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RESEARCH ARTICLE

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Comparing the value of community benefit and Tax-Exemption in non-profit hospitals

Hossein Zare PhD, MS[1] | Matthew D. Eisenberg PhD[2] | Gerard Anderson PhD[2]

[1]Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, & Adjunct Associate Professor, Global Health Services and Administration, University of Maryland Global Campus (UMGC), Baltimore, Maryland, USA

[2]Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, USA

Correspondence
Hossein Zare, PhD, MS, Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, and Adjunct Associate Professor, Global Health Services and Administration, University of Maryland Global Campus (UMGC), 624 N. Broadway, Hampton House 337, Baltimore, MD 21205, USA.
Email: hzare1@jhu.edu

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Abstract

Objective: We examined the characteristics of non-profit hospitals providing more community benefits and charity care than value of their tax exemptions and how this relationship changed between 2011 and 2018.

Data sources: Primary dataset was schedule H Form IRS 990 data. This data was merged with the American Hospital Association, Medicare Hospital Cost Report, and the America Community Survey.

Study design: We measured six categories of tax benefits and 17 types of community benefits. Subtracting the average value of community benefits provided by for-profit hospitals, we computed incremental community benefit and charity care provided by each non-profit hospital.

Extraction methods: A nationally representative sample was created of 11 776 non-profit hospital-year observations from 1472 unique hospitals over the 2011 to 2018 period was created. Descriptive analyses and random effect logistic regression were used to show associations between hospital characteristics and difference between incremental net community benefits and the value of tax-exemption.

Principal findings: After adjusting for community benefits provided by for-profits hospitals, on average, non-profit hospitals spent 5.9% (CI: 5.8%-6.0%) of their total expenses on community benefits; 1.3% (CI: 1.2%-1.3%) on charity care; and received 4.3% (CI: 4.2%-4.4%) of total expenses in tax exemptions. A total of 38.5% of non-profit hospitals did not provide more community benefit and 86% did not provide more charity care than the value of their tax exemption. Hospitals with fewer beds, providing residency education and located in high poverty communities were more likely to provide more incremental community benefits and charity care than the value of their tax exemption, while system affiliation had a negative association.

Conclusion: The amount of community benefits and charity care provided by non-profits varied substantially across non-profit hospitals. Establishing minimum requirements for non-profit hospitals or publicly ranking hospitals based on their community

benefit or charity care contributions, could encourage greater community benefits and charity care.

KEYWORDS
charity care, community benefit, inequality, non-profit, tax-exemption

What is known on this topic?

- Charity care, as an important component of community benefit, reflects the key mission fulfillment of non-profit hospitals and is an important justification for non-profit hospitals' tax exemption.
- Non-profit hospitals are expected to provide sufficient community benefit and charity care to justify their tax-exempt status.
- There is no agreement on the specific components of community benefits that should be included as community benefits.

What this study adds?

- Spending on community benefits and charity care varies substantially across non-profit hospitals; hospitals in the 90th percentile of community benefit provided 20 times more community benefits than hospitals in the 10th percentile.
- In 86% of non-profit hospitals, the value of their tax exemptions was greater than the value of their charity care.
- It raises the issue of which categories of community benefits should be counted to allow hospitals to maintain their tax exemption eligibility.

1 | INTRODUCTION

Community benefit is often cited as a justification for hospitals' tax-exempt status.[1] Studies have examined the community benefit and the value of tax benefits and found significant variation across hospitals along both dimensions.[2-4] Recently, policy makers have shown an interest in comparing the value of the tax deduction to the community benefits that non-profit hospitals' provide.[5]

The federal government collects data on the level of community benefits and charity care that non-profit hospitals provide, but does not mandate, which measures of community benefit should be counted or how much community benefit or charity care should be provided to fulfill their obligations. To monitor the hospital's behavior, states have chosen different approaches to monitor community benefits and tax advantages using the following: regulatory standards,[6] mandatory reporting requirements, community health needs assessments, social determinants of health,[7] the level of charity services for certain categories of patients,[8] and the minimum income eligibility standards for charity care.[9]

In this paper, we focus on three measures of community benefits - all 17 categories listed on Schedule H on the Internal Revenue Service 990 instructions, the 17 categories minus Medicaid shortfall, and just charity care. We used the term *charity care* to be what is defined in IRS schedule H part 1 line 7 column c: "financial assistance includes free or discounted health services provided to persons who meet the organization's criteria for financial assistance and are unable to pay for all or a portion of the services." We used the term "*community benefit*" to refer to all 17 forms of community benefit as reported in Schedule H.[10] Table 1 details the definitions for all 17 types of community benefits. Medicaid shortfall was defined as "the gap between a state's Medicaid payment rates and hospitals' costs for serving Medicaid beneficiaries."[11]

Because-profit hospitals also provide community benefits; we subtracted the average level of community benefits provided by for-profit hospitals from the level provided by each non-profit hospital to calculate an incremental community benefit for that hospital. We identified six tax advantages that non-profit hospitals receive. We examined the characteristics of non-profit hospitals that provided more incremental community benefits, more incremental community benefits not including Medicaid shortfall, and charity care compared to the value of the tax exemptions they receive. We also controlled for factors such as Medicaid expansion that could influence the amount of community benefit and charity care the hospitals provided.

2 | METHODS

We used hospital-level data between 2011 and 2018 from IRS Form 990, the American Hospital Association's Annual Survey and Medicare Hospital Cost Reports (HCR), to quantify 17 different measures of community benefits, Medicaid shortfall, charity care, and six different types of tax exclusion. We calculated the differences between community benefits and charity care and tax exemptions. We subtracted the

TABLE 1 IRS's definition of community benefits and tax exemption

Type of community benefits	IRS's inclusion criteria to include as a community benefit
Patient level CB	
1. Financial Assistance at cost (from Worksheet 1)-(CHR)	A charity care means free or discounted health services provided to" people who meet the hospital's financial assistance criteria and are unable to pay for the services.
2. Unreimbursed Other Means-Tested (UOM): "c. Costs of other means-tested government programs (from Worksheet 3, column b)"	"A means-tested government program is a government health program for which eligibility depends on the recipient's income or asset level. Other means-tested government programs mean government-sponsored health programs where eligibility for benefits or coverage is determined by income or assets, for example, State Children Health Insurance Program, other federal, state, or local health care programs."
3. Health Services (Not Means-Tested) (SHS): "g. Subsidized health services (from Worksheet 6)"	"A subsidized health service means clinical services provided despite a financial loss to the organization. In order to qualify as a subsidized health service, the organization must provide the service because it meets an identified community need. A service meets an identified community need if it is reasonable to conclude that if the organization no longer offered the service: • The service would be unavailable in the community, • The community's capacity to provide the service would be below the community's need, or • The service would become the responsibility of government or another tax-exempt organization. • Subsidized health services can include qualifying inpatient programs (eg, neonatal intensive care, addiction recovery, and inpatient psychiatric units) and outpatient programs (emergency and trauma services, satellite clinics designed to serve low-income communities, and home health programs)"
4. Community Benefit Contributions (CBC): "i. Cash and in-kind contributions for community benefit (from Worksheet 8)"	"A cash and in-kind contributions" mean contributions made by the organization to health care organizations and other community groups restricted, in writing, to one or more of the community benefit activities described in the table in Part I, line 7 (and the related worksheets and instructions). "In-kind contributions" include the cost of staff hours donated by the organization to the community while on the organization's payroll, indirect cost of space donated to tax-exempt community groups (such as for meetings), and the financial value (generally measured at cost) of donated food, equipment, and supplies."
System level	
5. Unreimbursed Medicaid (UMD)/Medicaid shortfall: "b. Medicaid (from Worksheet 3, column a)"	Medicaid means the United States health program for individuals and families with low incomes and resources. United States Government Accountability Office defined Medicaid as "the gap between a state's Medicaid payment rates and hospitals' costs for serving Medicaid beneficiaries."
6. Community Benefit Services (CBS): "e. Community health improvement services and community benefit operations (from Worksheet 4)"	"A Community health improvement services, means activities or programs, subsidized by the health care organization, carried out or supported for the express purpose of improving community health. Such services do not generate inpatient or outpatient revenue, although there may be a nominal patient fee or sliding scale fee for these services."
7. Unreimbursed Education (UED): "f. Health professions education (from Worksheet 5)"	"A health professions education means educational programs that result in a degree, certificate, or training necessary to be licensed to practice as a health professional, as required by state law, or continuing education necessary to retain state license or certification by a board in the individual's health profession specialty."
8. Unfunded Research (URS): "h. Research (from Worksheet 7)"	"A research means any study or investigation the goal of which is to generate increased generalizable knowledge made available to the public. The organization can include the cost of internally funded research it conducts, as well as the cost of research it conducts funded by a tax-exempt or government entity." "Community building activities mean the costs of the organization's activities that it engaged in during the tax year to protect or improve the community's health or safety, and that aren't reportable in Part I of this schedule."
Part II. Community BUILDING ACTIVITIES	
9. Physical improvements and housing	"Include, but aren't limited to, the provision or rehabilitation of housing for vulnerable populations, such as removing building materials that harm the health of the residents, neighborhood improvement or revitalization projects, provision of housing for vulnerable patients upon discharge from an inpatient facility, housing for low-income seniors, and the development or maintenance of parks and playgrounds to promote physical activity."

TABLE 1 (Continued)

Type of community benefits	IRS's inclusion criteria to include as a community benefit
10. Economic development	"Can include, but is not limited to, assisting small business development in neighborhoods with vulnerable populations and creating new employment opportunities in areas with high rates of joblessness."
11. Community support	"Can include, but is not limited to, childcare and mentoring programs for vulnerable populations or neighborhoods, neighborhood support groups, violence prevention programs, and disaster readiness and public health emergency activities, such as community disease surveillance or readiness training beyond what is required by accrediting bodies or government entities."
12. Environmental improvements	"Include, but aren't limited to, activities to address environmental hazards that affect community health, such as alleviation of water or air pollution, safe removal or treatment of garbage or other waste products, and other activities to protect the community from environmental hazards."
13. Leadership development and training for community members	"Includes, but is not limited to, training in conflict resolution; civic, cultural, or language skills; and medical interpreter skills for community residents."
14. Coalition building	"Includes, but is not limited to, participation in community coalitions and other collaborative efforts with the community to address health and safety issues."
15. Community health improvement advocacy	"Includes, but is not limited to, efforts to support policies and programs to safeguard or improve public health, access to health care services, housing, the environment, and transportation."
16. Workforce development	"Includes, but is not limited to, recruitment of physicians and other health professionals to medical shortage areas or other areas designated as underserved, and collaboration with educational institutions to train and recruit health professionals needed in the community (other than the health professions education activities reported in Part I, line 7f)."
17. Other	"Refers to community building activities that protect or improve the community's health or safety that aren't described in the categories listed in above eight activities."

Note: Source: 2018 Instructions for Schedule H (Form 990).

average level of community benefits provided by for-profit hospitals. We then examined characteristics of hospitals that spent more incremental community benefits than the value of their tax exemptions.

2.1 | Creating a comparison group - Estimating incremental community benefits relative to for-profits

For-profit hospitals provide community services, but they also pay taxes. Therefore, it is important to examine whether non-profit hospitals provide more community benefits than for-profit hospitals. To compute the incremental community benefits we adopted the method developed by Herring et al.[2] Medicare Hospital Cost Report provides values for community benefits for both for-profit and non-profit hospitals, while the 990 form collects data only for non-profits. To calculate the incremental community benefit, we calculated the average community benefit provided by for-profit hospitals as a percent of their total hospital expenses and subtracted this percentage from the community benefits in each non-profit hospital.

2.2 | Estimating the hospital's valuation of the non-profit tax exemption

Adapting the approach used by Herring et al[2] and Rosenbaum et al,[12] we calculated six categories of tax benefits for non-profit hospitals: Federal corporate income tax (FCT), the state corporate income tax (SCT), state sales tax (SST), and local property taxes (LPT), the lower rates of tax exempt bonds (TEB) and the charitable contributions subsidization tax (CCS). A key assumption is that the non-profits would not change their income, expenses, or physical plant to reduce tax liabilities if they were taxed.

2.2.1 | FCT exemption

We used the federal tax rate for hospitals, nursing, and residential care facilities applied to that hospital profit.[13,14]

2.2.2 | SCT exemption

For the state tax, we applied the state corporate tax rate as reported by the Tax Foundation.[15]

2.2.3 | SST exemption

We computed sales taxes on purchases of equipment/supplies in states with sales taxes by using the hospital's total facility supply expense from the AHA Annual Survey multiplied by the state's sales tax rate. We used the Hilltop Institute[16] and Tax Foundation[17] dataset to determine SST exemptions and state tax rates.

2.2.4 | LPT exemption

We first computed the average ratio of property taxes to total revenue for for-profit hospitals using Medicare cost report data (Worksheet A-7, Part I, Column 13) and applied the state-specific average property tax rate to each non-profit hospital's total revenue (Worksheet G3 line 3).

2.2.5 | TEB lower rates

Using data from the Corporate Bond Yield Curve from the US Department of Treasury,[18] we used 6.91% as taxable rate and 4.54% as the average rate for tax-exempt bonds between 2011 and 2018. The average tax reduction associated with tax-exempt bond financing was, therefore, 2.37% (ie, = 6.91%-4.54%) times the total bond amount.

2.2.6 | Charitable contributions subsidization (CCS)

This is the extra charitable contributions non-profit hospitals receive because donors receive a personal income tax exemption for charitable giving. The Congressional Budget Office (CBO) estimates a price elasticity of −0.5 for charitable contributions.[19] Assuming an average marginal income tax rate for charitable givers of 32%,[20] the "price" of donating $1 is "$0.68." We used this estimate and the donations from the cost report data (Worksheet G-3, line 6) to compute the amount in tax benefits.

2.2.7 | Data sources

To measure hospital characteristics, we obtained data on the number of hospital beds, church ownership, teaching status, percent of Medicare and Medicaid discharges, special care hospital status, number of physicians with admitting privileges; if the hospital was contract managed or a member of a system; if it provided obstetrics or trauma services; was a sole community provider; was located in a rural area, and its operating margin from American Hospitals Association's annual survey of hospitals. Case-mix information on Medicare beneficiaries was used as a proxy for overall case mix.[21] Race/ethnical composition and poverty ratio was obtained from the American Community Survey (ACS).[22]

2.2.8 | Data management

The IRS Form 990 is collected by Candid.[23] Because there is no existing crosswalk between the IRS 990 and Medicare cost report data, we used the hospital name, address, Zip Code, and/or city to match the two sources and obtained an 82.7% match. Hospitals that we could not match tended to be smaller (on average 50 fewer beds), but had similar levels of teaching status, payer mix, and case mix compared to hospitals we could match (data not shown).

Some local hospital systems reported as a single entity to the IRS while others reported each member hospital separately to the IRS, so one hospital entity in the IRS 990 data may correspond to several American Hospitals Association (AHA) hospitals. To include these hospitals in our analysis, we disaggregated the IRS 990 data to compute their hospital-level community benefits and tax exemption using the distribution within the local system of CMS-S10 charity care or beds (when charity care data were missing in the S10 data). We then merged the linked IRS-AHA data with the CMS Hospital Cost Report and case-mix index. The final sample was 11 776 observations (1464 hospitals for each year).

2.3 | Dependent variables - Incremental community benefits and charity care

The three dependent variables were total incremental community benefits (TICB); "total incremental community benefits" minus "Medicaid shortfall" (T-SF); and incremental charity care (TICHR) as a percentage of total hospital expenses. We combined all six types of tax exemption (TAX) as a percentage of total hospital expenses. We created three binary variables; If the TICB exceeded the value of the tax exemption then the binary variable assigned 1 (=1, if TICB>TAX), 2) if the TICB minus Medicaid shortfall exceeded the value of the tax exemption then the binary variable assigned 1 (=1, if T-SF > TAX) or 3); if incremental charity care (NCHR) was greater than the value of the tax exemption (=1, if TICHR>TAX).

3 | STATISTICAL ANALYSIS

We used the *t*-test for comparing incremental community benefits and tax benefits for each category of hospital. Because we performed more 26 *t*-tests to avoid bias of repeated testing effects, we employed a Bonferroni correction (a = 0.05; 0.0015) to determine the statistical differences in means between each group.[24]

To examine whether the hospital, market, county, and state characteristics were associated with a non-profit hospital having more incremental community benefits than the value of its tax exclusion, we estimated random effect models and computed marginal effects on the underlying probability that community benefits exceeded the value of the tax exemption. We also examined whether certain policy variables such as Medicaid expansion influenced the level of community benefits and charity care provided. For the adjusted models we controlled for hospital, market, state, and county level characteristics, and clustered SE by hospital-id and controlled for years and regions.

4 | RESULTS

4.1 | Study population

Table 2 compares hospital characteristics for six categories of hospitals. Column 1a presents hospital characteristics for hospitals

TABLE 2 Comparing net community benefit and tax exemption across categories of hospitals

	17 types of Incremental community benefits		17 types of Incremental community benefits minus Medicaid shortfall		Incremental charity care		
	Incremental community benefits exceeds tax benefits (ICB > TE)	Tax benefits exceeds incremental community benefits (ICB < TE)	Incremental community Benefits minus Medicaid shortfall exceeds tax benefits (T-SF > TE)	Tax benefits exceeds incremental community benefits minus Medicaid shortfall (T-SF < TE)	Incremental charity care exceeds tax benefits (ICHR>TE)	Tax benefits exceeds incremental charity care (ICHR<TE)	Overall
	Mean	Mean	Mean	Mean	Mean	Mean	Mean
	Column 1a	Column 1b	Column 2a	Column 2b	Column 3a	Column 3b	Column 4
N of hospitals	7248	4528	4616	7160	1688	10 088	11 776
Percent	61.5	38.5	39.2	60.8	14.3	85.7	100
Hospital characteristics							
Hospital Beds	208	197	215[a]	196	182[b]	207	204
<100 beds	0.43	0.43	0.44	0.43	0.50[b]	0.42	0.43
Non-church operated	0.86[c]	0.83	0.87	0.83	0.83	0.85	0.85
Teaching hospital	0.34[c]	0.26	0.37[a]	0.27	0.34[b]	0.31	0.31
% of Medicare	0.50	0.51	0.48[a]	0.51	0.51	0.50	0.50
% of Medicaid	0.22[c]	0.20	0.23[a]	0.20	0.21	0.21	0.21
Special care hospital	0.06[c]	0.08	0.07	0.06	0.07	0.06	0.06
Number of physicians with privileges/10	4.13[c]	3.69	4.32[a]	3.73	3.71	4.00	3.96
Contract managed	0.08	0.07	0.08	0.07	0.09	0.07	0.07
System member	0.55[c]	0.61	0.53[a]	0.60	0.59[b]	0.57	0.57
Obstetrics services provider	0.61	0.60	0.60	0.61	0.55[b]	0.62	0.61
Trauma center	0.41	0.41	0.41	0.41	0.37[b]	0.41	0.41
Community provider	0.07	0.07	0.07	0.07	0.08	0.07	0.07
Rural areas	0.21	0.19	0.22[a]	0.19	0.23	0.20	0.20
Total hospital expenses (million dollars)	333[c]	265	355[a]	275	272	312	307
Case-mix index	1.54	1.55	1.55	1.55	1.51[b]	1.55	1.55
Market and county level							
Hospital HI < 0.15	0.14[c]	0.10	0.15[a]	0.11	0.14	0.12	0.12
015 < Hospital HI < =0.25	0.19	0.17	0.20	0.17	0.21	0.18	0.18
Hospital HI > 0.25	0.67[c]	0.73	0.65	0.72	0.65[b]	0.70	0.69
Medicaid expansion	0.73[c]	0.61	0.69	0.68	0.60[b]	0.70	0.68

(Continues)

TABLE 2 (Continued)

	17 types of Incremental community benefits		17 types of Incremental community benefits minus Medicaid shortfall		Incremental charity care		
	Incremental community benefits exceeds tax benefits (ICB > TE)	Tax benefits exceeds incremental community benefits (ICB < TE)	Incremental community Benefits minus Medicaid shortfall exceeds tax benefits (T-SF > TE)	Tax benefits exceeds incremental community benefits minus Medicaid shortfall (T-SF < TE)	Incremental charity care exceeds tax benefits (ICHR>TE)	Tax benefits exceeds incremental charity care (ICHR<TE)	Overall
	Mean	Mean	Mean	Mean	Mean	Mean	Mean
	Column 1a	Column 1b	Column 2a	Column 2b	Column 3a	Column 3b	Column 4
Racial composition							
% White NH	0.77[c]	0.76	0.75	0.77	0.75	0.77	0.77
% Black NH	0.08	0.09	0.10	0.08	0.10[b]	0.08	0.09
% Asian NH	0.03	0.03	0.03	0.03	0.03	0.03	0.03
% Hispanic	0.08[c]	0.09	0.08	0.09	0.08	0.08	0.08
% Other	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Poverty Ratio	0.15	0.15	0.15	0.15	0.16	0.15	0.15

Note: Sources: IRS (990 data) 2011–2018, American Hospital Association Annual Survey Database 2011–2018, CMS Hospital Cost Report, 2011 to 2018. The Bonferroni correction sets the significance cut-off at α/n, here with $\alpha = 0.05$ and $n = 34$, reject a null hypothesis. If the *P*-value is less than .0015.

[a]Bonferroni correction ($P < .0015$) shows the significant difference between T-SF > TE and T-SF < TE.

[b]Bonferroni correction ($P < .0015$) shows the significant difference between ICHR>TE and ICHR<TE.

[c]Bonferroni correction ($P < .0015$) shows the significant difference between ICB > TE and ICB < TE.

whose total incremental community benefit for all 17 community benefits exceeded the value of the tax exemption. Column 1b shows the characteristics of the other hospitals. Columns 2a and 2b and columns 3a and 3b reports similar values for total incremental community benefit minus Medicaid shortfall and incremental charity care.

Table 3 shows that the average non-profit hospital spent 1.3% (CI: 1.2%-1.3%) of its total expenses on charity care; 5.9% (CI:5.8%-6.0%) on all 17 community benefits and 3.5% (CI: 3.4%-3.5%) on all community benefits minus Medicaid shortfall, after adjusting for the community benefits provided by for-profit hospitals. The value of the tax exemptions of the average non-profit hospital was 4.3% (CI: 4.2%-4.4%) of total expenses.

The federal tax exemption was the largest percentage (2.0%, CI: 1.9%-2.0%); followed by property tax exemption (0.9%, CI: 0.9%-1.0%); SST (0.8%, CI: 0.8%-0.9%); state income tax (0.3%, CI: 0.3%-0.3%); savings on TEB (0.1%, CI: 0.0%-0.2%), and charitable contributions (0.1%, CI: 0.1%-0.1%).

There was significant variation across hospitals in both the tax exemption and charitable contributions. The 10th and 90th percentiles for tax exemption as a percentage of total expenses were 0.9% and 7.7%; the 10th and 90th percentiles for TICB were 0.6% and 11.5%; the 10th and 90th percentiles for TICB minus Medicaid shortfall were 0.4% and 7.7%; the 10th and 90th percentiles for charity care were 0% and 3.0%. Approximately 5% of nonprofits did not report providing any community benefits and 15% of hospitals did not report providing any charity care. In the sensitivity analysis, we show the values without the for-profit hospital offset (See Appendix S3).

4.2 | Distribution of incremental community benefit expense

Appendix S1, details the distribution of incremental community benefits and tax exemption credits between 2011 and 2018 for all hospitals. Policy makers have raised concerns with some of the categories. For example, the largest category of incremental community benefits was unreimbursed costs from Medicaid (Medicaid shortfall); it represented 41.5% of the TICB. It was unclear whether Medicaid shortfall should be considered a community benefit, since the state government decides on the level of payment for Medicaid. Some of the other components of community benefits may provide benefits to the hospital as well as the community. For example, the fourth largest category unreimbursed education (8.5%) that could be considered a service that is part of usual business practice and not a community benefit. Unreimbursed education was defined as "educational programs that result in a degree, certificate, or training necessary to be licensed to practice as a health professional, as required by state law, or continuing education necessary to retain state license or certification by a board in the individual's health profession specialty." First, the expense is to comply with a state licensure requirement and second Medicare explicitly pays for direct

TABLE 3 Value of community benefits in non-profit hospitals: 2011 to 2018

	17 types of incremental community benefits		17 types of incremental community benefits minus Medicaid shortfall		Incremental charity care		
	Incremental community benefits exceeds tax benefits (ICB > TE)	Tax benefits exceeds incremental community benefits (ICB < TE)	Incremental community benefits minus Medicaid shortfall exceeds tax benefits (T-SF > TE)	Tax benefits exceeds incremental community benefits minus Medicaid shortfall (T-SF < TE)	Incremental charity care exceeds tax benefits (ICHR > TE)	Tax benefits exceeds incremental charity care (ICHR < TE)	Overall
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
	Column 1a	Column 1b	Column 2a	Column 2b	Column 3a	Column 3b	Column 4
N	7248	4528	4616	7160	1688	10 088	11 776
Percent	61.5	38.5	39.2	60.8	14.3	85.7	100
Panel A: Incremental community benefit							
Dollar amount (1 000 000)							
Charity care ($)	—	—	—	—	$7.54[a] (13.95)	$3.18 (8.45)	$3.82 (9.57)
Community benefits minus Medicaid shortfall ($)	—	—	22.52[a] (51.42)	5.95 (18.74)	—	—	12.45 (36.27)
Total (Combined community benefit) ($)	$27.70[a] (59.50)	$7.52 (25.51)	—	—	—	—	$19.96 (50.90)
% of Total expense							
Charity care (%)	—	—	—	—	3.10[a] (2.29)	0.94 (1.04)	1.25 (1.51)
Community benefits minus Medicaid shortfall (%)	—	—	5.95[a] (4.59)	1.83 (1.87)	—	—	3.45 (3.80)
Total (Combined community benefit) (%)	7.91[a] (5.10)	2.65 (2.64)	—	—	—	—	5.89 (5.03)
Panel B: Tax exemption							
Dollar amount ($1 000 000)	$10.79[a] (24.55)	$14.56 (43.48)	9.86[a] (22.00)	13.77 (38.	$4.31[a] (8.91)	$13.57 (35.50)	$12.24 (33.18)
Tax exemption combined (%)	2.90[a] (1.97)	6.43 (7.43)	2.43[a] (1.67)	5.44 (6.19)	1.59[a] (1.15)	4.71 (5.41)	4.26 (5.15)

Note: Source: IRS (990 data) 2011 to 2018.
[a]$P < .001$.

TABLE 4 Margins of random effect estimates of incremental community benefits that exceeded tax exemption and hospital and market and communities characteristics

	Marginal effect of total incremental community benefits exceed tax exemption		Marginal effect of total incremental community benefits minus Medicaid shortfall exceed tax exemption		Marginal effect of incremental charity care exceeds tax exemption	
Hospital characteristics	**Column 1a** *dy/dx*	**Column 1b** *dy/dx*	**Column 2a** *dy/dx*	**Column 2b** *dy/dx*	**Column 3a** *dy/dx*	**Column 3b** *dy/dx*
Hospital beds	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted
If bed less than 100	0.006	0.044*	0.023	0.078***	0.043***	0.053***
	(0.016)	(0.021)	(0.016)	(0.020)	(0.011)	(0.013)
Non-Church operated	0.032	0.016	0.064**	0.024	−0.022	−0.042**
	(0.022)	(0.024)	(0.022)	(0.023)	(0.014)	(0.014)
Teaching status	0.059***	0.048**	0.070***	0.071***	0.025*	0.039***
	(0.014)	(0.016)	(0.015)	(0.016)	(0.010)	(0.010)
% of Medicare	−0.056	−0.025	−0.110**	−0.090*	−0.002	−0.007
	(0.033)	(0.041)	(0.037)	(0.043)	(0.023)	(0.028)
% of Medicaid	0.102*	0.086	0.090*	0.023	−0.015	−0.007
	(0.046)	(0.054)	(0.044)	(0.054)	(0.029)	(0.033)
Special care hospital	−0.085**	−0.083*	−0.015	−0.056	−0.003	−0.029
	(0.031)	(0.035)	(0.034)	(0.037)	(0.023)	(0.024)
Number of physicians with privileges/10	0.007***	0.009***	0.005**	0.004	−0.001	0.001
	(0.002)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)
Contract managed	0.048	0.073**	0.046	0.061*	0.032*	0.022
	(0.026)	(0.027)	(0.025)	(0.026)	(0.016)	(0.016)
System affiliation	−0.057***	−0.058***	−0.058***	−0.052**	−0.013	−0.010
	(0.015)	(0.016)	(0.015)	(0.017)	(0.011)	(0.011)
Provide obstetrics services	0.009	0.014	−0.017	0.002	−0.032**	−0.022*
	(0.014)	(0.016)	(0.014)	(0.016)	(0.010)	(0.011)
Trauma center	0.004	−0.011	−0.005	−0.011	−0.017	−0.013
	(0.013)	(0.014)	(0.014)	(0.015)	(0.009)	(0.009)
Community provider	0.023	0.034	−0.016	−0.015	0.005	−0.016
	(0.026)	(0.026)	(0.027)	(0.028)	(0.019)	(0.019)
Rural area	0.015	−0.013	0.042*	0.035	0.023	−0.013
	(0.020)	(0.025)	(0.021)	(0.026)	(0.014)	(0.015)
Total expenses (billion dollars)	0.028	0.022	0.023	0.022	−0.017	0.004
	(0.023)	(0.025)	(0.020)	(0.023)	(0.010)	(0.008)
Case mix index	−0.040	−0.048	−0.058	0.014	−0.138***	−0.034
	(0.031)	(0.038)	(0.032)	(0.039)	(0.023)	(0.024)
Market and county level						
Hospital HI < 0.15	0.108***	—	0.068*	—	−0.031	—
	(0.032)		(0.035)		(0.024)	
015 < Hospital HI < =0.25	0.012	−0.079	0.03	−0.048	−0.011	0.002
	(0.029)	(0.041)	(0.027)	(0.041)	(0.019)	(0.029)
Hospital HI > 0.25	−0.066**	−0.072	−0.059*	−0.056	0.023	0.005
	(0.023)	(0.038)	(0.024)	(0.039)	(0.016)	(0.026)
Medicaid expansion	0.123***	0.073***	0.002	−0.019	−0.052***	−0.040**
	(0.018)	(0.022)	(0.018)	(0.023)	(0.011)	(0.013)
Racial composition						
% White NH	0.105*	—	−0.101*	—	−0.049	—
	(0.042)		(0.044)		(0.027)	

TABLE 4 (Continued)

Hospital characteristics	Marginal effect of total incremental community benefits exceed tax exemption		Marginal effect of total incremental community benefits minus Medicaid shortfall exceed tax exemption		Marginal effect of incremental charity care exceeds tax exemption	
	Column 1a *dy/dx*	Column 1b *dy/dx*	Column 2a *dy/dx*	Column 2b *dy/dx*	Column 3a *dy/dx*	Column 3b *dy/dx*
% Black NH	−0.082	−0.078	0.292***	0.204*	0.135***	0.001
	(0.073)	(0.099)	(0.074)	(0.097)	(0.041)	(0.053)
% Asian NH	0.021	0.283	0.151	0.166	−0.251	−0.061
	(0.200)	(0.243)	(0.203)	(0.246)	(0.129)	(0.140)
% Hispanic	−0.225**	−0.313***	−0.078	−0.206*	0.002	−0.081
	(0.071)	(0.087)	(0.076)	(0.097)	(0.048)	(0.055)
% Other	−0.157	−0.332*	0.054	−0.014	0.001	−0.063
	(0.101)	(0.130)	(0.096)	(0.125)	(0.076)	(0.087)
Poverty ratio	0.235	0.908***	0.581***	0.492**	0.636***	0.467***
	(0.148)	(0.201)	(0.145)	(0.189)	(0.090)	(0.116)
Year	—	Included	—	Included	—	included
Region	NA	Included	NA	Included	NA	included
Obs.	11 776	11 776	11 776	11 776	11 776	11 776

Note: Sources: IRS (990 data) 2011–2018, American Hospital Association Annual Survey Database 2011–2018, CMS Hospital Cost Report, 2011–2018. Parentheses report random effect with clustered standard errors at hospital level.
*$P < .05$; **$P < .01$; ***$p < .001$.

and indirect medical education as a separate line item. States have reached different conclusions on which categories of community benefits to include. Policymakers should look at each of the 17 items.

4.3 | Characteristics of hospitals whose incremental community benefits for all 17 community benefits was less than their tax benefit

When compared with for-profit hospitals and after adjusting for the for-profit hospitals' contribution to community benefit, 38.5% of non-profit hospitals did not provide more community benefits than the value of their tax exemptions (See Table 3 columns 1a and 1b). If the value of Medicaid shortfall was subtracted, then the percentage increased to 61% (See Table 3 columns 2a and 2b). These hospitals were less likely to have residents, fewer physicians with privileges; were located in a less competitive region, and were located in states that had not expanded Medicaid and were more likely to be system affiliated (See Table 2). Most of the same factors apply when Medicaid shortfall is subtracted, but expanded Medicaid situation was no longer significantly different.

4.4 | Hospitals whose incremental charity care was less than their tax benefit

A total of 86% of hospitals spent less on incremental charity care than the value of their tax exemption. These were mostly larger hospitals, offering obstetrics and trauma services, having a higher Medicare case mix, located in a Medicaid expansion state, or located in a community with a lower Black Non-Hispanic population.

4.5 | Association of tax exemption and community benefits in non-profit hospitals

The descriptive statistics showed significant differences across hospital categories, but it was important to analyze the differences using random effect regression models. Because each hospital was represented seven times in the data and there was collinearity in the independent variables, we used a random effect model to analyze panel data with a binary dependent variable.[25]

Table 4 columns 1a and 1b show the marginal effect when incremental community benefits exceeded the value of the tax exemption. Table 4 column 1a shows the unadjusted marginal effect of hospitals whose incremental community benefits exceeded the value of their tax exemption. The regression results show the following as positive predictors of more community benefits than tax benefits: having residents (5.9% with clustered standard error [SE] 1.4%); additional Medicaid patients (10.2%, SE: 4.6%); more physicians with privileges (0.7%, SE: 0.2%); being located in communities with a low level of hospital competition (HHI) (10.8%, SE: 3.2%); being located in a Medicaid expansion state (12.3%, SE: 1.8%); and being located in a community with higher percent of White non-Hispanics (10.5%, SE: 4.2%). Conversely, the following were negative predictors for spending more incremental community benefit than tax exemptions: being special

care hospital (−8.5%, 3.1%); having a system affiliation (−5.7%, SE: 1.5%); being located in community with middle level of hospital competition (HHI) (−6.6%, SE: 2.3%); and being located in communities with higher percent of Hispanic population (−22.5%, 7.1%) were negative predictors for spending more incremental community benefit than tax exemptions. In the adjusted model (controlled for hospital, market, state, and county level characteristic) (column 1b), most of the positive and negative predictors were similar to the unadjusted model; however, the significant impact of market concentration was no longer a statistically significant predictor and communities with higher poverty ratio spent more on community benefits (90.8%, SE: 20.1%).

Table 4 columns 2a and 2b show the unadjusted and adjusted marginal effects of hospitals whose incremental community benefits not including Medicaid shortfall (T-SH) exceeded the value of their tax exemption. The results of adjusted model (column 2a) show that most of positive and negative predictors were similar to the first two models, but Medicaid expansion status was no longer a significant predictor.

4.6 | Charity care and incremental community benefits predictors

Table 4 column 3a, shows the unadjusted marginal effect of hospitals whose incremental charity care exceeded the value of their tax exemption. In the unadjusted model hospitals with less than 100 beds (4.3%, SE: 1.1%), the following spent more on charity care: having residents (2.5%, SE: 1.0%); contract managed hospitals (3.2%, SE: 1.6%); being located in community with a higher Black non-Hispanic population (13.5%, SE: 4.1%); and located in higher poverty ratio (63.6%, SE: 9.0%). Hospitals having obstetrics services (−3.2%, SE; 1.0%); a higher Medicare case mix index (−13.8%, SE: 2.3%); and being located in Medicaid expansion states (−5.2%, SE: 1.1%) provided less incremental charity care compared to their tax exemption. In column 3b, we reported the adjusted marginal effect of hospitals incremental charity care exceeding the value of tax exemption. In this model, only hospital size, teaching status, and community poverty ratio remained significant and positive while non-church operation, obstetrics services, and Medicaid expansion remained negative predictors.

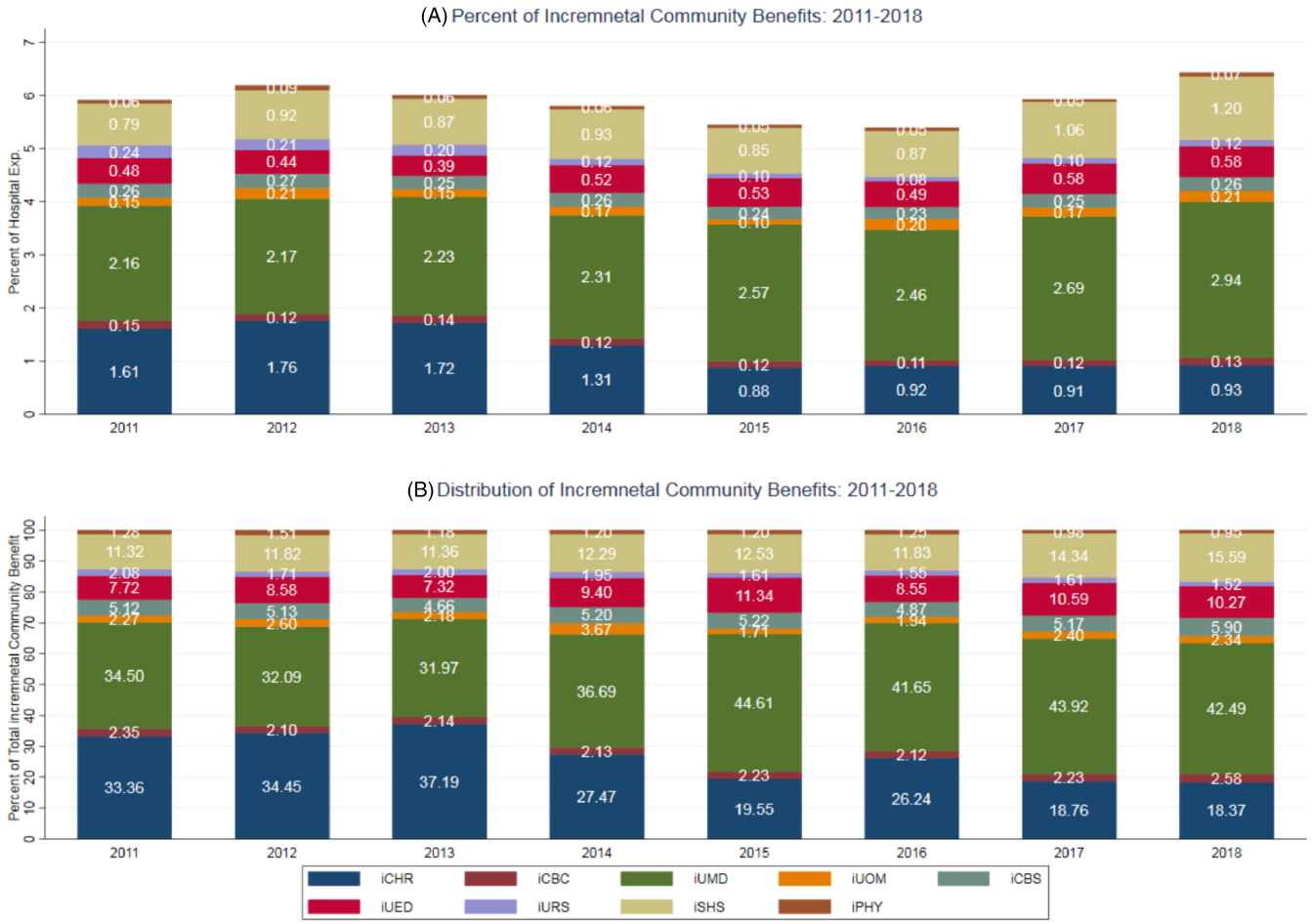

FIGURE 1 Distribution of incremental community benefits in non-profit hospitals between 2011 and 2018. Financial Assistance at cost (CHR), Unreimbursed Medicaid (UMD), Unreimbursed Other Means-Tested (UOM), Community Benefit Services (CBS), Unreimbursed Education (UED), Health Services (Non-Means-Tested) (SHS), Unfunded Research (URS), Community Benefit Contributions (CBC), Community Building Activities (PHY) [Color figure can be viewed at wileyonlinelibrary.com]

Combining the results analyzing the impact of different variables on community benefits, community benefits minus Medicaid shortfall and charity care suggests that there are certain commonalities that are associated with providing more community and charity care services than the value of their tax exemption. Hospitals with fewer than 100 beds; having residency programs; admitting more Medicaid patients; being church operated or non-affiliated and offering obstetrics services provide more community and charity care services than the value of their tax exemption. After controlling for Medicaid expansion, hospitals located in areas with a high poverty ratio and high percent of Black residents still provided more community service and charity care. Hospitals located in states with Medicaid expansion provided less community services and charity care, perhaps because Medicaid expansion addressed some of the need; for example, in 2018 Medicaid expansion states spent 1.2% in charity care and 8.8% in total community benefits and 4.5% of total community benefit minus Medicaid shortfall; non-Medicaid states spent 2.7%, 9.0%, and 6.1%, respectively.

4.7 | Examining trends in community benefits over time

We examined the distribution of community benefits across hospitals from 2011 to 2018 and combined the 17 incremental community benefits into nine main categories by combining the nine community building activities into one category (Figure 1, panel A). Charity care spending declined from 2.2% of total hospital expenses in 2011 to 1.7 in 2018 ---a 24% reduction in 8 years. Because for-profit hospitals increased their level of charity care during this time-period, the percent of incremental charity care reduced from 1.6% in 2011 to 0.9% in 2018 ---a 42.2% reduction in 8 years.

Hospitals' commitment to charity care declined during this time while community benefits remained relatively constant. In 2011, 69.6% of non-profit hospitals allocated at least 1% of their revenue to charity care; while in 2018 the percentage had dropped to 58.7%. The commitment levels also diverged. In 2011, the hospital at the 90th percentile of charity provided 12.4 times more than the hospital at the 10th percentile. In 2018, the difference was 24.3 times. In 2011, the hospital at the 90th percentile of community benefit provided 5.2 times more than the hospital at the 10th percentile. In 2018, the difference was 5.1 times.

The reason is the change in the mix of community benefits (Figure 1 panel B). Between 2011 and 2018 the incremental charity care percentage declined by 15% points from 33.4% in 2011 to 18.4% in 2018; Medicaid shortfall increased 8 percentage points from 34.5% in 2011 to 42.5% in 2018. Appendix S2 reports more detailed information on destruction of charity care and community benefits between 2011 and 2018.

4.8 | Sensitivity analysis

In the first sensitivity analysis, we showed that without adjusting for the value of community benefits provided by for-profit hospitals, 81% of non-profit hospitals provided more community benefits than the value of their tax exemption. After excluding the Medicaid shortfall expenses, 54.4% of non-profit hospitals provided more community benefits than the value of their tax exemption and only 22.3% of non-profit hospitals provided more charity care than the value of their tax exemption. (See Appendix S3).

We relaxed that requirement by allowing hospitals to enter and exit the sample (N = 16 872 hospital-years). The results do not qualitatively change (See Appendices S4 and S5).

4.8.1 | Limitations

This study was based upon what hospitals report to the IRS. A previous study showed that hospitals were more likely to report slightly higher values on average to the IRS than to Medicare,[2,26] but this was not consistent across all hospitals. We were able to match only 82.7% of non-profit hospitals on the IRS list. We assumed that a non-profit hospital would not change its reporting of profits or physical plant if it paid taxes, we recognize that some accounting experts may criticize this assumption.[27]

5 | DISCUSSION

It is generally assumed that non-profit hospitals will retain, reinvest, and distribute profits in their community[3] or contribute to community benefit activities at least commensurate with their level of tax exemptions.[28,29] Policymakers are debating, which categories of community benefits[8,9,30] should be considered and how to compute the value of the tax exemption.

Two federal agencies, IRS and CMS, collect data on community benefits. The IRS collects data on 17 different possible types of community benefits, but it does not make a judgment as to which ones should be considered a community benefit. The only penalty is when a hospital fails to file its annual return (Form 990) for three consecutive years; then the IRS will automatically revoke the organization's tax-exempt status.[31-33] Similarly, Medicare requires that short-term acute care hospitals (Section 1886[d] of the Act) submit cost reports and collects data on four measures of community benefits, but also does not render a judgment on what should be considered a community benefit.[32,34]

5.1 | Policymakers debate which activities to include as community benefits

One possible way is to assess, which of the community benefits provide greater benefits to the community or the hospital to compare the provision of specific community benefits between non-profit and for-profit hospitals. Services provided at similar levels by both profit and non-profit hospitals may have a higher level of private benefit than community benefit. The federal government and states could make this

comparison and use the information to decide, which services primarily benefit the hospitals, and which primarily benefit the community.

Increasing the level of community benefit is an objective of many policymakers.[35] The ACA, under section 9007 (Pub. L. No.111-148), requires that non-profit hospitals to perform certain functions regarding their charity care obligations, but does not specify standards that the hospitals must achieve to satisfy these obligations. Policymakers might consider defining sets of expectations and requirements for non-profit hospitals to maintain their tax exemption eligibility.

Some states[36] require their own community need assessment and other states require a minimum community benefit contribution by non-profit hospitals.[36] For example, in Illinois, non-profit hospital must provide "health services to low-income or underserved individuals"[36] to qualify for property and sales tax exemption. In Pennsylvania, non-profit hospitals must meet minimum requirements on six community benefit criterion.[37] Texas requires community benefits calculations based on three alternative community benefit standards; two of which specify a minimum level contribution.[38] Non-profit hospitals in Utah are required to make annual contributions as a "gifts to the community" in an amount exceeding the value of its annual property tax liability.[39]

The main objective of these minimum community benefit spending requirements is to ensure that non-profit hospitals provides a certain minimum level of community benefit in return for their tax exemption.[40] Our data showed that only 14% of non-profit hospitals spent more on incremental charity care than the value of their tax exemption. If increasing the level of charity care is the desired objective, then setting a minimum requirement commensurate with the value of the tax exemption would raise contributions in 86% of non-profit hospitals. Economists have raised a concern that setting minimum requirements may result in a race to the mandated standard. The concern is that some hospitals with historically higher levels of community benefits contributions may reduce their contributions to the mandate standard.[41] However, with 86% of the hospitals not achieving this standard, this is less of a concern.

Some states have defined minimum income eligibility standards for charity care, usually based on the federal poverty level. For example, California limits the amount hospitals may charge patients with income below 350% of the federal poverty level. In Illinois, hospitals may collect as payment for health care services no more than 25% of the family income of a patient eligible for an uninsured patient discount. North Dakota law limits late payment charges by both non-profit and for-profit hospitals.[36]

Only a few states require hospitals to submit their community benefit strategies and fewer require them to be publicly available.[40] Publishing the levels of charity care and/or community benefits could motivate some hospitals to increase their levels. A more sophisticated version is adjusted for hospital characteristics, community characteristics, and policy interventions (eg, Medicaid expansion) when comparing hospitals.

States have also adopted different policies on what should be included in the tax exemption. We identified six different types of tax exemptions that states could consider. Most states have focused primarily on state taxes.[36] Several proposals suggest using financial incentives (tax-based or otherwise) to steer non-profit hospitals to increase the level of their community benefits.[42-44]

6 | CONCLUSION

The provision of community benefits, charity care, and the value of the tax exemption varies substantially across non-profit hospitals. Only 38.5% of all non-profit hospitals receive more in tax benefits than the value of their incremental community benefits; 61.0% when Medicaid shortfall is eliminated from community benefits, and only 14% of hospitals provide more incremental charity care than the value of their tax exemption. Charity care is becoming a lower percentage of all community benefits while Medicaid shortfalls are becoming a greater percentage. The Corona Virus Disease (COVID -19) pandemic has again identified that poor communities with underserved minorities often have the greatest medical needs and the least access to medical services. Our results, while not focused on the COVID outbreak, show that hospitals in higher poverty areas spend more on charity care and community benefit than hospitals in higher income areas. With the reduction in hospitals revenues because of COVID-19 pandemic,[45] the ongoing challenge is to encourage the allocation of resources to the communities in greatest need.

Policymakers should consider the following: ranking hospitals, establishing a minimum requirement for non-profit hospitals, becoming more specific on which community benefits should be considered, or developing a system of credits and financial incentives to improve community benefit contributions.

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DATA AVAILABILITY STATEMENT

The Schedule H of IRS Form 990 data are available by purchase from Candid. The American Hospital Association Annual Survey is available by purchase from AHA. The Medicare Hospital Cost Report is openly available in (Centers for Medicare and Medicaid Services at https://www.cms.gov/Research-Statistics-Data-and-Systems/Downloadable-Public-Use-Files/Cost-Reports).

ORCID

Hossein Zare https://orcid.org/0000-0002-5832-0854

REFERENCES

1. Goodpasture JE. Calculation of foregone taxes and community benefit for Florida not-for-profit hospitals. *Int J Healthcare Manag*. 2019; 12(2):137-140.
2. Herring B, Gaskin D, Zare H, Anderson G. Comparing the value of non-profit hospitals' tax exemption to their community benefits. *Inquiry-J Health Car*. 2018;55:0046958017751970.
3. Lamboy-Ruiz MA, Cannon JN, Watanabe OV. Does state community benefits regulation influence Charity Care and operational

efficiency in U.S. non-profit hospitals? *J Bus Ethics*. 2019;158(2):441-465.
4. Johnson EK, Hardy R, Santos T, Leider JP, Lindrooth RC, Tung GJ. State laws and non-profit hospital community benefit spending. *J Public Health Manag Pract*. 2019;25(4):E9-E17.
5. Rubin DB, Singh SR, Young GJ. Tax-exempt hospitals and community benefit: new directions in policy and practice. *Annu Rev Public Health*. 2015;36:545-557.
6. Rozier MD, Singh SR, Jacobson PD, Prosser LA. Priorities for investing in community health improvement: a comparison of decision makers in public health, non-profit hospitals, and community nonprofits. *J Public Health Manag Pract*. 2019;25(4):322-331.
7. Sullivan HR. Hospitals' obligations to address social determinants of health. *AMA J Ethics*. 2019;21(3):248-258.
8. The Hilltop Institute. Community benefit Requiremnt; Illinois. https://www.hilltopinstitute.org/wp-content/uploads/hcbp/hcbp_docs/HCBP_CBL_IL.pdf. Accessed September 17, 2020
9. California Health and Safety Code. Chapter 2.5 of division 107. Article 1. Hospital Fair Pricing Policies https://oshpd.ca.gov/ml/v1/resources/document?rs:path=/Data-And-Reports/Documents/Submit/Hospital-Fair-Pricing-Policies/AB-774_FairPricingPolicies.pdf. Accessed September 17, 2020
10. IRS. Department of the Treasury Internal Revenue Service. 2017 Instructions for Schedule H (Form 990). https://www.irs.gov/pub/irs-prior/i990sh–2017.pdf. Accessed September 17, 2020
11. United States Government Accountability Office (GAO). States' Use and Distribution of Supplemental Payments to Hospitals (July 2019). https://www.gao.gov/assets/gao-19-603.pdf. Accessed March 21, 2021
12. Rosenbaum S, Kindig DA, Bao J, Byrnes MK, O'Laughlin C. The value of the non-profit hospital tax exemption was $24.6 billion in 2011. *Health Aff*. 2015;34(7):1225-1233.
13. IRS. Internal Revenue Services. SOI Tax Stats - Table 17 - Corporation Returns With Net Income, Form 1120 (last updated: Page Last Reviewed or Updated: 16-Jan-2020). https://www.irs.gov/statistics/soi-tax-stats-table-17-corporation-returns-with-net-income-form-1120. Accessed September 17, 2020
14. McBride W. Tax Foundation. Beyond the Headlines: What Do Corporations Pay in Income Tax? Special report. September 2011 No 194. https://files.taxfoundation.org/legacy/docs/sr194.pdf. (https://www.irs.gov/statistics/soi-tax-stats-corporation-complete-report). Accessed September 17, 2020
15. Tax Foundation. 2013. State Corporate Income Tax Rates, 2000-2014. http://taxfoundation.org/article/state-corporate-income-tax-rates. Accessed September 17, 2020
16. Hilltop-Institute. The Hilltop Institute. 2016, State Community Benefit Requirements and Tax Exemptions for Non-profit hospitals. http://www.hilltopinstitute.org/hcbp_cbl_state_table.cfm. Accessed September 17, 2020
17. Drenkard S. State and Local Sales Taxes in 2012 Tax. Foundation Fiscal Fact No. 291, February 14, 2012, Washington, D.C. 212.
18. US Depratmnet of Treasury. Corporate Bond Yield Curve Papers and Data (updated: February 14, 2019). https://www.treasury.gov/resource-center/economic-policy/corp-bond-yield/Pages/Corp-Yield-Bond-Curve-Papers.aspx. Accessed September 17, 2020
19. Muthitacharoen A, Giertz SH. Options for Changing the Tax Treatment of Charitable Giving. 2011.
20. Philanthropy IUCo. Patterns of Household Charitable Giving by Income Group, 2005. Center on Philanthropy at Indiana University; 2007.
21. Centers for Medicare and Mediciad Service. Case Mix Index. https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Acute-Inpatient-Files-for-Download-Items/CMS022630. Accessed September 17, 2020
22. American Commuity Survey. US Department of Commerce, United States Census Burea. http://www2.census.gov/. Accessed September 17, 2020
23. GuideStar. GuideStar USA. http://www.guidestar.org/2011-2012. Accessed September 17, 2020
24. STATA.COM. xtlogit — Fixed-effects, random-effects, and population-averaged logit models. https://www.stata.com/manuals13/xtxtlogit.pdf. Accessed September 17, 2020
25. STATA.COM. xtlogit — Fixed-effects, random-effects, and population-averaged logit models. https://www.stata.com/manuals13/xtxtlogit.pdf. Accessed September 17, 2020
26. Gaskin DJ, Herring B, Zare H, Anderson G. Measuring non-profit hospitals' provision of Charity Care using IRS and CMS data. *J Healthc Manag*. 2019;64(5):293-314.
27. Some OM. Non-profit hospitals Aren't Earning Their Tax Breaks, Critics Say (February 7, 2020). The PEW charitable trusts. https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2020/02/07/some-nonprofit-hospitals-arent-earning-their-tax-breaks-critics-say. Accessed September 17, 2020
28. Kacik A. Are 'community benefit programs' enough to let non-profit hospitals off the hook for taxes? (December 3, 2018). Crains' Chicago Bussiness. https://www.chicagobusiness.com/health-care/are-community-benefit-programs-enough-let-nonprofit-hospitals-hook-taxes. Accessed September 17, 2020
29. Rozier M, Goold S, Singh S. How should non-profit hospitals' community benefit be more responsive to health disparities? *AMA J Ethics*. 2019;21(3):273-280.
30. County Indigent Health Care Program. https://hhs.texas.gov/services/health/county-indigent-health-care-program. Accessed September 17, 2020
31. IRS. Internal Revenue Services. Revoked? Reinstated? Learn More (Updated: 11-Sep-2020). https://www.irs.gov/charities-non-profits/automatic-revocation-of-exemption. Accessed September 17, 2020
32. National Council of Nonprofits. Revocation of Tax Exemption. https://www.councilofnonprofits.org/tools-resources/revocation-of-tax-exemption. Accessed September 17, 2020
33. Sanborn BJ. IRS revoks tax-exempt status for county-run hospital, raising specter of more actions against nonprofits. https://www.healthcarefinancenews.com/news/irs-revokes-tax-exempt-status-county-run-hospital-raising-specter-more-actions-against. Accessed September 17, 2020
34. Centers for Medicare and Medicaid Services (CMS). Worksheet S-10 - Hospital Uncompensated and Indigent Care Data (Rev. 11). https://www.costreportdata.com/instructions/Instr_S100.pdf. Accessed September 17, 2020
35. Baehr A, Doty AM, Karp DN, Rising KL, Carr BG, Powell RE. Developing data to support effective coordination of non-profit hospital community benefit investments. *J Healthc Manag*. 2018;63(4):271-280.
36. IRS. Community Health Needs Assessment for Charitable Hospital Organizations - Section 501(r) (3)c (Page Last Reviewed or Updated: 20-Sep-2019). https://www.irs.gov/charities-non-profits/community-health-needs-assessment-for-charitable-hospital-organizations-section-501r3. Accessed September 17, 2020
37. Pennsylvania Department of State. The Institutions of Purely Public Charity Act. The Institutions of Purely Public Charity Act. 10 P.S. § 371. et seq. (1997, Nov. 26, P.L. 508, No. 55, § 15, imd. effective.). https://www.dos.pa.gov/BusinessCharities/Charities/Resources/Pages/The-Institutions-of-Purely-Public-Charity-Act.aspx#.Vks9JU2FPq4. Accessed September 17, 2020
38. Health and Safety Code. Title 4: Health Facilities. Acts 2015, 84th Leg., R.S., Ch. 1 (S.B. 219), Sec. 3.0840, eff. April 2, 2015. https://statutes.capitol.texas.gov/Docs/HS/pdf/HS.311.pdf. Accessed September 17, 2020
39. The Hilltop Institute. Community Benefit State Law Pr. ofiles. A 50-State Survey of State Community Benefit Laws through the Lens of the ACA. The Hilltop Institute. (2016, June). Community benefit state law profiles. https://www.hilltopinstitute.org/wp-content/uploads/publications/CommunityBenefitStateLawProfiles-June2016.pdf. Accessed September 17, 2020

40. Singh SR, Young GJ, Loomer L, Madison K. State-level community benefit regulation and non-profit hospitals' provision of community benefits. *J Health Polit Policy Law*. 2018;43(2):229-269.
41. Kennedy FA, Burney LL, Troyer JL, Stroup JC. Do non-profit hospitals provide more charity care when faced with a mandatory minimum standard? Evidence from Texas. *J Account Public Policy*. 2010;29(3):242-258.
42. Chaiyachati KH, Qi M, Werner RM. Non-profit hospital community benefit spending based on local sociodemographics. *J Health Care Poor Underserved*. 2018;29(4):1259-1268.
43. Leider JP, Tung GJ, Lindrooth RC, Johnson EK, Hardy R, Castrucci BC. Research full report: establishing a baseline: community benefit spending by not-for-profit hospitals prior to implementation of the affordable care act. *J Public Health Manag Pract*. 2017;23(6):e1–e9.
44. Valdovinos E, Le S, Hsia RY. In California, not-for-profit hospitals spent more operating expenses on charity care than for-profit hospitals spent. *Health Aff*. 2015;34(8):1296-1303.
45. Levy JF, Ippolito BN, Jain A. Hospital revenue under Maryland's total cost of care model during the COVID-19 pandemic, march-July 2020. *JAMA*. 2021;325(4):398-400.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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