital	BBB	BB
PA	Reading Hospital & Medical Center	A+	A
	York Hospital	A+	A
TN	Shelby Cnty., St. Francis Hospital	A+	A
	System		
AL	Baptist Medical Center		

DOWNGRADES

State	Hospital	To	From
AL	East Alabama Medical Center	BBB+	A
AZ	Tuscon Medical Center	A	A+
FL	Wuesthoff Memorial Hospital	A-p	A
IL	Alton Hospital	A–	A
	Jackson Park Hospital Foundation	BBB–	A
IA	St. Luke's Hospital	A–	A
	Des Moines General Hospital,	A–	A
	Allen Memorial Hospital	A–	A
KY	Hardin Memorial Hospital	A–	A
MO	Central Medical Center	BB	BBB–
NM	St. Joseph's Hospital	A–	A
	St. Mary's Hospital	BBB–	BBB+
OH	Children's Hospital, Lima Memorial Hospital	A	A+
PA	Suburban General Hospital of Norristown	A–	A
	Tyler Memorial Hospital	BBB	BBB+
TN	Methodist Hospital of Memphis	A+	AA
VA	Lynchburg General-Marshall Lodge Hosp.	A	A+
	University Medical College of Virginia	A+	AA
WV	St. Joseph Hospital of Parkersburg	BBB+	A
	System		
AZ	Samaritan Health Services	A	A+
MI	Sisters of Mercy Health Corp.	A+	AA–
UT	IHC Hospital	AA	AA+

(continued on next page)

Rating changes—1984

UPGRADES

State	Hospital	To	From
IL	Northwestern Memorial Hospital	AA	AA–
IN	Munster Medical Research Foundation Hospital d/b/a Community Hospital	A–	BBB
MA	MA Hlth. & Ed. University Hospital	A+	A
MD	MD Hlth. & Ed. Howard County General Hospital	A–	BBB+
OK	St. John's Medical Center	AA–	A+
TX	Valley Community Hospital	BBB+	BBB–
	System		
OK	Buffalo Cnty. Hosp. Auth., Good Samaritan Hosp. of Kearney (Franciscan Hlth. Care Corp.)	A+	A
NC	Charlotte Mecklenberg Hospital System	AA	AA–

DOWNGRADES

State	Hospital		
AL	Birmingham Med. Clin. Brd. Children's Hosp. of AL	BBB+	A–
AZ	Phoenix Baptist Med. Cntr.	BBB	A–
FL	Hillsborough Cnty. Hosp. Auth., Tampa General	BBB	A–
	Baptist Medical Center	BBB+	A–
IL	IL Hlth. Fac. Auth., Michael Reese Hosp. & Med. Cntr., Mt. Sinai Hosp. Med. Cntr., Graham Hospital	BBB+	A
IN	Caylor Nickel Medical Cntr., Winona Memorial Hospital	A–	A
KS	Merriam Shawnee Mission Med. Cntr.	BBB+	A–
	Coffeyville, Coffeyville Mem. Hosp.	BB	BBB+
KY	Richmond Pattie A Clay Infirmary	BBB+	A–
MD	North Charles General Hosp.	BBB+	A–
MI	Saginaw Hosp. Fin. Auth., St. Luke's Hosp.	A	A+
	MI State Hosp. Fin. Auth., Northwest General Hosp.	CCC	BB
	MI State Hosp. Fin. Auth., Detroit Osteopathic Hosp.	BBB	A
	MI State Hosp. Fin. Auth., Cent. Mich. Comm. Hosp.	A–	A
	Flint Hospital Building Auth., Flint Hospital	A–	A
	MI State Hosp. Fin. Auth. Bay Osteopathic Hosp.	BB	BBB–
	Edward W. Sparrow Hospital	A–	A
	MI State Hosp. Fin. Auth., Mercy Mem. Hosp. of Monroe	BBB+	A–
	MI State Hosp. Fin. Auth., Kingswood Hosp.	BBB+	A
	MI State Hosp. Fin. Auth., Hutzel Hosp.	BB	A
MS	F.G. Riley Memorial Hospital	A–	BBB
ND	St. Alexius Medical Cntr.	A–	A
NY	New York State Dorm. Auth. Soc. of NY Hosp.	A	A+
	NY State Med. Care Fac. Fin. Agy. Mercy Comm. Hosp.	A–	A+
	NY State Dorm. Auth. Cornwall Hosp.	BB	BBB
OH	Willard Hosp. Auth., Willard Area Hosp.	B	BBB
	Marion Cnty. Community Med. Cntr. Hosp.	BBB+	A–
	Montgomery Cnty. Kettering Med. Cntr.	A	A+
	Amherst, Amherst Hospital	BB	BBB
	Alliance, Alliance City Hosp.	A–	A
OK	Duncan Hospital Auth., Duncan Regl. Hosp.	BBB	A–
PA	Community General Hospital	BBB+	A
	McKeesport Hosp. Auth., McKeesport Hospital	A–	A+
	Suburban General Hospital	BBB+	A–
	Quakertown Community Hospital	BBB	A–
RI	RI Hlth. & Ed. Bldg. Corp., Roger Williams Gen. Hosp.	A–	A
TX	Santa Rosa Medical Center, High Plains Baptist Hospital, Paris, St. Joseph Hospital	A	A+
	Rolling Plains Memorial Hospital	BB	BBB
VA	Augusta Cnty. IDA Kings Daughters Hospital	A	A+
WI	Beaver Dam, Beaver Dam Comnty. Hosp.	BBB	A
	Manitowoc Holy Family Hospital	BBB–	BBB
WV	Kanawha Cnty. Bldg. Comm. Medical Plaza Corp. (St. Francis Hosp.)	BBB+	A–
	System		
MI	Sisters of Mercy Health Corp.	A–	A+
NJ	West Jersey Health System	BBB+	A–

Rating changes—1985

UPGRADES

State	Hospital	To	From
IL	Illinois Hlth. Fac. Auth., Graham Hospital	A	BBB+
	Augustana Hosp. & Hlth. Ctr.	AA	A–
LA	Alton Ochsner Medical Foundation	AA–	A+
MN	Minneapolis, Abbott Northwestern Hosp.	AA–	A+
NE	Douglas Cnty. Hosp. Auth., Immanuel Med. Cntr.	A+	A
NJ	NJHCFFA, Hackensack Medical Cntr.	A	A–
PA	Scranton Lack Hlth. & Welfare Auth. Commonwlth. Community Medical Center	A–	BBB+
	Allegheny Cnty. HDA, Southside Hosp. of Pitt.	BBB+	BBB
	Allegheny Cnty. HDA, St. Margaret Memorial	A	A–
	Chester Cnty., Byrn Mawr Rehab. Hosp.	A–	BBB
SC	Charleston Cnty., St. Francis Xavier Hosp.	A	A–
	Tuomey Hospital	BBB	BBB–
	System		
AZ	Samaritan Health Services	A+	A

DOWNGRADES

State	Hospital		
AL	Alabama Spl. Care Fac., Baptist Hosp. of Gadsen	BBB+	A
	Lauderdale Cnty., Eliza Coffee Mem. Hosp.	A	A+
	Baldwin Cnty., Thomas Hospital	BBB–	BBB
IL	De Kalb Cnty., Kishwaukee Cmnty. Hlth. Svcs.	A–	A
	IL Hlth. Fac. Auth., Mt. Sinai Hosp. Med. Cntr.	BB	BBB+
IN	La Porte Cnty. Hosp. Auth., La Porte Hosp.	BBB–	BBB+
	Lutheran Hosp.	A	A+
KY	Louisville Baptist Hospital	A–	A
	Good Samaritan Hospital	BBB+	A–
LA	Jefferson Parish, West Jefferson Gen. Hosp.	A	A+
MO	Missouri Hlth. & Ed., Central Med. Cntr.	CCC	BB
MS	Washington Cnty., Delta Medical Cntr.	BB	A–
NC	NC Med. Care Com., Annie Penn Mem. Hosp.	BBB–	BBB+
	NC Med. Care Com., Mercy Hosp. of Charlotte	A–	A+
NJ	NJHCFFA, Passaic General Hospital, John F. Kennedy Memorial Hosp.	BBB	BBB+
OH	Sandusky Cnty., Memorial Hospital of Fremont	BBB	BBB+
	Richmond Heights General Hospital	BBB	A–
OK	Okmulgee Mem. Hosp. Auth., Okmulgee Mem. Hosp.	BB	BBB+
PA	Allegheny Cnty. Hosp. Auth., Montefiore Hosp.	A–	A
	Conemaugh Valley Memorial Hosp.	BBB+	A
PR	Puerto Rico Indl. Med. & Environ. Poll. Ctl. Fac. Fin. Auth., St. Lukes Hosp.	BB	BBB
TX	Weslaco Hosp. Auth., Knapp Mem. Meth. Hosp.	BBB	A–
	Nolan Cnty., Sweetwater Hosp. n/k/a Rolling Plains	CCC	BB
	Jefferson Cnty. Hosp. Auth., Baptist Hosp. of SE TX	BB	BBB+
VA	Richmond Eye & Ear Hospital	BBB–	A–
WA	WA Hlth. Care, Our Lady of Lourdes Hosp.	BB	BBB–
WI	WI Hlth. Fac. Auth., Lacrosse Lutheran Hosp.	A	A+
WV	Kanawha Valley Mem. Hosp. (Part of Charleston Area Medical Center)	BB	BBB
	System		
AL	Birmingham Spl. Care Fac., Baptist Med. Cntr.	A	A+
CA	LHS Corp.	A	A+
KS	Wichita, St. Joseph Hosp. & Rehab.	A–	A

(continued on next page)

Rating changes—1986

UPGRADES

State	Hospital	To	From
IN	Marion Cnty. Hosp. Auth., Methodist Hospital of IN	A+	A
NE	Sarpy Cnty., Midlands Community Hospital	B	D
OH	Cuyahoga Cnty., Univ. Hosp. of Cleveland	AA–	A+
TX	Dallas Cnty., Parkland Memorial Hosp.	A+	A
	System		
SD	Socorro, Evangelical Lutheran Good Samaritan	A–	BBB

DOWNGRADES

State	Hospital		
AL	Morgan Cnty., Decatur Gen. Hosp.	BBB+	A–
	Birmingham North Med. Clin. Brd., Carraway Meth. MC	A	A+
	Colbert Cnty., Helen Keller Mem. Hosp.	BBB–	BBB+
	Anniston Regl. Med. Cntr., NE Alabama Regl. Med. Cntr.	A–	A
AR	Helena, Helena Hospital	BBB–	BBB+
	Independance Cnty. Pub. Hlth., White River Med. Cntr.	BBB	BBB+
	Baxter Cnty., Baxter General Hospital	BB	BBB
AZ	Maricopa Cnty., Scottsdale Mem. Hosp.	BBB+	A
	Maricopa Cnty., Walter O. Boswell Mem. Hosp.	BBB	A–
CA	Santa Cruz, Dominican Santa Cruz Hosp.	A–	A
	Fresno, Fresno Community Hospital	BBB+	A+
FL	Broward Cnty. Hlth. Fac. Auth., Holy Cross Hosp.	A–	A
IA	Ames, Greeley Memorial Hospital	A	A+
ID	Idaho Hlth. Fac. Auth., Bonner General Hospital	BB	BBB
IL	Community Mem. Hosp. Assn. Staunton	BB	BBB
	Bethany Home & Hosp. of the Methodist Church	BBB	A–
IN	Kokomo Hosp. Auth., St. Joseph Mem. Hosp. of Kokomo	BBB+	A–
KS	Lyon Cnty., Newman Mem. Cnty. Hosp.	B	BBB
KY	Christian Cnty., Jennie Stuart Mem. Hosp.	BBB	A–
LA	Vermillion Parish Hosp., Abbeville General Hosp.	BB	BBB
	LA Pub. Fac. Auth., Southern Baptist Hosp.	BBB	A–
MA	MA Hlth. & Ed., Winchester Hospital	A–	A
	MA Hlth. & Ed., St. Joseph Hosp. of Lowell	BBB+	A
	MA Hlth. & Ed., Berkshire Med. Cntr.	A–	A+
MI	MI Hosp. Fin. Auth., Lansing General Hospital	A–	A
	MI Hosp. Fin. Auth., Gratiot Comm. Hosp.	CCC	BBB+
	Bay Osteopathic Hospital	B	BB
MN	Fergus Falls, Lake Region Hospital	BBB	A–
	Hibbing, Central Mesabi Med. Cntr.	BBB–	BBB+
MS	Hinds Cnty., Mississippi Meth. Hospital	BB	BBB–
NC	NC Med. Care Comm., Annie Penn Mem. Hosp.	B	BBB–
	NC Med. Care Comm., Morehead Mem. Hosp.	BBB	BBB+
ND	Bismarck, St. Alexius Hospital	BBB+	A–
NJ	NJHCFFA, Burlington Cnty. Mem. Hosp.	BBB+	A–
NV	Washoe Cnty., Washoe Medical Center	A–	A
NY	NY State Dorm. Auth., Columbia Mem. Hosp.	BB	A
OH	East Liverpool, East Liverpool Hosp.	BBB	BBB+
	Ross Cnty., Chillicothe Hospital	BBB	A–
	Steubenville, Ohio Valley Hospital	BBB–	A–
OK	Okmulgee Mem. Hosp. Auth., Okmulgee Mem. Hosp.	B	BB
	Duncan Hosp. Auth., Duncan Regional Hospital	BBB–	BBB
	Washington Cnty. Med. Auth., Jane Phillips	BBB+	A
PA	Delaware Cnty., Crozer Chester Med. Cntr.	BBB+	A+
	Allegheny Cnty., North Hills Passavant Hosp.	A	A+
SD	South Dakota Hlth. & Ed., St. Joseph Hosp.	BBB–	BBB
TN	Rockwood Hlth. & Ed., Chamberlain Mem. Hosp.	BBB–	BBB+
	Knox Cnty. Hlth. & Ed., East Tennessee Bap. Hosp.	A	A+
TX	Nacogdoches Cnty. Hosp. Auth., Nacogdoches Mem. Hosp.	BB	BBB–
	North TX Hosp. Auth., Bethania Regl. Hlth. Care	A–	A
VA	Richmond IDA, Richmond Metro Hospital	BB	BBB–
VT	Vermont Ed. & Hlth., Central Vt. Med. Cntr.	A–	A
	Vermont Ed. & Bldg. Auth., Med. Cntr. Hosp. of VT	A	A+
WA	WA Hlth. & Ed., Group Hlth. Coop. of Puget Sound	A	A+
WI	Shawano, Shawano Community Hospital	BBB–	BBB
WV	Weirton Mun. Hosp, Bldg., Weirton General Hospital	BBB+	A
	Grafton, Grafton City Hospital	CC	CCC
	Kanawha Cnty., Richwood Bldg. Comm., St. Francis Hospital	BBB	BBB+
	System		
ND	Lutheran Hospital & Homes Society	BBB+	A
CA	CHFFA—Merritt Peralta Med. Cntr.	BBB+	A
FL	Sante Fe Health Care Systems	BBB+	A–
MI	Michigan Health Care Corp.	B+	BB–
OH	Hamilton Cnty., Bethesda Hosp. & Deaconess	A	A+

Rating changes— 1987

UPGRADES

State	Hospital	To	From
AR	Jefferson Cnty., Jefferson Regl. Med. Cntr.	A+	A
CA	Grossmont Hosp. Dist., Grossmont Dist. Hosp.	A+	A
	Santa Cruz, Dominican Santa Cruz Hosp.	A+	A–
IL	IL Hlth. Fac. Auth., Mt. Sinai Hosp. Med. Cntr.	BB+	BB
KS	Merriam, Shawnee Mission Med. Cntr.	A–	BBB+
	Shawnee Cnty., C.F. Menninger Found	AA–	A
KY	Christian Cnty., Jennie Stuart Mem. Hosp.	BBB+	BBB
MI	Marquette Hosp. Fin. Auth., Marquette Gen. Hosp.	A+	A
	Mich. State Hosp. Fin. Auth., Detroit Osteo Hosp.	BBB+	BBB
MO	MO Hlth. & Ed., Lake of the Ozarks Gen. Hosp.	BBB	BBB–
MS	Washington Cnty., Delta Med. Cntr.	BBB–	BB
OH	Alliance, Alliance City Hosp.	A	A–
PA	Allegheny Hlth. & Research Corp.	AA	A+
	Philadelphia Hosp. Auth., Methodist Hosp.	A	A–
SC	Beaufort Cnty., Hilton Head Hosp.	BB	D

DOWNGRADES

State	Hospital		
AL	Marshall Cnty., Boaz Albertville Hosp.	BBB–	BBB
	South Highlands Hospital	BBB–	A–
AR	Pulaski Cnty., Arkansas Childrens Hosp.	BBB+	A
	Little Rock Hlth. Fac., Baptist Med. Cntr.	A	A+
	Helena, Helena Hospital	CCC	BBB–
	Conway, Conway Memorial Hospital	BBB–	BBB
CA	CA Hlth. Fac. Auth., Valley Pres. Hosp.	BBB	A
	Foothill Hosp., Glendora	BBB–	BBB
FL	Miami Hlth. Fac. Auth., Mercy Hosp.	BBB+	A
	Dade Cnty. Hlth. Fac., St. Francis Hosp.	BBB–	A–
	Hillsborough Cnty. Hosp. Auth., Tampa Gen. Hosp.	BBB–	BBB
	Brevard Cnty., Wuesthoff Mem. Hosp.	BBB	A–
IA	Dubuque, Finley Hospital	BBB+	A
	Winnesheik Cnty. Pub. Hospital	BBB–	BBB
IL	IL Hlth. Fac. Auth., Graham Hospital	A–	A
	Hazelcrest Village, South Suburban Found	A	A+
	Alton, Alton Memorial Hospital	BBB+	A–
	Galesburg, Galesburg Cottage Hospital	BBB	A–
IN	Lawrence Cnty. Hosp. Auth., Bedford Med. Cntr.	BBB+	A
KY	Warren Cnty., Bowling Green Med. Cntr.	BBB+	A–
	Muhlenberg Cnty., Muhlenberg Comm. Hosp.	BB+	BBB–
	KY Dev. Fin. Auth., Ashland, Kings Daughters	BBB+	A–
LA	Lake Charles Memorial Hospital	A–	A
MA	MH&EFA, Massachusetts Gen. Hosp.	AA–	AA
	MH&EFA, Charlton Memorial Hosp.	BBB+	A–
	Atlanticare Medical Center	BBB	A–
MD	MD Hlth. & Ed., Howard Cnty. Gen. Hosp.	BBB	A–
	Riverdale, Washington Adventist Hosp.	BBB	BBB+
ME	Maine Hlth. & Ed., Kennebec Vy. Med. Cntr.	BBB+	A–
MI	MI State Hosp. Fin. Auth., Bay Osteo Hosp.	CCC–	B
	MI State Hosp. Fin. Auth., Lansing Gen. Hosp.	BBB+	A–
	MI State Hosp. Fin. Auth., Saratoga Gen. Hosp.	BBB+	A+
	MI State Hosp Fin. Auth., Detroit Osteo Hosp.	BBB	BBB+
MN	Minneapolis, Abbott Northwestern Hosp.	A+	AA
	Hibbing, Central Mesabi Med. Cntr.	BB+	BBB–
MO	MO Hlth. & Ed. Fac. Auth., Central Med. Cntr.	CCC–	CCC
NJ	NJHCFFA, Zurbrugg Mem. Hosp.	BBB+	A–
NJ	NJHCFFA, Muhlenberg Hosp.	A–	A
	Union Hospital	BBB+	A–
	Mt. Laurel Medical Bldg. (Gtd. by Burlington Medical Center)	BBB+	A–
NY	NYSMCFFA, Nyack Hospital	BBB+	A–
OH	Cleveland Clinic Foundation	AA–	AA
	Lucas Cnty, Parkview Hosp	BBB+	A–
	Trumball Cnty., St. Joseph Riveside	BBB+	A–
OK	Woodward Mun. Auth., Woodward Hosp.	B	BBB
	Shawnee Hosp. Auth., Shawnee Med. Cntr.	BBB–	A–
	Choctaw Cnty., City of Hugo Hosp.	BB	BBB–
	Jackson County Memorial Hospital	BBB–	BBB
PA	Philadelphia Hosp. Auth., Albert Einstein Med. Cntr.	BBB	A–
	Allegheny Cnty. Hosp. Auth., Divine Prov. Hosp.	BBB	BBB+

(continued on next page)

Rating changes— 1987 (cont'd.)

Downgrades (cont'd.)

State	Hospital	To	From
SC	Georgetown Cnty., Georgetown Cnty. Mem. Hosp.	BBB–	A–
TN	Rockwood Hlth. & Ed., Chamberlain Mem. Hosp.	BB–	BBB–
	Chattanooga Hlth. & Ed., Downtown Hosp. Assn.	BB	BBB+
TX	Dallas Metro Hosp. Auth., Gaston Episcopal Hosp.	B	BBB
	Harris Cnty. Hlth. Fac. Auth., Hermann Hosp. Estate	A	A+
	Texarkana Hosp. Auth., Wadley Regional Med. Cntr.	A–	A
	Weslaco Hosp. Auth., Knapp Mem. Methodist Hosp.	BB	BBB
	Metro Hlth. Fac. Dev. Corp., Wilson N. Jones Hosp.	BBB+	A
WA	WA Hlth. & Ed., Group Hlth. Coop. of Puget Sound	A–	A
	WA Hlth. & Ed., Our Lady of Lourdes Hosp.	CCC	BB
WV	Richwood Bldg. Com., St. Francis Hosp.	BBB–	BBB
	Kanawha Valley, Charleston Area Medical Cntr.	A–	A+
	System		
CA	Sutter Community Hospital (Sutter Comm. Hlth. Sys.)	A	A+
OH	Providence Hosp. of Sandusky, Franciscan Svcs.	A–	A
MI	Peoples Comm. Hospital Auth.	BBB+	A+
NC	Charlotte Mecklenburg Hosp.	AA–	AA
WA	Sisters of Providence, Seattle	AA–	AA

CreditComment

Not-for-profit hospital ratios

Medians in 1988 for not-for-profit hospitals continued to parallel health-care industry trends. However, increases in insured volume and merger activity have reduced the sample size. The number of S&P ratings in 1988 for uninsured hospitals with two or fewer facilities declined 38% from the 1987 level *(see table of industry ratios on next page)*.

S&P rated several issues in 1988 involving major construction and renovation projects to convert excess inpatient capacity to new, efficient outpatient facilities, demonstrating a commitment to increased levels of outpatient care.

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The anomalies in the data and the small sample size indicate that factors such as institutional characteristics, competition, service area, and management are an integral part of the rating process. *For comparison, 1987's ratios appear in the April 18, 1988 CreditWeek, and 1986's are in the Jan. 18, 1988 edition.*

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Not-for-profit hospital 1988 industry ratios*

Medians by rating category	AA	AA–	A+	A	A–	BBB+	BBB	BBB–
Sample size								
Historical	6	4	12	8	10	8	11	6
Projected	6	3	9	8	10	8	11	6
Beds								
Historical	826	926	566	254	276	303	167	86
Projected	894	907	474	272	276	305	167	104
Length of stay (days)								
Historical	6.65	8.25	7.15	6.66	7.13	5.92	5.97	4.80
Projected	6.90	8.18	6.99	6.69	7.00	6.41	6.02	5.49
Occupancy (%)								
Historical	75.65	77.27	78.30	70.99	70.68	70.25	69.20	59.20
Projected	75.23	74.17	76.55	69.70	67.95	65.51	63.00	63.90
Net patient revenue ($000)								
Historical	196,160	225,128	107,939	40,738	40,954	55,774	30,656	15,134
Projected	200,320	229,417	109,451	47,131	44,662	60,236	32,905	18,214
Operating margin (%)								
Historical	5.43	4.46	3.52	4.66	1.59	1.55	1.78	4.19
Projected	5.03	6.89	3.42	2.90	2.52	1.95	1.75	5.08
Excess margin (%)								
Historical	8.95	5.62	4.64	7.11	3.84	3.63	4.13	4.95
Projected	8.52	9.29	3.42	5.43	4.23	3.94	3.43	6.18
Debt service coverage (x)								
Historical	3.45	2.00	2.61	3.35	2.14	2.44	1.75	1.68
Projected	4.85	2.89	3.52	4.05	3.09	2.56	2.14	2.62
Debt service/revenues (%)								
Historical	4.74	5.45	4.03	4.30	6.30	5.69	8.77	9.45
Projected	3.71	5.04	2.81	3.83	5.84	5.32	8.21	6.75
Quick ratio								
Historical	4.27	2.17	2.28	3.59	2.48	2.36	2.32	2.06
Projected	4.03	2.59	3.01	4.54	3.49	2.42	2.65	3.84
Cash flow								
Historical	35.95	19.89	21.27	44.07	14.84	16.09	11.39	19.01
Projected	29.84	21.15	21.60	27.05	19.19	14.13	11.85	14.25
Days cash on hand								
Historical	227.18	82.21	67.53	120.81	68.72	82.28	58.75	28.46
Projected	181.61	120.58	68.70	176.63	88.43	100.74	64.01	63.59
Cushion ratio								
Historical	9.81	3.33	3.72	5.31	2.20	4.65	1.57	1.28
Projected	8.35	4.44	7.02	10.47	4.13	4.78	2.08	2.02
Debt/plant (%)								
Historical	41.34	64.37	70.47	46.04	73.80	88.28	78.97	78.30
Projected	48.74	68.80	62.46	66.90	82.64	89.49	85.45	100.54
Debt/capitalization (%)								
Historical	26.11	40.96	36.49	23.59	43.44	47.86	49.55	47.63
Projected	30.76	46.96	32.53	31.46	46.68	45.19	55.89	59.77
Days accounts receivable								
Historical	57.61	81.18	74.01	68.55	73.84	61.89	65.93	64.95
Projected	53.83	81.00	73.70	60.14	79.51	52.00	64.33	77.19
Return on assets (%)								
Historical	7.02	4.29	4.29	6.98	3.16	3.41	3.07	4.79
Projected	5.02	5.55	3.95	4.10	4.47	3.19	1.82	4.57
Capital expense (%)								
Historical	8.15	6.88	8.57	7.81	11.14	10.51	12.64	11.81
Projected	8.81	9.70	8.32	9.20	12.61	10.45	12.66	14.91

* Historical-last audited fiscal year. Projected-first full year after project completion or first full year after refinancing. Based on hospitals rated during 1988. Projected ratios are based on financial forecasts for hospitals rated during 1988. Hospital systems with three or more facilities are excluded from the sample.

GLOSSARY

Board-desig. funds: unrestricted reasonably liquid investments
Capital expenses: ((interest + depreciation) + operating expenses) x 100
Cash flow: ((excess income + depreciation expense) + (current liabilities + L-T debt)) x 100
Contractual allowances: difference between charges and the amt. actually reimbursed by third-party payors
Cushion ratio: (Cash and investments + board-desig. funds) + max. annual debt service
Days cash on hand: (Cash and investments: + board-desig funds) + ((oper. expense – depreciation expense)÷365)
Days in accts. receivable (DAR): (net accts. receivable x 365) + net patient revs.
Debt/capitalization: (L-T debt + (fund bal. + L-T debt)) x 100
Debt/plant: (L-T debt + net prop. plant and equip.) x 100
Debt service coverage: net available + max. annual debt service
Debt service as % of revs.: (max. annual debt service + (total oper. rev. + net nonoper. revs.)) x 100
Excess income: oper. income + net nonoper. revs.
Excess margin: (excess income + (total oper. rev. + net nonoper. rev.)) x 100
Expenses: oper. expenses including interest, depreciation, and amortization
Gross revs.: gross rev. from patient services
Length of stay: patient days + admissions
Net available: excess income + depreciation + amortization + interest
Net patient rev.: gross revs. - (contractual allowances + provision for charity and uncollectible accts.)
Occupancy (%): (patient days + (beds in service x 365)) x 100
Oper. income: total oper. rev. - expenses
Oper. margin: (oper. income + total oper. revs.) x 100
Quick ratio: (cash and investments + accounts receivable + board-desig. funds) + current liabilities
Return on assets: (excess income + total assets) x 100

Multihospital system ratios

The table below summarizes the financial position of not-for-profit multihospital systems in 1987 and 1988 using median ratios. A comparable table for 1986 and 1987 appears in the Jan. 2, 1989 *CreditWeek*. Systems included in this group are composed of three or more not-for-profit acute care hospitals that demonstrate a significant degree of both geographic and financial risk dispersion. The 1987 ratios have not been recalculated for rating changes that occurred in 1988. In addition, these ratios may not correlate precisely with a rating category due to the small sample size and because other nonfinancial benefits, which may be derived from system membership, are not reflected.

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Not-for-profit multihospital system ratios
Medians by rating category

	AA		AA–		A+		A		A–		BBB+		BBB–	
	1988	1987	1988	1987	1988	1987	1988	1987	1988	1987	1988	1987	1988	1987
Sample size	6	4	1	1	11	10	5	3	6	7	2	3	1	1
Beds	1351	2553	3563	3377	1635	1614	1671	1689	1262	1395	1591	1589	930	930
Average length of stay (days)	7.77	7.12	5.69	5.86	6.52	6.41	7.16	7.40	6.80	6.75	6.74	6.95	5.40	5.69
Occupancy (%)	78.07	71.10	59.47	58.80	71.00	70.16	69.30	68.00	65.20	59.10	59.98	58.25	55.70	60.26
Total oper. and non oper. rev. ($000)	471,645	622,860	897,548	815,832	487,409	362,283	371,611	345,156	215,477	207,280	300,214	247,075	164,901	175,627
Oper. margin (%)	3.21	4.61	3.84	3.78	3.43	4.10	2.98	2.83	0.67	1.99	1.50	(0.13)	(9.20)	(6.36)
Excess margin (%)	4.97	7.08	3.81	3.86	3.68	4.75	2.73	4.35	2.45	3.27	1.85	0.83	(10.17)	(5.13)
Debt serv. cov. (x)	3.11	3.29	2.34	2.12	2.25	2.36	2.79	3.33	2.35	2.08	2.24	1.33	0.36	0.60
Debt serv./rev. (%)	4.23	4.65	5.61	6.17	5.15	5.52	5.14	5.40	5.76	6.79	6.68	6.58	11.19	10.51
Quick ratio (x)	2.72	2.93	2.13	2.10	2.68	2.32	2.08	2.77	2.48	2.18	1.84	1.65	1.07	1.14
Cash on hand (days)	119.88	123.84	38.41	32.96	90.54	89.18	75.93	84.67	80.32	78.04	35.76	38.93	19.68	20.09
Cushion ratio (x)	7.75	6.50	1.71	1.31	4.14	3.68	3.36	3.88	3.48	2.98	1.34	0.93	0.50	0.52
Debt/plant (%)	74.04	76.53	67.43	66.02	81.54	90.32	76.36	82.19	83.34	80.26	108.85	103.93	136.20	101.08
Debt/cap. (%)	41.25	40.42	39.86	40.64	48.78	49.74	48.42	48.83	48.49	52.02	66.71	61.45	86.74	65.44
Days in accounts receivable	60.21	56.83	82.37	82.74	72.93	75.75	71.80	65.11	71.10	69.20	78.90	81.10	64.95	58.52
Ret. on assets (%)	3.95	4.72	3.19	3.10	3.63	3.95	1.92	3.65	1.98	2.83	1.47	0.92	(7.31)	(4.33)
Ret. on equity (%)	7.91	11.14	6.07	5.92	6.66	7.65	4.58	9.05	4.56	6.51	5.22	3.05	(65.69)	(15.01)
Cash flow/total debt (%)	16.99	20.78	18.13	17.44	16.81	15.41	12.60	16.04	12.44	12.24	8.61	8.37	(2.74)	1.29

Glossary

Average length of stay (ALOS): patient days ÷ admissions
Board-designated funds: unrestricted reasonably liquid investments
Cash flow to total debt: [(excess income + depreciation expense) ÷ (current liabilities + long-term debt)] X 100
Contractual allowances: difference between charges and the amount actually reimbursed by third-party payors
Contractual allowance: (contractual allowances ÷ gross revenues) X 100
Cushion ratio: (cash and investments + board-designated funds) ÷ maximum annual debt service
Days cash on hand: (cash and investments + board-designated funds) ÷ [(operating expense – depreciation expense) ÷ 365]
Days in accounts receivable (DAR): (net accounts receivable X 365) ÷ net patient revenues
Debt/capitalization: [long-term debt ÷ (fund balance + long-term debt)] X 100
Debt/plant: (long-term debt ÷ net property plant and equipment) X 100
Debt service coverage: net available ÷ maximum annual debt service
Debt service as % of revenues: [maximum annual debt service ÷ (total operating revenues + net nonoperating revenues)] X 100
Excess income: operating income + net nonoperating revenues
Excess margin: [excess income ÷ (total operating revenues + net nonoperating revenues)] X 100
Expenses: operating expenses including interest, depreciation, and amortization
Gross revenues: gross revenues from patient services
Net available: excess income + interest + depreciation + amortization
Net patient revenues: gross revenues – (contractual allowances + provision for charity and uncollectible accounts)
Occupancy (%): [patient days ÷ (beds in service X 365)] X 100
Operating income: total operating revenues – expenses
Operating margin: (operating income ÷ total operating revenues) X 100
Quick ratio: (cash and investments + board-designated funds + accounts receivable) ÷ current liabilities
Return on assets: (excess income ÷ total assets) X 100
Return on equity: (excess income ÷ fund balance) X 100
Total operating revenues: net revenues + other operating revenues

CreditComment

Not-for-profit hospital ratios

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Projected	48.74	68.80	62.46	66.90	82.64	89.49	85.45	100.54
Debt/capitalization (%)								
Historical	26.11	40.96	36.49	23.59	43.44	47.86	49.55	47.63
Projected	30.76	46.96	32.53	31.46	46.68	45.19	55.89	59.77
Days accounts receivable								
Historical	57.61	81.18	74.01	68.55	73.84	61.89	65.93	64.95
Projected	53.83	81.00	73.70	60.14	79.51	52.00	64.33	77.19
Return on assets (%)								
Historical	7.02	4.29	4.29	6.98	3.16	3.41	3.07	4.79
Projected	5.02	5.55	3.95	4.10	4.47	3.19	1.82	4.57
Capital expense (%)								
Historical	8.15	6.88	8.57	7.81	11.14	10.51	12.64	11.81
Projected	8.81	9.70	8.32	9.20	12.61	10.45	12.66	14.91

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