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Paige Evans 2019

Evaluation of Community Health Needs Assessments and Health Improvement Plans among Georgia, Iowa, and Florida Critical Access Hospitals

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Abstract

Evaluation of Community Health Needs Assessments and Health Improvement Plans among Georgia, Iowa, and Florida Critical Access Hospitals
By Paige Evans

Background: Critical Access Hospitals (CAHs) reduce the financial vulnerability of rural hospitals and improve access to healthcare by maintaining essential services in rural communities. CAHs are required to (1) develop Community Health Needs Assessments (CHNAs) to identify community needs and (2) produce Health Improvement Plans (HIPs) that describe which initiatives were taken to address health priorities. These are useful tools for hospitals to be held accountable for the health of their community.

Objective: Our objective was to evaluate the correspondence between CHNA priorities and HIP initiatives of all CAHs in Iowa (n=71), Georgia (n=30), and Florida (n= 12) in 2017 to identify how well CAHs respond to the health needs in rural populations. We further assessed CAH financial distress indicators and examined whether financial distress was related to initiatives undertaken in HIPs.

Methods: CAH websites were used to obtain CHNA and HIP reports. Financial information for CAHs was obtained from the American Hospital Directory. Health needs identified in CHNAs and health needs prioritized by HIPs were categorized as health conditions and behaviors, social and economic issues, clinical care, or environmental factors. Financial distress was measured with 10 variables: current ratio, quick ratio, operating margin, operating income, days cash on hand, average payment days, net patient revenue, Medicare revenue, state and local indigent program revenue, and uncompensated medical care revenue. We examined whether financial distress measures were related to the discrepancies between priorities identified in CHNAs and initiatives undertaken in HIPs categorized by agreement levels in FL, GA, and IA CAHs.

Results: There were a total of 560 identified needs in the CHNAs and a total of 399 HIP initiatives planned to be implemented by hospitals in IA, FL, and GA. There was a high degree of agreement on the top priorities in the CHNAs as compared to the initiatives undertaken in the HIPs. Mental health and obesity were the top needs identified in the CHNAs and just as likely to be prioritized in HIPs. On average, high agreement between CHNAs and HIPs in CAHs had more favorable financial indicators than low agreement CAHs.

Discussion: In their HIPs, CAHs responded reasonably well to the needs of their CHNAs. Our findings indicate that CAHs that had strong alignment between CHNAs and HIPs also had healthier financial profiles. The ability for a non-profit organization to pay its bills is a crucial financial tool and determines its ability to adopt new strategic priorities. While these data were not statistically significant, they can allow for advocacy groups to identify areas for additional educational training, lobbying, and grants to support CAHs in the rural Southeast and Midwest.

Evaluation of Community Health Needs Assessments and Financial Distress among Georgia, Iowa, and Florida Critical Access Hospitals

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Chapter 1: Introduction to Critical Access Hospitals

Overview

The presence of a hospital is critical to the infrastructure of any community (1, 2). CAHs reduce the financial vulnerability of rural hospitals and improve access to healthcare by keeping essential services in rural communities (2, 3). Congress created the CAH designation through the Balanced Budget Act of 1997 in response to a string of rural hospital closures during the 1980s to early 1990s (3, 4, 5, 6, 7). CAH is a title designated by the Centers for Medicare and Medicaid to eligible rural hospitals. To be considered a CAH, there must be 25 or fewer acute care inpatient beds, located in a non-metropolitan statistical area and more than 35 miles (15 miles in mountainous areas) from another hospital, have an annual average length of stay of 96 hours or less for acute care patients, and provide 24/7 emergency care services (3, 8, 9). The advantages of CAH status include access to Flex Program grant money, cost-based reimbursement, and access to capital improvement costs (10). For some hospitals, CAH designation has made the difference between closing the doors and continuing to serve the community (10).

Today, nearly twenty percent of the U.S. population lives in rural areas, generally defined as counties with no metro area larger than 50,000 residents (Figure 1) (5, 11,12). While there is no universal definition of a rural population in the United States, there is consensus that the dimension of rurality is sparseness of population. The Rural Development Act of 1972 defines ‘rural’ or ‘rural area’ as an area of no more than 10,000 residents (13, 14). In either definition, rural communities have been demonstrated to have poorly developed and fragile economic infrastructures, and substantial physical barriers to health care (14). Most recently, the US Census Bureau adopted the urban cluster concept, for the first time defining relatively small,

densely settled clusters of population using the same approach as was used to define larger urbanized areas of 50,000 or more residents, and no longer identified urban places located outside urbanized areas (14). This portion of the American population depend on small rural hospitals since they are often the sole health care provider in their communities (1).

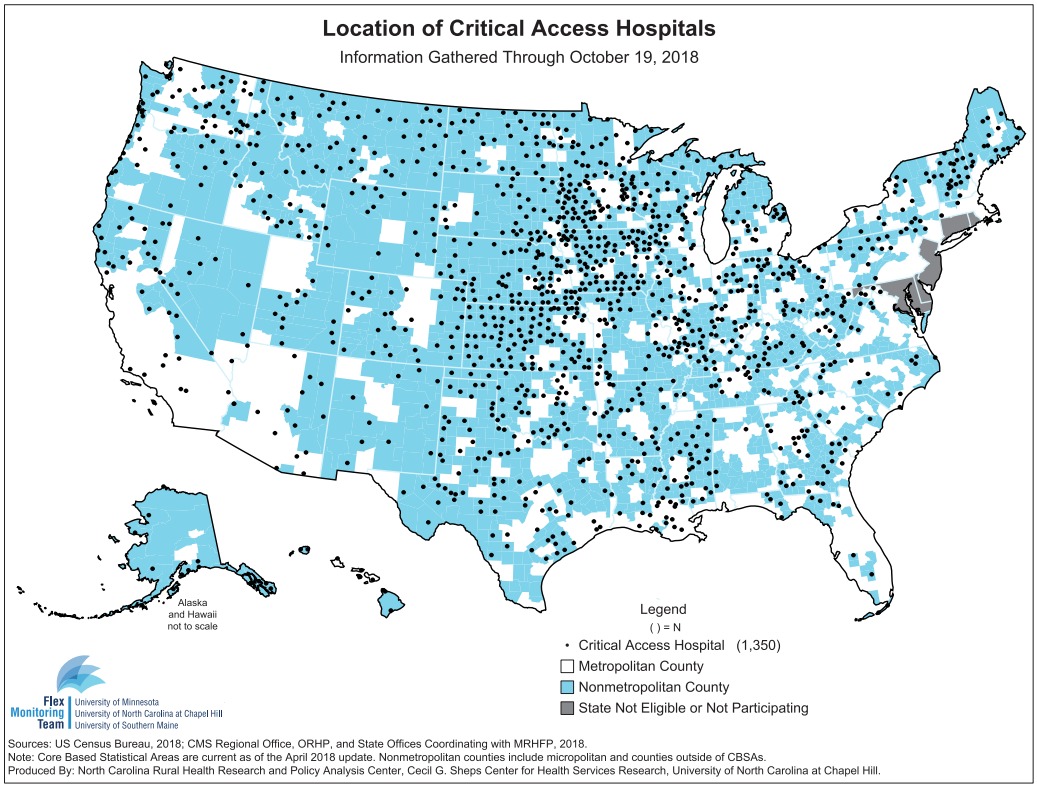


Figure 1. Map of 2018 CAHs in the US (16)

Rural Population Characteristics

Nearly one-half of rural residents have at least 1 major chronic illness (10). As of 2015, the number of rural persons living with complex chronic illness is growing (10). Rural adults also experience a greater degree of social vulnerabilities. In 2003, the Economic Research Service data showed that 14% of the population or 7.5 million people living in nonmetropolitan areas were poor as compared to 11% of the metropolitan population (1, 9, 10). One of the reasons for a higher poverty rate may be that large employers tend to locate in urban areas and more of the rural population is self-employed (1).

The high percentage of poverty and low number of employers relates to the low insurance coverage in rural areas, and that this has led to inefficient coping mechanisms by rural residents (14, 5). Due to the lack of insured resident's, CAHs patient base is between 75% and 80% Medicare (9). Rural residents have different health-seeking behaviors compared to their urban counterparts (14). Patients in rural areas are concerned about stigma, discrimination and the extent to which their clinical information is kept confidential (14). They often regard their health care providers as friends and neighbors rather than practicing professionals (14). These norms may be prohibitive in terms of consultation and treatment-seeking behavior (14, 15).

Community Health Needs Assessments: Mandatory reporting for CAHs

Since many CAHs are the central resources in rural systems of care, the Internal Revenue Service (IRS) aims to hold tax-exempt hospitals, including CAHs, accountable for addressing unmet needs in the communities they serve (16, 17). Relevant IRS hospital accountability initiatives include the establishment of a mandatory community benefit reporting framework in 2007 and the Affordable Care Act (ACA)-mandated changes to the IRS tax code that require tax-exempt hospitals to conduct triennial CHNA, and develop HIPs to address identified needs (16, 17). Many community benefit and hospital experts view these regulatory requirements as an opportunity to encourage tax-exempt hospitals to target their spending in these areas to improve the health of the residents of their communities (16, 17). Failure to complete a CHNA comes with a penalty of an excise tax of $50,000 and possible loss of tax-exempt status (16, 17). The additional requirements are CHNAs, a report that develops strategies to address the community's health needs and identified issues (17). The new requirement states that CHNAs must take into account input from persons who represent the broad interests of the community served by the hospital facility, including those with special knowledge of or expertise in public health, and be

made widely available to the public (17). To conduct a CHNA, a hospital facility must complete six steps (Figure 2) to remain a tax-exempt hospital (17). The end goal of a CHNA is for CAH's to ensure that they have the information they need to provide community benefits that meet the needs of their communities.

Figure 2. Community Health Needs Assessment Steps

A hospital facility is permitted to conduct its CHNA in collaboration with other organizations and facilities (17). This includes related and unrelated hospital organizations and facilities, for-profit and government hospitals, governmental departments, and nonprofit organizations. Collaborating hospital facilities may produce a joint CHNA report as long as all of the collaborating hospital facilities define their community to be the same and the joint CHNA report contains all of the same basic information that separate CHNA reports must contain. Additionally, the joint CHNA report must be clearly identified as applying to the hospital facility (17).

A hospital's HIP must be a written initiation plan for each significant health need identified in the CHNA (Figure 3). HIPs are a long-term, systematic effort to address public health problems based on the results of community health assessment activities and the community health improvement process. HIPs provide an opportunity to improve coordination of hospital community benefits with other efforts to improve community health. The HIP must describe how the hospital facility plans to address the health need or explains the health need as one the hospital facility does not intend to address and why it does not intend to address the

health need (17). Although an improvement strategy must consider all of the significant health needs identified through a hospital facility's CHNA, the improvement strategy is not limited to considering only those health needs and may describe activities to address health needs that the hospital facility identifies in other ways (17). If the hospital facility does not intend to address a significant health need, providing a brief explanation of its reason for not addressing the health need is sufficient (17). Reasons for not addressing a significant health need may include, but are not limited to resource constraints, other facilities or organizations in the community are addressing the need, relative lack of expertise or competencies to effectively address the need, a relatively low priority assigned to the need, and/or a lack of identified effective interventions to address the need (17). The HIP report must include actions to address prioritized health need, the anticipated impacts of the strategies, and a plan to measure and evaluate the impact of the strategies on each prioritized health need (17). The written HIP report must be published on or before the 15th day of the fifth month after the end of the taxable year in which the hospital facility finishes conducting the CHNA (17). The differences and similarities between CHNAs and HIPs are documented in Table 1.

Figure 3. HIP Steps

Table 1. Differences between CHNAs and HIPs

	Who Conducts	Requirements of the Report	Goals of the Report
CHNA	Community Members that represent the broad interests of that community At least one state, local, tribal, or regional governmental public health department, or a State Office of Rural Health Individuals or organizations serving medically underserved, low-income, and minority populations in the community served by the hospital facility	Define the community it serves Assess the health needs of that community Document the CHNA in a written report Make the CHNA report widely available to the public	Ensure that hospitals have the information they need to provide community benefits that meet the needs of their communities.
HIP	Hospital Steering Committee	1. Strategies for each health need 2. Actions to address prioritized health needs 3. Anticipated impacts of the strategies 4. A plan to evaluate the impact of the strategies	Provide an opportunity to improve coordination of hospital community benefits with other efforts to improve community health.

Problem statement

The obstacles faced by healthcare providers and patients in rural areas are immensely different than those in urban areas (2, 14). Approximately 60 million Americans live in rural areas and face a unique combination of factors that create disparities in healthcare experiences as compared with urban areas (5, 14). Economic factors, cultural and social differences, educational shortcomings, lack of recognition by legislators and the sheer isolation of living in remote rural areas all impede rural Americans to lead a healthy life (14).

Rural residents have the same right to quality health care as their urban counterparts (2, 14). According to the World Health Organization, Universal access to skilled, motivated and supported health workers, especially in remote and rural communities, is a necessary condition for realizing the human right to health, a matter of social justice (14). This problem is pervasive, affecting both specialist and primary care, and services delivered directly by physicians, nurses and pharmacists alike, health disparities affect all rural patient groups, irrespective of age, race, gender or sexual orientation (14). Barriers to accessing and seeking care may result in deleterious substitutions in care for rural patients (14).

Purpose statement

The end goal of the special studies project is to evaluate the CHNAs and HIPs among Georgia, Iowa, and Florida CAHs to identify areas of expansion to inform education, lobbying, and/or grant support.

The second end goal of this special studies project is to assess whether CAH financial distress is related to discrepancies between CHNAs and HIPs among Georgia, Iowa, and Florida CAHs. The financial analysis can help ensure that CAHs have the best information available when conducting their CHNAs and choosing their HIPs.

Aims

Aim one: The first goal of this project is to evaluate CHNAs and HIPs in CAHs in Iowa, Georgia, and Florida's to identify further areas of support and resources.

Aim two: The second goal of this project is to analyze financial records of CAHs in Iowa, Georgia, and Florida to evaluate the relationship between financial distress and CHNAs and HIPs discrepancies.

Significance statement

A focus on achieving greater equity in health outcomes has been energized by the ACA's Prevention and Public Health Fund. Health equity advocates have helped develop new requirements for CHNAs and action plans among nonprofit hospitals (19). These actions have revealed substantial health disparities in virtually every community (18, 19). The urgency of the issue is understandable when it is noted that for the past decade, the health services delivery system has been experiencing cost increases at a pace that significantly exceeds the general inflation rate (6, 7, 21). It should be noted that the amount of uncompensated medical care was $18 higher for patients seen in rural hospitals than those seen in urban hospitals (21).

Key Terms:

ACA- Affordable Care Act
CAH- Critical Access Hospitals
CAHMPAS - Critical Access Hospital Measurement and Performance Assessment System
CHNA- Community Health Needs Assessment
HIP- Health Improvement Plan
HTH- HomeTown Health
IRS- Internal Revenue Services
SHIP - Small Rural Hospital Improvement Grant Program

Chapter 2: Comprehensive Literature Review

Introduction

Compared with other rural hospitals, CAHs tend to be smaller, with higher unit cost, worse financial conditions, and are located in counties with low population density (8). American Hospital Association data show that 59 of the 71 hospitals which closed in 1986 were under 100 beds and 36 were rural (21). In total, the closures involve 1,514 rural beds and 3,330 urban beds (7, 21). After more than a decade of relative stability, the rate of closure for critical access and other rural hospitals is rising once again (1, 7). Between January 2010 and August 2015, fifty-seven rural hospitals closed or converted to alternative provider types (7, 9). Rural hospitals are

at greater risk for closure because they are smaller, have older facilities, have less financial capital, and have fewer opportunities to form strategic alliances with other health care organizations (1). As a result, many small rural hospitals have struggled to remain open in the face of competition, growing capital requirements, a dwindling population base, lagging economic growth, health professional shortages, and federal reimbursement policies (1).

Throughout the early 1990s, rural hospitals had lower Medicare operating margins than their urban counterparts (13, 20). In 1999, Medicare overall margins were 6.9% for urban hospitals and –2.9% for rural hospitals, meaning rural hospitals were operating at a financial loss (8). Hospitals need positive total margins to keep pace with changes in technology, to replace buildings and equipment, to provide new services, and to keep up with population growth (6). Negative total margins over multiple years may threaten the financial viability of a hospital, possibly leading to insolvency, bankruptcy or closure (6).

The smallest rural hospitals were not able to recover from Medicare costs and the worst-off closed due to financial pressure (13,20). To provide financial relief to the smallest and most vulnerable rural hospitals and to ensure rural Medicare beneficiaries' access to care, the Balanced Budget Act of 1997, through the Medicare Rural Hospital Flexibility Program, created a new category of hospitals—CAHs and changed their Medicare reimbursement mechanism from prospective to cost-based (13, 20).

Following the 1997 Balance Budget Act, a series of federal laws and regulatory changes made CAH conversion easier and the program more beneficial for rural hospitals (8). The Balanced Budget Refinement Act of 1999 expanded CAH eligibility to for-profit hospitals and facilities located within metropolitan areas but classified as rural hospitals and changed the

length of stay (LOS) limit to annual average of 4 days (13, 20). These changes significantly reduced restrictions on CAHs (13a, 20a).

In the Benefits Improvement and Protection Act of 2000, Medicare payment to skilled nursing care in CAH swing beds changed from fixed payment to a new cost accounting method whereby hospitals are paid for their skilled swing-bed care based on estimated routine cost per day, an average of acute and skilled swing bed care (8). This new payment methodology increases Medicare payments for skilled swing bed care and decreases payments for acute care. The 2003 Medicare Modernization Act made CAH conversion more beneficial by increasing payments from 100% of costs to 101% of costs (13, 20). It allowed CAHs to use up to 25 beds as acute care and allowed them to operate distinct-part inpatient psychiatric units and rehabilitation units, each with a 10-bed limit (13, 20). This provision resulted in additional 10-bed max distinct part units in rural areas, bringing a potential access benefit for areas with a shortage of mental health services (8).

Prior to the 2003 Medicare Modernization Act, rural hospitals which did not meet the isolated provider criteria could be designated as CAHs if they were declared by states as necessary providers (8). The 2003 Medicare Modernization Act removed states' ability to waive the isolated provider distance requirement (8). Since January 1, 2006, new CAHs must be at least a 35-mile drive from another short-term general hospital (8). In 2004, CMS somewhat controlled CAH growth by clarifying that observation beds which could be used as inpatient beds should be counted toward the 25-bed limit (8). As a series of laws made CAH status more attractive, the number of CAHs grew rapidly (8). From January 1, 1999, to January 1, 2005, the number of CAHs grew from 41 hospitals to 1,055 hospitals nationally (8). The earliest hospitals to convert

to CAH status were the smallest hospitals where the least changes were needed to meet the requirements (8).

Concerns about finances and reimbursement were cited by most hospital administrators as the main reason for conversion (8). Some hospitals chose not to convert to CAH status because they were profitable, were too large, or had average LOS that exceeded CAH requirements (8). Hospitals with a high percentage of Medicare patient days are more likely to convert earlier (8). Medicare payments play an important role in hospitals with a high proportion of Medicare patients (2, 13, 20). Hospitals in low population density areas were more likely to convert to CAH status and convert early (8).

The Health Services Resources and Administration Federal Office of Rural Health Policy has a quality improvement activity launched in 2011 under the Medicare Rural Hospital Flexibility grant program with its main goal in improving reporting programs and ultimately improve the quality of care by using the data to drive performance improvement (22). Public reporting of data is also a requirement for participation in the Small Rural Hospital Improvement Project (SHIP) program, which provides small grants, administered by State Offices of Rural Health, to support rural hospitals with 49 beds or fewer in activities related to improving quality and value (22).

It is often the challenge of rural health care providers to operate profitably with a patient population that is comprised of more Medicare and Medicaid business than urban providers (13). Nationally, urban hospitals were twice as profitable as rural hospitals in 2016 (6). Across all US regions, except the West, CAHs were less profitable than urban hospitals, particularly in the South and Northeast (6). A study conducted in 2018 found 847 unprofitable rural hospitals in the US, 485 were CAHs (6).

Poverty in Rural Florida, Iowa, and Georgia

Rural hospitals serve older, poorer, and sicker communities where higher percentages of patients are covered through Medicare programs, if at all (6, 9, 14). In 2017, the average income per person in rural Florida residents was $35,693 (3). Based on 2017 data, the poverty rate in rural Florida is 19.8%, (3). Similarly, the average income per person for rural Georgia residents in 2017 was $33,483 (3). Based on 2017 data, the poverty rate in rural Georgia is 20.3% (3). In Iowa, the average income per person for rural Iowans in 2017 was $44,557 (3). Based on 2017 data, the poverty rate in rural Iowa is 10.8% (3).

In addition, rural Americans' average income per person is $7,417 lower than in urban areas (1). The populations of rural areas have different demographics, health needs and insurance coverage profiles than their urban counterparts, which means that Medicaid and Marketplace coverage reforms in the ACA may affect the two populations differently (14).

The History of Medicare in the United States

The Medicare program, an amendment to Social Security legislation known as Title XVIII, provides medical coverage to all Americans 65 years of age and older (13). The bill was signed into law by President Lyndon B. Johnson in 1965 and took effect in 1966 (13). The enactment of the Medicare program was significant because it was the beginning of the federal government's role as a major financer of health care in the United States (13). Medicare is funded by both Social Security payroll taxes and insurance premiums, with coverage categories divided into part A, B, C, and D (13).

Medicaid is a health insurance program for low-income individuals and those with disabilities (23). Medicaid funding comes from a combination of state and federal dollars, and there are both state and federal regulations that apply to the operation of the Medicaid program (23). Because Medicaid is jointly run by federal and state governments, there is significant

variation in Medicaid programs from one state to another (23). Medicaid is different from Medicare, because Medicare is fully funded by the federal government, and thus very consistent throughout the country (23). Elderly low-income people are eligible for both Medicare and Medicaid. A provision in the ACA called for expansion of Medicaid eligibility in order to cover more low-income Americans (23). Under the expansion, Medicaid eligibility would be extended to individuals with incomes up to 138 percent of the federal poverty level (23). But in June 2012, the Supreme Court ruled that states could not be forced to expand their Medicaid programs, so it was left to each state to determine whether to participate or not (23). As of 2017, nearly 10 million people had gained coverage as a result of Medicaid expansion (23).

Over half of US rural hospitals are located in non-expansion states (7). Despite the large decrease in the number of uninsured people as a result of the ACA, nearly four million adults who are low income, disabled, or both remain without access to health insurance because many states have chosen not to expand their Medicaid programs (7). The continued lack of insurance coverage among rural populations as a result of Medicaid non-expansion places additional financial pressure on rural hospitals as the ACA continues to be implemented (7). In particular, rural hospitals in states that did not expand Medicaid could experience little to no growth in Medicaid revenues, while the costs of uncompensated care will remain unchanged (7).

The Improvement of the Affordable Care Act has led to a large decrease in the number of uninsured people (7). Uncompensated care will still occur, particularly in states where eligibility for Medicaid is not expanded (7). Rural hospitals in expansion states provided more dollars of uncompensated care than those in non-expansion states and that the difference was at least partly driven by greater uncompensated costs associated with public programs such as Medicaid (7). Compared to hospitals in expansion states, those in non-expansion states provided greater

amounts of uncompensated care as a percentage of revenues and appeared to be more financially vulnerable. Therefore, these hospitals may be more likely to experience financial pressure or losses (7).

Estimates by the Urban Institute suggest that if all states expanded Medicaid, national hospital Medicaid revenues would increase 22.8 percent, compared to increasing 3.7 percent if no state expanded the program (7). Some of the largest overall hospital revenue increases in the Medicaid expansion projection were in the South Atlantic (Florida, Georgia, North Carolina, South Carolina, Virginia, and West Virginia) and West South Central (Arizona, Louisiana, Oklahoma, and Texas) two areas in which many states have chosen not to expand their Medicare programs (7, 14).

Professional shortages in CAHs

According to the Medicare Payment Advisory Commission, physicians locate in communities with close proximity to hospital facilities, good access to continuing medical education, and the presence of a broad physician community (1). In America, it is notable that only 10% of physicians actually are practicing in a rural setting (1). The reality is that there are 2,157 health professional shortage areas in rural communities in contrast to only 910 urban areas (1). Shortages of health care professionals have plagued rural areas of the USA for more than a century (12). Explanations for the rural physician shortage range from a lack of attention to rural concerns at a domestic policy level to physician preference for specialties with highly controllable schedules (12).

Recruitment issues has been shown to be the driving force behind most shortages in rural areas (8, 12,13). The costs incurred to recruit are substantial, with hospitals spending more than $3 billion dollars annually to recruit and integrate providers into new work settings (24). Rural

hospitals have obstacles in recruiting medical professionals to their communities due to high malpractice premiums, inadequate Medicaid and Medicare reimbursement, and aging medical technology (1).

Many rural doctors find themselves 'overburdened and underpaid' when compared to their urban counterparts (14). The obstacles faced by rural health care providers are different from those in urban areas because of economic factors, cultural differences, less education, and rural isolation (1). Besides the physical location and economic disparities, physicians in rural communities can also expect lower income (1). Because of these factors, rural areas do not attract the best doctors (14). The small percentage of physicians working in the rural setting allows nurse practitioners, nurse midwives, and physician assistants to provide much of the care (1).

Telemedicine in Rural Settings

There is clear evidence for the existence of disparities in access to quality health care services in rural as compared to urban areas. Telehealth technology, including tele-emergency, addresses shortcomings in health care delivery and facilitates improvements in patient care (14, 25). Tele-emergency is defined as an immediate, real-time, interactive audio and video connection between an urban "hub" emergency department and a rural hospital (25). In an era of increasing competition for physicians and nurses, tele-emergency is a means of retaining essential local providers (25). By providing backup support to nurses in rural emergency departments, tele-emergency can distribute nursing resources efficiently across a number of rural settings (25).

While hospitals are increasing their efforts to use health information technology to improve the care patients receive, small rural hospitals in particular face considerable financial and

personnel resource shortages which hinder their efforts to implement complex health information technology systems (4). Investing in health IT (HIT) is an ongoing process and CAHs face considerable resource shortages which hinder their efforts to implement complex HIT systems (4). The increased use of complex and costly health care technology contributes to an ever-widening gap in the availability of health services between rural and urban hospitals (1).

Under new regulations, hospitals will face Medicare and Medicaid payment cuts for not meeting certain quality or technological standards (7). For many hospitals, current Medicaid reimbursement rates are insufficient to cover the full cost of providing services (7). Further cuts could have a significant adverse effect on rural hospitals, for whom Medicare and Medicaid revenue make up nearly threequarters of total revenue-a much higher percentage than is the case for most urban hospitals (7).

Medicare reimburses critical-access hospitals based on the cost of providing care, including fees paid to a tele-emergency hub (25). However, Medicare does not reimburse hospitals for their initial purchase of tele-emergency equipment, and other private and public payers do not generally reimburse critical-access hospitals on a cost basis (25). Thus, under current policies, the full cost of tele-emergency care is not recoverable solely through reimbursement for services rendered (25).

Chapter 3 Methodology

Context

This special studies project was conducted in collaboration with HomeTown Health (HTH), a private business organization founded in 1999 with a focus on the financial, operational improvement and educational resources required for the survival of rural hospitals. HomeTown Health is a network of rural hospitals, healthcare providers, and best practice business partners

who collectively pursue ways to help its membership survive in the environment of constant change in reimbursement, operations and technology. HomeTown Health has partnered with the state departments of health through the FLEX grant programs to perform numerous needs analysis, collect feedback on all delivered training, develop a wide contact database, and has thus developed trust and relationships with many of the states CAHs. HTH is currently in the third year of the Hospital Transformation Consortium Small Rural Hospital Improvement Grant Program (SHIP), a multi-state Consortium that includes Iowa hospitals, Georgia Hospitals, and Florida Hospitals. This information helps improve accuracy of reporting, activities and deliverables promised, and ongoing tracking of participation. The present evaluation focuses on the hospitals with which HTH partners to meet local population health needs.

Community Health Needs Assessments

CHNAs are a written report that develops strategies to address the community's health needs and identified issues. CHNAs are conducted by in person interviews with key stakeholders, focus groups, mailed surveys and online surveys. CHNA data is compiled by a paid CHNA consultant, state Universities, Department of Public Health partnerships, or internally in each hospital. The findings are published in a written report that should be published online. We obtained CHNAs from hospital websites.

Health Improvement Plans

HIPs are a long-term, systematic effort to address public health problems based on the results of community health assessment activities and the community health improvement process. A plan is typically updated every three to five years. This plan is created by internal hospital staff, usually a committee. A community HIP is critical for developing policies and

defining actions to target efforts that promote health. It should define the vision for the health of the community through a collaborative process and should address the gamut of strengths, weaknesses, challenges, and opportunities that exist in the community to improve the health status of that community. We obtained HIPs from hospital websites.

Financial information for the CAHs was obtained from the American Hospital Directory, Inc. via a paid subscription. American Hospital Directory, Inc. is a Kentucky company founded in February 1996. The American Hospital Directory provides data, statistics, and analytics about more than 7,000 hospitals nationwide.

Inclusion of CAHs in this evaluation

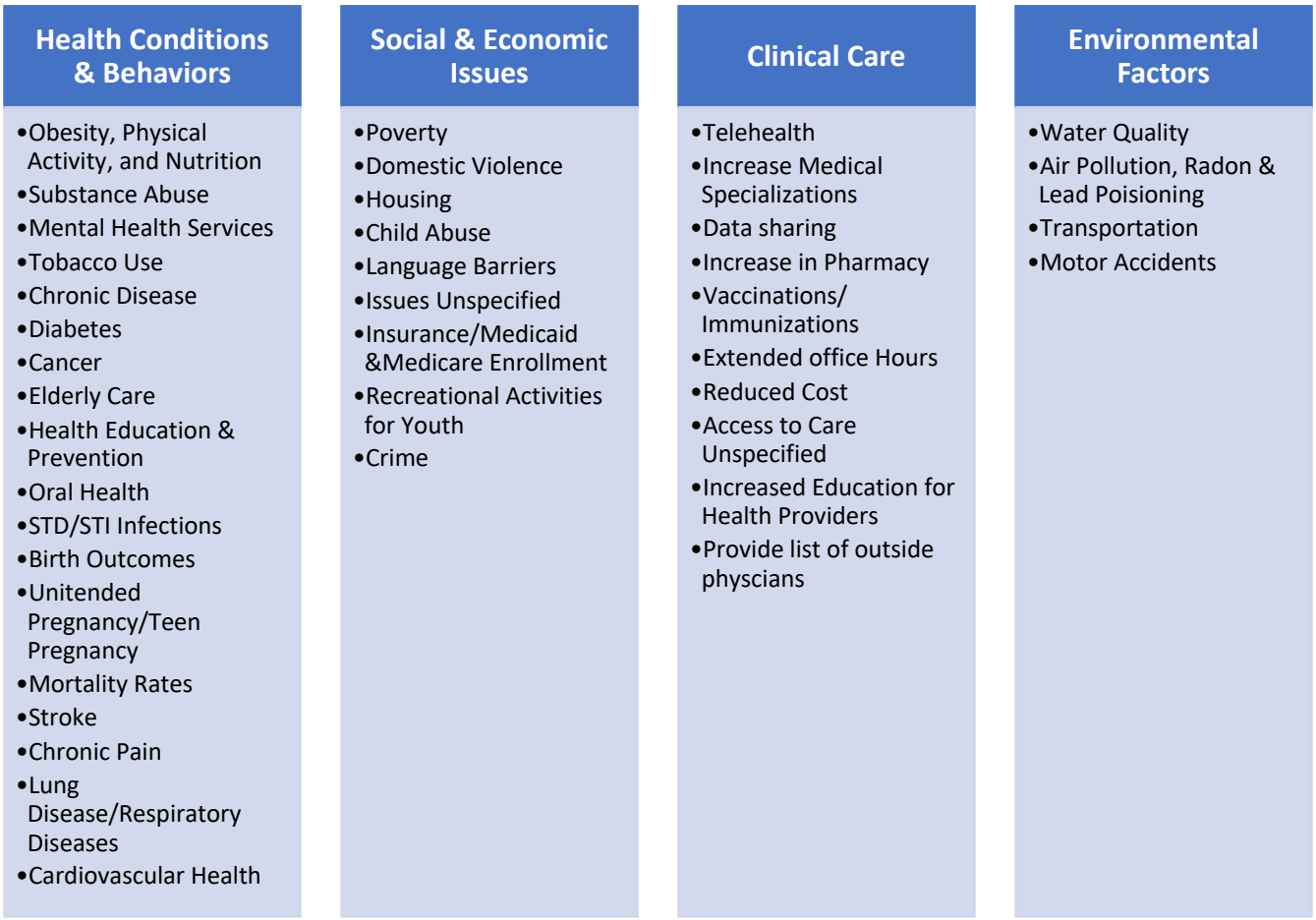
In total, there are 1349 CAHs in the United States, 121 of these CAHs were listed to be a part of the analysis for HTH. There are 30 CAHs in GA, 12 CAHs in FL, and 82 CAHs in IA. Health needs identified in CHNAs and priorities initiated in HIPs were recorded and analyzed. A hospital that did not have a publicly available CHNA or HIP for 2015-2019 was excluded from the CHNA and HIP count and discrepancy analysis. There is a total of 7 hospitals in FL, 22 in GA, and 43 in IA.

CAH's financial statements and financial ratios were then collected from American Hospital Directory, Inc. All 121 CAHs were evaluated for the financial indicators. CAHs that did not have published financial information for the Fiscal Year 2017 was excluded from this project's analysis. There is a total of 12 hospitals in FL, 30 Hospitals in GA, and 71 hospitals in IA included in the financial analysis, 66 CAHs that have CHNAs and HIPs and 47 as the comparison group, no CHNA or HIP, for a total of 113 CAHs.

Evaluation Measures

Health needs identified in CHNAs and health improvement needs enacted in the HIPs were categorized by health conditions and behaviors, social and economic issues, clinical care, and environmental factors. The specific needs reported by CAHs are listed in Figure 4.

Figure 4. Categorization of CHNA and HIP needs



Financial Measures

There are multiple ways to look at non-profit financial successes including revenue reliability, debt management, and liquidity (26). In June 2012, a group of CAH financial experts met in Minneapolis, Minnesota at a CAH Financial Leadership Summit (13). Of the many identified financial ratios proven useful for assessing organizations financial conditions, the Summit participants identified the 10 most important indicators for evaluating CAH financial

performance (13). Financial indicators for this project, based on the 2012 Summit framework, are current ratio, quick ratio, operating margin, operating income, days cash on hand, average payment days, net patient revenue, Medicare revenue, state and local indigent program revenue, and uncompensated medical care revenue. Data to measure these indicators come from the American Hospital Directory, which calculates the operating income, net patient revenue, Medicare revenue, state and local indigent program revenue, and uncompensated medical care. Financial ratios serve as a comparative tool of analysis for liquidity, profitability, debt, and asset management, among others (14).

The current ratio assumes that a hospital would, or could, liquidate all of most of its current assets and convert them to cash to cover these liabilities (13, 26). Favorable values are above the median and the 2016 CAH US Median of 2.48 (13). The quick ratio is a liquidity ratio that further refines the current ratio by measuring the level of the most liquid current assets available to cover current liabilities, but it excludes inventory and other current assets that are generally more difficult to turn into cash (26). The cash conversion cycle is vital for two reasons, it's an indicator of the company's efficiency in managing its important working capital assets and the cash conversion cycle provides a clear view of a company's ability to pay off its current liabilities (26). The ability for a non-profit organization to pay its bills is a crucial financial tool (26). As a general guideline, fewer than three months of cash is often perilously tight for nonprofits, though the “right” amount of liquidity depends on several elements, including an organization’s strategic priorities, funding volatility, facility needs, and the general economic environment (26).

Days in Net Accounts Receivable measures the number of days it takes an organization to collect its payments (13). High values reflect a long collection period and indicate problems in

the organization's business office with regards to billing or collecting payments (13). The ability to collect payments for services is increasingly difficult, but extremely important (13). Improvement in days in accounts receivable can mean hundreds of thousands of dollars in improvement in cash on hand (13). Days in Accounts Receivable is a good measure of how the billing process is working and its efficiency, but it does not indicate the overall financial strength of the hospital. Favorable values are below the median and the 2016 CAH US Median = 51.34 days. Reductions to accounts receivable will improve cash on hand. Days Cash on Hand measures the number of days an organization could operate if no additional cash was collected or received (13). This reflects the organization's safety net relative to the size of the hospital's expenses (13). Favorable values are above the median and the 2016 CAH US Median of 77.72 days (13).

Operating Margin measures the control of operating expenses relative to operating revenues related to patient care (13). Operating expenses are all expenses incurred from the hospital in delivering services, including salaries, supplies, and debt (13). This measure reflects the overall performance on the CAH's core business: providing patient care (13). Favorable values are above the median and the 2016 CAH US Median of 0.93 percent. (13).

Operating income, net patient revenue, Medicare revenue, state and local indigent program revenue, and uncompensated medical care revenue are revenues calculated from the income statement provided by American Hospital Directory.

Analysis

We first described the priorities listed in the CHNAs. Health needs indicators listed for each CHNA were tabulated for CAHs in FL, GA, and IA. Counts were recorded for each priority

indicator across CHNAs by state. Once the tabulation was completed, the percentage of CHNAs that included each indicator was computed. Specifically, the number of CHNAs reporting an indicator was treated as the numerator and the total number of CHNAs in each state was treated as the denominator. This descriptive analysis was also completed for the HIPs to find each state's top actions taken, respectively. The CHNA needs identified and health priorities initiated for HIPs are listed by state in Appendix A, Supplemental Table 1.

For the analysis of financial distress, we first categorized the CAHs into two agreement categories describing correspondence between CHNAs needs and HIPs initiated priorities: high agreement and low agreement. High agreement was 80% or higher of CHNA identified needs were initiated priorities in the HIPs on a hospital level. Low agreement was 79% or lower of CHNA identified needs were initiated priorities in the HIPs on a hospital level. We also created a third category, for no CHNA, that described hospitals that were not IRS compliant.The mean of each financial indicator was computed by category of CHNA/HIP agreement. The means of financial indicators were also compared across categories of agreement, treating hospitals with no CHNA were used as a comparison group. This analysis aimed to assess the average financial health of CAHs within each category to determine whether this impacted the agreement of health needs implemented in each hospital.

Table 2. Financial Indicator Calculations

Financial Indicator	**Definition**	**Interpretation**
Current Ratio	$\frac{\text{Total Current Assests}}{\text{Total Current Liabilities}}$	Liquidation of all current assets and convert them to cash to cover liabilities
Quick Ratio	$\frac{(\text{Total Current Assets} - \text{Inventory})}{\text{Total Current Liabilities}}$	Liquidation of current assets, excluding inventory, and convert to cash to cover current liabilities

Operating Margin	$\frac{\text{Total Operating Revenue} - \text{Total Operating Expense}}{\text{Total Operating Revenue}} \times 100$	Measures the control of operating expenses relative to operating revenues related to patient care
Days Cash on Hand	$\frac{\text{Cash} - \text{Marketable Securities}}{(\text{Total Operating Expenses} - \text{Depreciation}) \div 365}$	Number of days an organization could operate if no additional cash was collected or received
Average Payment Days	$\frac{\text{Total Current Liabilities}}{(\text{Total Expenses} - \text{Depreciation}) \div 365}$	Number of days it takes an organization to collect its payments

Chapter 4: Results

CHNA and HIP Results

There were a total of 22 hospitals in GA, 43 in IA, and 7 in FL that were considered IRS compliant, meaning an up to date CHNA and HIP publicly available online within the last three years. Across the 66 compliant hospitals in IA, FL, and GA CAHs, a total of 560 needs were identified in the CHNA and a total of 399 priorities to be implemented in HIPs. The distribution of priorities in the CHNAs and HIPs are reported in Table 3.

Table 3. Priorities named by CAHs in the CHNA and HIPs

Identified Needs	CHNA	HIP
Health Conditions & Behaviors	**%**	**%**
Mental Health Services	87.9	59.1
Obesity, Physical Activity, and Nutrition	74.2	69.7
Substance Abuse	56.1	34.8
Health Education & Prevention	48.5	57.6
Cardiovascular Health	43.9	19.7
Diabetes	40.9	27.3
Cancer	31.8	19.7
Chronic Disease	21.2	9.1
STD/STI Infections	19.7	9.1
Elderly Care	19.7	7.6
Tobacco Use	16.7	13.6
Stroke	13.6	7.6
Unintended Pregnancy/Teen Pregnancy	12.1	12.1

Oral Health	10.6	0
Chronic Pain	4.5	0
Birth Outcomes	3.0	0
Mortality Rates	3.0	0
Lung Disease/Respiratory Diseases	1.5	1.5
Social & Economic Issues		
Insurance/Medicaid &Medicare Enrollment	25.8	13.6
Poverty	16.7	6.1
Child Abuse	16.7	10.6
Domestic Violence	10.6	3
Recreational Activities for Youth	10.6	15.2
Issues Unspecified	9.1	0
Housing	7.6	4.5
Crime	6.1	0
Language Barriers	1.5	1.5
Environmental Factors		
Transportation	24.2	12.1
Motor Accidents	10.6	6.1
Water Quality	9.1	3
Air Pollution, Radon & Lead Poisoning	9.1	4.5
Clinical Care		
Increase Medical Specializations	50.0	37.9
Access to Care Unspecified	28.8	1.5
Reduced Cost	19.7	7.6
Vaccinations/ Immunizations	13.6	7.6
Extended office Hours	7.6	10.6
Increased Education for Health Providers	6.1	18.2
Telehealth	3.0	3.0
Data sharing	1.5	1.5
Pharmacy Locations	1.5	1.5
Provide List of Outside Physicians	0.0	21.2

Note: the first column shows the percentage of hospitals that included the priority in its CHNA, and the second column shows the proportion of hospitals that included in the HIP an initiative aligned with that priority.

Alignment of CHNAs with HIPs

Similar to 2003 findings in a similar study, the degree of agreement on the top 5 priorities in the CHNAs as compared to the priorities defined in the HIPs, was quite impressive (26). Mental Health, Obesity, Substance Abuse, Health Education & Prevention, Cardiovascular

Health, diabetes, and increase of medical specializations are the top identified needs of the 66 IRS compliant CAHs and are also the top needs initiated in HIPs in CAHs.

Also, there are relatively few differences in nominations of rural health needs in CHNAs and priorities defined in HIPs across IA, FL, and GA. Interestingly, mental health was a top CHNA health need identified and just as likely to be prioritized by hospitals in IA, GA, and FL. In earlier studies, mental health disorders were not as likely to be picked as a prioritization by hospitals or public health agencies (26). Alternatively, oral health was a top priority for hospitals and public health agencies in 2003, in this sample, oral health was identified by communities as an unmet need, but not prioritized in HIPs (26). Community prioritization of oral health may reflect their understanding of the consequences of poor oral health for other conditions, such as poor nutrition or low-grade infections produced by oral health problems (26). However, in this analysis oral health was an abandoned health need for HIPs. Other abandoned health needs from CHNAs to HIPs were birth outcomes, elderly care, chronic pain. There was also low prioritization in HIPs for poverty, child abuse, domestic violence, transportation and reduction in cost when compared to their CHNAs. Alternatively, areas where there was low need reported in CHNAs like increased education for medical staff, providing lists to outside physicians, recreational activities for youth, and extending office hours were initiated more often in HIPs in FL, GA, and IA.

CAH financial distress

There were 28 hospitals in high agreement between CHNAs and HIPs. There are 38 hospitals in low agreement and 47 hospitals that have no CHNA. Table 4 summarizes the results of the mean financial indicators by categorization tiers for agreement between priorities identified in the CHNAs and initiatives implemented in the HIPs.

Table 4. Mean values of CAH financial indicators by CHNA/HIP agreement category

Financial Indicator	High Agreement	Low Agreement	No CHNA
N	28	38	47
Mean Operating Margin	-0.05	-0.06	-0.09
Mean Days Cash on Hand	68.41	106.62	79.96
Mean Average Payment Days	68.32	182.48	67.79
Mean Quick Ratio	2.72	1.53	2.73
Mean Current Ratio	2.85	1.61	2.84
Mean Operating Income	-$168,503.46	-$1,076,122.42	-$1,152,542.19
Mean Net Patient Revenue	$22,975,066.14	$21,288,008.84	$26,097,713.87
Mean Revenue from Medicaid	$4,726,131.86	$5,713,070.92	$6,223,024.04
Mean Revenue from State and Local Indigent Care Programs	$102,646.79	$68,984.58	$46,934.17
Mean Revenue from Other Uncompensated Care	$1,688,606.96	$998,307.87	$682,094.23

All hospitals had similar mean net patient revenue, mean Medicaid revenue, and mean operating margins. All CAHs in this sample have negative values of the operating margin, this indicator measures the control of expenses relative to revenues related to patient care (13). Negative operating margins signify that the hospitals are having trouble managing their expenses and debts related to the amount of revenue they collect. This measure reflects the overall performance on the CAH's core business: providing patient care (13). Operating values above the 2016 CAH US Median of 0.93 percent are considered favorable.

The analysis of operating income financial indicator shows that low agreement hospitals and no CHNA hospitals have over 1 million dollars in operating debt. High agreement hospitals are also negative, it is only on average 160 thousand in operating debt. Negative operating income is an operating loss, which means that cost of services and operating expenses combined are greater than revenue collected from patients.

The mean net patient revenue and the mean revenue from Medicaid in all three hospital categories of CAHs are fairly similar. This is similar to what is stated in the literature due to over half of US rural hospitals that are located in Medicaid non-expansion states and lack health insurance among their rural populations (7). Contrary to initial beliefs that having more agreement between CHNAs and HIPs would indicate better financial health, the mean days cash on hand was the lowest among CAHs with the highest agreement between CHNAs and HIPs. Days cash on hand reflects the organization's safety net relative to the size of the hospital's expenses (13). Favorable values are above the median and the 2016 CAH US Median of 77.72 days (13). Based on this standard, low agreement and no CHNA CAHs have favorable values, while high agreement hospitals have a little bit lower amounts of cash to cover their expenses. As previously mentioned, the cash conversion cycle is vital for indicating the hospital's efficiency in managing its assets and provides a clear view of a company's ability to pay off its current liabilities (25, 26). If cash is tight, an organization's strategic priorities, funding volatility, facility needs, and the general economic environment will be affected (25). Because CAHs with high agreement between CHNAs and HIPs have the lowest amount of days cash on hand, there seems to be a mix of financial indicators that effect the number of priorities initiatited in CAHs rather than cash on hand alone. Low agreement hospitals have approximately 107 days cash on hand. This is above the CAH US Median of 77.72 signfiying low agreements CAHs have more cash on hand. On average, low agreement hospitals have a total of 183 payment days, meaning it takes these hospitals 183 days to collect patient payments. This is more days than no CHNA hospitals and high agreement hospitals take to collect their payments from patients.

The quick ratio and current ratio are similar between high agreement hospitals and No CHNA hospitals. The current ratio assumes that a hospital would, or could, liquidate all of most

of its current assets and convert them to cash to cover these liabilities (13, 26). Favorable values are above the median and the 2016 CAH US Median of 2.48 (13). The quick ratio is a liquidity ratio that further refines the current ratio by measuring the level of the most liquid current assets available to cover current liabilities, but it excludes inventory and other current assets that are generally more difficult to turn into cash (26). In this sample of CAHs, high agreement hospitals and no CHNA hospitals have favorable current and quick ratio values. This signifies that thse CAHs could liquidate their assets and be able to fully cover their current liabilities and debt. Low agreement hospitals have smaller current and quick ratios, meaning they have less ability to liquidate their assets to cover all of their liabilities and debt.

High agreement hospitals are receiving, on average, more revenue from state and local indigent programs and revenue from uncompensated medical care, when compared to low agreements and no CHNA CAHs. This may contribute to the level of agreement between needs identified in the CHNAs and priorities initiated in the HIPs due to the help of additional revenue. A limitation of these data was that we were not able to show statistical differneces using one-way ANOVA tests for each financial indicator categorized by the level of agreement between CHNAs and HIPs

Chapter 5: Conclusions and Recommendations

Conclusions

Often identified needs in a community can go unaddressed due to lack of hospital resources, but these data can be used to inform advocacy groups areas of support for vulnerable hospitals and aid in providing resources to the nations' underserved. Based on the evaluation of this project, the top areas of needs were mental health, obesity, substance abuse, health education

& prevention, cardiovascular health, diabetes, and increase of medical specializations and are also the top needs initiated in HIPs in GA, FL, and IA CAHs. Areas that were prioritized in CHNAs and abandoned initiatives in HIPs are oral health, birth outcomes, elderly care, chronic pain. There is also low initiation in HIPs for poverty, child abuse, domestic violence, transportation, and reduction in cost when compared to their CHNAs.

Financially, hospitals with high agreement between CHNAs and HIPs had more favorable mean financial indicators than no CHNA and low agreement CAHs. High agreement hospitals had lower days cash on hand, favorable current and quick ratios, and more revenues from State and local indigent programs and uncompensated medical care revenues. Low agreement hospitals between CHNAs and HIPs had unfavorable current and quick ratios, took more days to collect patient payments, lower operating income, and low revenue from state and local indigent programs. Studies like this provide an objective review on areas where many CAHs need help, including helping to match services to community needs and determine areas of focus for improvement work. Based on the health needs identified in CHNAs and priorities for HIPs, or lack of priorities in HIPs, advocacy groups have a better understanding of where the continue educational training, lobbying, and grants.

It is important for patients to have access to the best data-driven information available, and the power to make the best healthcare choices available. As the ACA states, for all Americans. This information helps improve accuracy of reporting, activities and deliverables promised to communities. It is imperative that CAHs and community stakeholders work together to ensure they are providing coordinated care management for rural populations in their specified counties and identifying areas where they can work together. Working together, not only helps coordination of care to ensure healthier patients, but also allows the hospital to cut costs as not to

repeat any medical procedures. To transform America's healthcare system there needs to be a set of best practices to utilize in order to meet the goals of improving access to high-quality, affordable care (2). Patient Protection and Affordable Care Act was implemented in 2010 with the aim of quality and affordable health care for all Americans (14).

Recommendations

This special studies project has generated data that advocacy groups like HTH may use to provide accurate and comprehensive support to CAHs in the US. Areas that are an identified health need and are a priority in HIPs are important to identify, but also areas that the community has a health need and is not a priority in HIPs are crucial to evaluate. Plans for rural population health need to be shifted to be better aligned with improving all areas of population health, specifically in areas that are abandoned in HIPs. CHNAs and HIPs are a tool, and IRS requirement, to help hospitals remain accountable for the communities they serve. Through evaluations such as these, HTH and other advocacy groups can ensure that hospitals are meeting their HIP goals and further define areas of improvement. Perhaps continued work in monitoring and evaluating CHNAs and HIPs will improve the number of agreements in CHNAs and HIPs, further improving rural population health and therefore, reduce the economic burden of CAHs.

Advocates for rural hospitals like HTH and the FLEX Monitoring Team have created multiple tools to help maintain and advance vulnerable hospitals. The FLEX Monitoring Team has created a protected online tool called the CAH Measurement and Performance Assessment System CAHMPAS (13). CAHMPAS provides graphs and data, which allows comparison of CAH performance for various measures across user-defined groups: by location, net patient revenue or other factors (13). CAHMPAS includes a variety of metrics and allows CAHs to compare their financial performance to peer facilities (13). Strategic, financial and operational

assessments provide a broad-based analysis of hospital performance and help identify specific opportunities for CAH improvement (13). Lean is also a program incorporated in CAHMPAS which focuses on increasing efficiency and eliminating waste (13). This creates greater value for customers and uses fewer resources (13). In the health care setting, Lean processes can result in substantial cost savings, fewer delays and increased patient and staff satisfaction (13). Lean education, Lean networks and shared Lean expertise have all been successfully used by individual CAHs and networks of rural hospitals (13).

With the access to these data, HTH could help develop tools to aid the CAHs in monitoring their HIP goals and hopefully adopt more health priorities in the next series of HIPs. HTH can also use this data to help CAHs monitor their debt and debt management. Financial distress in CAHs seems to be an area for significant improvement based on the results of this project. HTH can provide additional lobbying efforts and identify grants or funding opportunities for members of the HTH Consortium.

Telemedicine was not a priority for CHNAs or HIPs, however, under new regulations, CAHs will face Medicare and Medicaid reimbursement cuts for not meeting certain technological standards (7). While telemedicine was not directly stated in many CHNAs, access to care unspecified and increase in medical specializations was expressed as a CHNA need and has some priority in HIPs, particularly in IA. As stated previously, investing in the equipment and personnel staff required to set up and run the IT department would be substantial expense for CAHs. This is an area where HTH could try to find supportive programs or grants to assist in CAHs getting the technology needed to implement telemedicine. The benefit of adding telemedicine to HTH's agenda for the FLEX grant program would be that CAHs could receive

further Medicare and Medicaid reimbursements and provide more timely, efficient care to patients, improving the overall quality of care rural patients receive.

Recruiting for CAHs is also an area that may help reduce the number of abandoned priorities in HIPs. Although recruiting was not specifically mentioned in CHNAs or HIPs, increasing staff education and increasing medical specializations were two CHNA identified needs and priorities for HIPs, particularly in IA. HTH should continue to create and adapt their online webinars for the Consortium members, however they should look for ways to provide CAHs with staffing support. Areas related to mental health, substance abuse, and obesity should be top priority for HTH in helping CAHs monitor and evaluate these priorities to ensure HIP goals. Health needs like elderly care, chronic pain, and substance abuse are areas that are identified in CHNAs but are abandoned, or low priority, in HIPs.

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Appendices:

Appendix A: CHNA & HIP Initiatives by State

Supplemental Table 1: Georgia CHNA vs. HIP Initiatives

Identified Needs	CHNAs	HIPs	Difference
Health Conditions & Behaviors			
Obesity, Physical Activity, and Nutrition	19	24	-5
Substance Abuse	8	6	2
Mental Health Services	19	10	9
Tobacco Use	3	3	0
Chronic Disease	6	2	4
Diabetes	12	8	4
Cancer	12	5	7
Elderly Care	1	0	1
Health Education & Prevention	11	15	-4
Oral Health	2	0	2
STD/STI Infections	5	3	2
Birth Outcomes	1	0	1
Unintended Pregnancy/Teen Pregnancy	4	3	1
Mortality Rates	1	0	1
Stroke	5	1	4
Chronic Pain	1	2	-1
Lung Disease/Respiratory Diseases	0	0	0
Cardiovascular Health	15	5	10
Social & Economic Issues			
Poverty	0	0	0
Domestic Violence	0	1	-1
Housing	0	1	-1
Child Abuse	1	1	0
Language Barriers	1	1	0
Issues Unspecified	2	0	2
Insurance/Medicaid &Medicare Enrollment	5	3	2
Recreational Activities for Youth	0	5	-5
Crime	1	0	1
Environmental Factors			
Water Quality	0	0	0
Air Pollution, Radon & Lead Poisoning	0	0	0
Transportation	6	3	3
Motor Accidents	3	1	2
Clinical Care			

Telehealth	1	1	0
Increase Medical Specializations	8	5	3
Data sharing	0	0	0
Increase in Pharmacy	0	0	0
Vaccinations/ Immunizations	0	0	0
Extended office Hours	1	2	-1
Reduced Cost	4	3	1
Access to Care Unspecified	7	0	7
Increased Education for Health Providers	0	1	-1
Provide list of outside physicians	0	4	-4

Figure 3: Florida CHNA vs. HIP Initiatives

Identified Needs	CHNAs	HIPs	Difference
Health Conditions & Behaviors			
Obesity, Physical Activity, and Nutrition	7	8	-1
Substance Abuse	2	0	2
Mental Health Services	5	3	2
Tobacco Use	2	0	2
Chronic Disease	2	2	0
Diabetes	2	2	0
Cancer	1	1	0
Elderly Care	0	0	0
Health Education & Prevention	3	3	0
Oral Health	1	0	1
STD/STI Infections	1	0	1
Birth Outcomes	1	0	1
Unintended Pregnancy/Teen Pregnancy	1	3	-2
Mortality Rates	0	0	0
Stroke	1	1	0
Chronic Pain	0	0	0
Lung Disease/Respiratory Diseases	0	0	0
Cardiovascular Health	2	1	1
Social & Economic Issues			
Poverty	4	1	3
Domestic Violence	1	0	1
Housing	0	1	-1
Child Abuse	0	0	0
Language Barriers	0	0	0
Issues Unspecified	0	0	0
Insurance/Medicaid &Medicare Enrollment	3	2	1

Recreational Activities for Youth	1	0	1
Crime	0	0	0
Environmental Factors			
Water Quality	0	0	0
Air Pollution, Radon & Lead Poisoning	0	0	0
Transportation	1	1	0
Motor Accidents	0	0	0
Clinical Care			
Telehealth	0	0	0
Increase Medical Specializations	3	3	0
Data sharing	0	0	0
Increase in Pharmacy	0	0	0
Vaccinations/ Immunizations	0	0	0
Extended office Hours	0	1	-1
Reduced Cost	1	0	1
Access to Care Unspecified	3	0	3
Increased Education for Health Providers	0	0	0
Provide list of outside physicians	0	0	0

Figure 4: Iowa CHNA vs. HIP Initiatives

Identified Needs	CHNAs	HIPs	Difference
Health Conditions & Behaviors			
Obesity, Physical Activity, and Nutrition	56	57	-1
Substance Abuse	27	17	10
Mental Health Services	34	26	8
Tobacco Use	6	6	0
Chronic Disease	6	2	4
Diabetes	13	8	5
Cancer	8	7	1
Elderly Care	12	5	7
Health Education & Prevention	18	20	-2
Oral Health	4	0	4
STD/STI Infections	7	3	4
Birth Outcomes	0	0	0
Unintended Pregnancy/Teen Pregnancy	3	2	1
Mortality Rates	1	0	1
Stroke	3	3	0
Chronic Pain	2	0	2
Lung Disease/Respiratory Diseases	1	1	0
Cardiovascular Health	12	7	5

Social & Economic Issues			
Poverty	7	3	4
Domestic Violence	6	1	5
Housing	5	1	4
Child Abuse	10	6	4
Language Barriers	0	0	0
Issues Unspecified	4	0	4
Insurance/Medicaid &Medicare Enrollment	9	4	5
Recreational Activities for Youth	6	5	1
Crime	3	0	3
Environmental Factors			
Water Quality	6	2	4
Air Pollution, Radon & Lead Poisoning	6	3	3
Transportation	9	4	5
Motor Accidents	4	3	1
Clinical Care			
Telehealth	1	1	0
Increase Medical Specializations	17	17	0
Data sharing	1	1	0
Increase in Pharmacy	1	1	0
Vaccinations/ Immunizations	9	5	4
Extended office Hours	4	4	0
Reduced Cost	8	2	6
Access to Care Unspecified	9	1	8
Increased Education for Health Providers	4	11	-7
Provide list of outside physicians	0	10	-10

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