The Progress of US Hospitals in Addressing Community Health Needs

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Objectives. To identify how US tax-exempt hospitals are progressing in regard to community health needs assessment (CHNA) implementation following the Patient Protection and Affordable Care Act.

Methods. We analyzed data on more than 1500 tax-exempt hospitals in 2013 to assess patterns in CHNA implementation and to determine whether a hospital's institutional and community characteristics are associated with greater progress.

Results. Our findings show wide variation among hospitals in CHNA implementation. Hospitals operating as part of a health system as well as hospitals participating in a Medicare accountable care organization showed greater progress in CHNA implementation whereas hospitals serving a greater proportion of uninsured showed less progress. We also found that hospitals reporting the highest level of CHNA implementation progress spent more on community health improvement.

Conclusions. Hospitals widely embraced the regulations to perform a CHNA. Less is known about how hospitals are moving forward to improve population health through the implementation of programs to meet identified community needs. (*Am J Public Health.* Published online ahead of print December 20, 2016: e1–e7. doi:10.2105/AJPH.2016.303570)

The Patient Protection and Affordable Care Act (ACA) expanded the requirements that nonprofit hospitals must meet to maintain their federal tax-exempt status.[1] In particular, under Section 501(r)(3) of the Internal Revenue Code, which operationalized the ACA mandates, a federally tax-exempt hospital is now required to conduct a community health needs assessment (CHNA) every 3 years and to adopt an implementation strategy to meet the community needs identified through its CHNA.[2]

The impetus for expanded requirements was 2-fold. First, policymakers and community groups have had ongoing concerns that tax-exempt hospitals are not held to sufficiently strict requirements for maintaining exempt status. Although tax-exempt hospitals are expected to provide some level of community benefits in exchange for their exempt status, there have been no federal standards setting out how much hospitals must spend on the provision of these benefits. Given that the value of tax exemptions and charitable gifts to tax-exempt hospitals was recently estimated to be $24.6 billion for 2011, critics have argued that more should be required of tax-exempt hospitals in return for tax exemptions.[3,4]

Second, the ACA aims to change the paradigm of health care in the United States from a reactive, acute-care system to a proactive, prevention-based system.[5] This broad policy goal is also a factor in the requirement for tax-exempt hospitals to conduct CHNAs as proponents believe this activity can promote a stronger population health perspective in local communities. The CHNA requirement became effective for all hospitals on their tax returns starting after March 2012 (the second anniversary of the ACA).[1] Final regulations issued by the Internal Revenue Service (IRS) were published in December 2014 although hospitals were equipped with draft regulations to guide activities since 2011.[2,6]

Several small studies have been conducted to assess how hospitals are progressing in meeting federal CHNA requirements. Some have focused on CHNA-related collaboration as a key aspect of hospital progress in CHNA implementation. For instance, Beatty et al. reviewed hospitals' publically available CHNA reports in Missouri and surveyed staff at local health departments (LHDs) to assess LHDs' involvement in the conduct of hospital-initiated CHNAs.[7] They found that communication between hospitals and LHDs regarding CHNAs was common, but that collaboration, the highest level of joint action defined within the study, was rare.[7] Similarly, Pennel et al. reviewed CHNA reports in Texas and found strong collaborations to be an essential component in CHNA success.[8] Other groups have analyzed select hospitals' CHNAs and implementation plans and offered conclusions about the state of CHNA implementation based on small samples of hospitals. The Public Health Institute, for instance, assessed hospital progress in CHNA implementation through a review of 51 CHNA reports and 50 expert interviews. This assessment suggested that many hospitals have been slow to take definitive action to address the needs identified

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from CHNAs, possibly because they are having difficulty prioritizing needs.[9,10]

We conducted a national study to investigate the progress of tax-exempt hospitals in meeting federal CHNA requirements. We sought to address the following questions: How much progress have tax-exempt hospitals made toward CHNA implementation? Is there considerable variation among hospitals, and is more progress associated with a hospital's institutional and community characteristics? Is there any relationship between a hospital's CHNA implementation activity and its provision of community benefits?

METHODS

Our primary data source was the 2013 IRS Form 990 and related Schedule H, which all tax-exempt hospitals are required to file. Schedule H requires hospitals to report spending on community benefits and other community-related activities. We used 2013 data because it was the first year that the IRS required hospitals to report on CHNA implementation. We used these data to construct measures of a hospital's spending on community benefits, operating budget, and profit margin. We obtained our data from GuideStar, a company that obtains, digitizes, and sells data that organizations report on Form 990 and related schedules.[11]

We merged the hospital IRS filings with data from the 2013 American Hospital Association annual survey, the Area Health Resource File from the US Department of Health and Human Services, and various files from the Centers for Medicare and Medicaid Services.[12,13] By merging these data sets, we created hospital-level profiles for structural and operational characteristics including number of hospital beds (increments of 100), case-mix index, profitability (high is > 3%; negative is < 0%), system affiliation (i.e., corporate entity that owns 2 or more hospitals), network affiliation (i.e., group of hospitals, physicians, other providers, insurers, or community agencies that work together to coordinate and deliver a broad spectrum of services to their community), teaching status, contract-managed (general day-to-day management of the hospital is delegated to another organization under a formal contract), church affiliation, sole community provider, Medicare accountable care organization (ACO) participation, market competition (defined by Herfindahl–Hirschman Index), percentage of publically owned hospital beds in the community, percentage of for-profit hospital beds in the community, urban location, percentage uninsured in community, per capita income ($1000 increments), wage index, state community benefit reporting requirements, state CHNA requirements, and region of the country (see Table A footnotes, available as a supplement to the online version of this article at http://www.ajph.org, for full details on variables).

Specifically, to define Medicare ACO participation, we combined several data sources to identify whether a hospital was, as of 2013, a participant in an ACO that took part in the Medicare Shared Savings Program (MSSP) or Pioneer ACO initiative (Pioneer). These data sources were from government documents, a database from a consulting firm that tracks ACO formation (i.e., Leavitt Partners), and our own primary data collection. We used all 3 sources to confirm a hospital's current or previous participation in either an MSSP or Pioneer ACO. Moreover, to identify state regulations, we obtained data from the Hilltop Institute (http://www.hilltopinstitute.org) on whether a hospital was located in a state that required hospitals to conduct CHNAs and to report their community-benefit activities independent of the federal requirement.[14]

The study population comprised all tax-exempt, acute care hospitals that filed a Form 990, Schedule H, for 2013. We obtained data for 1593 tax-exempt hospitals, which accounted for approximately 55% of all nonprofit hospitals in the United States in 2013.[15] The remaining tax-exempt hospitals comprise those that were members of hospital systems that filed a consolidated Form 990, Schedule H, under an IRS group filing exemption. We compared the 2 groups of hospitals (i.e., those that file individual Schedule Hs and those that are covered by a group exemption) on a range of hospital-level characteristics (i.e., number of beds, teaching status) and found them to be very similar except that system affiliation was somewhat underrepresented among hospitals that do file an individual Schedule H. This is consistent with a previous comparison of the 2 groups using 2009 data.[16] A description of hospitals included in the study can be found in Table 1. Our final analyses included all hospitals for which we had complete data (n = 1504).

Key Variable and Measures

Schedule H of the 2013 Form 990 included a set of questions for hospitals to complete regarding their activities in meeting federal CHNA requirements.[17] Our examination of hospital responses to these questions indicated that, in 2013, virtually all hospitals reported that they had conducted at least 1 CHNA as required by 501(r)(3). However, we found considerable variation among hospitals in their responses to 8 questions on Schedule H regarding whether they had undertaken activities for addressing community health needs as identified through their CHNA, a specific requirement of IRS section 501(r)(3) (Table 2). We drew from these questions to construct an index to represent hospitals' progress in meeting federal CHNA requirements on the basis of their reported activities.

Our goal in developing the index was to develop a practical tool that leveraged the information value of the 8 questions included in Schedule H. In our review of these 8 questions, we found them to be paired conceptually across 4 areas of CHNA implementation with 2 focusing on implementation strategy, 2 focusing on participation with community partners in a community-wide plan, 2 focusing on operational activities for addressing identified needs, and 2 related to priority setting. Two of the pairs, strategy setting and participation in community-wide development planning, included an adoption or development question and an execution question, leading us to examine a potential stepped activity pattern. More than 80% of hospitals that reported they had undertaken the adoption or development activity for these 2 pairs of questions also reported that they had followed through with execution.

For purposes of the index, we focused on the hospital's response to the question regarding adoption or development. We maintained the 2 questions pertaining to operational activities as separate items. We also found that more than 75% of hospitals that indicated that they developed

TABLE 1—Descriptive Statistics of Study Hospitals, United States, 2013

Characteristic	No. of Hospitals (n = 1593)	Proportion or Mean (SD)
Institutional characteristics		
No. of beds		175.15 (189.70)
Case-mix index		1.43 (0.21)
Profit margin		
High	854	0.54
Negative	425	0.27
Affiliation		
System	849	0.53
Network	579	0.39
Teaching hospital	96	0.06
Contract-managed	158	0.11
Church	216	0.14
Sole community provider	108	0.07
Participation an ACO (MSSP or Pioneer)	339	0.21
Total community benefit spending		8.4 (5.490)
Community health improvement spending		0.34 (0.636)
Community characteristics		
Market competition		0.6 (0.34)
Percentage of publicly owned beds		0.06 (0.16)
Percentage of for-profit beds		0.05 (0.13)
Urban location	845	0.54
Percentage uninsured in local community		16.1 (5.22)
Per capita income		37 315.51 (10 333.00)
State CHNA requirement	456	0.29
State community benefit reporting requirement	1 107	0.70
Wage index		0.96 (0.16)
Region		
Western	216	0.14
Southern	398	0.25
Northeastern	377	0.24
Midwestern	602	0.38

Note. ACO = accountable care organization; CHNA = community health needs assessment; MSSP = Medicare Shared Savings Program. Means and SDs for continuous variables; proportions for categorical variables.
Source. Authors' analysis of data from 2013 IRS Schedule H, Form 990[11]; American Hospital Annual Survey[12]; Area Health Resource file from the US Department of Health and Human Services and Center for Medicare and Medicaid Services[13]; Hilltop Institute[14]; and proprietary ACO data from government documents, a database from a consulting firm that tracks ACO formation (i.e., Leavitt Partners), and our own primary data collection.

a strategy also indicated that they prioritized both needs and services. This makes conceptual sense because prioritization of needs from the CHNA seemingly should occur before setting a strategy to implement programs. Because of the overlap, we opted to leave the prioritization of needs and services out of the index.

Our final index consisted of 4 activities for CHNA implementation: strategy formulation to address identified needs, participation in the development of community-wide plans, planning for the provision of community benefits, and budget development to address identified needs. The values of our indicator ranged from zero (not completing any of these activities) to 4 (completing all 4 activities). A higher score indicates more progress toward meeting the CHNA implementation requirements. The correlation between the 4-item index and an index comprising all 8 questions was high (0.95).

Finally, we included hospital spending on community benefits as a dependent variable for our third research question. We chose 2 measures of hospital spending on community benefits: total community benefit spending and community health improvement spending. Each hospital's total spending comprises reported expenditures for the 7 types of community benefits that hospitals were required to report to the IRS on Schedule H in 2013: charity care (financial assistance provided to patients), shortfalls from Medicaid and other means-tested government programs, health professions education, subsidized health services, research, community health improvement, and cash and in-kind contributions to community groups. In line with previous research, we constructed the community health improvement spending measure by summing a hospital's expenditures for community health improvement and cash and in-kind contributions (contributions from the hospital to community groups or other health care organizations for community benefit activities including community health improvement initiatives).[16,18,19] To standardize these measures for the scale and scope of a hospital's patient care activities, we divided a hospital's reported community benefit spending by its operating expenditures, which we also obtained from Form 990.

Statistical Analysis

We computed descriptive statistics to assess hospitals' reporting of implementation activity as a measure of progress in meeting federal CHNA requirements. For the descriptive analysis, we assigned an index score to each hospital based on the number of the 4 activities it had reportedly undertaken, ranging from 0 to 4. We used regression analysis to assess whether a hospital's institutional and community characteristics were associated with its progress in meeting federal CHNA requirements based

TABLE 2—US Internal Revenue Service Form 990 Schedule H Questions: 2013

Question No.	Question Language	Responded "Yes," %
6a.	Adoption of an implementation strategy that addresses each of the community health needs identified through the CHNA?	85.7
6b.	Did hospital execute the strategy?	71.0
6c.	Did hospital participate in the development of a community-wide plan?	58.6
6d.	Did hospital participate in the execution of a community-wide plan?	50.4
6e.	Hospital included CHNA into operating plan?	53.3
6f.	Adoption of a budget for provision of services that address the needs identified in the CHNA?	54.7
6g.	Hospital prioritized health needs of community?	85.1
6h.	Hospital prioritized services to meet the health needs of the community?	77.7

Note. CHNA = community health needs assessment.

on the 4-item index. We estimated 2 different models, one that used ordinary least squares (OLS) regression and another that used logistic regression with SAS version 9.4 (SAS Institute Inc, Cary, NC).

For the OLS model, we specified the dependent variable as a continuous measure of our index based on the number of activities that a hospital reported. For the logistic model, we specified the dependent variable as 1 if the hospital reported undertaking all 4 activities and zero for any activity level less than 4. As an additional analysis, we examined whether an association existed between a hospital's progress toward meeting federal CHNA requirements and its spending on community benefits (as a percentage of its operating budget). The key independent variable was whether the hospital reported undertaking all 4 activities from the index (1 = reported all 4; 0 = reported less than 4). We assessed 2 dependent variables: total spending on community benefits and spending on community health improvement. For these analyses, we used OLS regression and included the same institutional and community characteristics as those included in the previous analysis. Because the OLS residuals did not meet the normality assumption, we performed additional statistical analyses to check for consistency in our OLS findings. We inversed our index and applied both Poisson and negative binomial regression as count data by using PROC GENMOD. Negative binomial distribution provided the better fit of the 2 models when we compared the Akaike information criterion.

RESULTS

As of 2013, hospitals varied widely in their reported activities on CHNA implementation. More than one third of all hospitals reported undertaking all 4 activities within our index (n = 574; 36%). Eleven percent of hospitals reported that they had not undertaken any of the activities (n = 182). The remaining hospitals were spread evenly among reporting 1, 2, or 3 activities (18%, 18%, and 17%, respectively).

Of the 4 index activities, strategy formulation was the most frequently reported, with approximately 85% of hospitals in the study reporting that they had formulated a strategy to address identified community health needs. The percentages for the remaining 3 activities were similar: participating in a community-wide plan (58.6%), operational planning (53.3%), and budget development (54.7%).

The regression results for the relationship between a hospital's institutional and community characteristics and its index score can be found in Table A. With respect to institutional characteristics, system affiliation and ACO participation were positively associated with a hospital's index score. Church affiliation was negatively associated with a hospital's index score. With respect to community characteristics, urban status was positively associated with a hospital's index score, whereas the proportion of uninsured persons in the community and per capita income were negatively associated with a hospital's index score. As a robustness test for the OLS analysis, we re-examined the results with the alternate methods described previously. The findings largely matched those from the OLS regression.

Logistic regression results for the relationship between a hospital's institutional or community characteristics and the undertaking of all 4 activities in the index can also be found in Table A. Contract management and a higher proportion of uninsured were negatively associated with reporting all 4 activities in the index. Location in a state that required CHNAs was positively associated with reporting all 4 activities.

Table 3 presents regression results for the relationship between a hospital's reporting all 4 activities and its spending on community benefits. No statistical association existed between highest level of progress on CHNA implementation and spending on total community benefits. In line with previous studies, teaching status and location in a state with community health reporting requirements were significantly and positively associated with total community spending.[16] Church affiliation and higher per-capita income were associated with lower spending. However, a significant and positive association did exist between highest level of progress on CHNA implementation and hospital spending on community health improvement initiatives. Location in a state with a CHNA requirement was also positively associated with community health improvement spending.

DISCUSSION

Although much has been written about CHNA from a policy perspective, empirical analyses are scant. We conducted a nationwide study of hospitals' progress in meeting federal CHNA requirements based

TABLE 3—Hospital Spending on Community Benefits in Relation to Community Health Needs Assessment Implementation Progress: United States, 2013

Characteristic	Total Community Benefit Spending b (SE)	*P*	Community Health Improvement Spending b (SE)	*P*
Institutional characteristics				
CHNA implementation Index (reporting 4 activities)	0.19 (0.29)	.52	0.09 (0.03)	.013
No. of beds	0.15 (0.11)	.17	0.00 (0.01)	.90
Case-mix index	−0.24 (0.91)	.79	−0.07 (0.11)	.51
Profit margin				
High	−0.13 (0.37)	.73	0.06 (0.04)	.14
Negative	0.56 (0.41)	.18	−0.06 (0.05)	.25
Affiliation				
System	−0.09 (0.31)	.77	−0.04 (0.04)	.25
Network	0.21 (0.31)	.49	0.01 (0.04)	.74
Teaching hospital	3.04 (0.74)	<.001	−0.01 (0.09)	.88
Contract-managed	−0.77 (0.49)	.12	−0.02 (0.06)	.71
Church	−0.98 (0.43)	.023	−0.01 (0.05)	.89
Sole community provider	0.36 (0.58)	.53	−0.07 (0.07)	.32
Participation in an ACO (MSSP or Pioneer)	0.20 (0.35)	.56	0.06 (0.04)	.16
Community characteristics				
Market competition	−0.35 (0.58)	.55	0.04 (0.07)	.56
Percentage of publicly owned beds	−1.05 (0.91)	.25	−0.21 (0.11)	.06
Percentage of for-profit beds	−0.14 (1.20)	.91	−0.10 (0.14)	.47
Urban location	−0.19 (0.38)	.61	0.01 (0.04)	.87
Percentage uninsured in local community	0.02 (0.04)	.58	−0.01 (0.00)	.08
Per capita income	−0.09 (0.02)	<.001	0.00 (0.00)	.19
Wage index	5.61 (1.38)	<.001	0.20 (0.16)	.22
State community benefit reporting requirement	0.83 (0.35)	.017	0.00 (0.04)	.94
State CHNA requirement	1.12 (0.36)	<.001	0.10 (0.04)	.022
Region				
Western	0.46 (0.62)	.46	0.10 (0.07)	.19
Southern	0.38 (0.55)	.49	0.10 (0.07)	.14
Midwestern	0.56 (0.42)	.18	0.05 (0.05)	.32

Note. ACO = accountable care organization; CHNA = community health needs assessment; MSSP = Medicare Shared Savings Program. See Table A notes, available as a supplement to the online version of this article at http://www.ajph.org, for full details. $P<.05$ is significant.
Source. Authors' analysis of data from 2013 IRS Schedule H, Form 990[11]; American Hospital Annual Survey[12]; Area Health Resource file from the US Department of Health and Human Services and Center for Medicare and Medicaid Services[13]; Hilltop Institute[14]; and proprietary ACO data from government documents, a database from a consulting firm that tracks ACO formation (i.e., Leavitt Partners), and our own primary data collection.

on their reporting of implementation activities as defined on Schedule H of Form 990 for 2013.

Our findings indicate that, for the first year of mandatory reporting, considerable variation existed among hospitals with regard to their progress in meeting the implementation provision of the federal CHNA requirements. Approximately one third of the study hospitals appeared to be far along in implementing plans for addressing community health needs. These hospitals reported undertaking all 4 of the key implementation activities we used to construct an implementation index. As such, these hospitals appeared to have in place the basic elements of a sound implementation plan. The remaining two thirds of the hospitals were seemingly at less advanced stages of the implementation process including some that had made little or no progress at all based on the fact that they reported that they had not undertaken any of the implementation activities.

Study results point to some factors that may influence a hospital's progress regarding CHNA implementation. As both system affiliation and ACO participation were associated with higher index scores, hospitals that are members of larger organizational arrangements may be in a more favorable position to move forward with CHNA implementation. These arrangements may come with resources, both intellectual and material, that support hospitals' efforts to address community health needs.

Location in a state with laws specific to community benefits, independent of the federal CHNA requirement, may have provided hospitals in these states additional time to allow for an adequate progression from the initial needs assessment process to a more coordinated, organized focus on implementation activities.

Hospitals in communities with a relatively higher proportion of uninsured individuals seem to have made less progress on CHNA implementation. This finding could be because communities with higher levels of uninsured individuals may also have complex social issues. As noted, the Public Health Institute highlighted that prioritization of community services to meet identified health needs is difficult for most hospitals.[10] Hospitals located in communities with substantial socioeconomic challenges may be overwhelmed by the volume and extent of the community's needs, which leads to inaction. Also, hospitals that serve relatively high levels of uninsured individuals may be focused on meeting charity care goals for patient care services, leaving little time or resources to focus on population health improvement.

We found an association between hospitals reporting all 4 activities on our index and higher community health improvement spending. Whether increased activity is driving increased investment in community health or vice versa cannot be

determined by our study. Hospitals with high levels of community health improvement spending may have historically had stronger ties to their community. More research is needed to replicate and clarify this finding.

Finally, among the implementation activities that we examined, previous research suggests that hospitals may be particularly ineffective in partnering with community stakeholders for purposes of implementing plans to address community health needs.[7,20] Some researchers have identified the lack of collaboration with LHDs as a significant threat to effective CHNAs.[8,9] Our data are consistent with these findings. Only about half of all hospitals in our study reported partnering with community stakeholders in developing a community-wide CHNA implementation plan in 2013. The Ohio Research Association for Public Health Improvement found that lack of collaboration between hospitals and other stakeholders, especially LHDs, may stem from the differences in mission and focus.[21] Hospitals tend to focus on disease and access to care whereas health departments often focus on social determinants of health including a larger focus on mental health and substance abuse.[22] As other researchers have observed, true improvements in population health need to blend both paradigms, and CHNA regulations have the potential to bridge the gaps.[22]

Limitations

Our study has several limitations. First, our assessment of hospitals' implementation progress was confined to those action items identified on Schedule H of IRS Form 990. Other activities not specifically queried by the IRS may also be relevant to a hospital's implementation progress. Furthermore, the data are self-reported by the hospitals. Thus, there exists the possibility of self-reporting biases that could skew our findings.

Second, we were unable to determine the quality of hospitals' implementation plans, particularly their actual alignment with identified community needs. As such, even hospitals that reported undertaking all 4 implementation activities may or may not be making meaningful progress in addressing identified community health needs.

Third, the results are cross-sectional and represent a single year of data only. Our results are important but preliminary. A review of implementation activity over the next few years will add to our understanding of hospitals' progress for meeting CHNA implementation requirements.

Finally, we are not capturing how hospitals develop their needs assessments or how they prioritize programs to meet those needs. A qualitative assessment of CHNA implementation reports from hospitals in the top and bottom decile of our index would yield interesting insights into these matters.

Public Health Implications

The ACA expanded the requirements for tax-exempt hospitals to report community benefit activities. Many policymakers and health policy analysts are hopeful that federal CHNA requirements will help drive hospitals toward a population-health focus. Research is just beginning to assess hospitals' progress in meeting CHNA requirements. Our findings are consistent with ongoing IRS compliance reviews suggesting that as many as 25% of hospitals may not be in compliance with ACA exemption requirements including those pertaining to community benefit needs assessments.[23] Whether hospitals have the know-how or proper incentives to make effective decisions regarding population health improvement is not yet well understood.

Future studies might investigate whether training and other supports for hospitals are needed if they are to be successful in using CHNAs for improving population health. As per our empirical results, this may be particularly true for hospitals serving areas with challenging socioeconomic conditions such as relatively high number of uninsured individuals. Additional qualitative assessments that "look under the hood" of the CHNA-related activities that hospitals are undertaking, especially as they pertain to the ACA's goal of improving the social determinants of health, would be very valuable. AJPH

CONTRIBUTORS

G. Rosen Cramer analyzed the data, interpreted the findings, and led the writing and revisions of the article. G. J. Young guided and supervised all aspects of the study including project design, data analysis, interpretation, and editing. S. Flaherty and S. R. Singh contributed to data management and reviewed and edited drafts.

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HUMAN PARTICIPANT PROTECTION

Approval for this study was granted by the Northeastern University Human Subjects Research Program Office.

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