

An empirical investigation of changes in charity care spending by nonprofit hospitals in response to mandatory threshold law

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ABSTRACT

The academic community has witnessed considerable debate over the performance of for-profit and nonprofit hospitals. U.S. hospitals were created as charitable institutions and even now, nonprofit hospitals are still the bedrock of U.S. general care. Policymakers have begun to question the tax advantages provided to nonprofit hospitals. Currently, 18 states have enacted legislation which addresses charity care and community benefits, with the most stringent legislation in Texas. Texas was the first state to pass legislation which requires nonprofit hospitals to meet a specific percentage of community benefits in order to retain their tax-exempt status. In 1993, they enacted legislation which requires nonprofit hospitals to meet specific criteria; the primary criteria requiring spending on charity care and government-sponsored indigent healthcare are equal to at least four percent of net patient revenue. Two years later, the Texas legislature modified this law to allow the deduction of bad debts to be included in the calculation of net patient revenue, in accordance with GAAP. The effect of this change would be to lower the threshold required by the Texas law.

This study tests the effects of the changes in Texas law on charity care spending by nonprofit hospitals by examining their spending patterns between 1992 through 1997. Grounded in agency theory and altruism, results show that nonprofit hospitals whose spending was below the threshold prior to the initial law establishing specific criteria increased their spending to at least the required threshold. However, hospitals that were already above the threshold reduced their spending on charity care, though not to a significant degree. Similarly, once the threshold was lowered due to consideration of bad debts, nonprofit hospital spending followed suit, slightly reducing their spending.

An Empirical Investigation of Changes in Charity Care Spending by Nonprofit Hospitals in Response to Mandatory Threshold Law

INTRODUCTION

U.S. hospitals were created as charitable institutions. At the time of their inception, they existed as substitutes for physician visits for the poor and needy. Hence, all U.S. hospitals were nonprofit until the 20th century. Even now, nonprofit hospitals are still the bedrock of U.S. general care (Starr 1982; Wood 2001). The advent of managed healthcare, the rising cost of health insurance, and an increasing number of for-profit hospitals raise concerns that these economic pressures are squeezing hospital finances and are making it more difficult to provide charity care.

Economic incentives for nonprofit hospitals to provide charity care were provided by the federal legislature through favorable tax treatment under Section 501(c)(3) of the Internal Revenue Code (IRC). In 1956, the IRC required hospitals to engage in charity care to maintain their nonprofit status. This requirement usually amounted to providing charity care to five percent of patients. In 1969, the IRS did away with previous requirements for nonprofit hospitals to maintain tax exemption, but still required nonprofits to operate an emergency room that turned no one down because of financial indigence. In 1983, the IRS did away with this emergency room requirement altogether.

The primary goal of the tax law was to make nonprofit hospitals more accountable for their charity care obligations (Bryce 2001). The expectation of the law was that nonprofit hospitals provide necessary charity care in exchange for a federal tax exemption. This presents the classic moral hazard situation where the principal (government) expects an unspecified level of charity care to be performed by the agent (hospital) in exchange for tax exemption. The

purpose of this contractual relationship was to enable a large portion of charity care costs to be paid out of the private sector rather than the sole responsibility falling to the government. The moral hazard exists in that the agent has private knowledge concerning transactions and records and there is a dependency by the government upon the hospital to maintain and report accurate records (Blankley and Forgione 1996).

Nonprofit hospitals often fall short of this obligation (Morrisey, Wedig, and Hassan 1996; Nicholson et al. 2000), however, and both policymakers and researchers have begun to question the tax advantages provided to nonprofit hospitals (Reinhardt 2000). The changing healthcare environment has provided multiple challenges for hospitals. Market entry by for-profit hospitals, the rising cost of health insurance, tightening of Medicare and increasing use of managed care systems have begun to squeeze hospital budgets making it more difficult to provide established levels of charity care (Mann et al. 1995). The IRS has aggressively pursued examinations of nonprofit healthcare organizations (Bain, Blankley, and Forgione 2001; Pelfrey and Theisen 1996). As a result, in 1985, the Utah Supreme Court revoked Intermountain Health Care's tax exempt status because it failed to provide an adequate level of community benefits. Similarly, the Illinois Department of Revenue revoked Provena Covenant Medical Center's tax exempt status in February 2004, because county tax authorities claimed that the Medical Center was not behaving like a charitable institution (Schneider 2004).

Over the past 30 years, the hospital industry has witnessed an influx of for-profit providers. Bain et al. (2001) cite "improved access to capital, increased operational efficiencies, increased executive compensation, employee stock ownership and profit sharing" as reasons for increased privatization. In 2000, 86% of all U.S. hospitals were nonprofit, while 14% were for-profit providers. While at first glance this figure may not appear to significantly alter the

industry, researchers suggest that this influx of for-profit hospitals is indicative of the nationwide trend towards a profit-oriented health care system (Goodrick, Meindl, and Flood 1997). Others theorize that this influx of for-profit hospitals is putting market pressure on nonprofits to abandon their charitable goals and behave like for-profits in order to stay in business (Bloche 1998; Culliton 1986; Frank and Salkever 2000; Goodrick, Meindl, and Flood 1997; Melnick, Keeler, and Zwanzinger 1999; Stevens 1989).

As of 1990, the General Accounting Officer (GAO) reported at least 17 states that had enacted legislation linking tax exempt status and nonprofit hospital behavior (Hassan, Wedig, and Morrissey 2000). In 1993, the Texas legislature enacted a law requiring compliance with one of four criteria to maintain tax-exempt status. Considered one of the most stringent guidelines (Bryce 2001), it was the first to include a threshold of spending on charity care based on a percent of net patient revenues. In 1995, the Texas legislature allowed the inclusion of bad debts as a deduction in the calculation of net patient revenues in accordance with Generally Accepted Accounting Principles (GAAP). This change in calculation effectively lowers the qualifying threshold and has created concern that it has allowed erosion of spending on charity care.

This study contributes to the literature in two ways. It is the first attempt to examine the impact on charity care spending of multiple legislative changes affecting legal obligations and reporting on one set of hospitals over time. It also considers the potential impact of accounting regulations on charity care spending. There are also implications for public policy because there is a continual dialogue in the public forum over concern for the uninsured and the high cost of providing healthcare. Even though the data for this study is from the 1990s, other states are considering similar legislation using thresholds. A current example is a proposal by an Ohio lawmaker in 2003 to establish a threshold requirement of 4% of total patient revenue to be spent

providing charity care (Reilly 2003). This study offers useful insight into the long-term effects of this type of change.

This paper is organized as follows. First, backgrounds in prior research concerning charity care, as well as, the Texas law changes are discussed. Next, agency theory and altruism are discussed and hypotheses are developed, followed by methodology and discussion of results. Finally, implications for theory and practice are summarized in the conclusion.

Texas Law and Charity Care

Definitions of charity care are varied and make it difficult for researchers to consistently examine issues. Most researchers use a combination of pure charity care plus bad debt as the measure of uncompensated care (Dyer, Adesina, and Kagan 2001; Morrissey, Wedig, and Hassan 1996). Though this measure has provided a certain amount of consistency across studies, the inclusion of bad debts most certainly includes not only those patients who are unable to pay, but also those who are unwilling to pay. However, hospital records are not normally detailed enough nor do reporting requirements necessitate such distinctions.

Texas is an exception in that the law passed in 1993 contains a narrow description of charity care. According to Section 311.031 of the Health and Safety Code, charity care means the unreimbursed cost to a hospital of “providing, funding, or otherwise financially supporting health care services on an inpatient or outpatient basis to persons classified” as financially or medically indigent. Financially indigent refers to uninsured or underinsured who is accepted for care with no obligation or a discounted obligation to pay for the services rendered based on the hospital’s eligibility system. Medically indigent refers to those whose medical or hospital bills after payment by third-party payers exceed a specified percentage of the patient’s annual gross income, determined in accordance with the hospital’s eligibility system, and the person is

financially unable to pay the remaining bill. The specific formula is discussed in more detail in the methodology section later in this paper. The intent of the law is to establish a floor of care specifically for the financially and medically indigent.

Texas was the first state to pass legislation that requires nonprofit hospitals to meet a specific percentage of community benefits in order to retain their tax-exempt status. Nonprofit hospitals must satisfy one or more of the following criteria:

- A. Charity care and government-sponsored indigent health care are provided at a level which is reasonable in relation to community needs, as determined through the community needs assessment, the available resources of the hospital, and the tax-exempt benefits received by the hospital;
- B. Charity care and government-sponsored indigent health care are provided in an amount equal to at least four percent of the hospital's net patient revenue;
- C. Charity care and government-sponsored indigent health care are provided in an amount equal to at least 100 percent of the hospital's tax-exempt benefits, excluding federal income tax;
- D. Charity care and community benefits are provided in a combined amount equal to at least five percent of the hospital's net patient revenue, provided that charity care and government-sponsored indigent health care are provided in an amount equal to at least three percent of net patient revenue. (In 1995, this last criteria was to change to read "at least four percent of net patient revenue")

Hospitals are allowed to select the mix of community service needs and consider their own capacity constraints when choosing the criteria with which to comply. However, hospital administrators expressed concern that bad debts were not considered as qualifying charity care

costs. In 1995, the law was amended to allow the deduction of bad debts in the calculation of net patient revenue in accordance to Generally Accepted Accounting Principles (GAAP).

Effectively, this reduces the dollar amount that nonprofits are required to spend on charity care.

In addition to the Texas legislature enacting a law that specifically links the provision of charity care to beneficial tax treatment, it also requires that each hospital file a standardized report within 120 days of year end. This report requires explicit, separate reporting of government-sponsored indigent care and bad debts. This study uses this detail to test changes in spending on government-sponsored indigent care before and after the 1993 law, as well as the 1995 law.

To summarize, Texas passed legislation in 1993 linking continued tax-exempt status with standards providing specified levels of charity care. Though the standards allow latitude in the category and mix of services provided to the community, the underlying intent was to provide a standard of care specifically for the financially and medically indigent. The 1995 law amendment allowed, through application of GAAP, consideration for bad debts. One effect of the change is to broaden the scope of costs that are included in calculating the qualifying uncompensated charity care costs. Secondly, since the calculation is based on audited financial statements, fiscal year-ends other than a calendar year-end create an oversight problem and lags in reporting, making comparisons across hospitals difficult. Each of these legislative changes provides incentives for hospitals to adjust their strategy for charity care spending.

Prior research identifies several factors that affect spending on uncompensated care. Studies of California hospitals find that severe fiscal pressures are associated with reduced spending on charity care and Gruber (1994) finds a similar effect from increased price shopping for private hospitals. Hospitals in more concentrated markets provide more charity care (Mann et

al. 1995; Thorpe and Phelps 1991), while the presence of public hospitals in a market reduces private hospitals' provision of charity care (Thorpe and Phelps 1991). Hospital ownership (Norton and Staiger 1994), size (Morrisey, Wedig, and Hassan 1996), presence of an emergency room (Herzlinger and Krasker 1987), and location (Hassan, Wedig, and Morrisey 2000) also have been shown to influence the level of charity care spending.

Theory

This study focuses on changes in the level of charity care spending before and after each of these law changes. As hospitals consider changes to their level of charity care spending, two alternative theories may guide their behavior: agency theory and altruism.

Agency Theory

The relationship between the government and nonprofit hospitals is that of a principal (government) and agent (nonprofit hospital). Agency theory assumes that the agents are utility maximizers striving for increased wealth with minimal cost or effort (Baiman 1990). In order to align the interests of agent and principal, contractual performance and incentive agreements are typically put in place. A dilemma of moral hazard exists when the agent has incentive to use private information and latitude to make decisions in the absence of specific oversight by the principal.

Agency theory has been specifically adapted for nonprofit hospitals (Forgione and Giroux, 1989; Wallace 1987). In this particular setting, the government (principal) provides favorable tax benefits to nonprofit hospitals in exchange for the hospitals expending resources on providing adequate charity care to the community. With increasing market pressures arising from for-profit hospitals and tightening controls in the healthcare industry, similar pressure is placed on hospitals to be discrete with the usage of the limited resources. Thus, in the absence of direct

government control, hospitals are motivated to reduce their level of spending on charity care.

The Texas legislation established a stated level of spending and reporting in order to mitigate the risk of the moral hazard situation and make more transparent transactions of nonprofit hospitals.

Altruism

Altruism is considered to be “the performance of cooperative unselfish acts beneficial to others (624)”(Jones 2002). Its impact on medical services has been studied in several contexts, such as participation in experimental trials and organ donation. Physicians exhibit behavior that may be considered altruistic when they consult with patients outside normal working hours or provide free medical care (Seelig and Dobbelle 2001). According to Schlesinger et al. (1997), it is likely that the nonpecuniary mission of nonprofit hospitals (as opposed to for-profit hospitals) influences their decisions to treat uninsured patients even if cost recovery is unlikely. This tendency may also be due to the self-selection of altruistic healthcare professionals into nonprofit settings.

Frank and Salkever (1991) suggest two altruistic models of behavior. ‘Pure altruism’ suggests that nonprofit hospitals would only be concerned that indigents receive medical care. Therefore, the hospital’s supply of charity care will increase or decrease along with community need. ‘Impure altruism’ is a function of the level of community need, as well as, which facility receives credit for providing the necessary care. In this case, the level of charity care provided by a nonprofit hospital increases with increasing competition in an effort to distinguish itself and maintain its status in the community. Using survey data drawn from a national database of hospitals, Schlesinger et al. (1997) found that pure altruism appears to motivate provision of uncompensated care, while impure altruism appears to influence the availability of marginally profitable services.

Hypothesis Development

Prior to establishing a benchmark with the 1993 law, Texas nonprofit hospitals were left to their own judgment when establishing the level of indigent services offered to the community. Passage of the 1993 law making nonprofit hospitals in Texas accountable for a minimum level of charity care established the first performance benchmark. In keeping with agency theory, it is in the nonprofit hospital's self-interest to adjust their spending on charity care to comply with the law and to maintain their tax benefits. There is, however, no similar incentive for for-profit hospitals to increase their charity care spending. In general, the Texas legislature's intent was to increase the overall level of care provided for the indigent. Therefore, our first hypothesis predicts that the 1993 law resulted in an overall increased spending on charity care by nonprofit hospitals but not for-profit hospitals.

H1a: For Texas hospitals, the level of charity care provided by nonprofit hospitals, relative to for-profit hospitals, on average increased following the 1993 law in order to meet the minimum charity care requirements.

The 4% threshold provided a benchmark requirement to which nonprofit hospitals could compare their performance and make adjustments. Prior to the 1993 law change, some hospitals may already have maintained a level of charity care spending greater than the 4% threshold, while others were below it. Those below the threshold who desired to maintain favorable tax treatment are predicted to have increased their charity care spending. According to agency theory, nonprofit hospitals that were already exceeding the threshold would be expected to reduce their charity care spending. Realizing that there are resources being spent on charity care over and above the law requirements may reinforce the administrator's decision to apply restraints on available services and spending.

H2a: Texas nonprofit hospitals that maintained lower levels of spending on charity care prior to the 1993 law adjusted their spending to at least meet the established threshold.

H2b: Texas nonprofit hospitals that maintained higher levels of spending on charity care prior to the 1993 law adjusted their spending downward toward the established threshold.

Support for hypothesis 2b would indicate that agency theory is motivating behavior. If, however, hypothesis 2b is not supported when there is clear incentive to reduce spending, then the alternative theory of altruism may apply. This theory of pure altruism suggests that nonprofit hospitals already exceeding the threshold will not reduce their spending, but will maintain their current level of charity care to the community.

For-profit hospitals have no requirement to contribute at the threshold mandated by the Texas law governing nonprofit hospitals. Therefore no change in charity care spending is expected. Since unknown economic, political or social factors may affect spending by both hospital categories, Hypothesis 2c examines the level of charity care spending by for-profit hospitals to ensure that no major environmental factors were evident during this time period that affected the behavior of both types of hospitals.

H2c: Texas for-profit hospitals had no change in spending on charity care when comparing the periods before and after the 1993 law.

The 1995 law change, which allowed the use of GAAP to determine what constituted charity care, effectively meant that hospitals could receive credit for a broader contribution to charity care without actually increasing basic indigent service care. Hospitals could, therefore, reduce their actual spending on indigent care without jeopardizing their tax-exempt status. The intent of the law, however, was to guarantee an established level of indigent care. To test the effect of the 1995 law change on indigent care, Hypothesis 3 predicts that if the tighter 1993 law for defining charity care were used in evaluating compliance with the spending threshold, the level of indigent care would decrease.

H3: When using the pre-1995 definition of charity care, nonprofit hospitals will reduce the amount spent on charity care after the 1995 law.

Support for Hypothesis 3 would indicate that agency theory is the prime motivator. If, however, there is no support for Hypothesis 3, the level of indigent care has not significantly decreased despite the easier law and supports altruism as the key motivation.

Data and Methodology

Our study examines the Texas Charity Care spending threshold requirements using data from the American Hospital Association's annual survey of Texas hospitals. Data were provided for over 325 Texas hospitals from 1991 through 1997. Thirteen government-owned or disproportionate share hospitals (DSH) hospitals were eliminated because they are not subject to the Texas law. The final sample of 312 hospitals resulted in a total data set containing 2,187 observations across the seven years. For purposes of classifying the firm year, we coded the hospital's year according to the year of the report, for example a May 14, 1994 year-end is included as a 1994 firm year. All data were converted to 2002 values. For the hospitals in the final data set, the average size (as proxied by number of bed days) was 150.5, net revenue was \$51,040,457 and charity care spending was \$2,138,934. In addition, nonprofit hospitals comprised 46% of all hospitals in Texas. This finding stands in stark contrast to that of the entire U.S., where only 14% of hospitals are nonprofit. As can be seen from Figure 1, nonprofit hospitals engage in more charity care spending across the entire sample period and with greater fluctuation than for-profit hospitals whose spending remains relatively flat.

[Insert Figure 1 Here]

Definition of Charity Care

Previous research (Schneider 2004) suggests that comparative results of nonprofit and for-profit charitable behavior are sensitive to the definition of community benefits. For

hypotheses examining the 1993 law change, charity care was measured as pure charity care. Pure charity care is defined in Chapter 311.031 of the Texas law as follows: Charity care means the unreimbursed cost to a hospital of “providing, funding, or otherwise financially supporting health care services on an inpatient or outpatient basis to a person classified by the hospitals as ‘financially indigent’ or ‘medically indigent’” and/or providing, funding, or otherwise financially supporting health care services provided to financially indigent persons through other nonprofit or public outpatient clinics, hospitals, or health care organizations.” Previous researchers have suggested (Nicholson et al. 2001; Reinhardt 1986; Buczko 1994) and implemented (Herzlinger and Kasker 1987; Morrisey et al. 1996; Scheneider 2004) this measure of charity care. For hypotheses examining the 1995 Texas law, charity care includes bad debt as set forth in Chapter 311 of the Texas law. Bad debt is generally included because of the large proportion of financially indigent patients who utilize emergency rooms and hospital services but are unable to pay for them.

Control Variables

Previous researchers have found that hospital size affects the level of charity care provided (Schneider 2004; Morrisey et al. 1996; Mann et al. 1997). In all cases, the number of beds was used as a proxy for size. This study follows in this vein by controlling for size with the number of beds set up and staffed for the reporting period. Other characteristics of hospitals that have been found in prior research to impact the level of charity care are payer mix (percent of patients covered by Medicare and Medicaid) and the presence of specific departments (such as emergency, general medical and rehabilitation). Additionally, certain market characteristics may affect the level of charity care engaged in by a hospital. For example, Schneider (2004) contends that high population and poverty rates should lead to an increase in the demand for charity care.

Per capita income and the unemployment rate for each county were used as measures of poverty. Finally, our model includes a county variable to control for differences across different counties.

Results and Discussion

Hypothesis 1

For hypotheses testing, we varied the model specification and data years. Hypothesis 1 predicts that charity care spending will differ between nonprofit and for-profit hospitals as a result of the 1993 (or first) law change. To capture the changes related to this 1993 law, we limited the data set for-profit and nonprofit hospitals to the period of 1991 through 1995, which includes two years before and after the change. This resulted in a data with a total of 1,288 observations. The following ordinary least squares model was used:

$$Y_{it} = \beta_0 + \beta_1 Nonprof_{it} + \beta_2 Law1st_{it} + \beta_3 NPLaw1st_{it} + \beta_4 Beds_{it} + \beta_5 PctMedicare_{it} + \beta_6 PctMedicaid_{it} + \beta_7 ED + \beta_8 HHI + \beta_9 GenMed + \beta_{10} Rehab + \beta_{11} PcInc + \beta_{12} Unemploy + \beta_{13} County + \epsilon_{it}$$

Where: Y_{it} = charity care for hospital i in year t .

Nonprof = a binary variable which takes a value of 1 if the hospital in question is classified as nonprofit according to Section 311 of the Texas legislation.

Law1st = a binary variable indicating whether the observation is from before the first law change (=0) or after the first law change (=1).

NPLaw1st = an interaction variable between Nonprof and Law1st.

Beds = the number of beds set up and staffed during the reporting period for hospital i in year t as a proxy for size.

PctMedicare = percentage of Medicare inpatient days to control for payer mix.

PctMedicaid = percentage of Medicaid inpatient days to control for payer mix.

ED = presence of an emergency department with 0 indicating no emergency department.

HHI = Herfindahl-Hirschman Index computed using number of staffed hospital beds as a proxy for market concentration.

GenMed = presence of general medical surgical department with 0 indicating no surgical department.

Rehab = presence of a rehabilitation department with 0 indicating no rehabilitation department.

PcInc = the real per capita income in the county in which a hospital is located as a proxy for poverty.

Unemploy = the rate of unemployment rate in the county in which a hospital is located as a proxy for poverty.

County = dummy variables were included to capture unobserved county differences.

Table 1 presents the results from estimating this model. The model as a whole is statistically significant at the .0001 level, with an R-squared of 0.54. Our results indicate that when using a sample from 1991 through 1995, nonprofit hospitals (Nonprof) provide more (by about 4.4 percentage points) charity care in general than for-profits. These results are not surprising since only nonprofit hospitals were required to comply with the Texas law requirements. However, as a group (including all hospitals whether they were above or below the threshold prior to the law change), no change was noted as a result of the 1993 law change (Law1st), on average. Overall, these findings support the contention that the 1993 Texas law change did improve the level of charity care spending on the indigent by nonprofit hospitals at a time when spending by for-profits did not demonstrate the same increased spending.

Our results also show that larger facilities (Beds) provided less charity care, but the impact of each additional bed only decreased charity care by a small amount (parameter estimate of -0.00003). Hospitals with more Medicaid (PctMedicaid) had higher spending on charity care, while hospitals with more Medicare (PctMedicare) reported a lower level of spending. Finally,

general medical surgical hospitals (GenMed) provided less charity care than facilities without these services.

[Insert Table 1 Here]

Hypotheses 2a through 2c

For this set of hypotheses, we once again limited the data set to firm years 1991 through 1995. However, these hypotheses predict that charity care spending will vary based on whether the hospital was originally above or below the 4% threshold. As a result, different subsets of the data were used for each hypothesis using the same overall model, as specified below:

$$Y_{it} = \beta_0 + \beta_1 \text{Law1st}_{it} + \beta_2 \text{Beds}_{it} + \beta_3 \text{PctMedicare}_{it} + \beta_4 \text{PctMedicaid}_{it} + \beta_5 \text{ED} + \beta_6 \text{HHI} + \beta_7 \text{GenMed} + \beta_8 \text{Rehab} + \beta_9 \text{PcInc} + \beta_{10} \text{Unemploy} + \beta_{11} \text{County} + \epsilon_{it}$$

Hypothesis 2a examined spending behavior of nonprofit hospitals with charity care spending **below** the 4% threshold prior to the 1993 law change. Only nonprofit hospitals that failed to meet this threshold were included in the data set for testing this hypothesis (N=159). As shown in Table 2, the overall model was significant at 0.001, with an overall R-square of 0.54. Our findings show nonprofit hospitals below the threshold prior to the law change significantly increased the percentage of net patient revenues (about 1.5 percentage points on average) spent on charity care after the law change (Law1st). Additionally, as would be expected, those hospitals with more Medicaid had higher levels of charity care spending. The other control variables did not have a significant effect on the level of charity care spending.

[Insert Table 2 Here]

Hypothesis 2b investigated the impact of the first law change on nonprofit hospitals that had spending on charity care **above** the 4% threshold prior to the 1993 law change. Therefore, the data set for this model included only those nonprofit hospitals that spent more than the

threshold prior to 1993. Table 3 presents the results for this model, which was significant at 0.001, with an overall R-square of 0.61.

These results demonstrate that the 1993 law change did not have a significant impact on the charity care spending of nonprofit hospitals that were initially above the 4% threshold (Law1st). The hypothesis had predicted a reduction in charity care spending for this subset of hospitals, and we did get a reduction, but it was not statistically significant. As conjectured in our alternative, perhaps the nature of services provided by nonprofit hospitals supports an altruistic attitude toward charity care spending. As a result, the hospitals did not significantly reduce their spending, even though they could legally do so.

The only control variables that were significant for this subset of hospitals indicate that entities with more Medicaid (PctMedicaid) spent higher amounts for charity care, while the opposite occurs in hospitals with more Medicare (PctMedicare). And, hospitals with rehabilitation facilities spend less on charity care than hospitals without those facilities (Rehab).

[Insert Table 3 Here]

Hypothesis 2c examined the 1993 law's effect on for-profit hospitals spending for charity care. The reason for this analysis is to ensure that unforeseen environmental factors that may affect the spending on charity care. For this analysis, only for-profit hospitals were included in the data set, again using data for the period of 1991 through 1995. The results, provided in Table 4, show that the model was significant at 0.001, with an overall R-square of 0.46. Figure 2 illustrates the median changes before and after the law changes for both those hospitals below the threshold and those above.

Hypothesis 2c predicted that for-profit hospitals would experience no change in charity care spending following the 1993 law change. Our findings support this hypothesis, since the

law change variable (Law1st) is not significant. However, for this set of hospitals, those that were both larger in size (Beds) and received more Medicare (PctMedicare) spent less on charity care. On the contrary, those hospitals with more Medicaid (PctMedicaid) spent significantly more on charity care.

[Insert Table 4 Here]

Hypotheses 3

This hypothesis deals with the change in the definition of charity care allowed in the 1995 law change (2nd law change). Our expectation was that when following GAAP in calculating qualified charity care according to the 1995 law (which allows a deduction for bad debt expense), nonprofit hospitals would decrease their overall level of charity care spending. The results of this analysis are shown in Table 5. Since the second law change occurred in 1995, we only included firm years 1994 through 1997. Therefore, the model was modified as follows:

$$Y_{it} = \beta_0 + \beta_1 Law2nd_{it} + \beta_2 Beds_{it} + \beta_3 PctMedicare_{it} + \beta_4 PctMedicaid_{it} + \beta_5 ED + \beta_6 HHI + \beta_7 GenMed + \beta_8 Rehab + \beta_9 PcInc + \beta_{10} Unemploy + \beta_{11} County + \epsilon_{it}$$

Where: Y_{it} = charity care **plus bad debt** for hospital i in year t .

Law2nd = a binary variable indicating whether the observation is from before the second law change (=0) or after the second law change (=1).

For Hypothesis 3, we do get a decrease in charity care spending (Law2nd) as expected, however, the change is not statistically significantly different from zero.

[Insert Table 5 Here]

Conclusion

Historically, hospitals have existed as charitable institutions. However, a recent influx of for-profit hospitals has sparked an overall market trend toward profit orientation. Policy makers

in Texas implemented legislation requiring nonprofit hospitals to meet a minimum threshold level of charity care to maintain their tax-exempt status. Results from the estimated empirical models suggest that after the Texas law implementation, nonprofit hospitals that were not spending above the threshold level increased their charity care in order to meet the standard. However, those nonprofit hospitals above the threshold and for-profits did not significantly change their levels of spending on charity care. And, despite concerns about the ability to include bad debts in the definition of charity care for purposes of the law, in general, Texas nonprofit hospitals did not reduce their spending on pure charity care.

The results of this study seem to support that introduction of an initial benchmark established a target for performance where there previously had been none. Nonprofit hospitals adjusted their charity care spending behavior towards this target in order to maintain favorable tax treatment and is consistent with agency theory. Interestingly, nonprofit hospitals that were above the benchmarked moved slightly in the direction of the benchmark, but did not do so significantly. This is inconsistent with agency theory because it is assumed that charity care spending would decrease as administrators strive to stretch application of resources. Results seem to indicate that as long as the obvious tax benefits are secure, administrators and physicians in nonprofit hospitals may be predisposed towards altruism and may be motivated to maintain a level of care they consider commiserate with community need. The theory of altruism suggests that charity care spending will occur at a level consistent with need regardless of benchmarks. This alternative theory offers a reasonable explanation for why there was only slight downward adjustment towards the benchmark.

This study's results suggest that establishing a threshold of spending on charity care may indeed result in more spending on charity care by those nonprofit hospitals that spend a minimal

amount. It should be noted, however, that there is some downward movement in those hospitals that were already spending in excess of the threshold. This result could be due to the 4% level established by the Texas legislature and implies that a higher or lower threshold would indeed affect spending on charity care. Future research should address issues such as how to establish an appropriate threshold.

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Table 1
Hypotheses 1:
OLS Estimates of the Percentage of Uncompensated Care 1991 – 1995

Variable	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	0.02748	0.04945	0.56	0.5784
Nonprof	0.04422	0.00534	8.27	<0.0001
Law1st	-0.00339	0.00529	-0.64	0.5223
NPLaw1st	-0.00540	0.00710	-0.76	0.4476
Beds	-0.00003	0.00001	-2.33	0.0198
PctMedicare	-0.04642	0.00949	-4.89	<0.0001
PctMedicaid	0.49160	0.01884	26.10	<0.0001
ED	-0.00078	0.00585	-0.13	0.8934
HHI	0.00495	0.02944	0.17	0.8665
GenMed	-0.02790	0.00713	-3.91	<0.0001
Rehab	-0.00404	0.00826	-0.49	0.6248
PcInc	0.00000	0.00000	0.82	0.4133
Unemploy	0.00001	0.00021	0.06	0.9531

**County fixed effects included in the estimated model.
n: 1288
R-Square: 0.5395
Adj R-Square: 0.5041
F-Statistic for test of overall model significance: 15.22

Table 2
Hypothesis 2a
OLS Estimates of the Percentage of Uncompensated Care 1991 – 1995
Nonprofit Hospitals with Charity Care Spending Initially Below the Threshold

Variable	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	-0.02819	0.05617	-0.50	0.6167
Law1st	0.01535	0.00593	2.59	0.0107
Beds	-0.00000	0.00001	-0.34	0.7380
PctMedicare	0.02041	0.01971	1.04	0.3024
PctMedicaid	0.22811	0.04912	4.64	<0.0001
ED	0.01125	0.00970	1.16	0.2486
HHI	0.01226	0.02611	0.47	0.6394
GenMed	0.01149	0.01591	0.72	0.4714
Rehab	0.01993	0.01756	1.13	0.2586
PcInc	0.00000	0.00000	0.63	0.5269
Unemploy	-0.00021	0.00034	-0.60	0.5476

**County fixed effects included in the estimated model.
n: 159
R-Square: 0.5406
Adj R-Square: 0.4417
F-Statistic for test of overall model significance: 5.46

Table 3
Hypothesis 2b

OLS Estimates of the Percentage of Uncompensated Care 1991 – 1995
Nonprofit Hospitals with Charity Care Spending Initially Above the Threshold

Variable	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	0.34552	0.12579	2.75	0.0063
Law1st	-0.01086	0.00955	-1.14	0.2565
Beds	-0.00007	0.00003	-2.34	0.0197
PctMedicare	-0.20708	0.03243	-6.38	<0.0001
PctMedicaid	0.28925	0.04332	6.68	<0.0001
ED	-0.04266	0.02606	-1.64	0.1026
HHI	-0.02452	0.06921	-0.35	0.7233
GenMed	-0.03449	0.02905	-1.19	0.2359
Rehab	-0.08218	0.02895	-2.84	0.0048
PcInc	-0.00000	0.00000	-0.19	0.8487
Unemploy	-0.00036	0.00044	-0.81	0.4165
<p>**County fixed effects included in the estimated model. n: 413 R-Square: 0.6084 Adj R-Square: 0.5337 F-Statistic for test of overall model significance: 8.14</p>				

Table 4
Hypothesis 2c
OLS Estimates of the Percentage of Uncompensated Care 1991 – 1995
For-profit Hospitals Only

Variable	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	-0.05815	0.05724	-1.02	0.3101
Law1st	-0.00256	0.00456	-0.56	0.5743
Beds	-0.00005	0.00002	-2.45	0.0147
PctMedicare	-0.01878	0.00938	-2.00	0.0458
PctMedicaid	0.44881	0.02528	17.75	<0.0001
ED	0.00666	0.00533	1.25	0.2122
HHI	0.01493	0.04113	0.36	0.7168
GenMed	-0.01152	0.00698	-1.65	0.0992
Rehab	0.00337	0.00793	0.43	0.6705
PcInc	0.00000	0.00000	1.30	0.1936
Unemploy	0.00044	0.00024	1.89	0.0591
**County fixed effects included in the estimated model. n: 716 R-Square: 0.4645 Adj R-Square: 0.4172 F-Statistic for test of overall model significance: 9.82				

Table 5
Hypotheses 3a and 3b
OLS Estimates of the Percentage of Uncompensated Care 1994 – 1997
Nonprofit Hospitals Only

Variable	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	-0.02021	0.08047	-0.25	0.8018
Law2nd	-0.00830	0.00641	-1.29	0.1963
Beds	-0.00005	0.00002	-2.19	0.0294
PctMedicare	-0.08553	0.01834	-4.66	<0.0001
PctMedicaid	0.25530	0.02972	8.59	<0.0001
ED	0.04867	0.01511	3.22	0.0014
HHI	0.02131	0.03546	0.60	0.5483
GenMed	-0.06354	0.01616	-3.93	0.0001
Rehab	-0.01521	0.01333	-1.14	0.2545
PcInc	0.00000	0.00000	2.06	0.0403
Unemploy	0.00066	0.00038	1.72	0.0872
**County fixed effects included in the estimated model. n: 442 R-Square: 0.5296 Adj R-Square: 0.4393 F-Statistic for test of overall model significance: 5.87				

Figure 1

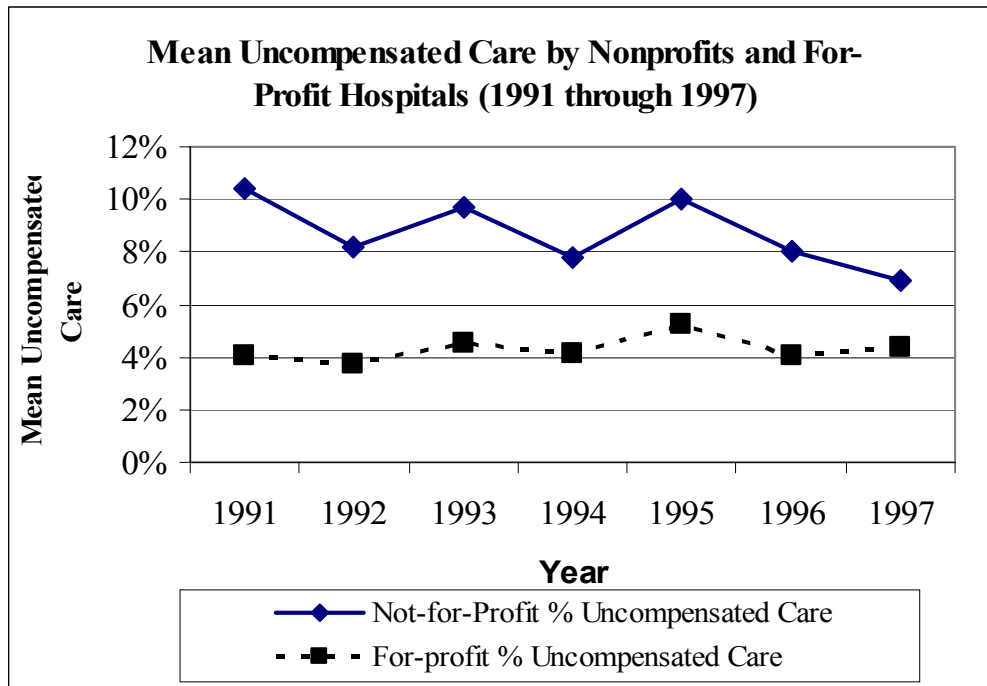


Figure 2

