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Original Scholarship

Provision of Social Care Services by US Hospitals

BRADLEY IOTT[*,†] and DENISE ANTHONY[*]

[*]*University of Michigan School of Public Health;* [†]*University of California, San Francisco*

Policy Points:

- Hospitals address population health needs and patients' social determinants of health by offering social care services. Tax-exempt hospitals are required to invest in community benefits, including social care services programs, though most community benefits spending is toward unreimbursed health care services.
- Tax-exempt hospitals offer about 36% more social care services than for-profit hospitals. Among tax-exempt hospitals, those that allocate more resources to community benefits spending offer more types of social care services, but those in states with minimum community benefits spending requirements offer fewer social care services.
- Policymakers may consider specifically incentivizing community benefits expenditures toward particular social care services, including linking tax exemptions to implementation, utilization, and outcome targets, to more directly help patients.

Context: Despite growing interest in identifying patients' social needs, little is known about hospitals' provision of services to address them. We identify social care services offered by US hospitals and determine whether hospital spending or state policies toward community benefits are associated with the provision of these services by tax-exempt hospitals.

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Methods: National secondary data about hospitals were collected from the American Hospital Association Annual Survey, with additional Internal Revenue Service (IRS) Form 990 data on community benefits spending from CommunityBenefitInsight.org and state-level community benefits policies from HilltopInstitute.org. Descriptive statistics for types of social care services and hospital characteristics were calculated, with bivariate chi-square and *t*-tests comparing for-profit and tax-exempt hospitals. Multivariable Poisson regression was used to estimate associations between hospital characteristics and types of services offered and among tax-exempt hospitals to estimate associations between social care services and community benefits spending and policies. Multivariable logistic regressions modeled associations between community benefits spending/policies and each type of social care services.

Findings: Private US hospitals offered an average of 5.7 types of social care services in 2018. Tax-exempt hospitals offered about 36% more social care services than for-profit hospitals. Larger number of beds, health system affiliation, and having community partnerships are associated with more social care services, whereas rural hospitals and those managed under contract offered fewer social care services. Among tax-exempt hospitals, greater community benefits spending is associated with offering more total (incidence rate ratio [IRR] = $1.10, p < 0.01$) and patient-focused social care services (IRR = $1.16, p < 0.01$). Hospitals in states with minimum community benefits spending requirements offered significantly fewer social care services.

Conclusions: Although tax-exempt status and increased community benefits spending were associated with increased social care services provision, the observation that certain hospital characteristics and state minimum community benefits spending requirements were associated with fewer social care services suggests opportunities for policy reform to increase social care services implementation.

Keywords: hospitals, social determinants of health, social care services, community benefit, state policy.

HEALTH CARE PROVIDERS INCREASINGLY RECOGNIZE THAT services to address patients' social needs and social determinants of health (SDH), collectively referred to as social care services, can improve health for patients and potentially for communities as well.[1-3] Federal, state, and commercial payers have launched new payment models to promote addressing SDHs with the expectation that such social care services will help to reduce unnecessary utilization and spending, particularly for patients with chronic illness with social needs

while also improving population health.[4-7] According to the National Academies of Sciences, Engineering, and Medicine (NASEM) 2019 report on *Integrating Social Care into the Delivery of Health Care*, social care services include activities that address health-related social risk factors and social needs at both the individual and community levels.[3] As such, social care services may be directly focused on supporting individual patients with significant social needs or more generally focused on promoting community health improvement activities. Thus, by offering social care services, providers seek to improve utilization of needed health care services (e.g., by providing transportation for clinical appointments), reduce unnecessary or low-quality services like emergency department use or hospital readmissions (e.g., by facilitating postdischarge food delivery), and promote healthy behaviors and reduce negative ones (e.g., nutrition classes and community violence prevention programs).[8,9]

Social care services are increasingly offered in various clinical settings,[4] including hospitals.[10] A recent assessment found that many health systems are investing billions of dollars in interventions focused on SDHs.[11] Investing in SDHs often aligns with hospital missions dedicated to improving community health. Nonprofit hospitals, whether religiously affiliated or not, may be particularly likely to see provision of social care services as part of their mission. In addition to profit status, large health systems and teaching hospitals have been particularly focused on SDH interventions.[11,12] In contrast, hospitals in more rural communities may face greater need for social care services but have fewer resources with which to offer them.[13,14]

Nonprofit hospitals have an additional motivation to offer social care services as part of their community benefits investments provided in exchange for exemptions from federal, and often also state and local, taxes.[15-17] In 2011, the value of the federal tax exemption for nonprofit hospitals was estimated at over $24.6 billion dollars.[18] Community benefits offered by hospitals include a variety of services and programs consistent with social care services, including those focused on patients, like transportation and food assistance, and those focused on community health improvement activities.[15] Such communitywide investments can include activities that align with other community and public services (e.g., investments in community-level programming, such as ride-sharing or time-bank programs) as well as advocacy efforts (e.g., promoting the creation of policy to improve public transportation infrastructure in the community) in order to improve population health.[3]

More recently, the Affordable Care Act (ACA) mandated that every 3 years, tax-exempt hospitals conduct and use community health needs

assessments (CHNAs) to create community health improvement plans with community partners.[16,19] Starting in 2016, tax-exempt hospitals must conduct a CHNA and adopt an implementation strategy based on it to address significant health needs in the community or face a penalty of $50,000 per year.[20] Hospitals must gather input from community members and interests. Implementation strategies must describe the actions the hospital intends to take, the resources committed, and any planned collaboration with other facilities or organizations. Hospitals' plans typically include social care services that address financial and other barriers to accessing care, preventing illness, and/or addressing social, behavioral, or environmental factors that influence health in the community.

Between 2009 and 2014, nonprofit hospitals spent, on average, approximately 7.5% of their total operating budgets on community benefits, with most of the spending by any individual hospital on unreimbursed care (85%).[21,22] Only about 5% of community benefits investments were for social care services, even post-ACA.[15,19,21-23] Such findings, that the vast majority of community benefits spending is toward unreimbursed care, suggest that community benefits spending for social care services may be particularly focused on direct patient support services rather than more community-focused services.

Some states pose specific community benefits requirements for nonprofit hospitals.[24,25] Twenty-three states have some type of policy regarding community benefits requirements, such as requiring a community benefits plan or implementation strategy. Five states specify a minimum community benefits spending level.[19,24,25] However, it is unknown whether state-level community benefits policies are associated with hospital provision of social care services.

This study identifies the number of types of social care services currently being offered by private US hospitals and, further, examines how hospital and community characteristics are associated with offering social care services. In addition, to explore the role of community benefits spending as a potential mechanism of encouraging investment in social care services, the study determines whether tax-exempt hospitals' level of community benefits spending or being in a state with community benefits policies is associated with provision of social care services. We build on prior work by determining associations between levels of community benefits spending and the number and type of both patient- and community-focused social care services.

Methods

We performed a secondary analysis of hospitals' provision of social care services using data from the American Hospital Association (AHA) Annual Survey, Community Benefit Insight on community benefits spending, The Hilltop Institute for state policies, and the 2018 American Community Survey for zip-code–level median household income. The AHA Annual Survey collects data about facilities, services, payment, and staffing from 6,218 hospitals across the United States.[26] Data from the AHA Annual Survey have been used to characterize hospitals' community benefits efforts,[27-29] and the 2018 version of the survey captures information about hospitals' participation in 11 types of social care programs.[26] Community Benefit Insight provides information about the community benefits spending of tax-exempt hospitals.[30] Data regarding state community benefits requirements came from The Hilltop Institute.[31] Zip-code–level median household income data came from the 2018 American Community Survey.[32]

Study Sample

Our population of interest is all nonfederal, nonpublic general medicine/surgery hospitals with 25 or more beds, as reported in the AHA survey ($n = 3{,}833$). Private tax-exempt hospitals in our sample ($n = 2{,}576$) include only nonprofit hospitals (religiously operated or otherwise). For-profit hospitals in our sample ($n = 385$) include investor-owned facilities operated by an individual, partnership, or corporation. We excluded any observations with missing data in any of our measures of interest described below for the final sample of 2,961 hospitals.

A large number of observations ($n = 772$) were missing data for our dependent variable (social care services). In Appendix 1, we show a logistic regression model predicting hospitals having missing data for our dependent variables. We observe significantly lower odds of observing missing dependent variables among tax-exempt hospitals, hospitals with over 500 beds, system-affiliated hospitals, teaching hospitals, hospitals serving as the sole provider in their community, and hospitals in communities with a median household income in the top three quartiles. Furthermore, rural hospitals had higher odds of having missing social care services data relative to more urban areas (Appendix 1). We conduct

sensitivity analyses with missing observations set equal to 0 to evaluate the influence of this missingness on our primary outcomes.

In the second phase of our analysis, which focused on exploring associations between community benefits spending and social care service provision, we excluded hospitals who were missing community benefits spending data ($n = 595$) and hospitals that filed a Schedule H Form 990 at the system level rather than for each individual hospital in the system ($n = 769$),[21] resulting in a subsample of 1,212 tax-exempt hospitals.

Measures

We count the *total number of social care service* types offered by hospitals according to the 11 types included in the AHA survey (range 0–11). Consistent with the NASEM definition of social care services as activities that address health-related social risk factors and social needs at both the individual and community levels, we categorized the 11 types of social care services by whether they were focused on supporting individual patients' access to health care or social care services or on improving the health of the entire patient population/community served by the facility.[3] *Patient-focused social care services* include the following: insurance enrollment assistance services, nonemergency transportation, enabling services (programs to help patients access health care services), employment support, meal delivery, and supportive housing. *Community-focused social care services* include the following: community health education, health fairs, community outreach (e.g., programs to facilitate connections with community-available programs and services), community violence prevention, and mobile health services. We created two count variables, one for patient-focused social care services (range 0–6) and one for community-focused social care services (range 0–5). The NASEM report emphasizes that actions across both categories are important for strengthening the delivery of social care in health care settings.

The independent variables include hospital and community characteristics. Hospitals' tax-exempt/profit statuses were categorized using the AHA measure of the type of authority responsible for hospital operations, coded as either for profit ($n = 257$) or tax exempt ($n = 1,076$). Using AHA survey data, we categorize hospital number of beds (25-99, 100–499, or 500 or more beds), whether the hospital was affiliated with a system, whether the hospital had a teaching or religious affiliation, whether the hospital was its community's sole provider, whether the hos-

pital was managed under contract by another organization, and the type of its regional location (metropolitan [50,000+ people], micropolitan [10,000-49,999 people], or rural [<10,000 people]). We also include a categorical variable representing quartiles of median household income of the zip code in which the hospital resides in order to control for possible need for social care services in the community in which the hospital operates.[21] The 2018 US median household income was $63.179,[33] and median household income quartiles are: $15,169-$42,577, $42,581-$51,250, $51,255-$63,200, and $63,263-$168,807.

For the analysis of community benefits spending associated with social care services in tax-exempt hospitals, we used data from Community Benefit Insight to construct a categorical measure of each hospital's total community benefits spending level as a percentage of total functional expenses: less than 5%, 5%-7.49%, 7.5%-10%, and greater than 10%.[21] We used only the most recent year of available community benefits spending data for each hospital from Community Benefit Insight. Furthermore, only those hospitals with data available from the 2 years prior to the AHA survey's measurement of social care services offered (2015-2017) were included, resulting in an exclusion of 245 hospitals with only pre-2015 data available. We create two binary indicators of state-level community benefits policy: one for the state having any community benefits requirements (1 if any, 0 otherwise) and one for the state specifying a minimum community benefits spending level (1 = yes, 0 = no).[31]

Analysis

We calculated descriptive characteristics and conducted bivariate tests comparing tax-exempt and for-profit hospitals. We conducted Pearson chi-square tests comparing the proportion of tax-exempt and for-profit hospitals that offer each type of social care service. We used Poisson regression models to determine the association between hospital characteristics and number of social care services offered by hospitals (total and patient focused and community focused) in our full sample of tax-exempt and for-profit facilities. Poisson specifications were used based on tests of overdispersion of our dependent variables and the likelihood ratio test comparing fit of negative binomial and Poisson models. We did not find evidence of overdispersion of our social care services variables.

Next, for the analyses of tax-exempt hospitals only, we use Poisson regression models to identify the associations among hospital community benefits spending levels, state community benefits policies, and number of social care services, controlling for hospital and community characteristics. We conduct sensitivity analyses of our Poisson models by setting missing observations on our dependent variables equal to 0 and including as an independent variable in the Poisson regression. For the analyses of the subsample of tax-exempt hospitals, we used multivariable logistic regression to identify the likelihood of offering each type of social care services by hospital community benefits spending levels and state community benefits policies, controlling for hospital and community characteristics. Data analysis was conducted using Stata 15.1.

Results

Private US hospitals with at least 25 beds offered an average of 5.7 types of social care services (median = five social care services) in 2018. Table 1 shows the distribution of types of social care services offered by for-profit and tax-exempt hospitals. The most common patient-focused social care services offered by a majority of both for-profit and tax-exempt hospitals was assistance to enroll in an insurance plan. For all other social care services, more tax-exempt than for-profit hospitals offered each type of both patient- and community-focused social care services. A low percentage of either hospital type offered supportive housing services to patients, though a significantly higher percentage of tax-exempt than for-profit hospitals did so. A majority of both types of hospitals offered various community-focused social care services, including community health education, health fairs, and community outreach.

Tax-exempt hospitals offered about 36% more types of social care services than for-profit hospitals (5.91 vs. 4.36 $t = -12.56$), including both patient-focused (2.48 vs. 1.63, $t = -10.70$) and community-focused (3.43 vs. 2.73, $t = -11.79$) types of social care services (see Table 2). For-profit and tax-exempt hospitals also differed significantly on other dimensions, including number of beds, system affiliation, teaching status, religious affiliation, and whether they were contract managed or regional. In multivariable Poisson regression, tax-exempt hospitals offered significantly more types of social care services than for-profit hospitals, including overall and patient-focused and community-focused

Table 1. **Distribution of Types of SCSs in Private For-Profit and Tax-Exempt Hospitals, $n = 2{,}961$**

Level	SCS	For Profit *N* (%)	Tax Exempt *N* (%)	Chi-Square *P* Value
Community-focused SCSs	Community health education	347 (90.13%)	2,452 (95.19%)	<0.001
	Health fairs	327 (84.94%)	2,374 (92.16%)	<0.001
	Community outreach	301 (78.18%)	2,291 (88.94%)	<0.001
	Community violence prevention	42 (10.91%)	765 (29.70%)	<0.001
	Mobile health Services	33 (8.57%)	956 (37.11%)	<0.001
Patient-focused SCSs	Insurance enrollment	313 (81.30%)	2,168 (84.16%)	0.155
	Transportation	105 (27.27%)	1,270 (49.30%)	<0.001
	Enabling services	89 (23.12%)	1,263 (49.03%)	<0.001
	Employment support	79 (20.52%)	863 (33.50%)	<0.001
	Meal delivery	35 (9.09%)	621 (24.11%)	<0.001
	Supportive housing	7 (1.82%)	190 (7.38%)	<0.001

Abbreviations: AHA, American Hospital Association; SCS, social care service.
This table is sourced from the AHA 2018 Annual Survey.

Table 2. Social Care Services and Hospital Characteristics of Private For-Profit and Tax-Exempt Hospitals, $n = 2{,}961$

	For Profit $n = 385$	Tax Exempt $n = 2{,}576$	Bivariate Test
Mean types of social care services			
Total	4.36	5.91	$t = -12.56^{**}$
Patient focused	1.63	2.48	$t = -10.70^{**}$
Community focused	2.73	3.43	$t = -11.79^{**}$
Number of beds			
25-99	36.62%	43.09%	
100-499	60.26%	48.18%	$\chi^2 = 26.36^{**}$
500+	3.12%	8.73%	
Health system affiliated	90.13%	68.28%	$\chi^2 = 77.83^{**}$
Teaching hospital	1.04%	7.18%	$\chi^2 = 21.15^{**}$
Church affiliation	2.60%	15.68%	$\chi^2 = 47.69^{**}$
Sole community provider	9.09%	7.69%	$\chi^2 = 0.91$
Contract-managed hospital	6.23%	9.28%	$\chi^2 = 3.84$
Region			$\chi^2 = 40.55^{**}$
Metropolis	77.14%	62.54%	
Micropolis	15.84%	18.21%	
Rural	7.01%	19.25%	

Continued

Table 2. (Continued)

	For Profit $n = 385$	Tax Exempt $n = 2,576$	Bivariate Test
Zip code median household income quartiles			
$15,169-$42,577	28.83%	24.46%	$\chi^2 = 4.39$
$42,581-$51,250	23.64%	25.19%	
$51,255-$63,200	25.45%	24.96%	
$63,263-$168,807	22.08%	25.39%	

Abbreviation: AHA, American Hospital Association.
*$p < 0.05$, **$p < 0.01$.
This table is sourced from the AHA 2018 Annual Survey, Community Benefit Insight, and the American Community Survey.

Table 3. Poisson Regression Incidence Rate Ratios (95% CI) for the Number of Social Care Services on Hospital Characteristics Among Private US Hospitals, $n = 2{,}961$

	Total Social Care Services	Patient-Focused Social Care Services	Community-Focused Social Care Services
Tax-exempt hospitals	1.43***	1.63***	1.31***
(Reference: for profit)	(1.36, 1.51)	(1.50, 1.78)	(1.23, 1.40)
Number of beds (reference: 25–99)			
100-499	1.16***	1.23***	1.12***
	(1.12, 1.21)	(1.16, 1.31)	(1.06, 1.18)
500+	1.25***	1.34***	1.19***
	(1.17, 1.34)	(1.20, 1.48)	(1.09, 1.30)
System affiliated	1.19***	1.25***	1.15***
	(1.14, 1.23)	(1.17, 1.32)	(1.09, 1.21)
Teaching hospital	1.14***	1.18***	1.11*
	(1.07, 1.22)	(1.07, 1.30)	(1.02, 1.21)
Religious affiliation	0.98	0.95	1.00
	(0.94, 1.02)	(0.88, 1.01)	(0.94, 1.06)
Sole community provider	1.00	0.97	1.02
	(0.94, 1.07)	(0.88, 1.08)	(0.94, 1.11)
Contract managed	0.91**	0.86**	0.93
	(0.85, 0.96)	(0.78, 0.95)	(0.86, 1.01)

Continued

Table 3. (Continued)

	Total Social Care Services	Patient-Focused Social Care Services	Community-Focused Social Care Services
Area (reference: metropolitan)			
Micropolis	0.90***	0.85***	0.94*
	(0.86, 0.94)	(0.78, 0.92)	(0.88, 1.00)
Rural	0.79***	0.70***	0.85***
	(0.74, 0.83)	(0.64, 0.77)	(0.79, 0.91)
Zip code median household income quartiles (reference: $15,169-$42,577)			
$42,581-$51,250	1.03	1.06	1.01
	(0.99, 1.08)	(0.99, 1.14)	(0.95, 1.07)
$51,255-$63,200	1.04	1.06	1.03
	(1.00, 1.09)	(0.99, 1.14)	(0.97, 1.09)
$63,263-$168,807	1.12***	1.18***	1.08**
	(1.07, 1.17)	(1.11, 1.27)	(1.02, 1.14)

Abbreviations: AHA, American Hospital Association; CI, confidence interval.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
This table is sourced from the 2018 AHA Annual Survey AHA 2018 Annual Survey, Community Benefit Insight, and the American Community Survey.

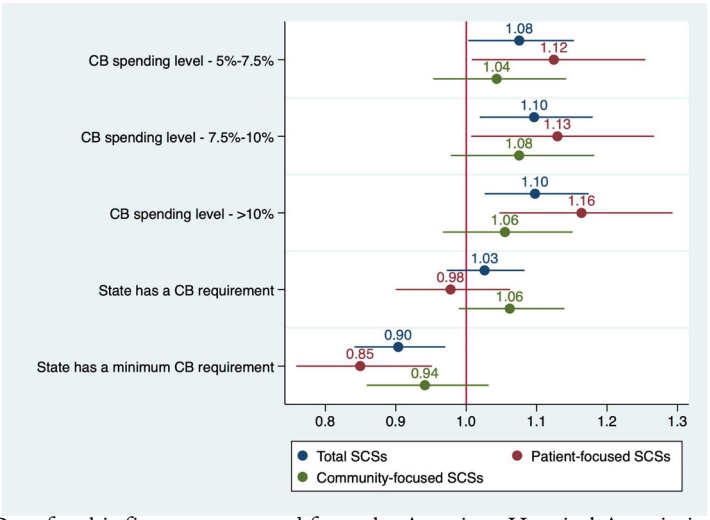
social care services (see Table 3). For every one type of social care services offered by a for-profit hospital, tax-exempt hospitals offered 1.4 social care services, including 1.6 times the number of patient-focused social care services and 1.3 times the number of community-focused social care services.

Other hospital characteristics are also associated with a number of types of social care services offered (Table 3). Larger hospitals offer more types of social care services than smaller hospitals and, particularly, more patient-focused social care services. For example, hospitals with 500 or more beds had 1.3 times the number of patient-focused social care services as hospitals with 25–99 beds. Consistent with previous findings that health systems are more likely to invest in SDH spending,[11] hospitals affiliated with health systems offer more social care services overall (internal rate of return [95% confidence interval] 1.19 [1.14, 1.23], $p < 0.001$) and both patient-focused (1.25 [1.17, 1.32], $p < 0.001$) and community-focused (1.15 [1.09, 1.21], $p < 0.001$) social care services, compared with non–system-affiliated hospitals. In contrast, hospitals managed under contract offer significantly fewer types of social care services (0.91 [0.85, 0.96], $p < 0.01$). Finally, hospitals in rural areas offered significantly fewer social care services overall (0.79 [0.74, 0.83], $p < 0.001$) than hospitals in more populated areas, including statistically fewer patient-focused (0.70 [0.64, 0.77], $p < 0.001$) and community-focused (0.85 [0.78, 0.91], $p < 0.001$) social care services, and subsequently, hospitals in zip codes in the highest quartile of median household income offered more social care services overall (1.12 [1.07, 1.17], $p < 0.001$), including more patient-focused services (1.18 [1.11, 1.27], $p < 0.001$) and community-focused services (1.08 [1.02, 1.14], $p < 0.001$).

Additionally, to account for missingness in our dependent variables, we conducted a sensitivity analysis of our Poisson models in Table 3 in which we set observations with missing social care services equal to 0 and included as an independent variable in the model. We observe substantively similar incidence rate ratios as shown in Table 3 (Appendix 2). One minor difference we observe in this analysis is that hospitals in the third quartile of median household income offered significantly more social care services overall (1.05 [1.00, 1.10], $p < 0.05$), including more patient-focused services (1.07 [1.00, 1.15], $p < 0.05$), unlike in Table 3, in which it is not significant.

Turning to the analysis of our subsample of tax-exempt hospitals, we found that community benefits spending levels at or above 5% were

Figure 1. Poisson Regression Incidence Rate Ratios (95% CI) for Number of Social Care Services by Tax-Exempt Hospital Community Benefit Characteristics, Controlling for Hospital Characteristics, n = 1,212



Data for this figure are sourced from the American Hospital Association 2018 Annual Survey, Community Benefit Insight, The Hilltop Institute, and the American Community Survey. Each Poisson regression includes hospital bed size, system affiliation, teaching status, religious affiliation, sole community provider, contract managed, zip code median household income, and type of area.
Abbreviations: CB, community benefit; CI, confidence interval; SCS, social care service.

associated with offering significantly more types of social care services overall and those that are patient focused, controlling for other hospital characteristics (see Figure 1). In addition, though hospitals in states with a community benefits requirement of any kind did not differ from nonrequirement states, surprisingly, hospitals in the five states with a minimum spending level offer almost 10% fewer types of social care services overall and 15% fewer patient-focused social care services than hospitals in states with no spending minimum.

Tables 4 and 5 show the marginal effects for multivariable logistic regressions of hospital community benefits spending levels and state policies on each type of patient-focused (Table 4) and community-focused (Table 5) social care services, controlling for hospital and community characteristics for tax-exempt hospitals. For patient-focused social care services, hospital community benefits spending levels are significantly associated with increased likelihood of offering insurance enrollment assistance (spending between 7.5% and 10%), transportation (each level of spending above 5%), and meal delivery (spending above 10%). We see little association between state community benefits requirements and the likelihood of offering any patient-focused services, except for a lower likelihood that a hospital offers meal delivery services in those states. Similar to our findings above for the number of social care services, hospitals in states with minimum community benefits spending levels are less likely to offer some types of patient-focused services, including insurance enrollment assistance, transportation services, and supportive housing.

For community-focused social care services, hospital community benefits spending levels of 7.5%-10%, compared with less than 5%, are significantly associated with increased likelihood of offering violence prevention programs, whereas spending at or above 5% increases the likelihood that the hospital offers mobile health services. State community benefits requirements were significantly associated with an increased likelihood of offering health fairs, community outreach, and community violence prevention programs. State minimum community benefits spending policies are not statistically associated with likelihood of offering most community-focused social care services except that hospitals in those states are significantly less likely to offer community violence prevention and mobile health services.

Discussion

In the increasing drive for more attention to social determinants and population health, we find that US hospitals are already offering multiple types of social care services. In 2018, 2 years after the ACA began requiring tax-exempt hospitals to conduct CHNAs and develop implementation plans to address significant health needs in the community, private general hospitals with more than 25 beds offered an average

Table 4. Marginal Effects for Hospital Community Benefits Spending and State Policies on the Types of Patient-Focused Social Care Services Among Tax-Exempt Hospitals, $n = 1,212$

	Patient-Focused Social Care Services					
	Insurance Enrollment Assistance	Transportation	Enabling Services	Employment Support	Meal Delivery	Supportive Housing
Hospital community benefits spending						
5%-7.49%	0.03	0.09*	0.03	0.06	0.02	0.02
	(−0.03, 0.10)	(0.01, 0.17)	(−0.05, 0.10)	(−0.02, 0.13)	(−0.04, 0.09)	(−0.02, 0.06)
7.5%-10%	0.07*	0.09*	0.04	0.03	0.01	0.02
	(0.01, 0.13)	(0.01, 0.17)	(−0.03, 0.12)	(−0.05, 0.10)	(−0.06, 0.08)	(−0.02, 0.07)
>10%	0.06	0.08*	0.05	0.06	0.07*	0.01
	(−0.00, 0.11)	(0.01, 0.16)	(−0.02, 0.12)	(−0.01, 0.13)	(0.00, 0.13)	(−0.02, 0.05)
State community benefits requirement	0.03	0.00	−0.02	0.01	−0.09**	0.01
	(−0.02, 0.08)	(−0.06, 0.07)	(−0.08, 0.04)	(−0.05, 0.07)	(−0.14, −0.03)	(−0.02, 0.05)

Continued

Table 4. (Continued)

	Patient-Focused Social Care Services					
	Insurance Enrollment Assistance	Transportation	Enabling Services	Employment Support	Meal Delivery	Supportive Housing
State minimum community benefits spending	−0.09*	−0.09*	−0.02	−0.06	−0.06	−0.06***
	(−0.16, −0.01)	(−0.17, −0.01)	(−0.10, 0.05)	(−0.13, 0.01)	(−0.12, 0.01)	(−0.08, −0.03)

Abbreviation: AHA, American Hospital Association.
*$p < 0.05$, **$p < 0.01$.
This table is sourced from the AHA 2018 Annual Survey, Community Benefit Insight, The Hilltop Institute, and the American Community Survey. Each logistic regression includes hospital number of beds, system affiliation, teaching status, religious affiliation, sole community provider, contract managed, zip code median household income, and type of area.

Table 5. Marginal Effects for Hospital Community Benefits on Types of Community-Focused Social Care Services Among Tax-Exempt Hospitals, $n = 1{,}212$

	Community-Focused Social Care Services				
	Community Health Education	Health Fairs	Community Outreach	Community Violence Prevention	Mobile Health Services
Hospital community benefits spending					
5%-7.49%	0.00	−0.00	0.02	0.03	0.09**
	(−0.03, 0.04)	(−0.05, 0.04)	(−0.03, 0.06)	(−0.04, 0.09)	(0.03, 0.16)
7.5%-10%	0.02	0.00	0.02	0.09*	0.12**
	(−0.01, 0.05)	(−0.04, 0.05)	(−0.04, 0.07)	(0.02, 0.16)	(0.04, 0.19)
>10%	0.01	−0.01	−0.01	0.10**	0.09*
	(−0.02, 0.04)	(−0.06, 0.03)	(−0.05, 0.04)	(0.04, 0.17)	(0.02, 0.15)
State community benefits requirement	−0.01	0.04*	0.07***	0.06*	0.05

Continued

Table 5. (Continued)

	Community-Focused Social Care Services				
	Community Health Education	Health Fairs	Community Outreach	Community Violence Prevention	Mobile Health Services
	(−0.04, 0.01)	(0.00, 0.08)	(0.03, 0.11)	(0.01, 0.11)	(−0.01, 0.09)
State minimum community benefits spending	−0.04	0.04	−0.06	−0.06*	−0.09*
	(−0.08, 0.01)	(−0.00, 0.09)	(−0.13, 0.01)	(−0.11, −0.00)	(−0.15, −0.02)

Abbreviation: AHA, American Hospital Association.
*$p < 0.05$, **$p < 0.01$.
This table is sourced from the AHA 2018 Annual Survey, Community Benefit Insight, The Hilltop Institute, and the American Community Survey. Each logistic regression includes hospital number of beds system affiliation, teaching status, religious affiliation, sole community provider, contract managed, zip code median household income, and type of area.

of 5.7 types of social care services to address patients' social needs and improve population health in their communities. Most hospitals, whether a for-profit or nonprofit hospital, offered assistance for patients to enroll in health insurance. This finding is not surprising given that such assistance programs benefit not only patients but also the hospital because it may lead to third-party insurance coverage for the patients' care. Most hospitals also engaged in community-focused social care activities like outreach, health fairs, and community education. On average, nonprofit, tax-exempt hospitals offered 20% more types of social care services overall than for-profit hospitals, including more of both patient-focused and community-focused social care services, even after accounting for other hospital and community characteristics. This finding suggests that the combination of mission and expectations related to tax-exempt status influence provision of services. In addition to profit status, larger hospitals, those affiliated with a system, and those located in a higher median income county were all associated with a hospital having more types of social care services compared with counterparts. These attributes are typically correlated with the presence of additional resources necessary to offer social care services and with larger patient populations for whom social care services may be beneficial. In contrast, though rural hospitals may serve populations with greater needs, they offer significantly fewer types of social care services than average, as do hospitals under contract management; all else is equal. Rural hospitals are typically lower resourced than nonrural hospitals, which may limit the ability to provide social care services. Contract-managed hospitals may have limited autonomy to allocate resources toward social care services. Measurement of hospitals' provision of social care services in 2018, 2 years after tax-exempt hospitals were required under the ACA to address community health needs, establishes an early baseline of social care services prevalence that can be monitored over time as hospitals become more familiar with conducting, implementing, and evaluating CHNAs going forward.

Given the requirements that nonprofit hospitals contribute to community benefits for their tax-exempt status, we also examined how level of community benefits spending, as well as state-level policies for community benefits, were associated with provision of social care services. Despite previous findings that most community benefits spending goes toward unreimbursed and charity care, not social care services,[21,25,34] not surprisingly, we found that higher levels of hospital community benefits spending were associated with offering more types of social

care services overall and, particularly, more patient-focused social care services such as transportation services to patients. Similar to patient-focused assistance in insurance enrollment, which benefits both the hospital and patient, transportation services that facilitate utilization help both the patient and the hospital. Although higher levels of community benefits spending were not associated with a greater number of community-focused social care services, more spending was associated with an increased likelihood of offering specific community-focused social care services, including mobile health services and community violence prevention programs. Being in a state with community benefits requirements in general did not significantly affect hospitals' likelihood of offering social care services. However, hospitals in states with a required minimum community benefits spending level actually were less likely to offer social care services, particularly insurance assistance, transportation services, supportive housing, and mobile health services.

This study has several implications for considering hospitals' role in addressing SDHs and improving population health. First, the finding that most hospitals are already offering social care services suggests that some capacity already exists on which to expand infrastructure to address SDHs. The 2019 NASEM report includes a number of important recommendations for integrating social care services into health care via organizational commitments, workforce development, digital infrastructure, financing, and research.[3] Hospitals and health systems need to increase awareness of the social care needs of patients and align with community partners to develop the workforce, infrastructure, and support for social care services. Policymakers and payers should consider how to build on existing programs (e.g., care management, home-based services) and policies (e.g., alternative payment models, support for Medicare and Medicaid dually eligible populations) to support the development of integrated social care services.

However, in order not to exacerbate existing inequalities, when integrating social care services into health care delivery, one must also consider variation in the extent to which hospitals have the resources or motivation to provide social care services. For example, though rural patient populations may benefit from additional hospital social care services, facilities in these communities typically have fewer resources,[13,14] likely constraining their ability to provide such services. It is not surprising that larger, more well-resourced facilities offer more social care services than smaller counterparts, though it is important to consider the equity

implications of this finding. As hospitals increasingly are expected to address significant health needs in their communities, if particular hospitals like rural facilities are less able to address those community needs, the resulting improvements in health in those communities will lag behind others. Providing additional community health resources to rural facilities to offer additional social care services may be a potential policy target to improve health equity. Internal organizational factors may also influence social care services implementation, as community benefits managers have been found to have limited control over community health improvement budgets and little guidance regarding the allocation of resources.[35] Additionally, hospitals have been thought to lack the competencies and infrastructure necessary to participate in community health initiatives,[21,36] whereas others worry that community organizations may be institutionally warped by the resource pull of hospital partnerships.[37]

These and other concerns suggest caution in seeking to address upstream SDHs by funneling more resources into the already massive health care delivery system. Though social care services are discussed as key ways to address patients' SDHs, they do not fully address the upstream needs of people and communities.[36,38] The benefits from social care services—particularly patient-focused social care services—flow, by definition, to patients, which means they also benefit the hospitals (e.g., insurance assistance programs that increase likelihood and amount of coverage for health care services or transportation services that increase patient utilization of care). Even community-focused social care services most often are directed toward hospital patient catchment area, rather than the entire geographic community.[36] Thus, social care services are limited in addressing "population health" and SDHs broadly. To address upstream SDHs requires social policies focused on broad social-level investments and efforts to undo centuries of racial segregation, to adequately fund education at all levels, and to address poverty and lack of adequate housing, among many other necessary community interventions.[36] Expanding community benefits spending expectations and using other policy levers as described below to increase social care offered via health care providers are mechanisms through which the health care delivery system can improve population health.[21] However, such policies cannot be expected to fully address the integration of social care into health care services or, certainly, to address the full range of SDHs overall.

For nonprofit hospitals already offering social care services, policymakers may want to consider specifically incentivizing community benefits expenditures toward particular social care services, and/or linking them to specific quality, implementation, or outcome targets.[10,39] Payment policies should also be considered for encouraging social care services by all hospitals, such as by the Centers for Medicare and Medicaid regarding, for example, Medicaid-covered social care services, or via alternative payment models. Policies that focus on the data standards and infrastructure needed to facilitate information sharing across institutions can enable more cooperation and integration of health care and social care services, though such policies need to carefully consider and monitor risks to privacy and information security. Implementation targets, including standards for the types and quality of social care services offered and the number of community social service agencies to which hospitals can send electronic social care referrals, may encourage hospital administrators to implement broad social care services portfolios and community partnerships to address a diverse range of social needs. Utilization targets, including the volume of patients served and health equity targets to ensure accessibility for all demographic groups, may encourage administrators to invest in the education of providers and patients about available social care services. Furthermore, outcome-related targets, including tracking patients' utilization of social care services following referrals, amount of time to referral and time to receipt of social care services, and changes to self-reported social needs following social care services utilization, may be employed to ensure the effectiveness of services and allow for longitudinal program evaluation.

State policies specifying community benefits minimums can have the unintended consequence of hospitals reducing spending to meet the minimum.[40] Our findings suggest something different. Hospitals in states with community benefits spending minimums offer fewer types of social care services, all else equal, indicating that state spending minimums may influence not only the total amount hospitals invest but also the types of community benefits provided. Community benefits spending has been required since the creation of Medicare, and historically, hospitals have focused their community benefits toward offering charity care and covering "unreimbursed" care from public insurance covereage.[41,42] Prior work has shown that most hospital community benefits spending is indeed on unreimbursed and charity care,[21,25,34] which may mean that in states with community benefits minimums, hospitals

focus all their spending (up to the minimum) on those programs and thus offer very few social care services. As a result, once community benefits spending minimums are met by providing unreimbursed or charity care, hospitals may lack a strong incentive to spend additional resources offering social care services. States should consider how to ensure that community benefits spending focuses on interventions to directly improve patient and community health. Currently, each of the five states with community benefits minimums have distinct standards defining the minimum spending threshold,[31] suggesting the need for research to understand how specific minimum spending policies influence hospital administrators' decisions around allocated community benefits resources. New standards implemented alongside community benefits minimums, related to the type and quality of social care services provided, may help to expand the provision of social care services in states with community benefits minimums. For example, requiring that hospitals provide social care services that are community focused (e.g., addressing environmental hazards) as well as patient focused (e.g., transportation to health care services), in addition to specifying a minimum spending level, may more comprehensively address significant health needs in the community. Finally, investment in social care services may be spurred as hospitals gain experience with CHNA processes and increasingly work in partnership with community organizations.

As health care providers increasingly screen patients for social risks and implement social care services, there is a risk of perpetuating or even increasing health disparities if social care services are not available to all in need.[43] Furthermore, conducting social risk screening without the ability to provide social care services may harm patient trust.[44] One method of expanding hospitals' ability to address patients' social needs is via referrals to community social service agencies. Community resource referral platforms (CRRPs) enable hospitals to digitally refer patients to outside organizations, which may allow for faster and more efficient referrals.[45] However, the use of CRRPs may create cost barriers for community social services agencies and smaller hospitals, who lack the necessary technological infrastructure or are unable to afford the cost of implementation and service fees, further perpetuating existing inequalities among lesser-resourced organizations. Furthermore, social service agencies may enter and exit communities quickly and, in some instances, faster than CRRP databases may be able to be updated, suggesting the need for local referral experts, including social workers

and community health workers, to facilitate referrals.[46] Social workers and community health workers may also receive feedback from patients following referrals about the quality and experience of using a resource, further enriching knowledge of local resources.[46] Combining local expertise with digital tools may lead to more successful referral practices that benefit from both the rich experiential knowledge of local experts as well as the broader databases of CRRPs to expand hospitals' abilities to offer a broad range of social care in collaboration with local organizations. Still, such collaborations must also consider the consequences for community organizations. Although many community service organizations may be eager to assist newly identified clients and welcome the resources that may flow via health care connections, there is also some risk to them and their clients if they don't have adequate capacity or they alter their structure and services in ways that reduce the broader welfare benefits.[37]

Limitations

Several limitations of our study must be considered. First, this study examines the types of social care services offered by hospitals. We do not measure the total amount of spending on social care services or the number of patients who receive these services. Instead, by measuring the number and types of social care services, we are characterizing the range of services that hospitals are using to address social needs. We use a cross-sectional design to examine social care services offered as of 2018. As a result, our analyses describe associations, not causes, and we are not able to explore trends in the implementation of social care services by US hospitals. As additional data about social care services implementation become available, longitudinal designs may capture greater detail about how hospitals' social care services offerings change and why, as well as the impact of such services on individual and population health outcomes. The social care services included in this study were those captured by the AHA Annual Survey.[26] Although this survey captures a wide range of social care services, this list is not necessarily inclusive of the entire range of social care services to address social needs.[47] The extent of missing data on social care services in the AHA data is less than ideal but is related to incomplete response levels for this section of the AHA survey. Finally, the binary AHA social care services indicators used in this analysis do

not provide information about the overall size or quality of hospitals' social care services.

Conclusion

Leading health care and policy experts, including the National Academies of Sciences and Medicine, advocate for increased provision of social care services in health care delivery in order to address SDHs and improve population health.[3] Similarly, federal policies like the ACA promote community partnerships to address community health needs, whereas new payment models promote interventions to address SDHs to reduce unnecessary utilization and spending and improve patient health outcomes.[7] Our findings show that US hospitals are responding to such encouragement by offering, on average, more than five types of patient- and community-focused social care services. Others have shown similarly that some health systems are investing billions of dollars in social care services to address SDHs.[11] This means that policymakers and advocates for social care services can build on existing hospital services and community collaborations to address social needs. Yet, we also find significant variation across hospitals in provision of social care services: nonprofits offer more than for-profits; larger and teaching hospitals offer more, whereas hospitals in rural areas offer less. Such variation means that policy and implementation strategies centered on hospital social care services to tackle SDHs must directly address such institutional inequalities to avoid reproducing them, thereby undermining the overall goal.

Our findings that increased community benefits spending among tax-exempt hospitals is associated with greater social care services indicate that this may be another promising avenue for motivating hospital engagement with SDHs. Some states already have specific regulations around community benefits spending and activities for hospitals' tax-exempt status. Yet, state community benefits regulations will have to be carefully crafted because they could have unintended consequences, such as in our finding that hospitals in states with spending minimums offer fewer social care services than those in states without mandatory minimums.

As health care seeks to integrate more with social services, there is great potential to improve patient outcomes and possibly also better

population health. Hospitals across the United States are already offering a variety of social care services. Future work is necessary to determine how well these services are meeting the goal of improving health and for whom.

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Address correspondence to: Bradley Iott, University of California, San Francisco, 10 Koret Way, Room K-301, San Francisco, CA 94131 (email: bradley.iott@ucsf.edu).

Appendix 1

Logistic Regression Odds Ratios (95% CIs) for Missing Dependent Variables (Social Care Services)* on Hospital Characteristics among Private US Hospitals, $n = 3{,}761$

	Dependent Variables (Social Care Services) Missing
Tax-exempt Hospitals (reference: For-profit)	0.25***
	(0.20, 0.31)
Bed Size (reference: 25–99)	
100–499	0.94
	(0.77, 1.15)
500+	0.43**
	(0.24, 0.78)
System Affiliated	0.47***
	(0.39, 0.57)
Teaching Hospital	0.47***
	(0.39, 0.57)
Religious Affiliation	1.14
	(0.85, 1.51)
Sole Community Provider	0.64**
	(0.46, 0.89)
Area (reference: metropolitan)	
Micropolis	1.15
	(0.90, 1.48)
Rural	1.50**
	(1.16, 1.94)
Zip Code Median Household Income Quartiles (reference: $15,169-$42,577)	
$42,581-$51,250	0.71**
	(0.57, 0.89)
$51,255-$63,200	0.69**
	(0.55, 0.88)
$63,263-$168,807	0.76*
	(0.59, 0.97)

Note: *Hospitals missing social care services variables were also missing management under contract by another organization, thus it is not included in this table.

Appendix 2

Poisson regression Incidence-rate ratios (95% CI) for number of Social Care Services on Hospital Characteristics among Private US Hospitals (Missing Observations for Dependent Variable set = 0), $n = 2{,}965$

	Total social care services	Patient-focused social care services	Community-focused social care services
Tax-exempt Hospitals (reference: For-profit)	1.43***	1.63***	1.31***
	(1.36, 1.51)	(1.50, 1.78)	(1.23, 1.40)
Bed Size (reference: 25–99)			
100–499	1.16***	1.23***	1.12***
	(1.12, 1.21)	(1.16, 1.31)	(1.06, 1.18)
500+	1.25***	1.34***	1.19***
	(1.17, 1.34)	(1.21, 1.48)	(1.09, 1.31)
System Affiliated	1.19***	1.25***	1.15***
	(1.15, 1.24)	(1.18, 1.33)	(1.10, 1.21)
Teaching Hospital	1.14***	1.18***	1.12*
	(1.07, 1.22)	(1.07, 1.30)	(1.02, 1.22)
Religious Affiliation	0.98	0.95	1.00
	(0.94, 1.02)	(0.88, 1.01)	(0.95, 1.06)
Sole Community Provider	1.00		
(0.94, 1.07)	0.97		
(0.88, 1.08)	1.02		
(0.94, 1.11)			
Contract Managed	0.91**	0.87**	0.93
	(0.85, 0.96)	(0.79, 0.95)	(0.87, 1.01)
Area (reference: metropolitan)			
Micropolis	0.90***	0.85***	0.94*
	(0.86, 0.95)	(0.79, 0.92)	(0.88, 1.00)
Rural	0.79***	0.70***	0.85***
	(0.75, 0.84)	(0.64,0.77)	(0.79, 0.91)
Zip Code Median Household Income Quartiles (reference: $15,169-42,577)			

	Total social care services	Patient-focused social care services	Community-focused social care services
$42,581-51,250	1.03	1.06	1.01
	(0.98, 1.08)	(0.99, 1.14)	(0.95, 1.07)
$51,255-63,200	1.05*	1.07*	1.03
	(1.00, 1.10)	(1.00, 1.15)	(0.97, 1.09)
$63,263-168,807	1.13***	1.20***	1.09**
	(1.08, 1.18)	(1.12, 1.28)	(1.02, 1.15)
Social Care Services Variable Missing	1.00	1.00	1.00
	(1.00, 1.00)	(1.00, 1.00)	(1.00, 1.00)

Source: 2018 AHA Annual Survey AHA 2018 Annual Survey, Community Benefit Insight, and the American Community Survey
Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.