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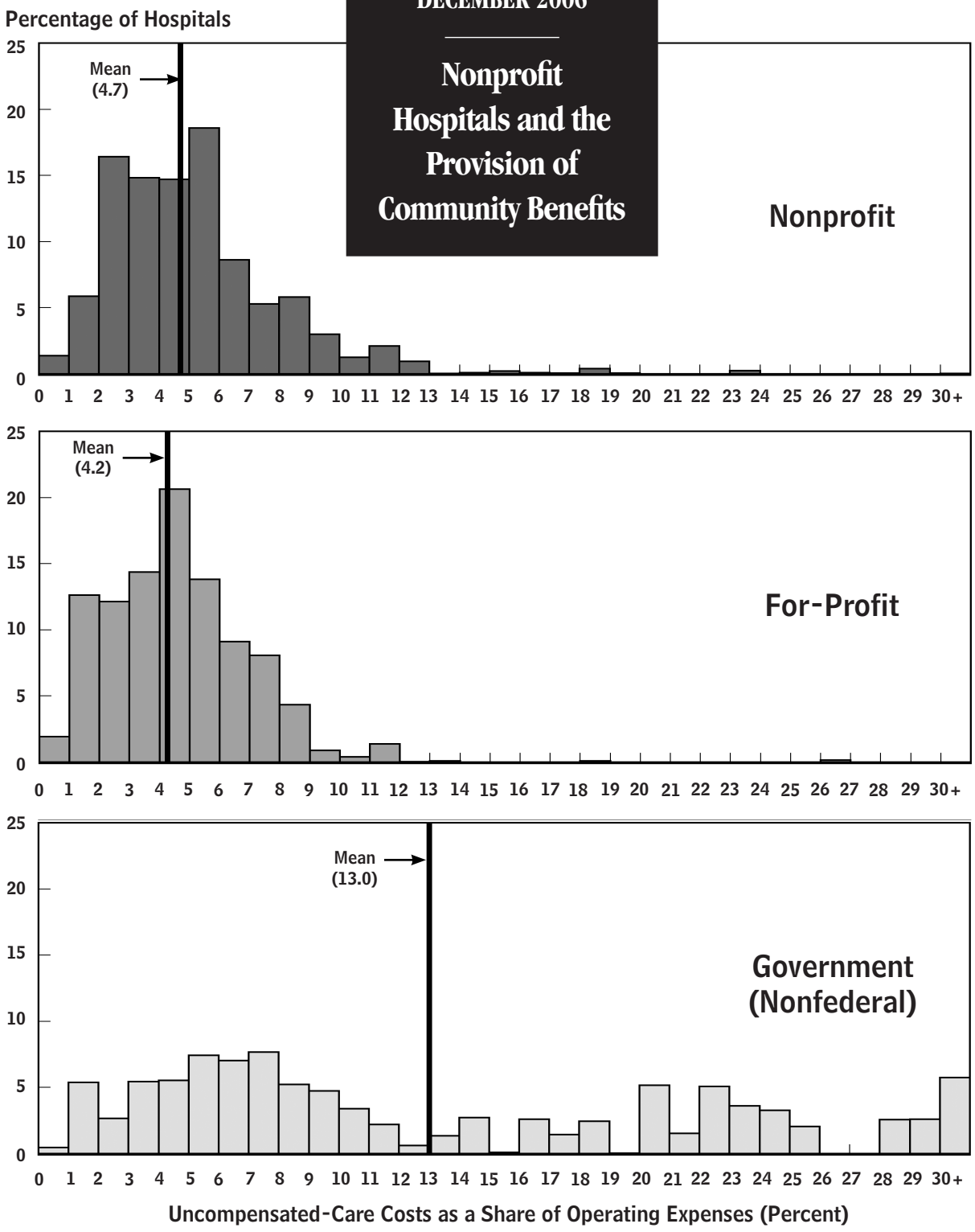
Nonprofit Hospitals and the Provision of Community Benefits



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The Congress of the United States ■ Congressional Budget Office

Note

The histogram on the cover was developed by the Congressional Budget Office based on the Medicare Hospital Cost Report, 2003, and on data from the Government Accountability Office on uncompensated care. The bar height indicates the share of hospitals, in percent. The distributions are weighted by operating expenses and truncated at 30 percent. The solid vertical lines represent the weighted average uncompensated-care share for each ownership type.

Preface

Nonprofit hospitals receive various tax exemptions from federal, state, and local governments with the expectation that, in return, they will provide benefits to the community. In this paper, requested by the Chairman of the House Committee on Ways and Means, the Congressional Budget Office (CBO) examines several measures of community benefits provided by hospitals of different ownership types. Nonprofit hospitals are compared with for-profit hospitals, which do not receive tax exemptions. The analysis focuses primarily on differences in the provision of uncompensated care but also examines the provision of Medicaid-covered services and the provision of certain specialized services, such as emergency room care. In keeping with CBO's mandate to provide objective, nonpartisan analysis, the paper makes no policy recommendations.

Chapin White, Robert Nguyen, and Alshadye Yemane of CBO's Health and Human Resources division prepared the report under the supervision of James Baumgardner and Bruce Vavrichek. The report benefited from comments by Thomas Bradley, Douglas Hamilton, and Dennis Zimmerman, all of CBO. Several outside reviewers also provided comments, including Richard Frank of Harvard University and William Gentry of Williams College. (The assistance of external reviewers implies no responsibility for the final product, which rests solely with CBO.)

Loretta Lettner edited the report, and John Skeen proofread it. Maureen Costantino designed the cover and prepared the report for publication. Lenny Skutnik produced the printed copies, and Simone Thomas prepared the electronic version for CBO's Web site (www.cbo.gov).

Donald B. Marron
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Introduction and Summary

The various tax exemptions provided to nonprofit hospitals have come under scrutiny by policymakers, with the central concern being whether those hospitals provide community benefits that justify forgone government tax revenues. In this paper, the Congressional Budget Office (CBO) measures the provision of certain community benefits and compares nonprofit hospitals with for-profit hospitals. For-profit hospitals do not receive tax exemptions and are not required to meet community-benefit standards; the level of community benefits provided by for-profit hospitals serves, therefore, as a useful benchmark against which to compare nonprofit hospitals. The analysis also examines the provision of community benefits by nonfederal government hospitals.[1]

Although nonprofit hospitals must provide community benefits in order to receive tax exemptions, there is little consensus on what constitutes a community benefit or how to measure such benefits. For the purposes of this analysis, community benefits include the provision of uncompensated care, the provision of services to Medicaid patients, and the provision of certain specialized services that have been identified as generally unprofitable. Those services were selected because they benefit the community but are not typically considered financially rewarding.

In general, the comparisons of nonprofit and for-profit hospitals yielded mixed results. CBO found that, on average, nonprofit hospitals provided higher levels of uncompensated care than did otherwise similar for-profit hospitals. Among individual hospitals, however, the provision of uncompensated care varied widely, and the distributions for nonprofit and for-profit hospitals largely overlapped. Nonprofit hospitals were more likely than otherwise similar for-profit hospitals to provide certain specialized services but were found to provide care to fewer Medicaid-covered patients as a share of their total patient population. On average, nonprofit hospitals were found to operate in areas with higher average incomes, lower poverty rates, and lower rates of uninsurance than for-profit hospitals.

Provision of Uncompensated Care

The level of uncompensated care provided by community hospitals is examined here for hospitals located in five states—California, Florida, Georgia, Indiana, and Texas—using data from 2003 (the latest year for which

1. Hospitals are identified as nonprofit, for-profit, or governmental on the basis of classifications reported by hospitals in the "control type" variable in the Medicare Hospital Cost Report. According to the control type variable, "nonprofit" refers to voluntary nonprofit (with or without church affiliation); "for-profit" refers to proprietary hospitals owned by individuals, corporations, partnerships, or other entities; and "government" refers to state, county, city-county, city, hospital-district, or other governmental entities (federal hospitals were excluded from the analysis).

such data are available).[2] "Uncompensated care" refers to the sum of charity care (services for which a hospital does not expect payment) and bad debt (services for which a hospital expects but does not collect payment). Although charity care is a better measure of the community benefits provided by a hospital, data limitations precluded CBO's analyzing charity care and bad debt separately.

The five selected states were chosen in part because sufficiently reliable data on uncompensated care were available in those areas. The data were provided to CBO by the Government Accountability Office (GAO) and were developed by GAO for use in its analyses of issues relating to the level of uncompensated care provided by different types of hospitals.[3] CBO's analysis expands on GAO's findings in several ways: first, regression techniques are used to calculate adjusted differences between nonprofit and for-profit hospitals in the provision of uncompensated care, taking into account hospital characteristics and the characteristics of local populations; and, second, the provision of Medicaid services and specialized services, such as emergency room care, are analyzed quantitatively.

CBO's five-state analysis of uncompensated care yielded the following key findings:

- In the five states analyzed, nonprofit hospitals provided a total of about $3 billion in uncompensated care, government hospitals provided more than $3 billion, and for-profit hospitals provided about $1 billion in uncompensated care. The difference in the total amount of uncompensated care provided by nonprofit and for-profit hospitals is largely attributable to the fact that nonprofit hospitals accounted for a much larger share of the hospital market than did for-profits.

- The average "uncompensated-care share"—the cost of uncompensated care as a share of hospitals' operating expenses—was much higher at government hospitals (13.0 percent) than at either nonprofit hospitals (4.7 percent) or for-profit hospitals (4.2 percent).

- Individual hospitals varied widely in their uncompensated-care shares. Although nonprofit hospitals, on average, have slightly higher uncompensated-care shares than for-profits (by 0.5 percentage points), the distributions of uncompensated-care shares among those two types of hospitals overlap to a large extent.

- When regression techniques were used to adjust for the hospitals' size and location and for the characteristics of the local populations, nonprofit hospitals were estimated to have an average uncompensated-care share that was 0.6 percentage points higher than that for otherwise similar for-profit hospitals. That estimated difference corresponds to nonprofit hospitals in the five selected states providing between $100 million and $700 million more in uncompensated care than would have been provided if they had been for-profits.[4]

Provision of Medicaid-Covered Services

Medicaid's payment rates have, in general, been found to be somewhat below the costs that hospitals incur in providing Medicaid-covered services. Because providing hospital services to Medicaid patients is often unprofitable and serves a needy population, it can be thought of as a type of community benefit. Among all community hospitals nationwide, CBO found that the Medicaid share—Medicaid-covered days as a share of all patient

2. "Community hospitals" include nonfederal short-term general hospitals. This definition includes most hospital facilities but excludes, for example, federal hospitals run by the Veterans Administration, psychiatric hospitals, and long-term-care hospitals. Several of the key data sources used are Medicare administrative files. Therefore, only Medicare-certified community hospitals were included in the analyses in this paper. Throughout the text "all community hospitals" refers to all Medicare-certified community hospitals. The findings are referred to as representing the year 2003, but the data are actually taken from either 2003 or 2002. For the analysis of uncompensated care, which includes hospitals in only five states, the data for 57 percent of hospitals are from federal fiscal year (FFY) 2003, and those for 43 percent of hospitals are from FFY 2002. For convenience, 2003 is used to describe the findings because the majority of hospitals report data for FFY 2003. For consistency, the analysis for all community hospitals used the same data years that were used to analyze uncompensated care costs in the five states. The FFY 2003 data were used for all hospitals not in the five states. For the other analyses, which include hospitals in all of the states, 90 percent of hospitals had FFY 2003 data and 10 percent of hospitals had FFY 2002 data.

3. See Statement of David M. Walker, Comptroller General of the United States, before the House Committee on Ways and Means, published as Government Accountability Office, *Nonprofit, For-Profit, and Government Hospitals: Uncompensated Care and Other Community Benefits*, GAO-05-743T (May 26, 2005), available at www.gao.gov/new.items/d05743t.pdf.

4. The range of $100 million to $700 million represents the 90 percent confidence interval from the underlying statistical analysis.

days—was, on average, 1.5 percentage points lower among nonprofit hospitals than it was among for-profit hospitals (15.6 percent versus 17.2 percent). The Medicaid share was substantially higher among government hospitals (27.0 percent). When regression techniques were used to control for hospital characteristics, nonprofit hospitals were found to have adjusted Medicaid shares that were 1.3 percentage points lower than those of otherwise similar for-profit hospitals.

Provision of Specialized Services

CBO also examined the share of hospitals of different ownership types that provide four specific types of specialized patient services: intensive care for burn victims, emergency room care, high-level trauma care, and labor and delivery services.[5] Each of those services addresses a community need and has been identified as being generally unprofitable. Among all community hospitals nationwide, emergency room care and labor and delivery services were both quite common, whereas few hospitals provided burn intensive care or high-level trauma care.

CBO found that nonprofit hospitals were more likely than for-profit hospitals to provide each of the four specialized services examined. After adjustment for hospital characteristics, nonprofit hospitals were found to be significantly more likely than for-profit hospitals to provide two of the four specialized patient services (emergency room care and labor and delivery services). Compared with otherwise similar for-profit hospitals, the share of nonprofit hospitals providing emergency room care was 3.8 percentage points higher, and the share providing labor and delivery services was 10.5 percentage points higher. CBO did not attempt to quantify the value to the community of the availability of those specialized services.

The Value of Tax Exemptions for Nonprofit Hospitals

The Joint Committee on Taxation (JCT) recently examined the value to nonprofit hospitals and their supporting organizations of the major tax exemptions they receive from federal, state, and local governments. Together, the value of the various tax exemptions in 2002 was estimated to be $12.6 billion, with exemptions from federal taxes accounting for about half of the total and exemptions from state and local taxes accounting for the remaining half.

JCT also estimated the value of some of the tax exemptions for nonprofit hospitals located in the five states for which uncompensated-care data were available. In those five states, the exemptions from federal and state corporate income taxes, state and local sales taxes, and local property taxes were valued at $2.5 billion. (Two important categories of tax exemptions—tax-exempt-bond financing and the deductibility of charitable contributions—were included in the national totals but were not available for the five states and are not included in the five-state total.)

Background

The hospital industry in the United States includes a mix of ownership forms. Nonprofit hospitals are the most common type, but for-profit and government hospitals also play substantial roles.[6] Of the 630,000 beds in Medicare-certified community hospitals in the United States in 2003, 68 percent were located in nonprofit hospitals, 16 percent were located in for-profit hospitals, and 15 percent were located in government (nonfederal) facilities.

This section of the analysis examines the differences between nonprofit hospitals and for-profit hospitals in their ownership structure, tax treatment, and the provision of collective goods. (Collective goods are defined as goods or services that, when used or consumed, generate well-

5. In CBO's analysis, a hospital provides "high-level trauma care" if it is a level 1 or level 2 adult trauma center (stand-alone pediatric trauma centers are not included). A hospital may be designated as a trauma center if it meets certain criteria developed by the American College of Surgeons. Trauma centers are assigned a level ranging from 1 through 5, with level 1 being the highest. To be designated a level 1 or level 2 trauma center, a hospital must "[provide] comprehensive trauma care" and must "have immediate availability of trauma surgeons, anesthesiologists, physician specialists, nurses, and resuscitation equipment." See Ellen J. MacKenzie and others, "National Inventory of Hospital Trauma Centers," *Journal of the American Medical Association*, vol. 289, no. 12 (March 26, 2003), pp. 1515-1522.

6. The terms "nonprofit" and "tax-exempt" (or "untaxed") are sometimes used interchangeably, but they are technically distinct. For the purposes of federal taxation, an organization may be deemed tax-exempt by meeting the requirements of section 501 of the Internal Revenue Code. Nonprofit status, on the other hand, is granted by state governments on the basis of criteria that vary from state to state. In CBO's analysis, hospitals that identify themselves as nonprofit in Medicare Hospital Cost Reports are assumed to be exempt from federal, state, and local taxes.

being or utility for more than one individual at the same time.[7]) The tax exemptions for nonprofit hospitals are discussed as one approach to promoting the provision of collective goods, and other approaches are identified as well.

Differences in Ownership Structure

Ownership of a business entity entails the right to direct the operations of that business and the right to receive its profits. Like for-profits, nonprofit hospitals have governing boards that guide their operations. And, like for-profits, nonprofit hospitals may earn surpluses or accounting profits, meaning an excess of revenues over expenses. But nonprofits face a "nondistribution constraint," which means that they do not have shareholders and may not distribute surpluses to managers, individual owners, or members of the governing board. Surpluses generated by nonprofit hospitals' activities are expected to be reinvested in the hospitals' operations rather than distributed to individual owners.

Differences in Tax Treatment

Nonprofit hospitals receive tax exemptions that allow them to use funds that would have been paid in taxes for patient care or other purposes. Tax exemptions provided to nonprofit hospitals, therefore, can be viewed as a form of government subsidy for the activities of a certain type of hospital. Whether that subsidy is justified from a public policy perspective depends on whether policymakers believe that the activities of hospitals in general should be subsidized, and, if so, whether those subsidies should be targeted at hospitals that organize themselves as nonprofits.

One possible rationale for providing tax exemptions to nonprofit hospitals would be if nonprofit hospitals tended to provide more collective goods than did for-profit hospitals. The provision of uncompensated medical care to an indigent individual might be thought of as a type of collective good: the medical care directly benefits the indigent individual who receives it and might also benefit members of the community (by fulfilling compassionate impulses, for example, or by preventing the spread of a communicable disease). The managers of nonprofit organizations, because they do not directly receive the profits from the activities they oversee, might, in principle, be more willing than the managers of for-profit firms to provide collective goods when doing so is unprofitable.[8]

Unlike for-profit hospitals, nonprofit hospitals are generally exempt from federal and state corporate income taxes, and local sales and property taxes. Nonprofit hospitals can also obtain tax-exempt-bond financing and receive charitable contributions that are tax-deductible to the donor. For a hospital to qualify for exemption from federal income taxes, it must be organized and operated exclusively for a charitable, educational, or scientific purpose and meet Internal Revenue Service (IRS) requirements under section 501(c)(3) of the tax code.

The IRS does not specifically require that a hospital provide a certain level of charity care to qualify for tax-exempt status, as long as the hospital provides some benefits to the community. The criteria the IRS uses to determine whether a hospital qualifies as tax-exempt have changed over time and have been the subject of some debate. Activities that could support a hospital's application for federal tax-exempt status include operating an emergency room that is open to all members of the community regardless of their ability to pay; having a governing board composed of community members; and using earnings to improve facilities, patient care, medical education, training, and research.

7. Burton A. Weisbrod, *The Nonprofit Economy* (Cambridge, Mass.: Harvard University Press, 1988).

8. A concept in the discipline of economics that is similar to a collective good is that of a "public good." Public goods are defined as having two properties: (1) nonrivalry in consumption (meaning that one person's consumption does not diminish another person's ability to consume the same good) and (2) nonexcludability (meaning that, because of the nature of the good, it is not feasible, once the good has been produced, to stop someone from consuming it; therefore, it is not possible for a seller of the good to recoup adequate payment for it). If nonindigent members of the community are made better off when indigent individuals are given health care, and if it is not possible for the hospital that provides such care to prevent nonindigent community members who have not contributed to the hospital from being made better off, then the provision of uncompensated care to poor people fits the definition of a public good. Because people can benefit from a public good without paying anything toward its production, a private marketplace may not produce an appropriate amount of such goods. Governments may intervene to bring about adequate production of public goods by either having the government produce those goods or by providing subsidies to private producers of such goods. Prevention of the spread of communicable disease also fits the definition of a public good and provides an additional rationale for subsidization of certain hospital activities, including care for the indigent.

Table 1.

Estimated Value of Tax Exemptions Provided to Nonprofit Hospitals, 2002

	Value (Billions of dollars)
Corporate Income Tax (Federal)	2.5
Tax-Exempt-Bond Financing (Federal)	1.8
Charitable Contributions (Federal)	1.8
Corporate Income Tax (State)	0.5
Sales Tax (State and local)	2.8
Property Tax (Local)	3.1
Total	**12.6**

Source: Joint Committee on Taxation.

To qualify for exemption from state corporate income taxes and for exemption from state and local property and sales taxes, hospitals are subject to local requirements that may differ from federal requirements. State and local governments have, in many cases, required that, in order to receive tax exemptions, hospitals meet standards that are stricter than those imposed by the IRS. For example, in 1985 the Utah Supreme Court ruled that, to qualify for the property-tax exemption, hospitals must engage in some "act of giving," such as providing charity care. In Illinois, property-tax exemptions are limited to nonprofit hospitals that dispense charity care to all who need it. Some states have already taken or have proposed taking the additional step of imposing specific reporting and performance requirements on nonprofit hospitals. For example, in Texas, to receive a property-tax exemption, nonprofit hospitals must regularly report on the charity care and other community benefits that they provide and must meet specified quantitative standards.[9] Those state and local requirements can represent significant constraints on nonprofit hospitals, given the financial value to nonprofit hospitals of the exemptions from state and local taxes.

To evaluate how nonprofit hospitals currently meet the community benefits standard, the IRS recently distributed a questionnaire to a selected group of nonprofit hospitals. Those hospitals were asked to provide a detailed report on their community-benefit policies, admissions policies, billing policies, and the amount of uncompensated care they provide. The IRS may use the responses to the questionnaire to issue further guidance or standards relating to tax exemptions for nonprofit hospitals.

The Value of Tax Exemptions for Nonprofit Hospitals

JCT recently examined the value to nonprofit hospitals of the major tax exemptions they receive from federal, state, and local governments.[10] Together, the value of the various tax exemptions for nonprofit hospitals nationwide was estimated to be $12.6 billion in 2002 (see Table 1). Exemptions from federal taxes accounted for about half of the total, and state and local taxes accounted for the other half. The largest categories were the exemption from local property taxes ($3.1 billion) and the exemption from state and local sales taxes ($2.8 billion). (The exemption from sales taxes applies to supplies that nonprofit hospitals purchase, such as medical and office equipment.)

JCT also estimated the value of certain tax exemptions provided to nonprofit hospitals located in the five states for which GAO data on uncompensated care were available. In those five states, the exemptions from the federal and state corporate income taxes, state and local sales taxes, and local property taxes in 2002 were valued at $2.5 billion. (Two important categories of tax exemptions—tax-exempt-bond financing and the deductibility of charitable contributions—were included in the national totals but were not calculated for the five states and are not included in the five-state total.)

In terms of reduced tax revenues, the costs to the various levels of government of the tax exemptions for nonprofit hospitals are difficult to quantify. Part of the difficulty in measuring the value of the tax exemptions arises from the fact that nonprofits, because of their tax-exempt status, do not file the same types of tax returns as for-profits and, thus, do not provide some information needed to calculate their potential tax liability. A more fundamental issue in valuing the tax exemptions provided to nonprofits is the fact that nonprofit hospitals, if they were to lose their tax-exempt status, would likely change their behavior.

9. For details on Texas's charity-care standards for the nonprofit hospital tax exemption, see Statement of David M. Walker, May 26, 2005; and Kathryn J. Jervis, "A Review of State Legislation and a State Legislator Survey Related to Not-for-Profit Hospital Tax Exemption and Health Care for the Indigent," *Journal of Health Care Finance*, vol. 32, no. 2 (Winter 2005), pp. 36-71.

10. See Congressional Budget Office, *Nonprofit Hospitals and Tax Arbitrage* (December 2006).

To calculate the value of the tax exemptions listed in Table 1, hospitals' observed tax bases were multiplied by the applicable tax rates. That method follows JCT's standard approach to calculating "tax expenditures," which are defined as revenue losses resulting from special provisions or preferences in tax law.[11] The calculation of tax expenditures implicitly assumes no behavioral responses—in other words, it assumes that if special tax preferences were removed there would be no change in firms' income, capital structure, or physical assets. A revenue estimate, which is the estimated change in tax revenues arising from a change in tax policy, differs from a tax expenditure in that the revenue estimate incorporates behavioral responses. The value of the tax exemptions detailed in Table 1 does not incorporate behavioral responses and should not be interpreted as revenue estimates.

Identifying the potential behavioral responses of nonprofit hospitals to removal of or restrictions on tax exemptions is complex. If nonprofit hospitals lost their tax-exempt status but maintained their nonprofit ownership status, they would face financial pressure to reduce their accounting profits and thereby reduce their tax burden.[12] That pressure could lead nonprofit hospitals to change their accounting practices as well as lower the prices they charge patients and insurers, and increase their costs of production.[13] At the same time, adding new restrictions on tax-exempt status for nonprofit hospitals might prompt some of those facilities to convert to for-profit ownership, which might also result in changes in their tax bases (taxable income for converting hospitals, for example, might increase).

Approaches to Providing Collective Goods

Besides offering tax exemptions to nonprofit hospitals, governments have several options if they wish to promote the provision of collective goods such as health care for low-income individuals. The first approach is to produce those goods directly. Government hospitals that provide charity care are an example of direct production. The second approach is to purchase collective goods from private organizations. An example of that approach is the Medicaid program, through which the federal government and state governments purchase health care from private organizations on behalf of low-income individuals. The third approach is to subsidize the activities of producers of collective goods. Subsidies have the advantage of flexibility—local organizations can direct the use of the subsidies to meet locally identified needs—but potentially have the disadvantage of being poorly targeted.

Unlike the tax exemptions provided to nonprofit hospitals, other subsidy mechanisms exist that are available to hospitals of all ownership types. Such subsidies include Medicare and Medicaid disproportionate share hospital (DSH) payments and Medicare's supplemental payments to teaching hospitals through the indirect medical education (IME) program.[14] Hospitals may also receive partial reimbursement from Medicare for bad debt incurred for Medicare patients.[15] In addition, some states fund hospitals through various revenue sources such as tobacco-settlement funds and uncompensated-care pools.

The existing subsidies for hospital care, other than the tax exemptions provided to nonprofits, are substantial. CBO estimates that in 2005 hospitals received $15 billion in Medicare DSH and IME payments, and $9 billion in

11. See Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2006-2010*, JCS-2-06 (2006).

12. For-profit hospitals also face an incentive to minimize their tax burden, but they are constrained from doing so by their owners' interests in generating and distributing income.

13. See Congressional Budget Office, *Taxing the Untaxed Business Sector* (July 2005).

14. Medicare DSH payments are based on each hospital's share of low-income patients. For the purposes of determining Medicare DSH payments, each hospital's disproportionate patient percentage is calculated, which equals the share of Medicare patient days accounted for by Medicare beneficiaries who receive Supplemental Security Income plus Medicaid patient days as a share of total patient days. The mechanism for allocating Medicaid DSH funds varies from state to state.

15. If a Medicare beneficiary does not pay the required deductible or coinsurance for a hospital stay, the hospital may, under certain conditions, report the unpaid amounts as bad debt and receive reimbursement from Medicare for 70 percent of that bad debt. See Statement of Mark McClellan, Administrator of the Centers for Medicare & Medicaid Services, *Tax Exemption for Hospitals and Federal Payment for Uncompensated Care*, before the House Committee on Ways and Means (May 26, 2005), available at www.cms.hhs.gov/media/press/release.asp?Counter=1476.

Medicaid DSH payments.[16] Other analysts have estimated that Medicare bad-debt payments to hospitals totaled $1.6 billion in 2005, and that in 2001 state and local governments provided about $7 billion to hospitals through various tax appropriations and indigent-care programs.[17]

Defining Community Benefits

Although nonprofit hospitals receive tax exemptions in return for providing community benefits, there is little consensus on what constitutes a community benefit or how to measure community benefits. In the academic literature, community benefits have been defined as "those programs and services that are generally thought to be provided at low or negative margin and are intended to improve access by disadvantaged groups or to address important health care matters for a defined population."[18] Community benefits and collective goods are linked—if a hospital chooses to provide a particular medical service despite its being unprofitable, that may indicate that the hospital views that service as a collective good that is worth providing because it benefits the community. In identifying and measuring the community benefits that hospitals provide, it seems reasonable, therefore, to focus on services that are uncompensated or relatively unprofitable.

The IRS has developed a practical definition of community benefits for the purpose of granting tax exemptions. The federal criteria for providing tax exemptions to nonprofit hospitals have changed over time and have been gradually loosened. In a 1956 revenue ruling, the IRS criteria included a charity-care requirement, meaning specifically that a hospital "must be operated to the extent of its financial ability for those not able to pay for the services rendered."[19] That 1956 revenue ruling specified clearly that bad debt did not constitute charity and that incurring bad debt did not satisfy the criteria for the tax exemption. In a 1969 revenue ruling, the IRS significantly loosened the criteria for nonprofit hospitals to receive the federal income tax exemption and defined promoting the health of any broad class of persons as a community benefit, including, perhaps, such activities as charity care, health screening, community education about health risks, emergency room services, and basic research.[20] A hospital could satisfy the 1969 community-benefit requirement by offering emergency room services to all people regardless of their ability to pay, even if the hospital did not otherwise admit individuals who were unable to pay. In 1983, the IRS loosened the guidelines further when it specified that a nonprofit hospital could receive the federal income tax exemption even if it did not operate an emergency room.[21]

As a basis for comparison, the Catholic Health Association (CHA) recently released a set of guidelines for hospitals to use in identifying community benefits. CHA's guidelines, which are in some ways stricter than the IRS's standards, specify that community benefits should include services that are "offered to the broad community [and] designed to improve community health," and for which the hospital either is not compensated at all or is undercompensated relative to the costs of providing the service.[22] The CHA guidelines include charity care as a community benefit but specifically exclude bad debt.

16. Many states use Medicaid supplemental payment programs, including DSH and upper payment limit (UPL) arrangements, to "recycle" Medicaid funds in order to increase the federal matching contribution. Those recycling strategies result in much of Medicaid's DSH funding not being retained by hospitals and, instead, being returned to states through provider taxes or intergovernmental transfers. One recent study estimated that only roughly half of the total spending on Medicaid DSH was retained by hospitals, with the rest paid back to states or retained by states. See Teresa A. Coughlin, Brian K. Bruen, and Jennifer King, "States' Use of Medicaid UPL and DSH Financing Mechanisms," *Health Affairs*, vol. 23, no. 2 (March/April 2004), pp. 245-257. The effective subsidy to hospitals from Medicaid DSH spending, therefore, is substantially less than the $9 billion in total spending on Medicaid DSH. UPL arrangements result in payments that, on the basis of Coughlin's study, appear in large part to be returned to the states rather than retained by hospitals. UPL payments are, therefore, not listed in this section as a type of subsidy for hospitals.

17. See Jack Hadley and John Holahan, "How Much Medical Care Do the Uninsured Use, and Who Pays for It?," *Health Affairs*, Web Exclusive (February 12, 2003), Exhibit 4, p. 76.

18. Joel Weissman, "Uncompensated Hospital Care: Will It Be There if We Need It?," *Journal of the American Medical Association*, vol. 276, no. 10 (September 11, 1996), pp. 823-828.

19. Internal Revenue Service, Revenue Ruling 56-185, 1956-1 C.B. 202, available at www.irs.gov/pub/irs-tege/rr56-185.pdf.

20. Internal Revenue Service, Revenue Ruling 69-545, 1969-2 C.B. 117, available at www.irs.gov/pub/irs-tege/rr69-545.pdf.

21. Internal Revenue Service, Revenue Ruling 83-157, 1983-2 C.B. 94, available at www.irs.gov/pub/irs-tege/rr83-157.pdf.

22. Catholic Health Association, *A Guide for Planning and Reporting Community Benefit*, available at www.chausa.org/NR/rdonlyres/7E5CFBD9-F741-4BA6-A74C-E8F14EC9DF82/0/ReferenceI.pdf.

Previous Research on Differences Between For-Profit and Nonprofit Hospitals

The Government Accountability Office recently released a report based on an analysis of hospitals in five selected states that compares the levels of uncompensated care provided by hospitals of different ownership types.[23] (The data on uncompensated care used for GAO's study are also used in this analysis.) GAO found that, in four of the five states analyzed, uncompensated care as a share of operating expenses was higher at nonprofit hospitals than at for-profit hospitals, although the differences were relatively small. A striking finding from that study was that (nonfederal) government hospitals devote a substantially greater share of their activities to uncompensated care than do either nonprofit or for-profit hospitals.[24]

Although other research findings besides the GAO report suggest that nonprofit hospitals provide higher levels of uncompensated care than do for-profits,[25] some researchers have concluded that the differences in the level of uncompensated care provided by nonprofit and for-profit hospitals are small.[26] Two studies have also reported that when nonprofit hospitals were acquired by for-profit corporations, they did not reduce their provision of uncompensated care or other community benefits.[27]

Although studies on uncompensated care often focus on the contrasts between for-profit and nonprofit hospitals, several factors may lead those different types of hospitals to provide similar levels of uncompensated care. First, both types of hospitals may choose to provide uncompensated care to maintain a good relationship with the local community. Second, some states, such as New Jersey, distribute funds to hospitals on the basis of the level of uncompensated care they provide, which can substantially reduce the financial disincentives to provide uncompensated care. And, third, regardless of nonprofit and for-profit hospitals' willingness to provide charity care, both types of hospitals may incur bad debt in the normal course of operations.

The difference in the level of uncompensated care provided by nonprofit and for-profit hospitals has generally been found to be small, but other disparities in hospitals' behavior have been documented. Nonprofit hospitals have been found by some researchers to be less efficient than for-profit hospitals, meaning that costs per unit of output are higher.[28] Many other studies report that

23. Statement of David M. Walker, May 26, 2005.

24. A 1990 GAO study also found that government hospitals devoted a larger share of their activities to uncompensated care than either nonprofit or for-profit hospitals. See General Accounting Office, *Nonprofit Hospitals: Better Standards Needed for Tax Exemption*, GAO/HRD-90-84 (May 30, 1990), available at http://archive.gao.gov/d24t8/141681.pdf. The difference in uncompensated-care shares between government hospitals and other hospitals appears to have grown substantially since the late 1980s.

25. Mark Schlesinger and others, "Competition, Ownership and Access to Hospital Services," *Medical Care*, vol. 35, no. 9 (1997), pp. 974-992.

26. Frank A. Sloan, "Not-for-Profit Ownership and Hospital Behavior," in A.J. Culyer and J.P. Newhouse, eds., *Handbook of Health Economics* (Amsterdam: Elsevier Science B.V., 2000); and Statement of Mark B. McClellan, May 26, 2005.

27. Gary J. Young, Kamal R. Desai, and Carol Van Deusen Lukas, "Does the Sale of Nonprofit Hospitals Threaten Health Care for the Poor?," *Health Affairs*, vol. 16, no. 1 (January/February 1997), pp. 137-141; and Gary J. Young and Kamal R. Desai, "Nonprofit Hospital Conversions and Community Benefits: New Evidence from Three States," *Health Affairs*, vol. 18, no. 5 (September/October 1999), pp. 146-155.

28. George W. Wilson and Joseph M. Jadlow, "Competition, Profit Incentives, and Technical Efficiency in the Provision of Nuclear Medicine Services," *Bell Journal of Economics*, vol. 13, no. 2 (Autumn 1982), pp. 472-482; Regina E. Herzlinger and William S. Krasker, "Who Profits from Nonprofits?," *Harvard Business Review*, vol. 93 (1987), pp. 93-106; and David M. Cutler and Jill R. Horwitz, "Converting Hospitals from Not-for-Profit to For-Profit Status: Why and What Effects?," in D.M. Cutler, ed., *The Changing Hospital Industry: Comparing Not-for-Profit and For-Profit Institutions* (Chicago: University of Chicago Press, 2000). Note, however, that at least one study has found that nonprofit hospitals are more efficient than for-profit hospitals. See Stephen Zuckerman, Jack Hadley, and Lisa Iezzoni, "Measuring Hospital Efficiency with Frontier Cost Functions," *Journal of Health Economics*, vol. 13 (1994), pp. 255-280.

nonprofits charge lower prices or markups than do for-profits.[29] Several studies have also concluded that for-profit hospitals appear to react more strongly than nonprofits do to the reimbursement environment by altering the mix of services they provide,[30] by limiting increases in the wages of hospital employees,[31] and by more aggressively coding services provided so as to increase reimbursement rates.[32] A large number of studies have examined differences in the quality of care and health outcomes between for-profit and nonprofit hospitals but have not generally identified any consistent patterns.[33]

Study Data and Methods

The remainder of this paper assesses whether the three types of hospitals—nonprofit, for-profit, and government—provide different levels of community benefits. First, the types of services used in the analysis as measures of community benefits are explained. Next, the paper describes the data used to measure hospital characteristics and the provision of community benefits, and the analytical strategy used to compare hospitals of different ownership types. Then the results of the analysis are presented, which examine the differences between hospitals of different ownership types, both in their basic characteristics (size, location, and so on), and in their provision of community benefits.

Measures of Community Benefits

Because of the lack of general consensus on the definition of community benefits, many different types of services and activities could be regarded as community benefits. This analysis focuses on the provision of uncompensated care, the provision of Medicaid-covered services, and the provision of certain specialized facilities or services (burn intensive care, emergency room care, high-level trauma care, and labor and delivery services).

Although uncompensated care is the focus of this CBO paper and has frequently been analyzed by other researchers, it has substantial limitations as a measure of community benefits. The most significant limitation is that it does not distinguish between the provision of charity care for the indigent, which is more clearly a type of community benefit, and bad debt, which is not necessarily a community benefit. A hospital may incur bad debt when providing services to a high-income individual with

29. Craig G. Coelen, "Hospital Ownership and Comparative Hospital Costs," in Bradford H. Gray, ed., *For-Profit Enterprise in Health Care* (Washington, D.C.: National Academy Press, 1986); Robert V. Pattison and Hallie M. Katz, "Investor-Owned and Not-for-Profit Hospitals: A Comparison Based on California Data," *New England Journal of Medicine*, vol. 309 (1983), pp. 347-353; Robert V. Pattison, "Response to Financial Incentives Among Investor-Owned and Not-for-Profit Hospitals: An Analysis Based on California Data 1978-82, in Gray, ed., *For-Profit Enterprise in Health Care*; and Richard G. Frank and David S. Salkever, "Nonprofit Organization in the Health Sector," *Journal of Economic Perspectives*, vol. 8, no. 4 (Autumn 1994), pp. 129-144.

30. Jill R. Horwitz, "Making Profits and Providing Care: Comparing Nonprofit, For-Profit, and Government Hospitals," *Health Affairs*, vol. 24, no. 3 (May/June 2005), pp. 790-801.

31. Daniel P. Kessler and Mark B. McClellan, "The Effects of Hospital Ownership on Medical Productivity," *Rand Journal of Economics*, vol. 33, no. 3 (Autumn 2002), pp. 488-506.

32. Elaine Silverman and Jonathan Skinner, "Medicare Upcoding and Hospital Ownership," *Journal of Health Economics*, vol. 23, no. 2 (March 2004), pp. 369-389; and Leemore S. Dafny, "How Do Hospitals Respond to Price Changes?," *American Economic Review*, vol. 95, no. 5 (December 2005), pp. 1525-1547.

33. Frank A. Sloan and others, "Hospital Ownership and Cost and Quality of Care: Is There a Dime's Worth of Difference?," *Journal of Health Economics*, vol. 21, no. 1 (January 2001), pp. 1-21; Edmund R. Becker and Frank A. Sloan, "Hospital Ownership and Performance," *Economic Inquiry*, vol. 23, no. 1 (January 1985), pp. 21-36; Gary Gaumer, "Medicare Patient Outcomes and Hospital Organizational Mission," in Gray, ed., *For-Profit Enterprise in Health Care*; Stephen M. Shortell and Edward F. X. Hughes, "The Effects of Regulation, Competition, and Ownership on Mortality Rates Among Hospital Inpatients," *New England Journal of Medicine*, vol. 318, no. 17 (1988), pp. 1100-1107; Emmett B. Keeler and others, "Hospital Characteristics and Quality of Care," *Journal of the American Medical Association*, vol. 268, no. 13 (1992), pp. 1709-1714; Sloan, "Not-for-Profit Ownership and Hospital Behavior"; and Kessler and McClellan, "The Effects of Hospital Ownership on Medical Productivity."

insurance, for example, if the individual fails to pay the deductible for a hospital stay.[34]

Medicaid's payment rates have, in general, been found to be lower than the costs that hospitals incur for providing Medicaid-covered services. Providing hospital services to Medicaid patients is generally unprofitable and serves a needy population and can, therefore, be thought of as a type of community benefit. Like uncompensated care, however, the provision of Medicaid-covered services has significant limitations as a measure of community benefits. The profitability of providing care to Medicaid patients appears to vary widely from state to state and also probably varies from hospital to hospital, and from case to case. Because providing Medicaid-covered services is not always unprofitable, it is not always appropriate to treat it as a community benefit.

The four specialized services analyzed by CBO (burn intensive care, emergency room care, high-level trauma care, and labor and delivery services) were selected because they serve community needs and have been identified by other researchers as being generally unprofitable, and because data are readily available on which hospitals provide them.[35] CBO did not attempt directly to measure the profitability of each of the four specialized services.

Data Sources

Two data sets were constructed, the first including all Medicare-certified community hospitals in the United States and the second including only the subset of community hospitals for which data on uncompensated care were available. Both data sets include the following hospital characteristics: ownership status, specialized services provided, community characteristics, and financial characteristics. Sufficiently reliable data on uncompensated care were available only for hospitals in five states: California, Florida, Georgia, Indiana, and Texas. GAO, which gathered the data on uncompensated care, selected those states because they are geographically diverse, they have a large number of hospitals in each ownership group, and authorities in those states collected hospital-specific information on uncompensated care.[36]

GAO's measure of uncompensated-care costs is based on charges (or "list prices") deflated by a hospital-specific cost-to-charge ratio. The cost-to-charge ratio equals the total costs of providing care to all patients in a given hospital divided by the total charges for all patients in that hospital.[37]

The main source of data on hospital characteristics is the Medicare Hospital Cost Report database. All Medicare-certified hospitals in the United States must file an annual cost report with the Centers for Medicare & Medicaid

34. There is very little direct evidence on the income and insurance status of the patients who account for hospitals' uncompensated care. Two surveys of uncompensated-care patients, both limited to hospitals in Massachusetts, showed that most uncompensated care was attributable to uninsured patients (see Joel S. Weissman, Carol Van Deusen Lukas, and Arnold M. Epstein, "Bad Debt and Free Care in Massachusetts Hospitals," *Health Affairs*, vol. 11, no. 2, Summer 1992, pp. 148-161), and that the great majority of bad debt was attributable to patients with incomes below 200% of the federal poverty line (see Joel S. Weissman, Paul Dryfoos, and Katharine London, "Income Levels of Bad-Debt and Free-Care Patients in Massachusetts Hospitals," *Health Affairs*, vol. 18, no. 4, July/August 1999, pp. 156-166). Those findings support the validity of the use of uncompensated care as a measure of community benefits, but they are not necessarily generalizable nationwide.

35. William M. Gentry, and John R. Penrod, "The Tax Benefits of Not-for-Profit Hospitals," in D.M. Cutler, ed., *The Changing Hospital Industry: Comparing Not-for-Profit and For-Profit Institutions* (Chicago: University of Chicago Press, 2000); and Horwitz, "Making Profits and Providing Care: Comparing Nonprofit, For-Profit, and Government Hospitals." Gentry and Penrod point out that emergency room care and labor and delivery services are financially unrewarding to hospitals because they are provided to disproportionately large numbers of Medicaid enrollees and the uninsured. Also, the Emergency Medical Treatment & Active Labor Act (EMTALA) makes the provision of emergency room care less financially attractive to hospitals. Complying with EMTALA, which is a precondition for participation in the Medicare program, requires that hospitals—if they choose to offer emergency room care—provide screening and stabilization services to all patients entering the emergency room regardless of their ability to pay. Some specialized services, besides the four CBO examined, have also been identified as generally unprofitable, but data on which hospitals provided those other services were not readily available.

36. For-profits hospitals had a larger market share in the five GAO states than in states not included in the GAO data. Among the hospitals included in the GAO data, 29 percent were for-profit, while among the hospitals that were included in the national analysis but not in the five GAO states only 14 percent were for-profit. That difference in for-profit market share implies that it may be difficult to generalize findings from the five GAO states to the national level.

37. Cost-to-charge ratios vary widely across hospitals, with ratios ranging from 0.17 (the 5th percentile) to 0.70 (the 95th percentile).

Services (CMS). Medicare Hospital Cost Reports contain a wealth of information on providers, such as ownership type and facility characteristics, utilization data (discharges and days of patient care), costs and charges by cost center (in total, and for Medicare), and financial-statement data (including assets, revenues, and expenses).[38] The cost reports also provide information on the location of the hospitals, the number of beds in each facility, and the availability of three types of specialized patient services: emergency room care, burn intensive care, and labor and delivery services. To identify hospitals that provide high-level trauma care, CBO used an inventory of trauma centers provided by the Trauma Information Exchange Program (TIEP).[39]

The Medicare Hospital Cost Report data used in this analysis are from the March 2005 update, which includes all Medicare Hospital Cost Reports submitted up to that point. The analysis focuses on services provided in 2003, however, because the uncompensated-care data cover that period and because cost-report data are available for 2003 for over 4,500 community hospitals, representing nearly all such hospitals. Other hospital data are obtained from the "Provider Specific" file and the "Provider of Services" file, both maintained by CMS.

The characteristics of the county in which each hospital is located are taken from the 2004 Area Resource File, which is maintained by the Bureau of Health Professions of the Department of Health and Human Services. Those data include average per capita income in the county, the percentage of the population in poverty, the unemployment rate, and other population characteristics. Each hospital is associated with a set of population characteristics (income, and so on) based on the county in which that hospital is located. For each population characteristic, the most recent data available were used.

The level of uncompensated care provided by a hospital will depend, in part, on the size of the hospital, the characteristics of the community in which it is located, as well as the hospital's mission and form of organization. One of the reasons that nonprofit hospitals may provide a higher level of uncompensated care than for-profit hospitals do is simply that nonprofits tend to be larger than for-profits. To account for differences in hospitals' size in the comparison of levels of uncompensated care, CBO used uncompensated care as a share of operating expenses (the uncompensated-care share) as the main measure of uncompensated care.

Methods of Analysis

CBO used two approaches to compare the level of community benefits provided by the three different types of hospitals. The first approach is an "unadjusted" analysis that compares simple weighted averages among hospitals of different ownership types. The second approach is an "adjusted" analysis that measures the differences between hospitals of different ownership types, holding constant certain hospital characteristics, such as the size of the facility, the state in which it is located, and the income level of the community in which it is located. Those unadjusted and adjusted analyses were first applied to uncompensated-care shares, and then the same approach is used to analyze the provision of Medicaid-covered services, and the provision of certain specialized services.

The use of both unadjusted and adjusted analyses can help determine whether any observed differences among hospitals of different ownership types are attributable to the hospitals' location and size or to some other factor correlated with ownership status. As other researchers have pointed out, hospitals of different ownership types tend to be located in disparate geographic areas with divergent patient populations. One can think of different geographic areas as having varying levels of demand for uncompensated care, with low-income areas and areas with high numbers of uninsured people having higher levels of demand. The unadjusted uncompensated-care shares reflect both hospitals' willingness and ability to provide such care and their decision to locate in areas with high or low levels of demand for uncompensated care. The differences in adjusted uncompensated-care

38. Although the Medicare Hospital Cost Report includes some information on uncompensated care, CBO did not analyze those Cost Report-based data because of concerns over the quality and consistency of the data. Nancy M. Kane and Stephen A. Magnus present a detailed description of the limitations of the Medicare Cost Report, especially financial measures contained in the cost report's worksheet G and uncompensated care in worksheet S-10. See Nancy M. Kane and Stephen A. Magnus, "The Medicare Cost Report and the Limits of Hospital Accountability: Improving Financial Accounting Data," *Journal of Health Politics, Policy and Law*, vol. 26, no. 1 (February 2001), pp. 81-105.

39. National Inventory of Trauma Centers Database (Upper Marlboro, Md.: American Trauma Society-Trauma Information Exchange Program, 2006), accessed October 4, 2006. The analysis and interpretation of the data on high-level trauma care presented in this paper are solely the responsibility of CBO and do not represent the views or conclusions of TIEP, its funders, or those who carried out the original collection of the data.

Table 2.

Hospital Ownership Types, by Region

	Share of Hospitals (Percent)			Number of Hospitals of All Types
	Nonprofit	For-Profit	Government	
Northeast	89	6	5	618
Midwest	69	6	25	1,339
South	43	29	28	1,728
West	52	21	27	833
All Regions	58	18	24	4,518

Source: Congressional Budget Office based on the Medicare Hospital Cost Report, 2003.

shares, by contrast, reflect differences in hospitals' willingness and ability to supply uncompensated care, after controlling for differences in the communities in which the hospitals are located and other hospital characteristics. Conceptually, the adjusted differences represent the differences that would occur if hospitals of all ownership types were located in the same areas and were the same in all respects other than ownership status.[40]

To calculate the adjusted differences in uncompensated-care shares, CBO regressed uncompensated-care shares on state indicator variables, local population characteristics, a measure of hospital size, case mix (in other words, the average intensity of illness and resource needs among a hospital's patients), and indicator variables for nonprofit and government ownership status.[41] ("For-profit" ownership is the omitted reference group.)[42] That regression yields adjusted differences in uncompensated-care shares for each state and the average for the entire five-state sample. That technical adjustment has the effect of correcting for differences in hospital size and local community characteristics that may affect the uncompensated-care share of a hospital, leaving a clearer picture of the differences in community benefits that are attributable solely to differences in ownership type.

Characteristics of Hospitals

Of the 4,518 community hospitals included in the national analysis, 58 percent (2,641) are categorized as nonprofit, 18 percent (794) as for-profit, and the remaining 24 percent (1,083) as government hospitals. Those different types of hospitals vary in their location, size, and financial performance, and in their provision of community benefits.

The distribution of hospital ownership varies markedly by region (see Table 2). In the Northeast, 89 percent of the hospitals are nonprofits, whereas in the South only 43 percent of the hospitals are nonprofits. For-profit hospitals are common in the South and West, but not in the Northeast and Midwest.

Nonprofit hospitals tend to be larger than for-profit hospitals and are more likely to be teaching hospitals (see Table 3). The mean number of beds at nonprofit

40. Nonprofit hospitals operating in the same market as for-profits appear to imitate their behavior to some extent. See Cutler and Horwitz, "Converting Hospitals from Not-for-Profit to For-Profit Status: Why and What Effects?"; Silverman and Skinner, "Medicare Upcoding and Hospital Ownership"; and Jonathan Gruber, "The Effects of Competitive Pressure on Charity-Hospital Response to Price Shopping in California," *Journal of Health Economics*, vol. 13, no. 2 (1994), pp. 183-212. That phenomenon has led some researchers to focus not on the effect of the ownership status of individual hospitals, but, instead, on the effect of the share of hospitals that are for-profit in defined geographic areas. See, for example, Mark Duggan, "Hospital Market Structure and the Behavior of Not-for-Profit Hospitals," *Rand Journal of Economics*, vol. 33, no. 3 (Autumn 2002), pp. 433-446. CBO did not analyze any market-level ownership effects or interaction effects among hospitals. Possible interaction effects might include crowding out (the existence of governmental hospitals could reduce the uncompensated care provided by nongovernmental hospitals in the same market) and imitation effects.

41. An indicator variable is one that only takes on values of either zero or one. For example, the state indicator variable for Alaska equals one for all hospitals located in Alaska and zero for all other hospitals.

42. In the uncompensated-care-share regressions, each independent variable is interacted with—in other words, multiplied by—a set of indicator variables representing the state in which the hospital is located. That allows the estimated effect of each independent variable to vary from state to state. The uncompensated-care-share regressions are weighted by operating expenses.

Table 3.

Characteristics of Hospitals, by Ownership Type

Hospital Characteristics	Ownership Type		
	For-Profit	Nonprofit	Government
Number of Hospitals in Data Set	794	2,641	1,083
Facility Size and Patient Population			
Number of hospital beds	130	164 ***	90 ***
Total discharges	5,666	8,337 ***	4,018 ***
Medicare discharges (Percent)	37.5	37.4	32.9 ***
Medicaid discharges (Percent)	16.9	13.5 ***	23.0 ***
Number of staff (Full-time equivalents)	465	955 ***	551 **
Case-mix index (Transfer-adjusted)	1.4	1.5 ***	1.4
SSI days as a percentage of Medicare days	13.2	8.1 ***	12.0 **
Hospital Characteristics			
Teaching hospital (Percent)	18.1	30.8 ***	12.8 ***
Ratio of interns/residents to (100) beds	3.5	12.2 ***	19.0 ***
Referral center (Percent)	3.8	5.9 **	4.0
Transplant center (Percent)	2.4	5.6 ***	3.7 *
Financial Measures			
Total assets (Millions of dollars)	57.0	137.2 ***	70.0 **
Fixed assets (Millions of dollars)	30.4	56.5 ***	26.6 *
Net patient revenue (Millions of dollars)	68.9	119.0 ***	58.6 **
Operating expenses (Millions of dollars)	64.5	120.6 ***	64.4
Total margin (Percent)[a]	9.1	3.9 [b]	2.9 [b]
Local Population Characteristics[c]			
Average per capita income (Dollars)	29,126	32,423 ***	29,273
Population in poverty (Percent)	13.4	11.4 ***	13.2
Population uninsured among people under age 65 (Percent)	19.0	15.4 ***	17.7 ***
Population eligible for Medicare (Percent)	14.4	14.9 ***	14.4
Unemployment rate	6.1	5.8 ***	6.0
Population with fewer than nine years of schooling (Percent)	9.3	7.0 ***	8.4 ***
Location			
Large urban area (Percent)	59.8	51.4 ***	24.1 ***
Small urban or suburban area (Percent)	33.1	34.3	41.8 ***
Rural area (Percent)	7.1	14.3 ***	34.1 ***

Source: Congressional Budget Office based on the Medicare Hospital Cost Report, 2003.

Notes: SSI = Supplemental Security Income.

All statistics represent means, unless otherwise noted.

The statistical significance was calculated for the differences between for-profit and nonprofit hospitals and between for-profit and government hospitals, using two-tailed Student's t-tests. * = $p<0.10$; ** = $p<0.05$; *** = $p<0.01$.

Approximately 700 hospitals were missing data on SSI days as a share of Medicare days and case-mix index. A small number of hospitals were missing data for some items.

Weights were used to calculate the following statistics: percentage of discharges (weight = discharges); case-mix index (weight = inpatient days); SSI days as a percentage of Medicare days (weight = Medicare days); ratio of interns/residents to (100) beds (weight = beds); local population characteristics (weight = inpatient days).

a. The source for total margins is the Medicare Payment Advisory Commission (MedPAC). Total margins were calculated by MedPAC among community hospitals paid under Medicare's prospective payment system in 2003.

b. Statistical significance not calculated.

c. Each hospital is assigned local population characteristics on the basis of the population of the county in which it is located.

hospitals (164) is 26 percent larger than the mean number of beds at for-profits (130), and 82 percent larger than at government hospitals (90). The number of patient discharges and the number of employees (measured by full-time equivalents) follow similar patterns.

Teaching hospitals account for 31 percent of nonprofits versus 18 percent of for-profits and 13 percent of government hospitals.[43] The ratio of interns and residents to beds, a measure of teaching intensity, shows that nonprofit hospitals are involved to a greater degree in graduate medical education than are for-profits.[44] Nonprofits also have higher mean total assets, fixed assets, net patient revenues, and operating expenses than both for-profit and government hospitals. Nonprofit hospitals have a total margin (3.9 percent) that is somewhat higher than government hospitals' (2.9 percent) but lower than for-profits' (9.1 percent).[45]

Compared with for-profit hospitals and government hospitals, nonprofit hospitals tend to be located in counties with higher average incomes and lower poverty rates. Nonprofit hospitals also tend to be located in areas with relatively low rates of uninsurance and higher levels of education. Both nonprofit hospitals and government hospitals are more likely than for-profit hospitals to be located in rural areas.

43. In this analysis, a teaching hospital is defined as a hospital that reports being a teaching hospital in the Medicare Hospital Cost Report.

44. Some researchers treat the costs that hospitals incur in providing graduate medical education as a type of community benefit, similar to the provision of uncompensated care. Others have argued that medical residents bear the costs of their own training by earning salaries less than the revenue generated for the hospital by the services they provide, and that medical residents ultimately benefit from their training when they receive the higher salaries they can command because of that training. Teaching hospitals also receive payments from Medicare on the basis of the number of residents in training. Those facts imply that providing graduate medical education is not necessarily unprofitable for the teaching hospital and does not necessarily meet the criteria CBO used to identify services as community benefits.

45. The total margin is defined as the excess of total payments from all sources over all costs as a share of payments.

Differences in the Provision of Uncompensated Care

CBO's analysis of uncompensated care as a share of operating expenses was conducted using 1,057 community hospitals in the five selected states—California, Florida, Georgia, Indiana, and Texas—for which data on uncompensated care were available. Of those 1,057 community hospitals, 462 (44 percent) were nonprofit, 308 (29 percent) were for-profit, and 287 (27 percent) were government-owned. In the five states analyzed, nonprofit hospitals provided a total of about $3 billion in uncompensated care, government hospitals provided more than $3 billion, and for-profit hospitals provided about $1 billion in uncompensated care.

Table 4 presents the unadjusted uncompensated-care shares for each ownership type, as well as unadjusted and adjusted differences between nonprofit and for-profit hospitals, and between government hospitals and for-profit hospitals.[46] In the unadjusted results, nonprofit hospitals were found to devote a slightly larger share of their operating expenses to uncompensated care than did for-profits (a statistically significant difference of 4.7 percent versus 4.2 percent).

The adjusted differences in Table 4 reflect the estimated differences in uncompensated-care shares after controlling for the following variables: the hospital's size; the state in which it is located; the degree of urbanization of the community in which it is located; its case mix; the percentage of the surrounding county's population that lives in poverty; the percentage of the county's population that is uninsured; and the percentage of the county's population that is eligible for Medicare. (The full regression results used to generate the adjusted results in Table 4 are included in Table A-1.) After adjustment, the difference between nonprofit and for-profit hospitals in their average uncompensated-care share was a statistically significant 0.6 percentage points. As in the unadjusted results,

46. The unadjusted uncompensated-care shares reported by CBO inTable 4 differ slightly from the uncompensated-care shares reported by GAO (see Statement of David M. Walker, May 26, 2005, "Highlights" and p. 11). The discrepancy is attributable to the use of different data sources for hospital operating expenses (hospital operating expenses are used as the denominator in the calculation of uncompensated-care shares). The differences in total operating expenses between the two data sources are relatively small and are not large enough to substantially affect the key results.

Table 4.

Uncompensated-Care Shares, by Hospital Ownership Type and State

	Number of Hospitals	Mean Uncompensated-Care Share (Percent)			Difference Between Nonprofit and For-Profit Hospitals (Percentage points)		Difference Between Government and For-Profit Hospitals (Percentage points)	
		For-Profit	Nonprofit	Government	Unadjusted	Adjusted	Unadjusted	Adjusted
California	328	3.4	3.2	12.8	-0.2	-0.4	9.4 ***	8.1 ***
Florida	168	4.3	5.5	12.8	1.2 ***	0.9 *	8.5 ***	8.1 ***
Georgia	132	5.2	6.0	10.3	0.8	-0.4	5.1 ***	2.3
Indiana	97	1.9	3.9	3.4	1.9 ***	1.8 ***	1.5 ***	0.7
Texas	332	4.6	6.4	19.7	1.8 ***	2.1 **	15.2 ***	15.3 ***
All Five States	1,057	4.2	4.7	13.0	0.5 ***	0.6 *	8.9 ***	8.6 ***

Source: Congressional Budget Office based on the Medicare Hospital Cost Report, 2003, and data from the Government Accountability Office on uncompensated care.

Notes: The uncompensated-care share equals uncompensated-care costs as a share of total hospital operating expenses, expressed as a percentage. The adjusted differences reflect the differences between for-profit, nonprofit, and government hospitals after controlling for the following factors: number of hospital beds, hospital case mix, and population characteristics of the county in which the hospital was located (including percentage in poverty, percentage without insurance, percentage eligible for Medicare, and the degree of urbanization—large urban, suburban/small urban, or rural—of the county). In the "All Five States" model, state indicator variables were included, and each control variable was interacted with an indicator for the state in which the hospital was located. All regression models were weighted by operating expenses. Appendix A presents the regression models used to calculate the adjusted differences.

In the unadjusted results, the statistical significance of the differences (between for-profit and nonprofit hospitals and between for-profit and government hospitals) was calculated using two-tailed Student's t-tests. In the adjusted results, the statistical significance of the differences was calculated on the basis of the estimated regression coefficients and standard errors. * = $p<0.10$; ** = $p<0.05$; *** = $p<0.01$.

government hospitals were found in the adjusted results to have much higher uncompensated-care shares than either nonprofit or for-profit hospitals. If nonprofit hospitals in the five selected states had behaved like otherwise similar for-profit hospitals—in other words, if they had provided the level of uncompensated care that CBO predicts would have been provided by otherwise similar for-profit hospitals—there is a 90 percent chance that nonprofit hospitals would have provided between $100 million and $700 million less in uncompensated care than they actually did provide.[47]

To check the sensitivity of the results to the particular empirical specification used, CBO analyzed a number of alternative specifications. Alternative models were considered that included only subsets of the control variables in the basic model (the results of two of those models are shown in the appendix); added a teaching-hospital control variable; used different functional forms for some of the variables; and used different geographic groupings (such as zip code) for defining certain variables (such as the poverty rate). In general, the key results on nonprofit ownership status were quite similar in those alternative analyses to the main results presented in Table 4. The finding that nonprofit hospitals in the five selected states have, on average, slightly higher uncompensated-care shares than for-profit hospitals appears, therefore, to be statistically robust, meaning that very similar key results occur when different analytical specifications are used.

Effect of Location on Adjusted Differences

The relatively small estimated differences that exist between nonprofit and for-profit hospitals in adjusted uncompensated-care shares could tend to mask larger differences in actual shares if nonprofits tended to be located in areas with high demand for uncompensated care. That is, the adjustment process controls for locational characteristics and would not, in a sense, give credit to nonprofit hospitals for their decision to operate in areas with a high demand for uncompensated care. On the basis of the national data presented in Table 3, however, it appears that

47. The range of $100 million to $700 million represents the 90 percent confidence interval from the underlying statistical analysis.

Table 5.

Economic Characteristics of Hospitals' Communities, by Hospital Ownership Type and State

	Number of Hospitals	Local Population Characteristics (Means)	Ownership Type		
			For-Profit	Nonprofit	Government
California	328	Average per capita income (Dollars)	32,221	32,673	31,264
		Population in poverty (Percent)	13.0	13.0	13.8
		Population uninsured among people under age 65 (Percent)	22.2	21.2 *	22.3
Florida	168	Average per capita income (Dollars)	29,491	28,731	29,036
		Population in poverty (Percent)	12.2	11.8	11.8
		Population uninsured among people under age 65 (Percent)	19.7	18.7 **	20.1
Georgia	132	Average per capita income (Dollars)	30,754	31,715	28,536
		Population in poverty (Percent)	14.8	13.1 **	15.0
		Population uninsured among people under age 65 (Percent)	17.8	17.6	17.9
Indiana	97	Average per capita income (Dollars)	27,571	28,356	27,788
		Population in poverty (Percent)	8.7	10.1 *	7.7
		Population uninsured among people under age 65 (Percent)	12.8	14.3 **	11.7 *
Texas	332	Average per capita income (Dollars)	28,347	29,580	27,483
		Population in poverty (Percent)	16.3	14.5 **	15.2
		Population uninsured among people under age 65 (Percent)	22.7	20.4 ***	21.3 *

Source: Congressional Budget Office.

Note: Each hospital was assigned local population characteristics on the basis of the population of the county in which it is located. The statistical significance was calculated for the differences between for-profit and nonprofit hospitals and between for-profit and government hospitals, using two-tailed Student's t-tests. * = $p<0.10$; ** = $p<0.05$; *** = $p<0.01$.

nonprofit hospitals tend to be located in areas with relatively high income, low poverty rates, and low rates of uninsurance.[48]

To examine locational differences in more detail, CBO focused on the five states included in the uncompensated-care analysis and measured average per capita income, poverty rates, and rates of uninsurance in the counties where the hospitals were located (see Table 5). In each of the five states except for Indiana, nonprofit hospitals, compared with for-profit hospitals, were found to be located in counties with either lower poverty rates, lower rates of uninsurance, or both. (In Indiana, in comparison with for-profit hospitals, nonprofit hospitals were located in counties with higher rates of poverty and higher rates of uninsurance.) On the whole, nonprofit hospitals do not appear disproportionately to have characteristics, other than ownership type, that are associated with greater provision of uncompensated care. That fact results, in the analysis of uncompensated-care shares, in

48. At the national level, nonprofit hospitals, compared with for-profit hospitals, tend to be located in higher-income counties (see Table 3). That fact is partly attributable to regional differences and the uneven distribution of hospitals across regions (see Table 2). In the Northeast, a region with relatively high incomes, nonprofits account for 89 percent of all hospitals and for-profits account for only 6 percent. In the South, a region with relatively low incomes, nonprofits account for 43 percent of all hospitals, and for-profits account for 29 percent. Those regional differences in income can account for much of the observed differences between nonprofit and for-profit hospitals in the average income and poverty rates of the communities they serve.

the unadjusted and adjusted differences between nonprofit and for-profit hospitals being quite similar.

Differences by State

States differ in whether they impose community-benefit requirements on nonprofit hospitals, in the strictness of those requirements, and in other factors that affect hospitals' provision of uncompensated care. The differences between nonprofit and for-profit hospitals in their uncompensated-care shares should not, therefore, be expected to be the same among different states.

In terms of community-benefit requirements, among the five states included in the uncompensated-care analysis, only California, Indiana and Texas require that nonprofit hospitals maintain and report community-benefit plans; only Texas and Indiana impose fines on nonprofit hospitals for not reporting community benefits; and only Texas requires that nonprofit hospitals demonstrate that they have met certain quantitative requirements in their provision of charity care and community benefits.

CBO's regression analysis of uncompensated-care shares allows for a separate comparison of nonprofit, for-profit, and government hospitals in each state. Those results, which appear in Table 4, show that in Florida nonprofit hospitals have somewhat higher uncompensated-care shares than otherwise similar for-profit hospitals (0.9 percentage points), while the differences between nonprofit and for-profit hospitals' uncompensated-care shares are larger in Indiana (1.8 percentage points) and Texas (2.1 percentage points). In California and Georgia, the differences in uncompensated-care shares between nonprofit and otherwise similar for-profit hospitals are not significantly different from zero. Given that the analysis of uncompensated-care shares includes only five states, it is not possible to draw any firm conclusions regarding possible links between state community-benefit requirements for nonprofit hospitals and the differences between nonprofit and for-profit hospitals in their uncompensated-care shares. It is worth noting, however, that among the five states examined, Texas and Indiana impose the strictest requirements on nonprofit hospitals, and the differences in uncompensated-care shares between nonprofit and for-profit hospitals appear to be largest in those two states.

Distribution of Hospitals' Uncompensated-Care Shares

The comparison of the mean uncompensated-care shares among hospitals of different ownership types masks substantial variation among individual hospitals. To illustrate the high degree of variation in uncompensated-care shares, CBO generated the histograms in Figure 1, which show the fraction of hospitals with different uncompensated-care shares by ownership type.[49] There is substantial variation within each ownership type in hospitals' uncompensated-care shares. Although nonprofit hospitals, on average, have higher uncompensated-care shares than do for-profits, the distributions of hospital-level uncompensated-care shares among those two types of hospitals overlap to a large extent. Among both nonprofit and for-profit hospitals, a large majority have either low uncompensated-care shares (below 5 percent) or moderate uncompensated-care shares (5 to 10 percent). Government hospitals on average provide much more uncompensated care than either nonprofit or for-profit hospitals, but a substantial share of government hospitals provides only modest levels of uncompensated care. The difference in the mean uncompensated-care shares between government hospitals and other types of hospitals is driven largely by the existence of a relatively small number of government hospitals—35 out of the 287 government hospitals in the five selected states—that had very high uncompensated-care shares (over 15 percent).

Differences in the Provision of Medicaid-Covered Services

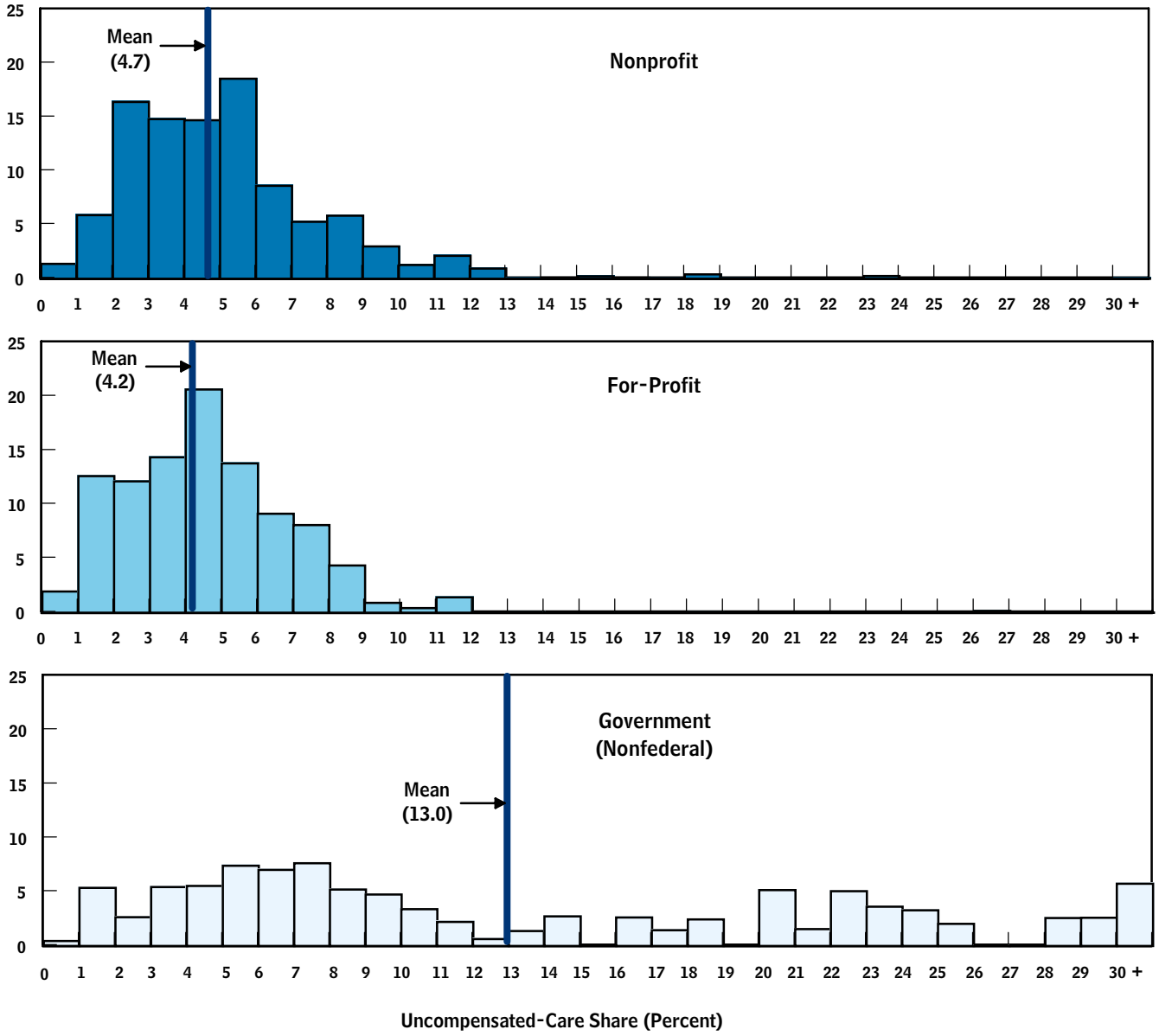
Some industry experts and researchers include the so-called Medicaid shortfall as an additional type of community benefit. The Medicaid shortfall is the difference between the costs that hospitals incur as a result of providing services to Medicaid enrollees and Medicaid's payments to hospitals for those services. On the basis of data from the American Hospital Association, the Lewin Group estimates that Medicaid's payments over the past several years have covered about 95 percent of the Medic-

49. To generate the histograms in Figure 1, unadjusted uncompensated-care shares are used and each hospital is weighted by its operating expenses.

Figure 1.

Distribution of Hospitals, by Uncompensated-Care Share and by Ownership Type

(Percentage of Hospitals)



Source: Congressional Budget Office based on the Medicare Hospital Cost Report, 2003, and data from the Government Accountability Office on uncompensated care.

Note: "Government" hospitals include only nonfederal government-owned community hospitals.

The uncompensated-care share equals uncompensated-care costs as a share of total hospital operating expenses. Uncompensated-care shares are unadjusted. The bar height indicates the share of hospitals, in percent. The distributions are weighted by operating expenses and truncated at 30 percent. The solid vertical lines represent the weighted average uncompensated-care share for each ownership type.

Table 6.

Medicaid Shares, by Hospital Ownership Type

Mean Medicaid Share (Percent)			Difference Between Nonprofit and For-Profit Hospitals (Percentage points)		Difference Between Government and For-Profit Hospitals (Percentage points)	
For-Profit	Nonprofit	Government	Unadjusted	Adjusted	Unadjusted	Adjusted
17.2	15.6	27.0	-1.5 ***	-1.3 **	9.8 ***	8.8 ***

Source: Congressional Budget Office based on the Medicare Hospital Cost Report, 2003.

Notes: The Medicaid share equals Medicaid-covered hospital inpatient days as a share of total hospital inpatient days, expressed as a percentage. The adjusted values reflect the differences between for-profit and nonprofit hospitals, and between for-profit and government hospitals, after controlling for the state in which the hospital was located and the following factors: number of hospital beds, hospital case mix, and population characteristics of the county in which the hospital was located (including percentage in poverty, percentage without insurance, percentage eligible for Medicare, and the degree of urbanization—large urban, suburban/small urban, or rural—of the county). Each control variable was interacted with an indicator for the state in which the hospital was located. The regression model was weighted by operating expenses. Hospitals were excluded from the calculation of the adjusted differences if they were located in a state that did not have at least one for-profit hospital.

In the unadjusted results, the statistical significance of the differences (between for-profit and nonprofit hospitals, and between for-profit and government hospitals) was calculated using two-tailed Student's t-tests. In the adjusted results, the statistical significance of the differences was calculated on the basis of the estimated regression coefficients and standard errors. * = $p<0.10$; ** = $p<0.05$; *** = $p<0.01$.

aid-related costs that hospitals incur.[50] Hospitals that treat a large number of Medicaid patients, therefore, are likely to face a larger Medicaid shortfall than hospitals that treat fewer Medicaid patients.

To examine differences among nonprofit, for-profit, and government hospitals in the provision of care to Medicaid patients, CBO analyzed the "Medicaid share," which is calculated for each hospital and equals the percentage of inpatient days accounted for by Medicaid patients. The Medicaid analysis included all community hospitals nationwide for which data were available (N = 4,397).[51] In 2003, the average Medicaid share among for-profit hospitals was 17.2 percent, among nonprofit hospitals it was 15.6 percent, and among government hospitals it was 27.0 percent (see Table 6). CBO calculated adjusted differences in Medicaid shares using regression models similar to those used to analyze the uncompensated-care share. After accounting for hospitals' characteristics and local population characteristics, CBO estimated that nonprofit hospitals had a Medicaid share that was 1.3 percentage points lower than for-profit hospitals, a difference that was statistically significant.

The difference in Medicaid shares can be used to estimate the differences in the Medicaid shortfall as a share of operating expenses among different types of hospitals. On the basis of Lewin's estimated national average, the shortfall from treating Medicaid patients would equal about 5 percent of a hospital's Medicaid-related operating expenses. As a share of operating expenses, the Medicaid shortfall is estimated to be less than one-tenth of one percentage point higher at for-profit hospitals than at nonprofit hospitals. The fact that nonprofit hospitals tend to treat fewer Medicaid patients than otherwise similar for-profit hospitals implies that they probably face less of a Medicaid shortfall; but, as a share of operating expenses, the difference appears to be quite small.

50. Al Dobson and others, *Executive Summary: Evaluation of the Adequacy of Medicaid Payments to Hospitals in Pennsylvania* (prepared by the Lewin Group for the Hospital and Healthsystem Association of Pennsylvania, June 2005), available at www.haponline.org/downloads/Evaluation_of_the_Adequacy_of_Medicaid_Payments_to_Hospitals_in_Pennsylvania_LEWIN_Exec_Summ.pdf.

51. Hospitals were excluded from the calculation of the adjusted differences in Medicaid shares if they were located in a state that did not have at least one for-profit hospital. The four states that did not meet this criterion lacked adequate comparison groups and could not, therefore, be used to estimate differences between for-profit hospitals and other ownership types.

Table 7.

Share of Hospitals That Provide Specialized Patient Services, by Hospital Ownership Type

Specialized Service	Share of Hospitals That Provide a Specialized Service (Percent)			Difference Between Nonprofit and For-Profit Hospitals (Percentage points)		Difference Between Government and For-Profit Hospitals (Percentage points)	
	For-Profit	Nonprofit	Government	Unadjusted	Adjusted	Unadjusted	Adjusted
Burn Intensive Care	1.0	6.8	22.0	5.8 ***	0.0	21.0 ***	19.9 ***
Emergency Room Care	96.6	98.5	97.1	1.9 ***	3.8 ***	0.6	4.9 ***
High-Level Trauma Care	9.3	33.0	48.0	23.8 ***	1.7	38.7 ***	25.9 ***
Labor and Delivery Services	72.2	83.5	86.5	11.3 ***	10.5 ***	14.3 ***	14.0 ***

Source: Congressional Budget Office based on data from the Medicare Hospital Cost Report, 2003, and the Trauma Information Exchange Program.

Notes: Providing "high-level trauma care" indicates that the hospital is a level 1 or level 2 adult trauma center (stand-alone pediatric trauma centers are not included). The adjusted values reflect the differences between for-profit and nonprofit hospitals and between for-profit and government hospitals, after controlling for the state in which the hospital was located and the following factors: number of hospital beds, hospital case mix, and population characteristics of the county in which the hospital was located (including percentage in poverty, percentage without insurance, percentage eligible for Medicare, and the degree of urbanization—large urban, suburban/small urban, or rural—of the county). Each control variable was interacted with an indicator for the state in which the hospital was located. All regression models were weighted by operating expenses. Hospitals were excluded from the calculation of the adjusted differences if they were located in a state that did not include at least one for-profit hospital.

In the unadjusted results, the statistical significance of the differences (between for-profit and nonprofit hospitals, and between for-profit and government hospitals) was calculated using two-tailed Student's t-tests. In the adjusted results, the statistical significance of the differences was calculated on the basis of the estimated regression coefficients and standard errors. * = $p<0.10$; ** = $p<0.05$; *** = $p<0.01$.

Differences in the Provision of Specialized Services

CBO analyzed the fraction of hospitals of different ownership types that provided the following specialized patient services: burn intensive care, emergency room care, high-level trauma care, and labor and delivery services (see Table 7).[52] Those services were selected because they have been identified by other researchers as being generally unprofitable. Like the analysis of Medicaid-covered services, the analysis of specialized services includes all community hospitals nationwide for which data were available (N = 4,397).[53]

In general, the analysis found that burn intensive care and high-level trauma care are provided by only a minority of hospitals, whereas a large majority of hospitals provide labor and delivery services, and nearly all hospitals provide emergency room care. On the basis of an analysis of the unadjusted fraction of hospitals providing each service, nonprofit hospitals were found to be significantly more likely than for-profit hospitals to provide each of the specialized services examined.

52. Data on burn intensive care, emergency room care, and labor and delivery services were taken from the Medicare Hospital Cost Report and are from 2003. Data on high-level trauma care are from 2006.

53. Hospitals were excluded from the calculation of the adjusted differences in the provision of specialized services if they were located in a state that did not have at least one for-profit hospital. The four states that did not meet this criterion lacked adequate comparison groups and could not, therefore, be used to estimate differences between for-profit hospitals and other ownership types. As a specification check, CBO also estimated adjusted differences in the provision of specialized services excluding any state in which there was no variation among hospitals in the provision of the specialized service (in some states, for example, all hospitals provide emergency room care). The key results from that alternative analysis were very similar to the results presented in Table 7.

Adjusted differences in the provision of specialized services were also calculated using linear probability models that included the same set of control variables used in the regressions of uncompensated-care shares. After controlling for hospital characteristics and the characteristics of the local population, CBO found statistically significant differences between nonprofit hospitals and for-profit hospitals in the provision of two of the specialized services examined: nonprofit hospitals were 3.8 percentage points more likely to provide emergency room care, and they were 10.5 percentage points more likely to provide labor and delivery services. For each of the four specialized services, government hospitals were found in the adjusted results to be significantly more likely than otherwise similar for-profit hospitals to provide such services.

For two of the specialized services that CBO examined—burn intensive care and high-level trauma care—the unadjusted results show that nonprofit hospitals were significantly more likely to provide those services than for-profit hospitals, but no statistically significant difference was found in the adjusted results. That fact implies that, compared with for-profit hospitals, nonprofit hospitals tend disproportionately to have characteristics other than ownership type that are associated with the provision of burn intensive care and high-level trauma care. Nonprofit hospitals, for example, tend to be larger than for-profit hospitals, and larger hospitals are more likely to provide burn intensive care and high-level trauma care.

Limitations of the Analysis

Several important limitations apply to this analysis. First, the data on uncompensated care do not distinguish between charity care and bad debt. Charity care for the indigent is more clearly a type of community benefit, whereas bad debt is not necessarily a community benefit. Second, data on the amount of uncompensated care provided are available only for hospitals in five selected states. That limitation is attributable to the lack of a valid nationwide source of data on uncompensated care provided by hospitals. Hospitals in the five selected states are not necessarily representative of all hospitals nationwide. Third, the analysis of the Medicaid shortfall uses a single national estimate of the ratio of Medicaid's payments to hospitals' costs; the Medicaid shortfall varies among states and years and may also vary among individual hospitals. Fourth, the identification of certain types of specialized services as community benefits is based on a review of the literature and on the services that other researchers have identified. The value to the community of those services was not quantified by CBO and neither was their profitability.

A final limitation of the analysis relates to the interpretation of the reported differences in the level of community benefits provided by nonprofit and for-profit hospitals. Although the observed differences reflect the current differences in tax treatment, they may also reflect variations along other dimensions as well, such as organizational objectives.

Appendix: Detailed Results from Regression Models of Uncompensated-Care Shares

This appendix presents the results from three ordinary least squares (OLS) regression models.[1] In each of the three OLS models, the "uncompensated-care share"—uncompensated-care costs as a share of operating expenses—is used as the dependent variable, and the coefficients of interest are the indicator variables for the hospital ownership types. One of the models (the "full model") was used to estimate the adjusted differences in uncompensated-care shares, which are used as the main results of the uncompensated-care analysis (see Table 4 on page 15).[2] The other two models presented in this appendix are used as alternative specifications to examine the robustness of the main results.

The coefficient estimates shown in Table A-1 may be interpreted as percentage-point effects. For example, a coefficient estimate of 1 implies a 1 percentage-point increase in the predicted uncompensated-care share. The models pool hospitals in the five states for which uncompensated-care cost data are available and include state indicator variables and interactions of state indicator variables with each of the control variables. The key coefficients are the interactions of the state indicator variables with the indicators for nonprofit ownership status and government ownership status. (For-profit hospitals are the omitted reference group, which means that the coefficients on nonprofit ownership status and government ownership reflect an implicit comparison between those ownership types and for-profit hospitals.) The other control variables are as follows: the natural logarithm of the number of hospital beds, a measure of the hospital's case-mix index (missing values in the original data were set to zero); a variable indicating whether the case-mix index was missing (the case-mix index is missing for critical-access hospitals because they are not paid by Medicare under the case-mix-adjusted prospective payment system); the percentage of a county's population living in poverty; the percentage of a county population's that is uninsured; the percentage of a county's population that is eligible for Medicare; a location indicator for small urban or suburban counties; a location indicator for rural counties (large urban counties are the omitted reference group); and an indicator for state. Each of the control variables (other than the state indicators) is interacted with each state indicator variable, which allows the estimated effect of each control variable to vary from state to state.

The overall estimated effect of nonprofit ownership status and government ownership status on the uncompensated-care share is calculated by taking a weighted average of the five state-specific coefficients on the nonprofit indicators, where the weight equals each state's share of total hospital operating expenses among the five states. Those weighted averages are shown near the bottom of Table A-1.

1. OLS models provide estimates of the relationship between an outcome of interest, referred to generically as the "dependent" variable, and a set of variables—referred to as "control" (or, "independent") variables—thought to influence the outcome of interest.

2. The adjusted differences reflect the association between uncompensated-care shares and nonprofit ownership status and between uncompensated-care shares and government ownership status, after controlling for characteristics of hospitals other than ownership status.

Table A-1.

Uncompensated-Care Shares (Ordinary least squares regression models)

	Regression Model		
Control Variable	Ownership	Ownership and Hospital Characteristics	Full Model (Ownership, hospital characteristics, and county characteristics)
Nonprofit Hospital Indicator			
California	-0.953 ***	-0.034	-0.369
Florida	1.379 ***	0.803	0.922 *
Georgia	1.830 ***	-0.927	-0.424
Indiana	-0.282	1.924 ***	1.790 ***
Texas	2.227 ***	1.833 **	2.060 **
Government Hospital Indicator			
California	8.609 ***	8.376 ***	8.117 ***
Florida	8.685 ***	7.834 ***	8.106 ***
Georgia	6.145 *	2.192 *	2.335
Indiana	-0.741 *	1.124 **	0.736
Texas	15.571 ***	14.672 ***	15.313 ***
Natural Logarithm of Hospital Beds			
California	n.a.	2.537 ***	2.933 ***
Florida	n.a.	1.479	0.777
Georgia	n.a.	5.030 *	4.798 *
Indiana	n.a.	0.042	0.339
Texas	n.a.	2.133 ***	1.625 **
Hospital Case-Mix Index			
California	n.a.	-9.616 ***	-10.344 ***
Florida	n.a.	-3.296	-2.252
Georgia	n.a.	-13.168 **	-13.672 **
Indiana	n.a.	-1.032	-1.267
Texas	n.a.	-4.913 **	-4.245 **
Indicator for Missing Case-Mix Index			
California	n.a.	-3.606	-5.004
Florida	n.a.	0.909	-0.558
Georgia	n.a.	-5.881	-7.586
Indiana	n.a.	0.306	0.142
Texas	n.a.	-7.179 **	-5.531 *
County Population in Poverty (Percent)			
California	n.a.	n.a.	0.162
Florida	n.a.	n.a.	0.164
Georgia	n.a.	n.a.	0.362
Indiana	n.a.	n.a.	0.040
Texas	n.a.	n.a.	0.254
County Population Uninsured (Percent)			
California	n.a.	n.a.	-0.210
Florida	n.a.	n.a.	0.037
Georgia	n.a.	n.a.	-0.488
Indiana	n.a.	n.a.	-0.195 **
Texas	n.a.	n.a.	-0.298

Continued

Table A-1.

Continued

Control Variable	Regression Model: Ownership	Ownership and Hospital Characteristics	Full Model (Ownership, hospital characteristics, and county characteristics)
County Population Eligible for Medicare (Percent)			
California	n.a.	n.a.	0.005
Florida	n.a.	n.a.	-0.114 *
Georgia	n.a.	n.a.	-0.078
Indiana	n.a.	n.a.	0.003
Texas	n.a.	n.a.	0.037
Suburban/Small Urban Location Indicator			
California	n.a.	n.a.	2.065
Florida	n.a.	n.a.	-0.400
Georgia	n.a.	n.a.	-0.460
Indiana	n.a.	n.a.	0.393
Texas	n.a.	n.a.	-2.509 *
Rural Location Indicator			
California	n.a.	n.a.	-0.709
Florida	n.a.	n.a.	4.486 ***
Georgia	n.a.	n.a.	0.705
Indiana	n.a.	n.a.	2.568 *
Texas	n.a.	n.a.	-6.494 ***
State Indicator			
Florida	n.a.	-3.222	-2.682
Georgia	n.a.	-5.074	0.054
Indiana	n.a.	-0.839	-1.183
Texas	n.a.	-3.914	-0.836
Constant	4.157 ***	4.137	5.452
Memorandum:			
Weighted Average of Nonprofit Hospital Coefficient	0.625 ***	0.651 **	0.646 *
Weighted Average of Government Hospital Coefficient	9.200 ***	8.478 ***	8.571 ***
Number of Observations	1,058	1,058	1,057
R-Squared	0.433	0.509	0.527

Source: Congressional Budget Office.

Notes: The dependent variable in each model is the uncompensated-care share, which equals uncompensated-care costs as a share of total hospital operating expenses expressed as a percentage. The omitted reference categories are as follows: for-profit ownership, California, and urban location. At hospitals with missing values for case-mix index, the case-mix index is set to zero.

* = $p<0.10$; ** = $p<0.05$; *** = $p<0.01$; n.a. = not applicable.