Predicting Financial Distress And Bankruptcy For Hospitals

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Abstract

Five upstate New York hospitals were examined to identify a common pattern that might portend future financial distress, bankruptcy, or even closure. A four year period was examined for each of the hospitals selected that had either closed, declared bankruptcy or experienced financial distress during the period. Various financial variables were studied, including liquidity, leverage, profitability and efficiency. Utilizing previous studies on predicting financial failure and the findings of this study, various models are developed to determine if such prediction was possible for the five hospitals in this study. This study presents (1) the key indicators that were consistent in rendering the facilities financially distressed, and (2) the four year pattern of financial indicators.

Introduction

*I*n the 11 year period from 1990 until 2000, 504 hospitals in the United States closed. Of this total 208 were in rural areas, or 7.8% of all rural hospitals; and 296 in urban areas, or 10.6% of all urban hospitals. (OEI 04-02-00610, 2003; and OEI 04-02-00611, 2003) Over this time period the Office of Evaluation and Inspection interviewed key persons associated with each of the closed facilities. Although each hospital's circumstances for closure were a composite of different external and internal environmental conditions, making its reasons for closure unique, several factors are found in common, including:

- The closures were business related decisions such as relocations, consolidations, or mergers;
- The hospitals had a low number of patients as measured by occupancy or average daily census;
- The hospitals experienced rising costs and lagging revenues; and
- Competition was a significant factor for urban hospitals, but a factor as well for rural hospitals.

(OEI 04-02-00610, 2003; and OEI 04-02-00611, 2003)

In 2001, a University of California – Berkeley report requested by the California Attorney General reported that financial problems were the single most common reason for the closure of 23 California hospitals between 1995 and 2000. The report noted, "… each of the closed hospitals experienced declining reimbursements, income per bed and utilization in the year prior to closure. As a group, they performed worse financially than the state's operating general acute care hospitals did in 1999." (Berkeley (2001)

The purpose of this study of New York State hospitals was to examine financial indicators over a period of time to determine financial viability or potential failure. The four year period 1998–2001 – of audited financial statements of five Upstate New York hospitals were the basis of the study. The following hospitals were selected for the study:
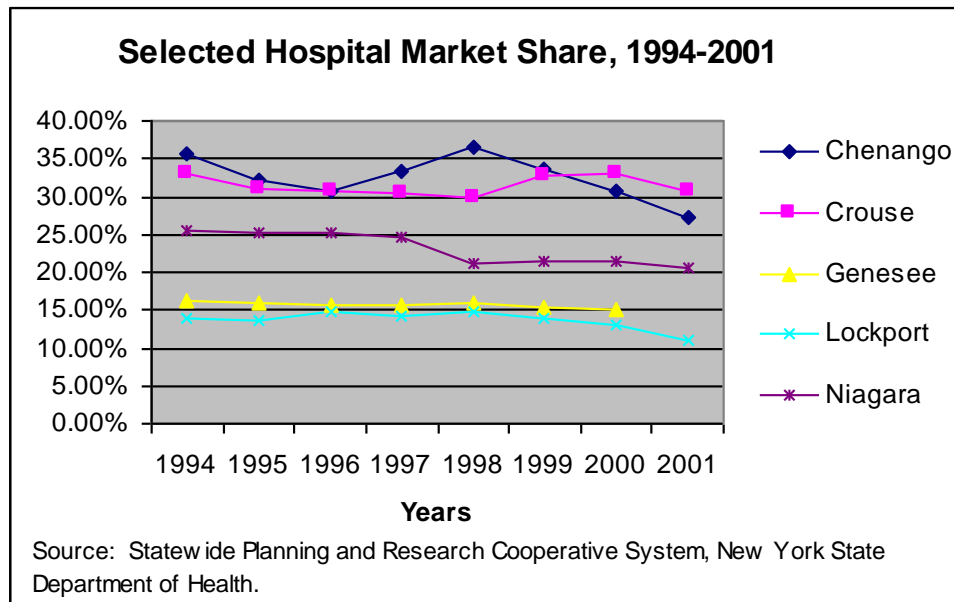
- Genesee Hospital, Rochester, NY, closed in 2001 after suffering substantial financial setbacks;
- Crouse Hospital, Syracuse, NY, filed for bankruptcy in 2001 after suffering substantial financial deficiencies;

- Niagara Falls Memorial Medical Center, Niagara Falls, NY, was operating with several negative financial ratios in one or more of the study years;
- Lockport Memorial Hospital, Lockport, NY, was operating with several negative financial ratios in one or more of the study years; and
- Chenango Memorial Hospital, Norwich, NY was operating with several negative financial ratios in one or more of the study years.

Examining the four year trend of various financial indicators of these hospitals helps determine the commonality of factors that may lead to financial failure of these organizations.

Consistent with the findings of the Office of Evaluation and Inspection, we found both a declining market share of residents in the county they reside, and declining numbers of patients as measured by the average daily census.

Figure 1

Selected Hospital Market Share, 1994-2001

Source: Statewide Planning and Research Cooperative System, New York State Department of Health.

Market share as an indicator of the competitive environment showed a declining trend for each hospital in our study group. It is important to note that market share can be maintained even in an atmosphere of overall hospital utilization decline. However, an erosion of market share suggests that an organization is losing appeal to area residents and, equally as important, the physicians who admit them.

The average daily census is a measure of the number of patients in the facility, on average, any given day of the year. It is a better measure of use than occupancy, as occupancy can be manipulated by changing bed capacity. Average daily census, on the other hand, has a direct impact on patient revenue and declining average daily census is indicative of a weak market position.

Figure 2
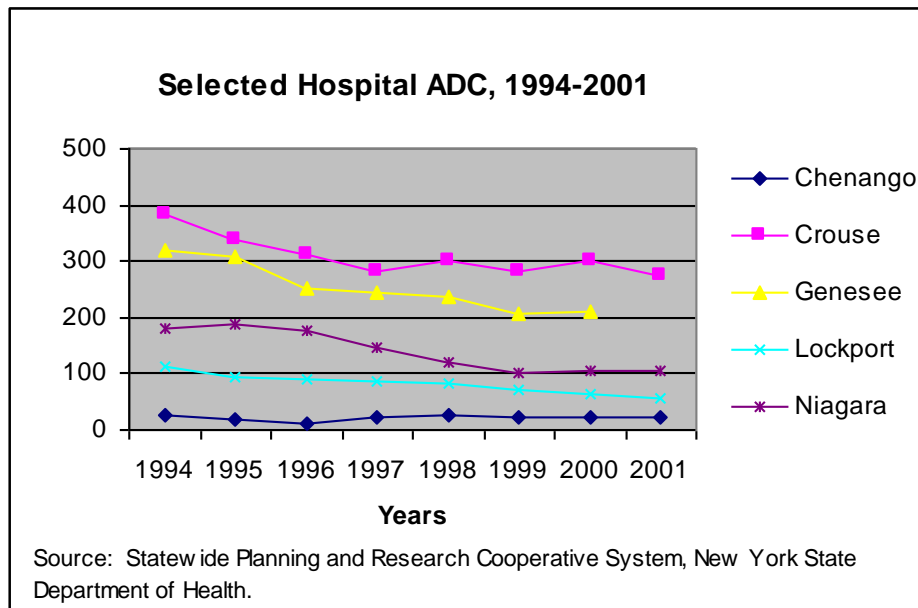
The remainder of this paper focuses on the financial indicators of hospital financial distress.

Methodology

A thorough examination of the financial audits for the years 1998 – 2001 was undertaken, and various studies undertaken by other investigators were reviewed to glean salient points of those authors in their review of causation of hospital closures. (Gardiner, Oswald and Herera 1996; Drain, Godkin, and Valentine 2001; and Drain and Godkin 1996)

Also utilized in this study was data from Gapenski and Cleverly, health care finance texts that are important to understanding hospital finances. (Gapenski 1998; and Cleverly 1997)

Data Analysis

Drain et al's paper on hospital closure and the use of financial and non-financial indicators, along with their statistical analyses was carefully examined for its practical application as a predictor of closure; and while appropriate for an academic exercise, it was felt that this theoretical model would not optimally serve the health care practitioner and was not used in this study (Drain (1996, 2000)).

Gardiner et al's model for predicting hospital failure and the University of California study highlighted various financial indicators and proved to be indicative of financial success or failure were deemed practitioner oriented, and therefore utilized for the financial analysis of the five hospitals in this paper. Further guidance from Cleverly, provided significant information for this study. (Gardiner (1996); Berkley (2001); and Cleverly (1997)

Study and Findings

In the Gardiner paper, the authors utilized various financial and non-financial indicators, and then applied a discriminate analysis as the predictive methodology. Table 1 provides only the financial indicators that modeled this study. No statistical analysis was performed on this data.

Table 1. Selected Ratios of Study Hospitals, 1998-2001

	1998	1999	2000	2001	Study Open Hospitals	1999 CHIPS National Median
LIQUITIDITY: (Cash Flow to Total Debt)						
(Excess of revenue over expenses + depreciation)/total debt						
Gen. Hosp - Closed 2001	(21.06)	2.19	(29.75)	CLOSED		
Crouse - Bankruptcy 2001 - Open	10.53	0.20	(23.99)	(15.62)		
Nia. Falls - Open	(8.35)	(1.86)	6.19	(3.54)	25.2	21.0
Lockport Mem. Hospital-Open	(29.7)	(9.6)	13.1	9.7		
Chenango Mem. Hospital-Open	(3.8)	(48.5)	14.4	(1.2)		
PROFITABILITY: (Equity Financing)						
(Total Net Assets)/Total Assets						
Gen. Hosp - Closed 2001	32.19	29.99	8.23	CLOSED		
Crouse - Bankruptcy 2001 - Open	27.45	21.10	15.03	(3.03)		
Nia. Falls - Open	(10.30)	(21.39)	(18.51)	(43.18)	62.5	38.0
Lockport Mem. Hospital-Open	(20.46)	(43.86)	(44.55)	(51.69)		
Chenango Mem. Hospital-Open	32.31	(0.14)	6.15	(1.84)		
LEVERAGE: (Long-term debt per bed)						
Long-term liability/hospital bed size						
Gen. Hosp - Closed 2001	150,664	165,923	282,565	CLOSED		
Crouse - Bankruptcy 2001 - Open	159,094	176,588	167,675	268,898		
Nia. Falls - Open	81,070	87,197	91,007	103,303	35,903	
Lockport Mem. Hospital - Open	128,770	129,132	125,331	113,480		
Chenango Mem. Hospital - Open	52,704	54,090	52,417	46,125		

Sources: Internal Revenue Service Form 990, 1998-2001; Gardiner, L., Oswald, G. and Jahera, J. 1996. Prediction of Hospital Failure: A Post-PPS Analysis. Hospitals & Health Services Administration (Winter); and The Center for Healthcare Industry Performance Studies.

For the three financial ratios, Liquidity, Profitability, and Leverage, all five hospitals' results for years studied did not approach the levels required for financial health as stated in the Gardiner paper.

The Center for Healthcare Industry Performance Studies (CHIPS) produces financial benchmarks for the hospital industry, and in examining their norms for Liquidity and Profitability, it is also evident that none of the hospitals approached these benchmarks during the four year period.(Cleverly, (1997))

Findings from this first analysis show that by comparing Gardiner's norms and CHIPS data to the hospitals under study, it is evident in 1998 that all five hospitals were facing severe financial challenges. By 1999, serious issues appear for all five hospitals:

- All hospitals experienced declining liquidity problems;
- All hospitals continued to face red ink and declining profitability; and
- All hospitals demonstrated significant declines in all debt coverage and leverage ratios.

Many facts were noted in the Berkeley (2001) study. Three years prior to closure the mean operating margin, based on income from patient care, was –4.5%. The mean total margin, assisted by non-operating income, improved but was still low at 1.0%

- Hospitals' profitability sharply declined one and two years prior to closure, with the mean total margin dropping below –9% two years prior to closure and below –20% one year prior to closure;
- Hospital bankruptcy is a key indicator of closure. Insolvency is established if the fair market value of an organization's assets were less than their liabilities, leaving them with negative equity; and
- Other financial ratios as indicators of closure include: profitability, fixed asset efficiency, capital structure, and liquidity/working capital efficiency.

The study notes that interpretation of univariate statistics for the group of closed hospitals, e.g. means and medians, was difficult due to the small sample size and considerable volatility in the data as reflected by high standard deviations. However, trends for the ratios in each category were consistent in that each measure moved in a negative direction, i.e., a direction indicative of poorer financial performance, over the three-year period.

Table 2 provides a four year analysis of the 5 hospitals, utilizing this approach. During the four year period none of the five hospitals reached the CHIPS National Median for Total Margin, Return on Equity, Equity Financing or Cash Flow to Debt.

Genesee Hospital's results confirms the Berkely study's observations on profitability – in 1998 Total Margin was -.17.7; in 1999 it was –3.4; and in 2000 it was –35.4%.

The rest of the ratios did not meet the CHIPS national median point for any of the four years. Even though 1999 Net Loss improved from $25million in 1998 to$5.5million in 1999, the 2000 net loss rose to $47.5 million; and all indicators predicted that closure was inevitable.

Crouse Hospital, while not experiencing negative operating margin in 1998, three years prior to filing bankruptcy, demonstrated severe financial weakness in 1999, increasing dramatically in 2000. The 2001 financial results validates the bankruptcy filing, and lacking a government bailout, based on the Berkely analysis, Crouse will either close or be merged with another hospital organization.

Niagara Falls Memorial Medical Center's 1998 Operating Margins indicate, according to the Berkely study, that it most likely will close. While the 1999 and 2000 Operating Margins have shown improvement, the 2001 margin decreased significantly. Its' negative equity position would indicate insolvency and imminent closure

Lockport Memorial Hospital has had negative ratios in all four categories for most of the four year period. Only Cash Flow to Debt ratio has been positive in 2000 and 2001. Again, based on the Berkely study, this hospital would also appear to be in imminent danger of closing in the near future.

Chenango Memorial Hospital, while demonstrating some renewed success in 2000, returns to negative ratio results in all four ratios in 2001, as occurred in 1998 and 1999. This hospital as well, in accordance with the Berkely study, will face the strong possibility of closure in the near future.

Conclusion

The Board of Directors of not-for-profit hospitals have a fiduciary responsibility – a public position of trust – to protect and preserve the assets of the organization it serves. In all five situations, it appears that this fiduciary responsibility has been abrogated. All five institutions were or are in a financial crisis. Lack of governance oversight and weak management resulted in one hospital closing and four more that most likely will close. Bankruptcy has protected Crouse from foreclosure and Niagara Falls is kept open only by a benevolent creditor.

Table 2. Selected Ratios of Study Hospitals, 1998-2001					
	CHIPS National Median	**1998**	**1999**	**2000**	**2001**
A. PROFITABILITY					
TOTAL MARGIN					
Genesee Hospital		(0.17)	(0.03)	(0.35)	CLOSED
Crouse Hospital	3.8	0.02	(0.03)	(0.18)	(0.12)
Niagara Falls Memorial Medical Center	=====	(0.09)	(0.07)	(0.01)	(0.07)
Lockport Memorial Hospital		(0.24)	(0.14)	(0.00)	(0.02)
Chenango Memorial Hospital		(0.06)	(0.33)	0.02	(0.05)
RETURN ON EQUITY					
Genesee Hospital		(0.48)	(0.11)	(3.42)	CLOSED
Crouse Hospital	0.074	0.10	(0.20)	(1.58)	0.00
Niagara Falls Memorial Medical Center	=====	0.00	0.00	0.00	0.00
Lockport Memorial Hospital		0.00	0.00	0.00	0.00
Chenango Memorial Hospital		(0.20)	0.00	0.49	0.00
B. CAPITAL STRUCTURE					
EQUITY FINANCING					
Genesee Hospital		0.32	0.30	0.08	CLOSED
Crouse Hospital	0.52	0.27	0.21	0.15	(0.03)
Niagara Falls Memorial Medical Center	=====	(0.10)	(0.21)	(0.19)	(0.43)
Lockport Memorial Hospital		(0.20)	(0.44)	(0.45)	(0.52)
Chenango Memorial Hospital		0.32	(0.00)	0.06	(0.02)
CASH FLOW TO DEBT					
Genesee Hospital		(0.21)	0.02	(0.30)	CLOSED
Crouse Hospital	0.21	0.11	0.00	(0.24)	(0.16)
Niagara Falls Memorial Medical Center	=====	(0.08)	(0.02)	0.06	(0.04)
Lockport Memorial Hospital		(0.16)	(0.06)	0.08	0.06
Chenango Memorial Hospital		(0.04)	(0.49)	0.17	(0.02)

Sources: Internal Revenue Service Form 990, 1998-2001; Gardiner, L., Oswald, G. and Jahera, J. 1996. Prediction of Hospital Failure: A Post-PPS Analysis. Hospitals & Health Services Administration (Winter); and The Center for Healthcare Industry Performance Studies.

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Notes

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