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MITIGATING THE RISK OF FINANCIAL DISTRESS AND CLOSURE IN RURAL  
HOSPITALS: A MULTIPLE CASE STUDY

BY

Christopher Brian Wiggs

A doctoral project submitted to the faculty of the Medical University of South Carolina  
in partial fulfillment of the requirements for the degree  
Doctor of Health Administration  
in the College of Health Professions

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Christopher Brian Wiggs

Approved by:

Chair, Project Committee	Dr. Jillian Harvey, MPH, PhD	Date
Member, Project Committee	Dr. Dunc Williams, MHA, PhD	Date
Member, Project Committee	Dr. Alan Kent, DHA	Date

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Abstract of Dissertation Presented to the  
Medical University of South Carolina  
In Partial Fulfillment of the Requirements for the  
Degree of Doctor of Health Administration

MITIGATING THE RISK OF FINANCIAL DISTRESS AND CLOSURE IN RURAL  
HOSPITALS: A MULTIPLE CASE STUDY

by

Christopher Brian Wiggs

Chairperson: Dr. Jillian Harvey, MPH, PhD  
Committee: Dr. Dunc Williams, MHA, PhD  
Dr. Alan Kent, DHA

**Abstract**

Few studies have explored strategies rural hospitals have implemented to lower the risk of financial distress and closure. The objective of this doctoral project is to explore factors rural hospital stakeholders consider when determining the most appropriate business model for their organization.

A multiple case study design was utilized to explore key factors considered in the decision-making processes at three rural hospitals in the southeastern United States with varying business models and characteristics. Nine rural hospital stakeholders including administrators, clinician, and community leaders participated in semi-structured interviews. Interviews were recorded, transcribed, and analyzed using an inductive coding process. Seven themes emerged: 1) Align hospital with community needs, 2) Rightsize services to address community needs, 3) Leverage collaboration and partnership, 4) Access to financial resources, 5) Leadership and governance, 6) Community awareness and engagement, and 7) Challenges with recruiting healthcare professionals.

Findings suggest when determining the most appropriate business model to implement, rural hospital stakeholders should identify the specific needs of their surrounding community and redesign services to meet the needs while leveraging resources within and outside the community. Additionally, stakeholders should assess leadership and governance competencies and determine how to engage the community as active partners in the decision-making process.

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## CHAPTER I INTRODUCTION

### Background and Need

Rural communities all across the United States (US) are losing their hospitals at an increasing rate. Since 2005, 166 rural hospitals have closed with a majority of closures, 124, occurring since 2010 (Pink & Holmes, 2018; Richman & Pink, 2017; Sheps Center, 2020; Thomas et al., 2019b; Thomas & Pink, 2019; Topchik, 2020). According to the North Carolina Rural Health Research Program (NCRHRP), a “rural hospital closure” is defined as the cessation or relocation of inpatient services more than fourteen miles from the rural hospital’s present location (Pink & Holmes, 2018; Sheps Center, 2020). Currently, over 550 rural hospitals, more than 20% of all rural hospitals in the US, are predicted to be at a high to mid-high risk of financial distress (Thomas et al., 2019b; Thomas & Pink, 2019).

Recent research has identified a sizeable geographical disparity in the risk of financial distress among rural hospitals in the US. In 2019, close to three-fourths of rural hospitals predicted to be at an elevated risk of financial distress were located in the South census region of the US (Thomas et al., 2019b). The proportion of at-risk hospitals varies by reimbursement designation. An estimated 7.3% of critical access hospitals (CAHs) are classified as being at a high-risk of financial distress. CAHs represent roughly 61% of all rural hospitals in the US (Thomas & Pink, 2019).

In 1997, Congress created the CAH designation through passage of the Balanced Budget Act to address the significant increase in rural hospital closures after implementation of the Medicare prospective system. The purpose of the designation was to improve access to healthcare services by reducing the financial vulnerability of hospitals in rural communities. Historically, Medicare reimbursed CAHs at 101% of allowable costs for inpatient and outpatient

services. However, in 2013, federal spending cuts decreased cost-based reimbursement for CAHs from 101% to 99% (Topchik, 2017). To be eligible for CAH designation, rural hospitals must have 25 beds or less, operate emergency services 24 hours a day, located at least 35 miles from the nearest hospital, or deemed a “necessary provider” by the hospital’s state (iVantage, 2016; Mason, 2017; RHihub, 2019; Thomas et al., 2019b; Thomas & Pink, 2019; Topchik, 2017).

A hospital closure can have a devastating impact on a rural community, further exacerbating the health, economic, and care access disparities for residents in these communities (Richman & Pink, 2017). For example, in 2014, the Pungo District Hospital, which served two rural eastern North Carolina counties, closed its doors, leaving residents 75 miles away from the nearest emergency department (ED). Four days after the hospital closed, a resident from the closed hospital’s community died from a heart attack while waiting for a medevac helicopter to the nearest ED (Think NC First, 2019). A recent study conducted by the NCRHRP found that abandoned hospitals, hospitals that no longer provide any healthcare services, served markets with a higher proportion of non-Whites and were located further from other nearby hospitals. A survey of residents in the abandoned hospital communities found residents were concerned about the increased travel time to receive care, which they believed would increase the risk of adverse health outcomes (NACRHHS, 2016; Thomas et al., 2015).

Hospital closures can also lead to an outmigration of healthcare professionals, which can exacerbate existing challenges in access to care in rural communities. For example, rural communities tend to have higher levels of elderly and low-income individuals who may lack access to transportation. While some residents in rural communities have the means to access care in adjacent counties, older and poorer residents may delay or forgo needed care (Wishner, Solleveld, Rudowitz, et al., 2016).

The closure of a rural hospital can also have a devastating impact on the local community's economy. In rural America, the hospital is often one of, if not the largest, employer in the community representing roughly 20% of employment and income (Think NC First, 2019). The potential economic impact of a rural hospital closure on a community can include an increase of outmigration (healthcare workers seeking jobs in other counties), higher unemployment rate, drop in housing values, and lower per capita income. Recent research by Mark Holmes, Director of the Cecil G. Sheps Center for Health Services Research, has identified an association of a per capita income loss between \$703 and \$1,300 within a rural community when its hospital closes (Balasubramanian & Jones, 2016; M. Holmes & Thomas, 2019; Knopf, 2018; Mason, 2017; Think NC First, 2019).

### **Problem Statement**

Numerous studies have shown that the primary driver of hospital closure is financial. Low levels of profitability, liquidity, equity, and market share increase the likelihood of a rural hospital experiencing some degree of financial distress (B. Kaufman, Pink, et al., 2016; RCHI, 2017; Thomas et al., 2016). A significant contributor to lower levels of profitability in rural hospitals is declining inpatient volumes. As outmigration from rural communities continues, declining patient volumes will present challenges in spreading fixed costs within the hospital (Thomas et al., 2016). Other potential factors contributing to the increasing rate of rural hospital closures include aging facilities, declining reimbursement from Medicare and Medicaid, cost of healthcare technology, implications of the Patient Protection and Affordable Care Act (ACA), and lack of healthcare professionals practicing in a rural setting (Bryant, 2017; B. G. Kaufman, Thomas, et al., 2016; Mason, 2017; NACRHHS, 2016; Pink & Holmes, 2018; Weeks, 2018; Wishner, Solleveld, Rudowitz, et al., 2016). For example, according to former CMS

Administrator Any Slavitt, although approximately 20% of Americans live in rural areas, only ten percent or less of physicians practice in the setting (LaPointe, 2017).

Of all the factors that can contribute to a rural hospital's closure, the hospital's community characteristics may be the most significant. In recent years, an increasing number of studies have highlighted the critical relationship between rural hospital closure and the sociodemographic characteristics of the community served. Rural communities have a significantly higher percentage of African American and Hispanic residents, a higher percentage of elderly residents, lower levels of education, higher unemployment rates, higher rates of public insurance, and a higher percentage of residents reported to have fair to poor health compared to urban communities. According to Kaufman et al. (2016), the odds of hospital unprofitability increase when a community has a higher rate of elderly residents, poverty, and increased market share competition from nearby hospitals (AHA, 2016b; B. G. Kaufman, Thomas, et al., 2016; Pink & Holmes, 2018; RCHI, 2017; Richman & Pink, 2017; Thomas et al., 2016).

Studies that have examined the drivers of rural hospital closure have illuminated the need to develop strategies to address the financial challenges facing hospitals serving rural communities. However, there are a limited number of studies focused on the development of strategies to transition a rural hospital to a more sustainable health delivery model. In 2018, the Bipartisan Policy Center published a report with a controversial suggestion that not all rural communities need a CAH. The report, consistent with other recent literature, posits that each rural community has a different set of needs and resources. Given the specific needs and available resources of the community, hospital leaders should consider what healthcare business model will make the most significant impact on the health of its community. For example, a rural community may not need inpatient beds, but rather, better access to emergency services and

primary care. Most importantly, the literature emphasizes that healthcare providers must engage the community as an active partner in determining a clear way forward to improving the overall health of the community (Bannow, 2018; Bipartisan Policy Center, 2018; M. Holmes & Thomas, 2019; Irons & Sauer, 2018; Knopf, 2018; Mason, 2017; Meyer, 2018; Pink & Holmes, 2018; Richman & Pink, 2017; Weeks, 2018).

The objective of this qualitative multiple case study is to explore the factors rural hospital stakeholders consider when determining what the most appropriate business model is for their organization based on the specific financial and contextual challenges they face.

### **Research Question**

The central qualitative research question of this doctoral project is: How do rural hospital stakeholders determine the most appropriate business model for their organization? Additional key questions the project will address include:

- What critical factors do rural hospital stakeholders consider when determining the most appropriate business model for their organization?
- What resources do rural hospital stakeholders use to determine the most appropriate business model for their organization?
- What barriers and facilitators related to adoption and sustainment must rural hospital stakeholders be aware of when deciding what business model is most appropriate for their organization?

### **Case Study Population**

The multiple case study will explore factors hospital stakeholders considered when determining the most appropriate business model for their specific organization at three rural hospitals in the southeastern US. Rural hospitals will be selected to participate in the project if



they have successfully implemented a new business model within the last five years or have recently completed the decision-making process to select a new business model to implement (Hogle & Moberg, 2014). The multiple case study will include key informant interviews of multiple rural hospital stakeholders including hospital leaders, medical staff leaders, healthcare system leaders, and community leaders who were involved in their hospital's decision-making process.

## CHAPTER II SCOPING LITERATURE REVIEW

A comprehensive literature review was conducted to gain a thorough understanding of the existing research related to the topic of rural hospital closure and potential strategies to reduce the risk of closure. The purpose of the review was to evaluate findings, research methods, and limitations of the current literature to support the development of a project design to explore how rural hospital stakeholders determine what the most appropriate business model is for their organization based on the challenges they face.

A review of the literature was conducted using ProQuest, Scopus, and Google Scholar databases from the years 1980 to 2020. A search of gray literature was also conducted using the Google search engine. The Patient Protection and Affordable Care Act (ACA) has had a significant impact on the healthcare industry since its passage in 2010. Therefore, the majority of the review includes literature published after 2010. However, relevant literature from 1980 to 2010 was selectively included in the review to provide context behind the recent rise in the number of rural hospital closures. Key search terms included critical access hospital, rural hospital closure, care access, financial distress, alternative care model, community engagement, health disparities, and rural safety net. The literature collected for the review consists of peer-reviewed journal articles, published dissertations, government reports, news reports, online journals, advocacy group reports, and other scholarly publications.

The literature review begins with a discussion on the definition and types of rural hospitals in the United States (US). Next, a brief overview of key milestones in rural health policy is given to provide the reader with both background and context to better understand the rapid rise in the number of rural hospital closures. The review then examines rural hospital closure trends since 2010, including key drivers of the phenomenon. Also, the review examines

the impact a rural hospital closure on surrounding communities. The review then summarizes key themes from the current literature on what strategies rural health stakeholders are implementing to mitigate the risk of financial distress and improve financial performance. The summary includes a discussion of current rural health transformation demonstration projects and gaps in the current literature. Finally, the reader will be exposed to the generic two-stage competitive process framework which explains the differences and interrelationships of the concepts of business model, strategy, and tactics.

### **Rural Hospital, Defined**

Rural hospitals and communities have faced significant challenges in recent years. Since 2005, 166 rural hospitals have closed in the US, with a majority of closures (124) occurring in the last nine years (Sheps Center, 2020; Topchik, 2020). Rural hospitals are vital in improving the overall health and well-being of rural communities by providing essential services across the continuum of care. Also, rural hospitals often serve as an economic anchor in their respective communities through employment and purchasing of goods and services from residents and vendors (AHA, 2019; HRSA, 2019; RHHub, 2018a). According to a report conducted by the North Carolina Rural Health Research Program (NCRHRP), there were 2,244 acute rural hospitals in the US as of January 1, 2016. An estimated 40% of rural hospitals are located in the South census region of the US (NCRHRP, 2017; Wishner, Solleveld, Paradise, et al., 2016).

There are multiple meanings of the term “rural,” and the US federal government utilizes two different definitions created by the US Census Bureau and the Office of Management and Budget (OMB). The US Census Bureau does not directly define the term “rural.” Instead, the Census Bureau has defined two types of urban areas: “urbanized areas” (greater than 50,000 people) and “urban clusters” (2,500 to 50,000 people). Therefore, all population, housing, and

territory not classified as urban are considered rural. Using the Census Bureau's definition of rural, 19.3% of the US population lives in rural areas, according to the 2010 Census. The OMB classifies counties as either metropolitan, micropolitan, or neither. Therefore, counties not part of a Metropolitan Statistical Area are classified as rural. Under the OMB definition of rural, approximately 15% of the US population lives in rural areas, according to the 2010 Census (HRSA, 2018).

There are limitations in both the Census Bureau and OMB rural definitions. Rural health policy experts have argued that the Census Bureau's rural definition overcounts the rural population because many suburban areas are classified as rural. Rural health policy experts also argue the OMB's rural definition undercounts the US rural population as some rural areas are included in metropolitan counties and classified as urban (HRSA, 2018).

The Federal Office of Rural Health Policy (FORHP) has developed its definition of "rural" using components of each definition from the US Census Bureau and OMB. According to the FORHP, all non-metropolitan counties are classified as rural. Also, the FORHP utilizes an additional method to determine the rurality of a specified area named the Rural-Urban Commuting Area (RUCA). RUCA codes are based on measures such as daily commuting, population density, and urbanization. Using the RUCA methodology, census tracts within metropolitan counties with a RUCA code from four to ten are considered to be rural. All literature included in this review utilizes FORHP's definition of rural. Therefore, hospitals are classified as rural if located within a nonmetropolitan county or have a RUCA code of four or higher within a metropolitan county (Freeman et al., 2015; HRSA, 2018; USDA, 2019).

In 2015, researchers at the NCRHRP published a report profiling the modern rural hospital. The researchers collected and analyzed data related to services and population

characteristics from rural hospitals across the US and created a profile for an average rural hospital. An average rural hospital in the US is located in a rural area with a median population of 27,980, has 25 inpatient beds, and an average daily inpatient census of seven patients. In addition to inpatient services, the typical rural hospital offers outpatient surgery, cardiac rehabilitation, and mammography services. A typical rural hospital has a positive total margin of 2.7% and 58 days of cash on hand. Outpatient services represent the majority (69.3%) of total revenue, while Medicare patients represent 31% of all charges. The average rural hospital is located in a county where approximately 17% of the population is 65 years or older, and close to 18% of the population lives below the federal poverty level (Freeman et al., 2015).

Rural hospitals face significant financial challenges. Compared to urban hospitals, rural hospitals rely more heavily on federal and state payers, have lower volume, limited services, and a higher percentage of the patient population that is uninsured. Federal lawmakers recognize that the survival of a rural hospital is critical in maintaining access to care in rural communities. Over the years, federal lawmakers have experimented with different payment classifications for rural hospitals under the Medicare program to improve the financial viability of these organizations. There are currently four rural hospital classifications, which include critical access hospitals (CAHs), Medicare-dependent hospitals (MDHs), sole community hospitals (SCHs), and rural referral centers (RRCs) (G. Holmes et al., 2013; Uecker, 2018).

A CAH is currently reimbursed at 99% of allowable costs for inpatient, outpatient, laboratory, rehabilitation (physical therapy), and post-acute services. A rural hospital is eligible for CAH status if it is located at least 35 miles from the nearest hospital, has 25 inpatient beds or less, provides 24/7 emergency care, and maintains an acute care average length of stay of 96 hours or less. A CAH is also eligible to receive cost-based reimbursement if it owns the sole

ambulance service within 35 miles of the facility. Over 50% of rural hospitals in the US are CAHs (G. Holmes et al., 2013; iVantage, 2016; RHIhub, 2019; Topchik, 2017; Wishner, Solleveld, Paradise, et al., 2016).

MDHs serve rural populations with a high proportion of Medicare beneficiaries. Therefore, MDHs face financial challenges in offsetting low Medicare reimbursement, uncompensated care, and charity care with other sources of revenue due to low volumes and limited services. To ensure financial stability, MDHs are provided additional payments from Medicare. To qualify as an MDH, a rural hospital must have 100 inpatient beds or less with Medicare patients accounting for 60% or more of the hospital's inpatient discharges. MDHs account for 8% of rural hospitals in the US (G. Holmes et al., 2013; RHIhub, 2018a; Wishner, Solleveld, Paradise, et al., 2016).

Rural hospitals can be designated as an SCH when it is located 25-35 miles from the nearest like hospital, has less than 50 inpatient beds, and is the exclusive provider of care for Medicare patients in a particular community. A rural hospital can also be classified as an SCH if it is located 50 miles or more from the nearest hospital or located in an area where the nearest hospital is inaccessible. Medicare provides enhanced reimbursement to these organizations based on hospital-specific rates outlined in relevant legislation. SCH may also be eligible for Medicare payment adjustment if the organization experiences a significant decrease in patient volume. Thirteen percent of rural hospitals are classified as an SCH (G. Holmes et al., 2013; RHIhub, 2018a; Uecker, 2018).

RRCs are rural tertiary hospitals that receive referrals for high-volume complex cases from surrounding acute care rural hospitals. To be classified as an RRC from CMS, the hospital must have at least 275 inpatient beds, is the primary provider of care for Medicare beneficiaries

in a specific area, has high referral volume, and has a comparable case mix to an urban hospital within its region. RRCs are exempt from the Medicare disproportionate share hospital payment cap. RRCs account for 11% of rural hospitals in the US (G. Holmes et al., 2013; RHIhub, 2018a; Uecker, 2018).

### **Key Milestones in Rural Health Policy**

Changes to existing and the development of new health policy have had a significant and sometimes negative impact on rural hospitals. Many rural hospitals operate with thin margins and offer limited services with limited resources. Therefore, significant changes to Medicare and Medicaid reimbursement, along with increased regulatory and reporting demands, can potentially exacerbate the long-term financial sustainability of a rural hospital. However, federal and state lawmakers understand the importance of a rural hospital's survival within its community and have passed legislation to improve the financial viability of these hospitals over the years. This section of the review will provide the reader a brief overview of critical milestones in rural health policy, including the Hill-Burton Act of 1946, Medicare and Medicaid, the implementation and impact of the Medicare prospective payment system, Rural Hospital Flexibility Program, and the ACA (RCHI, 2017).

**Hill-Burton Act of 1946.** Shortly after the official end of World War II, President Harry S. Truman shifted his Administration's focus to improving the health of all Americans. In November 1945, President Truman outlined his five goals to improve national health in a speech to Congress. The five priorities were to 1) develop and bolster public health services (including maternal and child healthcare), 2) increase investment in medical research and education, 3) address high cost of medical care, 4) address lost income from sudden illness, and 5) address the shortage and disparity of healthcare professionals, especially in rural and low-income

communities (Markel, 2014; Schumann, 2016).

While some of President Truman's goals were seen as radical and controversial, legislators worked together in a bipartisan manner to address the shortage and disparity of healthcare professionals in the country. On August 13, 1946, President Truman signed into law the Hospital Survey and Construction Act. The legislation has historically been referred to as the "Hill-Burton Act" (HBA) to recognize the two senators who sponsored the bill. The HBA called for a survey of healthcare facilities within the country to identify areas in need of increased access to care and the construction of healthcare facilities in these areas. The HBA provided federal grants and guaranteed loans to states and communities to build and modernize hospitals, nursing homes, and other needed healthcare facilities. In return, communities had to provide healthcare services to a particular volume of individuals who were unable to afford care (HRSA, 2017; Mantone, 2005; Meit & Knudson, 2009; RCHI, 2017; Schumann, 2016; Wishner, Solleveld, Paradise, et al., 2016).

Since the enactment of HBA, over \$4.6 billion in federal grants and \$1.5 billion in federal loans have been allocated to healthcare facility-related construction projects in over 4,000 communities throughout the country. The HBA resulted in a significant rise in the number of rural hospitals and health centers across the country. By 1975, the HBA was responsible for the existence of almost one-third of the country's total number of hospitals (HRSA, 2017; Mantone, 2005; Schumann, 2016).

The HBA has had a long-lasting impact on the US healthcare system. Financing policies from the HBA are still practiced today. For example, nonprofit hospitals must demonstrate evidence of community benefit in order to maintain their tax-exempt status. Also, with the significant rise in community hospitals throughout the country, the HBA has indirectly elevated



the expectation among Americans that every community should have a hospital. Many Americans expect the same technology, level of service, and specialty care access from their community hospital as they receive from larger urban hospitals (RCHI, 2017; Schumann, 2016).

**Medicare and Medicaid.** In 1945, President Truman proposed a universal health insurance program as part of his five goals to improve national health. In a speech to Congress, President Truman stated:

Millions of our citizens do not now have a full measure of opportunity to achieve and enjoy good health. Millions do not now have protection or security against the economic effects of sickness. The time has arrived for action to help them attain that opportunity and that protection (Markel, 2014).

President Truman, however, was unable to pass legislation to create a universal health insurance program due to strong opposition in Congress. Twenty years later, on July 30, 1965, President Lyndon Johnson signed into law Medicare and Medicaid. The main objective of the two programs was to reduce barriers to healthcare for aging adults and individuals living in poverty. President Truman sat next to President Johnson as he signed the two programs into law. At point one during the ceremony, President Johnson declared President Truman as the real father of Medicare (CMS, 2019e; Leonard, 2015; Markel, 2014).

The original Medicare program included coverage for inpatient care (Part A) and outpatient care (Part B). Up to 19 million Americans enrolled in Medicare shortly after its passage. Over the years, Medicare has grown both in the number of benefits and people eligible for coverage. In 1971, Medicare began covering nursing home care for low-income seniors. The Medicare Prescription Drug Improvement and Modernization Act of 2003 approved private supplement health plans known as Medicare Advantage Plans. The legislation also created an

optional prescription drug benefit option known as “Part D.” As of 2018, over 40 million Americans are enrolled in Medicare (CMS, 2018; KFF, 2019; Leonard, 2015).

Medicaid in 1965 initially provided health coverage to Americans who were receiving government assistance. Since 1965, Medicaid coverage has expanded and has become the largest health insurance program in the US (Leonard, 2015). Medicaid provides health insurance coverage to low-income Americans, individuals with disabilities, low-income children, and senior citizens receiving long-term care, which Medicare does not cover (CMS, 2019b; Toledo, 2017).

Medicaid is a joint state and federal program that is governed by the states. Each state’s governor must designate a Medicaid agency responsible for deciding how the state will administer its Medicaid program. Each state’s Medicaid program is required to cover certain mandatory services in order to receive matching funds from the federal government to help offset a percentage of Medicaid program expenditures. However, states have the flexibility to set eligibility requirements, delivery system and provider payment methods, provider qualifications, additional benefits in addition to the mandatory requirements, and administrative activities required to carry out the program (BIAA, 2019; CMS, 2019b; Toledo, 2017). Any changes to a state’s Medicaid program must be submitted and approved by the Centers for Medicare and Medicaid Services (CMS) (Toledo, 2017).

The passage of Medicare and Medicaid into law has had long-lasting impacts throughout the healthcare industry and country. In addition to increasing health insurance coverage, Medicare and Medicaid helped to mitigate racial segregation practices by healthcare facilities in the 1960s. Also, Medicare and Medicaid have had a significant impact on rural health. Rural

residents are often older, poorer, and more likely to benefit from government programs such as Medicare and Medicaid (AHA, 2019; Leonard, 2015).

**Medicare's Prospective Payment System.** Before the implementation of the Medicare Prospective Payment System (PPS) in 1983, hospitals were reimbursed by Medicare on a retrospective cost basis, which provided no incentive for hospitals to control costs. Under this model, a hospital's reimbursement matched whatever they spent. For this reason, hospital costs increased faster than the overall rate of inflation. In 1982, Congress started to take action to slow the significant rise in healthcare costs with the passage of the Public Law and Tax Equity and Fiscal Responsibility Act. The legislation established a limit on the total amount Medicare would reimburse a hospital for an inpatient stay. Congress also directed the Department of Health and Human Services (DHHS) to propose a plan to incorporate incentives for hospital cost control and management efficiency within its payment model. In 1983, under the Social Security Amendments, the Medicare PPS was implemented (Guterman & Dobson, 1986; Kent, 2016; Leonard, 2015).

The chief objective of PPS was to curtail the rapid growth of Medicare inpatient spending and overall hospital cost inflation while ensuring that all Medicare beneficiaries would continue to have access to quality and affordable care. PPS replaced retrospective cost-based reimbursement with a fixed payment system. Fixed payments to hospitals were based on standardized diagnosis-related groups (DRG), which classify patients into specific groups that are clinically distinct and homogenous in the number of resources needed to treat the patient. The fixed payments are determined in advance and pay for a patient's specific unit of service or case instead of a per day or per-procedure basis. The PPS model incentivized hospitals to control costs and improve efficiency. Therefore, inefficient hospitals with costs higher than the payment

rate for a certain DRG would lose money. However, efficient hospitals with costs lower than the PPS payment would be able to keep the additional reimbursement (Coulam & Gaumer, 1991; GAO, 2018; Guterman & Dobson, 1986; Kent, 2016).

Less than 12 years after the implementation of PPS, a large number of rural hospitals closed. In fact, during the 1980s and 1990s, approximately a sixth of the hospitals in the US closed. According to a 2018 Government Accountability Office (GAO) report, 140 rural hospitals closed between 1985 and 1988 (GAO, 2018). Initial studies that evaluated the association of PPS with the significant rise in rural hospital closures were mixed but did not rule out PPS as a leading cause. Studies showed that closures were associated with hospitals that had declining volumes, low case mix, higher debt, a limited number of inpatient beds, limited physician availability, declining population base, and a high unemployment rate among its patient population. One study concluded that PPS might have contributed to the rise in rural hospital closures. The researchers posited that PPS payments did not buffer the volatility in patient volumes often seen in rural hospitals. Further studies conducted in the 1990s continued to show evidence that smaller hospitals were more likely to close as a result of PPS payments than larger urban hospitals (Coulam & Gaumer, 1991; GAO, 2018; B. G. Kaufman, Thomas, et al., 2016; Kent, 2016; Mantone, 2005; Troxell, 2017).

**The Medicare Rural Flexibility Program.** Hospital closures in the US during the 1980s and 1990s raised alarms about access to care in rural communities. In the 1990s, approximately 460 hospitals closed with 35% of the closures occurring in rural areas of the country (Poley & Ricketts, 2011). The majority of rural hospital closures occurred in the Central and Southeast regions of the US. Federal lawmakers in the 1990s started to acknowledge that PPS may be causing undue financial distress among small hospitals, which led to various experimentation

projects with cost-based reimbursement and service limitations for rural hospitals. The Medicare Rural Hospital Flexibility Program and critical access hospital (CAH) designation was created as part of the Balanced Budget Act of 1997 (Court, 2007; Dalton et al., 2003; RHIhub, 2019; Troxell, 2017).

Under the Balanced Budget Act of 1997, states are provided federal funding to develop rural health plans tailored to the specific needs of the state. Federal funding enables states to create cooperative rural health networks linking CAHs, emergency medical services (EMS), and clinics to improve access to care among rural communities. Also, the Flex Program provides support to states for financial and operational improvement programs, population health integration, quality improvement, integration of innovative care models, and the designation of CAHs (Court, 2007; NRHRC, 2019; RHIhub, 2019).

The primary objective of the CAH designation, as part of the Flex Program, is to mitigate challenges associated with the financial sustainability of rural hospitals and improve access to essential healthcare services within rural communities. The CAH designation allows rural hospitals to meet the conditions of participation in Medicare with less rigid service and staffing requirements. Hospitals eligible for the CAH designation receive cost-based reimbursement (101% of costs) for outpatient and inpatient services provided to Medicare beneficiaries, which is above the rate of reimbursement hospitals would have received from Medicare under PPS (Dalton et al., 2003; MedPAC, 2016).

However, in early 2013, federal spending cuts, referred to as “sequestration,” resulted in a two percent cut in Medicare spending, which has impacted rural hospitals across the board, especially CAHs. Sequestration has resulted in a decrease in cost-based reimbursement for services provided to Medicare beneficiaries from 101% to 99% (iVantage, 2016; Topchik, 2017).

Under the cost-based reimbursement model, CAHs are reimbursed at an interim rate for inpatient and outpatient services throughout the year. At the end of the fiscal year, CAHs may receive an additional payment from Medicare through a retrospective settlement that accounts for the difference in interim payments made throughout the year and allowable costs documented in the organization's Medicare cost report. Medicaid reimbursement to CAHs is determined by each state's Medicaid program (Court, 2007; Dalton et al., 2003; NRHRC, 2019).

The initial legislation outlining CAH eligibility requirements within the 1997 Balanced Budget Act was more restrictive than today's requirements. For example, in 1997, CAHs could not have more than 15 acute care beds and were required to maintain an average length of stay of 96 hours or less for each acute care patient. Over time, CAH eligibility requirements were revised in subsequent legislation. For a rural hospital to be eligible for CAH status today, rural hospitals must provide 24/7 emergency care, have no more than 25 inpatient beds, are located at least 35 miles away from the nearest hospital, and an acute inpatient annual average length of stay of 96 hours or less (Court, 2007; Dalton et al., 2003; RHHub, 2019).

**Patient Protection and Affordable Care Act (ACA).** On March 23, 2010, President Barack Obama signed the ACA into law, which promised to expand health coverage to millions of Americans through several critical provisions. First, the law mandated the creation of healthcare exchanges to provide individuals who did not have employer covered insurance or were eligible for Medicare or Medicaid access to affordable healthcare coverage. Second, the law imposed penalties on large employers who did not offer affordable health insurance coverage to their full-time employees. The law also introduced new regulations for insurance companies, such as preventing health plans from denying individuals coverage due to preexisting conditions. Parents, through the dependent coverage provision, were able to keep their children

on their insurance plan until the age of 26. Also, the ACA aimed to transform Medicare reimbursement payment from a fee-for-service model to a value-based model where hospitals would be reimbursed based on the quality of care provided to patients (French et al., 2016; HHS, 2013; Kaiser Family Foundation, 2012; RCHI, 2017).

Provisions of the ACA also aimed at improving funding for rural health providers. Over a billion dollars was allocated to efforts to address the issue of physician shortages in rural areas such as improving primary care grants and scholarships and establishing a National Healthcare Workforce Commission to coordinate and develop a national healthcare workforce strategy. By far, the most critical provision of the ACA for rural health providers was the expansion of Medicaid. Under the ACA, the minimum income eligibility requirement was increased to 138% of the federal poverty level (FPL) for adults less than 65 years of age (Greenhalgh, 2014; Kaiser Family Foundation, 2012). As part of the ACA, the federal government provided states funding to cover 100% of the costs associated with expansion, given that millions of Americans would now be eligible for Medicaid coverage. However, federal funding has decreased since 2016 and will only cover 90% of costs associated with Medicaid expansion starting in 2020. Initially, the ACA required states to expand Medicaid. If a state decided not to expand Medicaid, the federal government would withhold Medicaid funding (Greenhalgh, 2014; Kaiser Family Foundation, 2012).

Rural hospitals have traditionally received payments from the Medicaid Disproportionate Share Hospital Program. Federal law requires that all hospitals must provide care to a patient, regardless if they are able to pay, when the patient presents for emergency care. Each year, the federal government provides states an allotment of funding to cover expenses related to providing uncompensated care. The ACA aimed to reduce the amount of DSH funds on an

incremental basis since provisions of the ACA, such as Medicaid expansion, were supposed to decrease the amount of uncompensated care. However, in the summer of 2012, the U.S. Supreme Court ruled the Medicaid expansion requirement to be unconstitutional. As a result of the ruling, states were granted the right to decide on whether to expand Medicaid or not. For non-expansion states, reductions in DSH payments could present a financial challenge for rural hospitals that care for a large number of uninsured patients. Furthermore, the decision by some states to not expand Medicaid has left thousands of low-income individuals to live in what is known as the "health coverage gap." Low-income individuals within the coverage gap do not qualify for subsidies in the health insurance marketplace nor meet income eligibility requirements for Medicaid coverage (Balasubramanian & Jones, 2016; Greenhalgh, 2014; B. Kaufman, Reiter, et al., 2016; Lindrooth et al., 2018; Toledo, 2017; Weeks, 2018).

Since 2010, there has been a significant rise in the number of rural hospital closures. Research has shown that hospitals in states that have expanded Medicaid have experienced an increase in Medicaid revenue and a decrease in charity care and bad debt. In comparison, rural hospitals in non-expansion states are less profitable and provide a larger volume of uncompensated care. Studies have also indicated that hospitals in expansion states were six times less likely to close compared to non-expansion state hospitals. From 2005 to 2015, the unadjusted rate of hospital closures in non-expansion states was significantly higher than the expansion states. However, according to the NCRHRP, a state's decision to expand Medicaid has not yet been directly linked to a higher rate of hospital closures for a particular state. NCRHRP researchers argue that other confounding factors may lead to an increased rate of rural hospital closure. For example, a rural hospital located in the South census region of the US may have a higher number of socio-economic challenges that influence the rate of hospital closures (B.



Kaufman, Reiter, et al., 2016; B. G. Kaufman, Thomas, et al., 2016; Lindrooth et al., 2018; Pink & Holmes, 2018).

In addition to Medicaid expansion, the ACA has had a long-lasting impact on rural healthcare. A 2016 University of Iowa study indicated that 2016 premium rates in the health insurance exchanges were disproportionately higher in rural areas. The availability of insurers in the exchanges has further exacerbated the issue of affordable health coverage. One study found that some states with exchanges containing high-deductible plans saw a significant increase in bad debt. The Trump Administration has further complicated the health insurance marketplace by cutting marketing funding and shortening enrollment periods. Also, researchers have identified several additional ACA provisions that could disproportionately affect rural hospitals, such as additional regulatory compliance requirements (Mason, 2017; RCHI, 2017; Weeks, 2018).

### **Rural Hospital Closure Trends Since 2005**

Since 2010, there has been a significant increase in the number of rural hospital closures in the US not seen since the 1980s and 1990s when a large number of rural hospitals closed due to the financial implications of Medicare's PPS payment model. According to the NCRHRP, a "rural hospital closure" is defined as any hospital that discontinues offering inpatient services or relocates its inpatient services 15 miles or more from the organization's current location. Since 2005, 166 rural hospitals in the US have closed with a majority of the closures, 124, occurring since 2010. (GAO, 2018; B. G. Kaufman, Thomas, et al., 2016; Pink & Holmes, 2018; Sheps Center, 2020; Topchik, 2020).

A rural hospital closure includes abandoned hospitals or hospitals that converted its services to alternative models of care that do not include inpatient services. Abandoned hospitals

are facilities that no longer provide any healthcare services. The majority of abandoned rural hospitals in the US are located in the South census region, where residents have more socio-economic challenges such as higher rates of poverty. Table one shows the number of rural hospital closures each year since 2005. The number of closures has been compiled by the NCRHRP, which is part of the Cecil B. Sheps Center for Health Services Research. The rate of rural hospital closures decreased in 2016 (12) and 2017 (10). However, there has been over 38 rural hospital closures in the last 26 months with 2019 having the highest number of closures in a single year since the closure crisis began (Chartis Center for Rural Health, 2020; B. G. Kaufman, Thomas, et al., 2016; Pink & Holmes, 2018; RHRG, 2017; Sheps Center, 2020; Thomas et al., 2015; Topchik, 2020).

Table 1: Rural Hospital Closures by Year, 2005 – 2020 To Date

Year	Number of Rural Hospital Closures
2020	4*
2019	19
2018	15
2017	10
2016	12
2015	17
2014	16
2013	14
2012	9
2011	5
2010	3
2009	10
2008	6
2007	9
2006	8
2005	9

*Note:* Adapted from Sheps Center, (Sheps Center, 2020). Rural Hospital Closure Tracking.

\* As of February 2020

Researchers at the NCRHRP have developed a financial risk prediction model referred to as the Financial Distress Index (FDI). The purpose of this tool is to develop an “early warning system” to identify rural hospitals that are at a high risk of closure. The FDI model theorizes financial distress as a phenomenon with four major subsequent financial events starting with unprofitability and ending with closure. Research has shown the rate of closure for hospitals classified as high risk of financial distress with the FDI model increases significantly compared to hospitals at lower risk (B. Kaufman, Pink, et al., 2016).

The number of rural hospitals predicted to be at high risk of financial distress has been increasing over the past few years. In 2019, over 20% of rural hospitals in the US are predicted to be at a high to moderate risk of financial distress. The majority of rural hospitals (73%) predicted to be at high risk of financial distress are located in the South census region of the US. Since 2015, the proportion of southern rural hospitals predicted to be at high risk of financial distress has increased from 13% to approximately 19% in 2019. Currently, six out of the 16 states within the South have more than 20% of their rural hospitals classified as being at a high risk of financial distress (B. G. Kaufman, Randolph, et al., 2016; Thomas et al., 2019b; Thomas & Pink, 2019).

In September 2019, the Chartis Center for Rural Health developed a model to ascertain the probability of rural hospital closure. The model identified 453 out of 1,844 open rural hospitals as being vulnerable to closure with 216 hospitals considered to be “most vulnerable” and 237 “at risk.” The majority of rural hospitals that were identified as vulnerable or closed were located in the Southeast and lower Great Plains regions of the US corroborating the findings in research conducted by the NCRHRP (Chartis Center for Rural Health, 2020; Topchik, 2020).

Also, research has shown financial distress risk varies by the hospital's Medicare payment classification. PPS and MDH rural hospitals have the highest proportion of hospitals at a high risk of financial distress. Since 2015, the proportion of CAHs to be at high risk increased from 6.8% to 7.3% in 2019. CAHs account for the majority of rural hospitals in the US (Thomas & Pink, 2019).

### **Impact of Hospital Closure on Rural Communities**

Rural communities tend to be older, poorer, less educated, have higher unemployment rates, higher rates of public insurance, and a higher percentage of residents reported to have poorer health compared to urban communities (AHA, 2016b; B. G. Kaufman, Thomas, et al., 2016; Pink & Holmes, 2018; RCHI, 2017; Richman & Pink, 2017; Thomas et al., 2016; Thomas & Pink, 2019). A hospital closure can have a devastating and far-reaching impact on a rural community, further exacerbating the health, economic, and care access disparities for residents in these communities. The recent rise in the number of rural hospital closures is putting many rural communities at risk for adverse health and economic outcomes. The NCORHP reported in 2018 that over 660,000 rural residents throughout the country currently live in counties without access to an acute care hospital, federally qualified health center, or rural health center (Clawar et al., 2018; B. Kaufman, Pink, et al., 2016; B. G. Kaufman, Randolph, et al., 2016; Mitchell, 2019; Pink & Holmes, 2018; RCHI, 2018; RHRG, 2017; Richman & Pink, 2017; Robles, 2019; Thomas et al., 2019a; Thomas & Pink, 2019).

Recent research has shown that rural residents often travel long distances to receive healthcare services after the closure of their local hospital. Studies conducted by the Chertis Center for Rural Health and RCHI found that rural residents often have to travel from 20 to 30 miles to receive care. A study of 68 rural communities where a hospital closed found that

residents had to travel 30 minutes or more to reach the nearest hospital (RCHI, 2017; Topchik, 2020). The additional travel burden to receive care after a hospital closure disproportionately affects rural residents who do not have access to transportation, who live in poverty, or are experiencing an emergency. Thomas et al. (2015) conducted a non-random, qualitative survey of community stakeholders in areas where a rural hospital recently closed. Community stakeholders indicated that vulnerable groups, including the elderly, individuals with mental and physical disabilities, pregnant women, and ethnic minorities within the community, were affected the most. Access to transportation was discovered to be the most significant barrier for the group. Wishner et al. (2016) found that the elderly are more likely to forgo needed care after a rural hospital closure due to barriers associated with transportation (Adaniya, 2016; Balasubramanian & Jones, 2016; M. Holmes & Thomas, 2019; RCHI, 2017; RHRG, 2018; Thomas et al., 2015; Topchik, 2020; Wishner, Solleveld, Paradise, et al., 2016).

In addition to travel time, rural hospital closures can also lead to gaps in care. Wishner et al. (2016) discovered in communities under study where a hospital recently closed, the loss in access to emergency care had the most significant impact. Emergency departments (ED) in rural communities often are a source of primary care and a safety-net for residents with mental health or substance abuse needs. Additionally, EDs provide emergency services where rural patients can be stabilized and then transferred to receive a higher level of care. Also, Wishner et al. noted decreasing access to specialty care within the communities under study. In addition to losing access to specialty care clinics, rural residents also lost access to referrals to specialists from other providers associated with the hospital. The study indicated that soon after a rural hospital closed, physicians left the rural community to practice in other areas associated with the health

system or pursued other opportunities outside of the health system, further exacerbating the shortage of healthcare providers within the rural area (Wishner, Solleveld, Paradise, et al., 2016).

The impact of a hospital closure in a rural community reaches beyond access to care. The closure of a rural hospital can have a devastating impact on the local community's economy through loss in employment, drop in per capita income, loss of local businesses, and lower housing values. In rural America, the hospital is often one of, if not the largest, employer in the community representing roughly 20% of employment and income. In addition to a rise in unemployment within a rural community, recent studies have highlighted the impact of outward migration after hospital closure. According to Wishner et al. (2016), the rise in migration of residents from a rural community can decrease the tax base, which can negatively impact local schools and public services. Also, studies show that hospital closure can prevent rural communities from attracting new employers further stymying economic growth. For example, Wishner et al. states that some employers may decide not to relocate or open a new facility in a community if their employees do not have access to healthcare services (Adaniya, 2016; Balasubramanian & Jones, 2016; M. Holmes & Thomas, 2019; Mason, 2017; Pink & Holmes, 2018; RCHI, 2017; RHRG, 2017; Think NC First, 2019; Thomas et al., 2015; Wishner, Solleveld, Paradise, et al., 2016).

The actual economic impact of a hospital closure in a rural community in the literature is mixed, and researchers state that the degree of impact may be dependent on the unique characteristics of the population and hospital. One study found no significant economic differences when comparing counties with a closed hospital to counties with an operational hospital. However, the authors argued it might be possible that in the communities where a hospital closed, the economic footprint of the organization was diminished to the point that its

closure did not make an impact it would have if it were financially healthy. Another study found an estimated four percent drop in per capita income and close to two percent rise in the unemployment rate in the first year after the closure of the community's sole hospital. Another study in Oklahoma found that a rural community could lose an estimated \$2 to \$6.4 million in retail sales if its hospital were to close. While the degree of economic impact may differ from one community to the next, there is no question that hospitals play a vital role in a rural community's economic well-being (Adaniya, 2016; M. Holmes & Thomas, 2019; RCHI, 2017).

### **Drivers of the Recent Rise in Financial Distress and Closure Among Rural Hospitals**

Multiple studies in the literature conclude that one of the most significant factors contributing to rural hospital closure is financial. Low levels of profitability, liquidity, equity, and market share increase the likelihood of a rural hospital to experience financial distress. Profitability, specifically, is a consistent predictor of both financial distress and closure. In 2019, an estimated 47% of all rural providers are operating with a negative operating margin (Chartis Center for Rural Health, 2020; Topchik, 2020). Researchers have been developing models to predict financial distress and closure. However, the models tend to be more academic rather than a practical tool and have yet to be adopted by rural health leaders for widespread use in real-time problem-solving. Some researchers would argue that no metrics have been proven to assess the viability of a rural hospital consistently. Rural hospital closure is a result of a myriad of causal factors, both financial and non-financial, including recruitment and retention of healthcare professionals, population migration, health disparities, healthcare policies, and economic policies. According to Kaufman et al. (2016), the causal factors associated with rural hospital closures can be categorized in two distinct but interrelated groups: internal (poor financial health, low occupancy, lack of healthcare professionals) and external (market) factors (Chartis Center

for Rural Health, 2020; M. Holmes & Thomas, 2019; B. G. Kaufman, Thomas, et al., 2016; Kent, 2016; RCHI, 2017; Troxell, 2017).

**Internal Factors.** According to a 2018 US Government Accountability Office (GAO) report, financial distress was found to precede the closure of a rural hospital. Adaniya (2016) points out that significant declines in services offered by rural hospitals with increasing financial distress were found to be evident in the last two to three years before closure. The NCORHP developed a model that both conceptualizes and predicts financial distress for rural hospitals. The model highlights profitability, payer mix, hospital size and ownership, and market characteristics as the most critical factors associated with financial distress. Profitability, often measured by the total margin, is the most consistent indicator of financial distress. Pink and Holmes (2018) testified to the Senate Finance Committee that urban hospitals were twice as profitable (5.51% urban v. 2.56% CAH and 2.01% other rural hospitals) than rural hospitals in 2016. The 2018 GAO report on rural hospital closures indicated hospitals that closed all had a negative operating margin one to five years before closure (Adaniya, 2016; GAO, 2018; B. G. Kaufman, Randolph, et al., 2016; Pink & Holmes, 2018).

Kaufman et al. (2016) evaluated the potential causal factors associated with rural hospital closure from 2010 to 2014. The researchers discovered that closed rural hospitals had significantly lower total margin, operating margin, current ratio, days cash on hand, and higher debt levels. A separate study conducted by the Texas A&M Rural and Community Health Institute (RCHI) indicated that rural hospitals often had a lower total margin (-7.37% v. -3.83%) and operating margin (-7.48% v. -5.70%) than open hospitals. Also, research has shown that geography may play a role in unprofitability. For example, rural hospitals such as CAHs located in the South census region are less profitable when compared to CAHs in other regions of the US



(Adaniya, 2016; GAO, 2018; B. G. Kaufman, Thomas, et al., 2016; Mason, 2017; Pink & Holmes, 2018; RCHI, 2017; Thomas et al., 2016; Topchik, 2017).

Multiple interrelated internal factors contribute to financial distress and unprofitability, including payer mix, outpatient revenue, aging facilities, low occupancy, ownership, staff retention and recruitment, case mix index, system affiliation, and organizational leadership. A majority of rural hospitals' payer mix is dominated by patients that rely on Medicare and Medicaid. The American Hospital Association (AHA) reported that in 2017, Medicare and Medicaid accounted for approximately 56% of an average rural hospital's revenue. Mason (2017) stated in the Journal of the American Medical Association that Medicare and Medicaid accounted for up to 60% of revenues for some rural hospitals compared to 45% for urban hospitals (Adaniya, 2016; AHA, 2019; Chartis Center for Rural Health, 2020; Mason, 2017; Pink & Holmes, 2018; RCHI, 2017; Thomas & Pink, 2019).

Medicare and Medicaid reimburse at a lower rate compared to non-government health plans. According to the AHA (2019), hospitals are reimbursed only 87 cents for each dollar spent on providing care for patients with Medicare and Medicaid. Rural populations are often older, sicker, more reliant on government payers, and often have more chronic conditions compared to urban residents. Sicker patients on Medicare and Medicaid, coupled with declining patient volumes, further exacerbate a rural hospital's financial health. As outmigration from rural communities continues, rural hospitals will see declining patient volumes making it harder to spread fixed costs within the organization, significantly impacting profitability. In Texas, the RCHI conducted interviews with leaders of recently closed rural hospitals and identified a lack of patient volumes as a significant contributor to rural hospital closure within the state (Adaniya, 2016; AHA, 2019; Mason, 2017; Pink & Holmes, 2018; RCHI, 2017; Thomas & Pink, 2019).

The Hill-Burton Act of 1947 facilitated the construction of thousands of hospitals throughout the country, especially in rural areas. Today, many of these hospitals are still in operation and require significant renovation and modernization. However, due to limited margins, rural hospitals do not have access to capital to invest in improving their aging facilities. Wishner et al. (2016) found that a facility's aging infrastructure can create a perception within the local community that the hospital provides poor quality care. As a result, rural residents with private insurance and access to transportation bypass the rural hospital to larger and newer hospitals with state of the art healthcare technology in nearby communities. The outmigration of these patients resulted in a worsening payer mix and elimination of services for one hospital included in the case study (AHA, 2019; Kent, 2016; Mantone, 2005; Wishner, Solleveld, Paradise, et al., 2016).

Rural hospitals and communities also face challenges in recruiting and retaining highly skilled healthcare professionals. Approximately 20% of the US population lives in rural areas. However, only ten percent of physicians practice in these communities. Rural areas of the US are often designated as health professional shortage areas. More than 70% of health professional shortage areas are rural. One of the most critical healthcare challenges in rural America is access to primary care. According to Clawar et al. (2018), there were fewer primary care physicians (PCPs) in non-metropolitan areas (55.1 per 100,000 people) than urban areas (79.3 per 100,000) in 2013. The AHA reports that as of November 2018, a majority of the primary care health professional shortage areas were in rural areas. Access to mental health and substance abuse treatment in rural areas are also severely limited due to a lack of healthcare professionals and facilities (Adaniya, 2016; AHA, 2019; Clawar et al., 2018; Mason, 2017; Troxell, 2017; Weeks, 2018).

Physician burnout and lower salaries have also been challenges in recruiting and retaining physicians in rural settings. Many organizations have turned to nurse practitioners, physician assistants, and other mid-level practitioners to fill this gap. However, state licensure laws have limited the practice of these providers, which limits the services they can provide to rural communities. Lastly, difficulty in recruiting and retaining healthcare professionals is not limited to physicians as there are workforce shortages across all disciplines in rural communities. A 2018 Medical Group Management Association Stat survey discovered a majority of their respondents were experiencing difficulty in recruiting qualified candidates for non-clinical positions (Adaniya, 2016; AHA, 2019; Weeks, 2018).

The literature also identified leadership as an internal contributing factor associated with rural hospital closure. Many rural hospitals face challenges in recruiting and retaining highly skilled and knowledgeable leaders. In addition to recruiting highly skilled leaders such as chief executive officers, rural hospitals are often challenged in recruiting a competent governing board. In some instances, a rural hospital's governing board may be comprised more of well-known community residents as opposed to qualified stakeholders. Finally, rural hospitals that are part of a more extensive health system often are disproportionately affected by decisions made by health system leaders outside of their organization. The RCHI posits that large health systems do not often have the right metrics to measure a rural hospital's performance. These measures are often developed for larger organizations that are held to different payment models and regulations. Wishner et al. (2016) conducted three case studies on recently closed rural hospitals. The health system of each hospital decided to close the hospitals based on decisions that favored other hospitals within the health system as opposed to the needs of the rural communities these organizations served (RCHI, 2017; Troxell, 2017; Wishner, Solleveld, Paradise, et al., 2016).

**External factors.** In recent years, an increasing number of studies have highlighted that of all the factors that contribute to a rural hospital's closure, the characteristics of the surrounding community may be the most significant. Rural communities served by rural hospitals at a high-risk of financial distress tend to be older, poorer, less educated, have higher unemployment rates, higher rates of public insurance, and a higher percentage of residents reported to have poorer health compared to urban communities. According to Kaufman et al. (2016), the odds of hospital unprofitability increase when a community has a higher rate of elderly residents, poverty, and increased market share competition from nearby hospitals. Also, research into rural hospital closures has indicated that location is a significant contributor as well. The majority of rural hospital closures have occurred in the South census region of the US, where communities face more significant socioeconomic challenges when compared to other parts of the country. This section of the review will provide the reader an overview of external contributing factors of rural hospital closure and financial distress including shifting population demographics, socioeconomic challenges, health characteristics of rural communities, market competition, and impact of recent health policy changes (Clawar et al., 2018; B. G. Kaufman, Thomas, et al., 2016; Pink & Holmes, 2018; Thomas et al., 2015, 2016; Thomas & Pink, 2019).

Changing demographics of rural communities over the last decade has been a significant challenge for rural health providers. Rural America is generally older when compared to urban areas. According to Paluso et al. (2018), the median age of a rural resident is 51 years of age, while the median age of an urban resident is 45 years of age. Also, multiple studies indicate that rural communities have a more substantial proportion of residents age 65 and older. Furthermore, the population of rural communities is declining. The GAO (2018) reported that from the years 2010 to 2015, the rural population has decreased by 0.9% each year. The Great Recession has

had a significant impact on rural communities throughout the country. Many rural residents, especially younger individuals, have migrated towards metropolitan areas for work as employment opportunities in rural communities have decreased. As younger individuals and families leave rural areas, the proportion of elderly residents will continue to rise leaving rural hospitals with a smaller patient base and payer mix increasingly dominated by government payers (Adaniya, 2016; AHA, 2019; Bryant, 2017; Freeman et al., 2015; GAO, 2018; B. G. Kaufman, Thomas, et al., 2016; Meit & Knudson, 2009; Paluso et al., 2018; RCHI, 2017; RHRG, 2018; Wishner, Solleveld, Rudowitz, et al., 2016).

Rural communities in some areas of the country are also becoming more diverse. Studies have shown that rural communities with a significantly higher percentage of African American and Hispanic residents are more likely to have a hospital that is in financial distress or closed. The literature does not provide any direct evidence on what could be causing this phenomenon, however, the literature does indicate possible racial disparities in care within rural America (B. G. Kaufman, Thomas, et al., 2016; Meit & Knudson, 2009; Pink & Holmes, 2018; RHRG, 2018; Thomas et al., 2016).

A growing body of research shows that economic, social, educational, and behavioral factors play a more significant role in the overall health of a population than the provision of healthcare alone. Social determinants of health include factors such as education, neighborhood and physical environment, access to healthy food, access to healthcare, and socioeconomic status. Research has shown that all of these factors drive health outcomes. Recent studies have also shown a potential association between rural hospital closures and the socioeconomic characteristics of surrounding communities (Artiga & Hinton, 2018; Irons & Sauer, 2018; Thomas et al., 2016).

Median income levels for rural households are lower when compared to urban households. Freeman et al. (2015) report that the per capita income of rural communities is 20% lower than urban communities. Also, rural counties account for 85% of the counties in the country that are classified as "persistently poor," where over 20% of the county's residents are classified as living in poverty for three consecutive decennial censuses. One study found that rural adults were more likely than urban residents to start a calendar year with an income below 138% of the federal poverty level (FPL). The rural-urban poverty gap also differs by region. Rural communities located in the South census region of the US, where the majority of rural hospital closures have occurred, have the highest rates of poverty in the country. Individuals living in poverty in rural communities are less likely to have health insurance and access to transportation, which may lead these residents to forgo care due to costs. Wishner et al. (2016) indicated that high poverty and uninsured rates, coupled with a declining population, contributed significantly to hospital closure in three rural communities included in the study. The poverty rates for each community were found to be higher than both the state and national averages (Adaniya, 2016; Freeman et al., 2015; M. Holmes & Thomas, 2019; RHRG, 2018; Weeks, 2018; Wishner, Solleveld, Paradise, et al., 2016).

Rural communities have experienced a slower economic recovery from the Great Recession compared to urban communities. The GAO (2018) reports that from 2010 to 2015, rural employment only grew 0.8% each year compared to a 1.9% annual growth rate in urban communities. Research has shown that rural hospitals at a high risk of financial distress are more likely to serve communities with higher rates of unemployment. A rise in unemployment can lead to a decrease in private insurance coverage and an increase in both the uninsured rate and the number of individuals reliant on government assistance programs. Rural hospitals that serve

communities with high unemployment and uninsured rates may see higher levels of uncompensated care. The rural hospital's financial challenge is further exacerbated when higher rates of uncompensated care are met with higher rates of patients reliant on Medicare and Medicaid which reimburse providers less compared to private payers (Adaniya, 2016; GAO, 2018; Mason, 2017; Pink & Holmes, 2018; Richman & Pink, 2017; Thomas et al., 2016, 2019a; Weeks, 2018).

The literature also points out other noteworthy factors related to the social determinants of health that can have an impact on the long-term viability of rural hospitals including inadequate housing, lack of reliable public and private transportation, lower levels of education within the population, less access to healthy food, and poor access to the internet which can stymie the development of telemedicine programs (Adaniya, 2016; M. Holmes & Thomas, 2019; Mason, 2017; Pink & Holmes, 2018; RHRG, 2018; Richman & Pink, 2017; Thomas et al., 2019a; Weeks, 2018).

Also, rural hospitals serve populations that experience numerous health disparities and poorer health when compared to populations in urban communities. The Chartis Center for Rural Health defines health disparities as one population group having a higher burden of mortality, disease, and disability when compared to another population group. In 2016, the Chartis Center for Rural Health developed a health disparities index model to help identify vulnerable communities along with the hospitals that serve these populations. Researchers determined that 671 rural hospitals served disadvantaged populations. Of the 671 rural hospitals, 355 were identified as being vulnerable to closure. The highest concentration of vulnerable communities were located in the South. According to the model, more than 70% of all rural hospitals located in the South were found to serve vulnerable communities. (iVantage, 2016; B. G. Kaufman,

Thomas, et al., 2016; Pink & Holmes, 2018; RHRG, 2018; Richman & Pink, 2017; Thomas et al., 2016, 2019a; Topchik, 2017).

Research shows that rural communities have a higher percentage of residents who suffer from chronic disease conditions (Mason, 2017; RCHI, 2017). For example, rural communities have a higher proportion of residents living with two to four or more chronic diseases compared to urban communities (RHRG, 2018). According to the GAO (2018), a higher percentage of residents in rural communities reported limitations in physical activities due to chronic conditions in 2010-2011 (GAO, 2018).

Compared to urban communities, life expectancy rates have been declining over time, while mortality rates have increased in rural communities. For example, one recent study reported a higher age-adjusted mortality rate per 100,000 population in rural communities (830.5 for rural vs. 703.5 for urban). The NCRHRP reports that an estimated 43% of deaths in rural areas were potentially avoidable (Holmes & Thompson, 2019). In 2017, the Centers for Disease Control and Prevention (CDC) published a report examining the differences in the leading causes of deaths between urban and rural communities. The report found that rural areas had a higher age-adjusted mortality rate than urban areas. The report also found that rural communities had significantly higher age-adjusted mortality rates directly associated with the five leading causes of death, including cancer, heart disease, chronic lower respiratory disease, stroke, and accidental injuries. The higher proportion of potentially excess deaths associated with leading causes of death in rural communities has been linked to higher levels of health risk factors present in rural communities such as obesity, sedentary lifestyles, not wearing seat belts while driving, and higher levels of tobacco use. Furthermore, the CDC reports that the higher level of potentially excess deaths may be linked to limited socioeconomic resources and limited access to



appropriate healthcare services. Rural residents tend to have higher rates of poverty and uninsured or underinsured individuals who may not receive preventative care or delay seeking care (Adaniya, 2016; Garrison et al., 2018; M. Holmes & Thompson, 2019; Irons & Sauer, 2018; Moy et al., 2017; RCHI, 2017; RHRG, 2018; Weeks, 2018).

Rural communities also have less access to mental health and substance abuse treatment services due to provider unavailability, facility shortages, and social stigma associated with mental health within rural areas. The opioid epidemic has especially hit rural communities hard. In 2017, the CDC reported that the rate of deaths associated with opioid overdose in rural communities was on track to surpass opioid death rates in urban America. Over a quarter of rural residents in the US identified substance use, especially opioids, as the biggest issue facing their communities in a recent poll conducted by National Public Radio. In a recent study, Case and Deaton (2015) developed the term “despair deaths” to explain the rise in mortality among White non-Hispanic rural residents. The authors argue that due to declining job markets in rural areas, increasing levels of stress and despair among middle-aged white residents has resulted in increased levels of obesity, tobacco use, substance abuse (i.e., alcohol and opioids), and suicide rates (AHA, 2019; Case & Deaton, 2015; Weeks, 2018).

Another external contributing factor associated with the risk of financial distress and hospital closure in rural America is increasing market competition. The Hill-Burton Act of 1946 resulted in the construction of a plethora of hospitals in rural communities. Today, these rural hospitals compete for patients and limited resources such as funding, staff, and providers (Wishner, Solleveld, Paradise, et al., 2016). Studies that have examined market competition have found that closed rural hospitals were more likely to have a smaller market share and located in micropolitan areas with shorter driving distances to a nearby hospital when compared to open

hospitals. Also, studies show that rural hospitals are facing more competition from nearby hospitals who offer specialty services not provided by their organization (GAO, 2018; B. G. Kaufman, Thomas, et al., 2016; Kent, 2016; Mason, 2017; RCHI, 2017; Thomas et al., 2016).

The majority of rural hospitals in the US operate on thin margins and limited resources. Health policy changes at both the state and federal levels can have a devastating impact on the financial viability of rural hospitals, especially changes to Medicare and Medicaid reimbursement. In March 2013, federal spending cuts known as “sequestration” went into effect. The planned across the board spending cuts included a two percent cut in all Medicare spending. For example, CAHs are currently reimbursed at 99% of allowable costs as opposed to 101% as outlined in the Medicare Rural Hospital Flexibility Program. The cut in Medicare spending will disproportionately harm rural hospitals who rely heavily on reimbursement from Medicare, especially for hospitals already operating on negative margins. One study estimated that over the next ten years, sequestration could result in a loss of \$3.5 billion in Medicare reimbursement and a loss of 153,000 jobs among rural hospitals. Also, the Middle-Class Tax Relief and Job Creation Act of 2012 reduced Medicare reimbursable bad debt from 100% to 65%. The decrease in reimbursable bad debt, known as “charity care,” has had a significant financial impact on rural hospitals in communities with high rates of uninsured residents and states that did not expand Medicaid (iVantage, 2016, 2016; Mason, 2017; Thomas & Pink, 2019; Topchik, 2017; Wishner, Solleveld, Paradise, et al., 2016).

Rural hospitals can also be disproportionately harmed by budget-driven state policies that freeze or cut Medicaid reimbursement rates. For example, Kentucky's Medicaid managed care program implemented a program to discourage the use of the ER for non-emergency visits. Medicaid reimbursed hospitals a small triage fee, as opposed to the full fee, for non-emergency

visits. However, in rural America, the ER is often used for primary care due to the higher level of residents who are uninsured and lower access to primary care (Thomas & Pink, 2019; Wishner, Solleveld, Paradise, et al., 2016).

Also, a state's decision to expand Medicaid or not has a significant impact on rural hospitals. Although a state's decision to expand Medicaid has not been directly linked to rural hospital closure, there is evidence that the decision does have an impact on financial performance. A recent study conducted by the Chartis Center for Rural Health found that rural hospitals located in a Medicaid expansion state were 62% less likely to close on average when compared to rural hospitals in non-Medicaid expansion states. In the study, rural hospitals in Medicaid expansion states were found to have a higher median operating margin (0.8% Medicaid expansion state versus -0.3% non-Medicaid expansion state) and lower percentage of rural hospitals with a negative operating margin (44% Medicaid expansion state versus 52% non-Medicaid expansion state). The GAO (2018) and additional studies found that in expansion states, rural hospital financial performance improved. Furthermore, approximately 80% of rural hospital closures have occurred in states that decided not to expand Medicaid. For example, North Carolina hospitals as a whole are providing roughly one billion dollars in uncompensated care annually, which would significantly decrease if the state expanded Medicaid (AHA, 2019; Chartis Center for Rural Health, 2020; GAO, 2018; B. Kaufman, Reiter, et al., 2016; Norris, 2019; Topchik, 2020).

The emergence of high-deductible plans in recent years is another challenge rural hospitals must face. High-deductible health plans are usually cheaper for individuals but cover fewer healthcare services. Patients with these plans often find that they are not able to afford the

deductible or are responsible for costs not covered by the health plan, which could lead to an increase in uncompensated care (AHA, 2019; iVantage, 2016; Topchik, 2017).

The cost of compliance for regulatory requirements is another financial concern for rural hospitals. In 2017, the AHA (2019) published a report entitled “Regulatory Overload: Assessing the Regulatory Burden on Health Systems, Hospitals, and Post-acute Care Providers.” In the report, the AHA estimates that hospitals and health systems throughout the country spend an average of \$39 billion a year on regulatory requirements that are not directly involved with patient care. Also, typical acute care community hospitals dedicate, on average, 59 full-time employees to regulatory compliance. Rural hospitals may face significant challenges in maintaining compliance with regulatory compliance due to financial and resource constraints (AHA, 2019).

### **Current Strategies to Address Challenges Facing Rural Hospitals**

The majority of the literature focuses on identifying the drivers of financial distress and rural hospital closure. A majority of these studies have illuminated the need to develop strategies to address financial challenges facing hospitals serving rural communities. However, there are a limited number of studies in the literature that explore strategies rural hospital leaders have implemented to address these challenges (AHA, 2016b; B. G. Kaufman, Randolph, et al., 2016; Pink & Holmes, 2018; RCHI, 2017; Richman & Pink, 2017; Thomas et al., 2016).

In 2017, in response to the rapid rise in rural hospital closures in Texas, the Texas A&M Rural and Community Health Institute (RCHI) issued a report to provide rural hospital leaders information on potential strategies they could implement to maintain access to care within their communities. The researchers concluded that a “one size fits all” strategy to address financial distress and closure for each rural hospital is not a realistic approach to carry forward. The

causes of rural hospital distress and closure are multi-faceted. As such, a rural hospital must determine the most appropriate strategies to address the specific challenges they face. Before developing any strategy, rural hospital leaders should understand the specific characteristics and health needs of their surrounding community (RCHI, 2017).

Shortly after the release of the report, RCHI conducted a series of case studies in three rural Texas communities where the rural hospital either closed or was at high risk of closure. RCHI researchers conducted key informant interviews and focus groups with hospital leadership, community leadership, and community residents to gather insight on the community's perspective on healthcare needs and utilization. Also, RCHI researchers collected data on the hospital's facility, service lines, patient demographics, and hospital administrative records in each community. After collecting data and gathering community feedback, researchers identified five themes, including community awareness, community engagement, redefining access, hospital board leadership, and finances. Using these categories, researchers developed a "blueprint" for each community, which highlighted the community's specific gaps and suggested strategies to improve healthcare delivery and access to care (RCHI, 2018).

**Community Awareness.** Community awareness refers to the level of knowledge the community has on what healthcare services are offered by the rural hospital and the challenges the organization faces. Rural hospitals are usually the principal employer and key to the long-term economic health of the community. Therefore, the health of the rural hospital should be one of the top priorities among stakeholders within the community. However, RCHI (2018) found in all three communities under study, communication challenges between the rural hospital and community on the financial issues and concerns faced by the hospital. For each of these

communities, the gap in communication resulted in a negative perception of the organization from the community's perspective (RCHI, 2018).

RCHI (2018) offers a few recommendations to improve community awareness of the rural hospital's services and challenges. First, RCHI recommends that rural hospitals improve transparency with their surrounding communities. One tactic is to develop an outreach program where hospital stakeholders set out to educate the public on healthcare services provided by the hospital. The outreach program also helps to create a two-way communication channel by providing the rural hospital an opportunity to listen to the concerns and challenges community members face daily. Another tactic is to increase the foot traffic within the rural hospital by offering community activities such as cooking classes, in-door walking circuits, and physicals for local school athletic programs. In RCHI's study of three rural communities in Texas, researchers recommended all hospitals develop a health resource center to serve as a tool for the organization to use to develop programs to meet the needs of the community such as transportation access and assistance in signing up for Medicaid (RCHI, 2018).

To enhance transparency between rural communities and hospitals, RCHI (2018) recommends hospitals keep the community updated and informed on services offered, new providers, quality and patient safety information, and any initiatives to improve care through local media outlets in addition to an outreach program. Lastly, RCHI recommends that rural hospital leaders involve community organizations such as churches, school clubs, service organizations, and city government departments (i.e., parks and recreation) as partners in projects and initiatives related to improving the health of the community. By involving these community stakeholders, the hospital will be able to create a group of community ambassadors invested in the long-term success of the organization (RCHI, 2018).

**Community Engagement.** Community engagement refers to the degree a community is actively involved in the decision-making process related to the services offered by the rural hospital and other issues associated with access to care. RCHI (2018) found in their multi-case study that the level of community engagement was a predictor of the rural hospital's success. Rural hospitals that engaged their communities successfully were able to instill a sense of ownership of the hospital within the community. By successfully engaging communities, rural hospitals may be able to face challenges associated with financial performance and access to care with the community as an active partner in the problem-solving process. In order to successfully engage the community, rural hospitals must gain a full understanding of the surrounding community's culture, perceptions, needs, and expectations. In a qualitative study of healthcare availability in rural Kentucky, Piercey (2010) recommended rural hospitals engage the local community anytime decisions of healthcare services were being considered. The researcher reminded readers that healthcare demand comes from the community, while the hospital provides the healthcare supply (Piercey, 2010; RCHI, 2017, 2018).

To gain a better understanding of the needs of the community, hospitals have a variety of tools and processes to choose from. A community health needs assessment provides rural hospital leaders a wealth of information on a community's demographics, resources, needs, and health outcomes. The community health needs assessment provides rural hospital leaders the opportunity to collaborate with local community stakeholders in developing strategies to improve health outcomes, access to care, and other challenges facing the community such as poverty or unemployment rates. Outside of the community health needs assessment, rural hospital leaders can engage the community through various surveys to gather information on the community's satisfaction with services offered by the hospital, concerns related to the quality of

care, or ideas of what services are needed by residents. Rural hospitals could also create or better utilize patient and family advisory councils to gather feedback on hospital performance and input from community leaders regarding critical decisions related to healthcare services currently provided by or being proposed by the hospital (RCHI, 2017, 2018).

Rural hospitals successful at engaging their local communities understand that bringing together all stakeholders within the community, including stakeholders from other healthcare organizations, presents an opportunity for collaboration and partnership to meet the health needs of the population served. For example, Clawar et al. (2018) discussed emerging collaboration among CAHs and federally qualified health centers (FQHC) in North Dakota. FQHCs and rural hospitals often compete for the same patients in rural areas. In 2011, one CAH and FQHC started to share board members, which resulted in discussions among the entities on what services each organization was better capable of providing to improve the health of the community while decreasing the number of redundant services in the area. Lexington Regional Medical Center, a CAH in central Nebraska, partnered with other CAHs in the region to improve bargaining power with suppliers. The CAHs also share a data analyst that each hospital is unable to afford separately. Partnering with local school systems is another option rural hospitals can consider. For example, rural hospital and local school system collaboration can produce programs for special needs students or wellness programs for student-athletes (Adaniya, 2016; Bryant, 2017; Clawar et al., 2018; M. Holmes & Thomas, 2019; Irons & Sauer, 2018; RCHI, 2018; Uecker, 2018).

Olden and Szydlowski (2004) conducted a qualitative study to identify potential obstacles and enablers of offering health promotion and disease prevention services by small rural hospitals. The researchers found that collaboration among community organizations, employers,



school systems, and healthcare providers within the community was the most significant enabler in improving the provision of health promotion and disease prevention services. Through collaboration and partnerships, the different stakeholders were able to pool vital resources, including staffing and funding, to provide needed services to the community (Olden & Szydlowski, 2004).

**Redefining Access to Care.** In 2017, the Bipartisan Policy Center interviewed 90 health policy experts and stakeholders in seven upper Midwest states about the current state of rural healthcare to identify opportunities for improving rural healthcare delivery and access. The researchers concluded that although the CAH model is one of the most prevalent healthcare models in rural America, not every rural community needs to have a CAH. A significant theme from the interviews and roundtables in the study was the concept of hospital "right-sizing." In other words, instead of having a full-service CAH, rural healthcare providers must tailor their services to the needs of the community. For example, some rural communities may need access to inpatient beds while other communities need better access to primary care and mental health services as opposed to acute inpatient care (Bannow, 2018; Betbeze, 2014; Bipartisan Policy Center, 2018; Knopf, 2018; RCHI, 2017).

The recent rise in rural hospital closures highlights the need for rural hospitals to consider alternative models of care to improve access to care and community health while also addressing financial challenges. Wishner et al. (2016) identified through key informant interviews that new models of healthcare delivery might be needed to address the specific needs of rural communities of today, such as more access to primary care, alternative access to emergency services, and robust referral processes to specialty care. In instances where a rural hospital faces imminent closure, conversion to an alternative care model is one way to maintain access to healthcare

services while mitigating the negative economic impact a full closure would have on the surrounding community. In a recent study, Kaufman et al. (2016) identified outpatient centers, skilled nursing facilities, and alternative emergency or urgent care services as the most common alternative care models implemented by rural hospitals that no longer offer acute inpatient care.

Table two summarizes some of the most common alternative care models.

Table 2: High-Level Overview of Selected Alternative Care Models

Alternative Care Model	Key Elements of Model
Free-Standing Emergency Department	<ul style="list-style-type: none"> <li>• Facility offering emergency services structurally separate and distinct from a hospital</li> <li>• Provides emergency care 24/7</li> <li>• Offers imaging and laboratory services</li> </ul>
Patient-Centered Medical Home	<ul style="list-style-type: none"> <li>• Cradle-to-grave healthcare oversight and coordination by primary care physician across the healthcare system including specialty care, inpatient care, home health care, and community support</li> <li>• Provides a broad range of services including preventative care, mental health, and chronic care</li> </ul>
Rural Health Clinic	<ul style="list-style-type: none"> <li>• Provides access to primary care services in rural communities</li> <li>• Can be limited to a specific type of service (i.e., pediatrics)</li> <li>• Must be located in health professional shortage area or medically underserved area</li> </ul>
Federally Qualified Health Clinic	<ul style="list-style-type: none"> <li>• Provides comprehensive services including preventative care, dental, mental health, substance abuse, and specialty care services</li> <li>• Serves underserved area or population</li> </ul>

*Note:* Table adapted from: (FQHC.org, 2019; Lukens, 2016; O’Dell, 2016; RHHub, 2018b).

Also, state and federal governments have funded several demonstration projects to pilot new rural healthcare delivery models. Table three summarizes a few of the current demonstration projects.

Table 3: Summary of Current Rural Health Demonstration Projects

Rural Health Demonstration Project	Key Elements of Project
Kansas Hospital Association “Primary Health Centers”	<ul style="list-style-type: none"> <li>• Shifts focus of organization away from inpatient care to emergency and outpatient services including, but not limited to, primary care, urgent care, and chronic care management</li> <li>• Payment approach includes a combination of fixed and variable payments based on budgets approved by CMS and Medicaid</li> <li>• Value-based incentives and penalties based on measures aligned with volume and services</li> </ul>
Oregon Rural Health Reform Initiative	<ul style="list-style-type: none"> <li>• As required by state law, Oregon Health Authority (OHA) identifies rural hospitals which would remain financially viable if shifted away from cost-based reimbursement and which hospitals should continue to receive cost-based reimbursement</li> <li>• Rural hospitals under alternative payment models negotiate rates with local coordinated care organizations under the oversight of OHA</li> </ul>
Rural Community Hospital Demonstration	<ul style="list-style-type: none"> <li>• Tests feasibility of cost-based reimbursement for inpatient services for hospitals that have less than 51 inpatient beds, provide 24/7 emergency care and are not eligible for critical access hospital (CAH) designation</li> </ul>
Frontier Community Health Integration Project	<ul style="list-style-type: none"> <li>• Purpose is to develop and pilot integrated, coordinated care models to improve health outcomes and reduce Medicare costs in sparsely populated rural areas</li> <li>• Allows CAHs to have up to 35 inpatient beds (ten additional beds only can be used for skilled nursing facility-level care)</li> <li>• Reimburses CAHs at 101% of costs associated with telemedicine overhead, salaries, and depreciation value of telemedicine equipment if services originated from the CAH</li> <li>• Reimburses CAHs 101% cost for providing ambulance services</li> </ul>
Pennsylvania Rural Health Model	<ul style="list-style-type: none"> <li>• Tests whether paying hospitals on a monthly global budget helps improve health outcomes and access to care</li> </ul>

*Note:* Table adapted from (CMS, 2019d, 2019a, 2019c; KHA, 2019; OAHHS, 2019).

One of the internal contributing factors of rural hospital closure is the limited number of healthcare services provided by a hospital due to the limited number of practicing providers within rural facilities. The provision of telemedicine is one strategy that rural hospital leaders can

implement to expand the number of services offered by the facility. The use of telemedicine has proliferated in the last few years and has the potential to drastically transform healthcare delivery in the US. Telemedicine connects patients across geographical locations to primary care physicians and specialists, ensuring that patients receive the right care at the right place at the right time. Healthcare organizations that have embraced the technology are starting to see an increase in care access, time savings for healthcare professionals, improved care outcomes, and lower healthcare costs (AHA, 2016a; Dorsey & Topol, 2016).

Telemedicine has also been shown to improve cost savings and clinical outcomes for vulnerable populations that lack access to primary care, specialty care, and mental health specialists often found in rural areas (RCHI, 2017). For example, Tele-emergency (tele-ED) is a telemedicine application that provides real-time emergency care consultation that can aid ED providers in making timely diagnosis and treatment decisions to improve patient outcomes. MacKinney et al. (2015) examined the utilization of tele-ED from the perspective of a CAH to determine if there was a financial case present to justify implementation of the service. The authors concluded that tele-ED offered the potential for cost savings in CAHs who use the service to replace physician backup call for mid-level providers who staff the ED (MacKinney et al., 2015; Natafqi et al., 2017).

Natafqi et al. (2017) examined 9,048 tele-ED encounters from 85 rural hospitals from 2009 to 2014 to estimate the potential cost and benefits of utilizing tele-ED. The analysis showed that the use of tele-ED helped to prevent 1,175 patient transfers. The authors concluded that the use of tele-ED may reduce cost and increase revenue by reducing the number of patient transfers from the ED. The use of tele-ED costs each rural hospital in the study \$1,739 to avoid a patient

transfer. However, use of the technology prevents an estimated \$5,563 in transportation and indirect costs, resulting in a savings of \$3,823 per avoided patient transfer (Natafagi et al., 2017).

The literature indicates that rural physicians are often overwhelmed and overworked, which is further exacerbated by the current challenges in recruiting providers to practice in rural settings. The literature provides a few recommendations for rural hospital leaders to evaluate to improve recruitment of rural providers, including sponsoring a preceptor program and developing "pipeline" programs with medical schools to help attract young providers to practice in a rural setting. The most consistent recommendation from the literature is to utilize mid-level providers such as physician assistants and nurse practitioners at the top of their license to help close the rural provider gap and improve access to care. However, not all states allow mid-level providers to practice independently from the supervision of a physician (Bipartisan Policy Center, 2018; RCHI, 2017; Uecker, 2018).

The utilization of community health workers is another strategy that rural hospital leaders can implement to help rural residents access and navigate the local healthcare system. Community health workers can act as a liaison between the rural hospital and the surrounding community through such roles as providing transportation to appointments or helping rural residents sign up for health insurance. Most importantly, community health workers can help rural hospitals improve the overall health of their communities through health education, informal counseling, patient advocacy, and social support (Bryant, 2017; RCHI, 2017).

**Finances.** RCHI (2018) recommends three strategies rural hospital leaders can pursue to improve the financial performance of their organization. First, RCHI recommends rural hospital leaders to reevaluate their existing service contracts (i.e., outsourced nutrition services) and renegotiate for lower rates where appropriate. Second, evaluate and identify opportunities to

improve the organization's revenue cycle, including processes specific to coding, billing, and collections. Furthermore, RCHI recommends establishing financial counseling services onsite to help assist patients in securing financial assistance to cover the cost of care. Lastly, rural hospitals are advised to look for opportunities to improve operational efficiency to avoid potential cuts in reimbursement. For example, CMS withholds a specific percentage of Medicare reimbursement if a hospital has a 30-day readmission rate higher than an established threshold (Piercey, 2010; RCHI, 2018).

**Leadership.** Recent studies have highlighted the importance of leadership in the long-term sustainability of a rural hospital. RCHI (2018) identified board governance knowledge and competency as a critical gap among rural hospitals. The researchers recommend rural hospital leaders develop and implement education and training programs for hospital board members to ensure effective governance. A vital element of the training and education program should include current information on health policy legislation, either pending or implemented, that will have a significant impact on the organization. RCHI advises rural hospital leaders and board members to develop relationships with elected leaders, become members of relevant industry organizations, and engage in advocacy efforts on behalf of the rural hospital and community (RCHI, 2017, 2018).

Effective communication from leadership was another key theme found in the literature. Case studies performed by Piercey (2010) and RCHI (2017) found that effective communication may be essential in the long-term success of a healthcare organization. RCHI highlights the importance of rural hospital leaders opening a dialogue with community residents to continuously discuss their perceived needs and satisfaction with services offered by the local health system. Meckstroth (2013) noted in his qualitative study of short-term acute care hospital

leaders in Ohio, the needs of the community are essential consideration leaders must consider when deciding on what services to offer within their respective markets. Without an established communication channel with surrounding communities, rural hospital leaders will not be able to determine the appropriate mix of services to offer a community which could have a negative financial impact on the organization (Meckstroth, 2013; Piercey, 2010; RCHI, 2017, 2018).

Meckstroth (2013) discovered within the literature that hospital executives consider 11 key variables when evaluating what services to offer. These variables include mission, key stakeholder relationships, wellness of the community, market share, strategic positioning, corporate structure, finance, quality, staffing, regulatory requirements, and philanthropy. A majority of these variables are associated with the traditional strategic planning framework (Meckstroth, 2013).

Uecker (2018) performed a multi-case study to explore strategies rural hospital leaders pursue to improve financial performance. The key themes found in Uecker's study centered around hospital leadership and their role in the development and execution of the organization's strategy. One key theme centered around the inclusion of all internal and external stakeholders in the development and execution of the strategic plan. Engaging all stakeholders, both internal and external, in the development of the strategic plan ensures shared responsibility and accountability in meeting the organization's long and short-term goals. Also, Uecker concludes that hospital leaders should implement a continuous monitoring process to ensure the organization is moving towards meeting its strategic goals. A continuous monitoring process will enable leaders to address problems and barriers associated with strategic initiatives in real-time, which can increase the odds of success (Uecker, 2018).

## **Strategy, Business Models, and Tactics**

The objective of this doctoral project is to explore the factors rural hospital stakeholders consider when evaluating different business models to adopt. Individuals often mistakenly liken an organization's business model to its strategy. Although related, strategy and business model are two distinct concepts. Historically, business literature has not provided a clear distinction between the two concepts. In this section of the review, the author will define the concepts of business model, strategy, and tactics. A theoretical framework will be presented to help the reader understand the relationships among the three concepts (Casadesus-Masanell & Ricart, 2010).

**Business model.** There are multiple definitions for the concept "business model," as there is no consensus within the business literature on one standard definition. However, each definition provided in the literature agrees that a business model depicts how an organization identifies and delivers value to its customers. For this doctoral project, the author will embrace the definition of a business model adopted by Casadesus-Masanell and Ricart (2010), which is "the logic of the firm, the way it operates, and how it creates value for its stakeholders" (p. 197).

Casadesus-Masanell and Ricart (2010) posit that a business model is comprised of two elements, leadership choices and the consequences of those choices on the organization. Choices made by leadership shape the policies, assets, and governance structures of the organization's business model. For a healthcare organization, the choices could include the location of facilities, healthcare services offered, electronic health record platform utilized, or marketing initiatives (Casadesus-Masanell & Ricart, 2010).

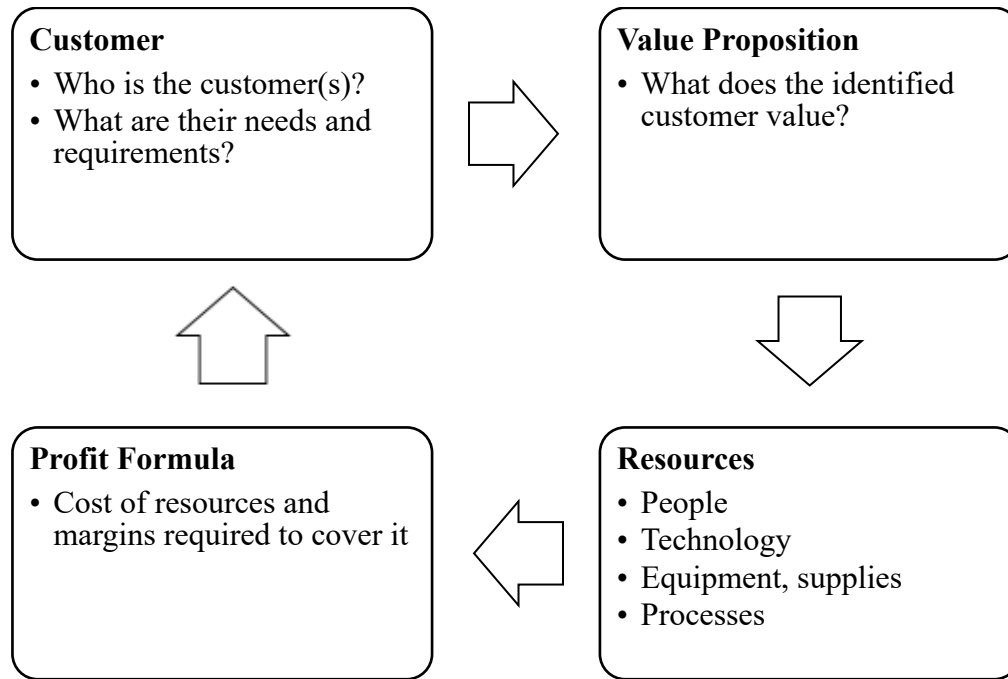
According to Sharan et al. (2016), the goal of any business model is to define how an organization will deliver value to its customers while making a profit. The authors point out that



in order to create such a model, an organization must answer four key questions that translate to the four components of an organization's business model. First, who is the organization's customer? For healthcare organizations, customers are often segmented by health status or needs (i.e., patients needing specialized chronic disease care) and payer type (i.e., Medicare, commercial). Second, what unique value proposition is the organization delivering to the identified customer within the market? An example of a unique value proposition for a healthcare organization could be offering patients the option of telehealth visits as opposed to the traditional in-person clinic visit (Hwang & Christensen, 2008; Sharan et al., 2016).

Third, what resources, processes, and activities are needed to deliver value to the customer? This component of the business model will force an organization to align its resources around delivering a specific value to a customer. Resources within organizations are limited. Therefore, critical decisions around what value or services to offer or not must be made. Finally, what is the cost of the resources necessary to provide value to the customer? In most industries, organizations are able to determine what they can charge a customer in order to cover the cost of resources while making a profit. However, in healthcare, selecting how much to charge a customer is not as straight-forward given that private and government payers are generally the ones paying the cost associated with medical care as opposed to the patient who is the direct customer. Figure one summarizes the four critical components of a business model (Hwang & Christensen, 2008; Sharan et al., 2016).

Figure 1: Four Components of a Business Model



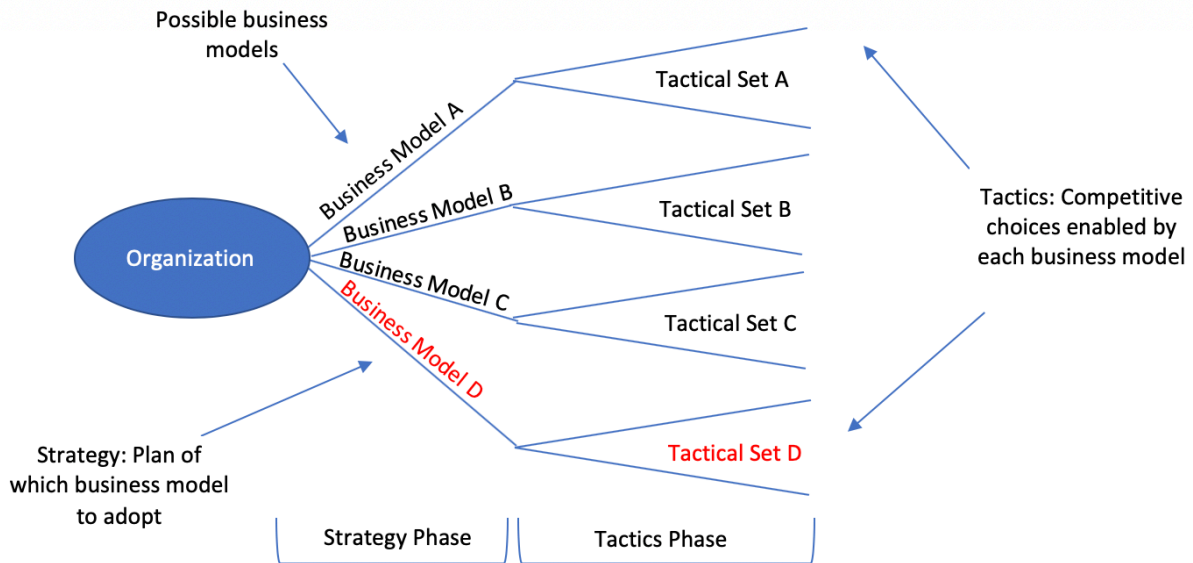
*Note:* Adapted from (Hwang & Christensen, 2008; Sharan et al., 2016).

**Tactics.** Tactics refer to the specific plans of action an organization undertakes to work towards its long-term strategic goals. Tactics play a vital role in an organization's ability to create and capture value in the marketplace. Developing a robust swing bed referral base or implementing a 24/7 urgent care smartphone application are two examples of tactics a rural hospital could pursue. The development of tactics centers around the efficient use of an organization's limited resources, which is a crucial component of an organization's business model. Therefore, an organization's business model dictates the range of tactics available to an organization. Different business models offer different sets of tactics an organization could pursue to compete against or cooperate with other healthcare organizations within the marketplace (Casadesus-Masanell & Ricart, 2010; Farnam Street, 2018).

**Strategy.** The term "strategy" is frequently defined in the literature as a contingent plan of action based on decisions made by leaders in response to the business environment on which direction an organization will take to achieve a specific goal. According to Michael Porter (1996), strategy is the "creation of a unique and valuable position, involving a different set of activities" (p. 68). According to Casadesus-Masanell and Ricart (2010), the word "creation" in Porter's definition of strategy implies that an organization chooses a specific way in which it will compete in the marketplace. Furthermore, the resulting activity system which delivers value is not the organization's strategy but instead a reflection of it. In reality, the activity system is an organization's business model that includes the resources necessary to deliver value to its customers. Therefore, strategy is an organization's choice of which business model it will adopt to compete in its market. By choosing a specific business model, an organization is deciding on how it will operate and create value for its customers. Thus, a business model is not an organization's strategy but a reflection of it (Casadesus-Masanell & Ricart, 2010; CMOE, 2019).

**Generic Two-Stage Competitive Process Framework.** Casadesus-Masanell and Ricart (2010) developed the Generic Two-Stage Competitive Process Framework to distinguish the concept of a business model from strategy. The framework is illustrated in Figure two. The Generic Two-Stage Competitive Process Framework is divided into two stages, strategy and tactics. In the first stage, an organization chooses a business model from a cascade of choices in which it will compete in the marketplace. In the second stage, the organization will make tactical decisions, bounded by the selected business model, which will be guided by its long-term goals (Casadesus-Masanell & Ricart, 2010; CMOE, 2019).

Figure 2: Generic Two-Stage Competitive Process Framework



*Note:* Adapted from (Casadesus-Masanell & Ricart, 2010).

In summary, strategy involves designing different business models that will enable an organization to meet its long-term goals. Each business model has a distinct set of tactical choices, or plans of action, an organization can pursue to create value and compete in the marketplace. The objective of strategy is to select a business model that will enable an organization to achieve its mission and goals (Casadesus-Masanell & Ricart, 2010; CMOE, 2019).

### Summary and Conclusion

The number of rural hospital closures in America has increased significantly in the last few years, which may further widen the disparity in care between rural and urban communities. Since 2010, researchers have published numerous studies on the rising number of rural hospital closures within the United States. The topic of rural hospital closure initially garnered significant

attention in the 1990s due to the impact of the PPS, a method of capitated reimbursement. (RCHI, 2017, 2018; Troxell, 2017).

The majority of the literature focuses on identifying the drivers of financial distress and rural hospital closure. Studies have shown that the primary driver of hospital closure is financial. Low levels of profitability, liquidity, and equity increase the likelihood of a rural hospital to experience financial distress. Researchers have been developing models to predict financial distress and closure. However, the models tend to be more academic rather than a practical tool (B. G. Kaufman, Thomas, et al., 2016; RCHI, 2017; Thomas et al., 2016; Troxell, 2017).

An increasing number of recent studies have highlighted the critical relationship between rural hospital closure and the sociodemographic characteristics of the surrounding community. Rural communities have a significantly higher percentage of elderly residents, lower levels of education, higher unemployment rates, higher rates of public insurance, and a higher percentage of residents reported to have fair to poor health compared to urban communities. According to Kaufman et al. (2016), the odds of hospital unprofitability increase when a community has a higher rate of elderly residents, poverty, and increased market share competition from nearby hospitals (AHA, 2016b; B. G. Kaufman, Randolph, et al., 2016; B. G. Kaufman, Thomas, et al., 2016; Pink & Holmes, 2018; RCHI, 2017; Richman & Pink, 2017; Thomas et al., 2019a).

Given the challenges rural communities face, rural hospital closures will likely continue. Communities with high levels of poverty and unemployment lead to higher levels of uncompensated care. Also, as outmigration from rural communities continues, rural hospitals will see declining patient volumes making it harder to spread fixed costs within the organization, significantly impacting profitability. Studies that have examined the drivers of rural hospital closure have illuminated the need to develop strategies to address the financial challenges facing

hospitals serving rural communities (AHA, 2016b; B. G. Kaufman, Thomas, et al., 2016; Pink & Holmes, 2018; RCHI, 2017; Richman & Pink, 2017; Thomas et al., 2016).

However, there are a limited number of studies published on what strategies to implement to lower the risk of financial distress and closure. The review was unable to find literature on how to reengineer a rural hospital to a more sustainable healthcare delivery model from the perspective of hospital and rural community leaders. Many rural hospitals across the US are starting to reevaluate their business models to improve financial performance, access to care, and overall health of their respective communities. As rural hospitals stakeholders begin to embark on this journey, it will be valuable for them to fully understand what critical factors and resources have been considered and utilized by other rural hospitals (Piercey, 2010; RCHI, 2017, 2018; Troxell, 2017; Uecker, 2018).

## CHAPTER III METHODOLOGY

### **Research Design**

A collective or multiple case study design was utilized to explore the factors rural hospital stakeholders consider when determining the most appropriate business model for their organization. A case study design is a qualitative approach that analyzes a real-life bounded system through comprehensive data collection from numerous sources of information in order to develop an in-depth understanding of the case. Qualitative methods are used to explore, describe, or explain a phenomenon when little is known about the topic from the current literature, or the variables associated with the phenomenon cannot be easily measured (Creswell & Poth, 2018; Piercey, 2010; Uecker, 2018).

The focus of this multiple case study is the decision-making of hospital stakeholders at three rural hospitals in southeastern United States (US). A multiple case study design was used to examine the similarities and differences in hospital stakeholder decision-making processes. Data gathered for this case study included key informant interviews, administrative documentation, community health needs assessments, and other publicly reported data (Baxter & Jack, 2008; Creswell & Poth, 2018; Durdella, 2019).

### **Sample Selection**

Rural hospitals were purposefully selected to participate based on the success case study approach where researchers explore factors that contribute to a successful outcome for the phenomenon under study (Hogle & Moberg, 2014). Participating rural hospitals have either implemented a new business model within the last five years or have recently decided on a business model to implement in the near future. Snowball sampling was used to select interview

participants who were involved, either directly or indirectly, in the rural hospitals' decision-making process (Creswell & Poth, 2018).

### **Data Collection & Methods**

Semi-structured key informant interviews were performed to develop a better understanding of the factors rural hospital stakeholders considered when deciding on the most appropriate business model for their organization. A key informant interview is a qualitative method that helps one gain knowledge of an issue or topic of interest from those that have direct or personal experience of the phenomenon under examination (Creswell & Poth, 2018; Durdella, 2019; Richards & Morse, 2013; USAID, 2011).

Selected candidates were invited to participate in an interview via email invitation that explained the purpose of the doctoral project and associated time commitment. See Appendix A for a template of the email invitation. Interviews were conducted by phone and lasted on average 45 to 60 minutes. Before conducting the interviews, the doctoral student verbally explained the purpose of the project and received verbal consent to audio record the interview. The doctoral student conducted the semi-structured interview utilizing an interview protocol to guide the discussion and ensure the interviews were consistent across all participants. See Appendix C for the complete interview protocol. Field notes were used to document observations and insights during the interviews. All interviews were transcribed using Trint artificial intelligence software in preparation for thematic analysis (Creswell & Poth, 2018; Durdella, 2019).

Post-interview, participants were asked to review the transcript of their interview to ensure the accuracy of their recorded responses. This validation technique is referred to as member checking or participant validation, which is used to evaluate the credibility of the information recorded within the interview. By participating in member checking, participants



were allowed to add any relevant information that may not have been included in the original interview (Birt et al., 2016; Richards & Morse, 2013).

Additional data were collected to further analyze the decision-making processes of rural hospital stakeholders including administrative records, publicly reported financial data, community health needs assessments, census data, and health outcomes and socioeconomic measures from County Health Rankings (see Appendix D). The County Health Rankings and Roadmaps program provides evidence and data at a county level to empower local leaders to improve health within their communities (County Health Rankings, 2019).

### **Data Analysis**

A thematic analysis was performed on all interviews and transcripts. Transcripts were coded for analysis using NVivo 12 qualitative research software. The doctoral student utilized an inductive coding process. Inductive (or open) coding process allows for codes and themes to emerge from the context of the raw qualitative data as oppose to developing codes based on a preexisting hypothesis or coding frame (Creswell & Poth, 2018; Nowell et al., 2017). As the interviews progressed, the doctoral student refined the categorization of codes in order to identify and interpret nodal themes present within the data. A second coder independently coded two transcripts to ensure reliability in the coding process. Memos were utilized during the analysis to record ideas or impressions from the interviews, any reflective notes from the analysis, and any thoughts or ideas on developing themes (Creswell & Poth, 2018; Durdella, 2019; Richards & Morse, 2013).

Data analysis in this multiple case study incorporated data from multiple sources. Therefore, triangulation was used to compare the results of the key informant interviews with information gathered from publicly reported data and administrative documents provided by the

hospitals. Triangulation is a term used to refer to the process of analyzing a phenomenon utilizing data from various sources (Carter et al., 2014; Yin, 1999).

### **Protection of Human Subjects**

This doctoral project has been determined to be a quality improvement/program evaluation project not subject to Institutional Review Board review or approval. Interviews performed during the project did not collect private information or data on individual human subjects. The doctoral student reviewed the purpose of the project, confidentiality statement, and asked for permission to record the interviews with the project participant before each interview (See Appendix B). Participants may decline their participation in the doctoral project at any time without penalty. All data and information given by the project participants will remain confidential throughout the project and final written report. No participant will be identified by name or role. All data from the project will be stored on the doctoral student's password-protected personal computer, which will not be accessible by other individuals. Audio recordings will be destroyed within 60 days of the completion of this project (HHS.gov, 2019).

## CHAPTER IV ARTICLE MANUSCRIPT

The rate of rural hospital closures has accelerated at an alarming rate over the last decade. Since 2005, 166 rural hospitals have closed within the United States (US) (Sheps Center, 2020). In 2019, 19 rural hospitals closed, representing the highest number of closures in a single year since the closure crisis began (Chartis Center for Rural Health, 2020; Sheps Center, 2020). More than 20% of all rural hospitals in the US are predicted to be at risk of financial distress (Thomas et al., 2019b; Thomas & Pink, 2019). Closure of a rural hospital can have a devastating impact on its surrounding community, further exacerbating the economic, health, and care access disparities experienced by residents living within these communities (Richman & Pink, 2017).

Research studies have shown that financial distress within rural hospitals is a result of a myriad of factors including but not limited to declining profitability, aging facilities, declining reimbursement from Medicare and Medicaid, and lack of healthcare professionals practicing in a rural setting (B. G. Kaufman, Thomas, et al., 2016; LaPointe, 2017; Mason, 2017; NACRHHS, 2016; Pink & Holmes, 2018; RCHI, 2017; Thomas et al., 2016; Wishner, Solleveld, Paradise, et al., 2016).

Several studies have emphasized the critical relationship between rural hospital financial distress and closure and the sociodemographic characteristics of the hospital's surrounding community. Rural communities have a significantly higher percentage of elderly residents, higher unemployment rates, higher rates of public insurance, and a higher percentage of residents reporting poor health compared to urban communities (AHA, 2016b; B. G. Kaufman, Thomas, et al., 2016; Pink & Holmes, 2018; RCHI, 2017; Richman & Pink, 2017; Thomas et al., 2016). Researchers who have examined the drivers of financial distress and closure of rural hospitals have highlighted the need for these organizations to develop strategies to address the financial

challenges they face. However, a limited number of studies within the literature focused on developing a more sustainable business model within rural hospitals.

### **Project Objective and Aims**

This qualitative multiple case study aims to explore the factors rural hospital stakeholders consider when determining the most appropriate business model for their organization. This doctoral project's central research question is: How do rural hospital stakeholders determine the most appropriate business model for their organization? To fully answer the central research question, the following questions were addressed:

- What critical factors do rural hospital stakeholders consider when determining the most appropriate business model for their organization?
- What resources do rural hospital stakeholders use to determine the most appropriate business model for their organization?
- What barriers and facilitators related to adoption and sustainment must rural hospital stakeholders be aware of when deciding what business model is most appropriate for their organization?

### **Definition of Business Model**

This doctoral project will adopt Casadesus-Masanell and Ricart's (2010) definition of a "business model," which is "the logic of the firm, the way it operates, and how it creates value for its stakeholders" (p. 197). A business model comprises four components: its targeted customer, value proposition delivered to the customer, resources needed to deliver the specified value, and the profit formula of the model (Hwang & Christensen, 2008; Sharan et al., 2016). The term business model is distinct from strategy. A business model comprises of a set of tactical choices or plans of actions an organization can pursue to create value in the marketplace

while the objective of strategy is to select the business model that will enable an organization to meet its mission (Casadesus-Masanell & Ricart, 2010; CMOE, 2019).

### **Project Methodology**

A multiple case study design was utilized to explore the factors rural hospital stakeholders considered when determining the most appropriate business model for their organization. Data collected and analyzed in this multiple case study were gathered from various sources, including administrative records, annual cost reports, community health needs assessments, the US Census Bureau, County Health Rankings, and key informant interviews.

Financial data included in the multiple case study was collected from the Healthcare Cost Report Information System (HCRIS) provided through the RAND Corporation. Medicare-certified healthcare organizations are required to submit annual cost reports to a Medicare Administrative Contract. The cost reports contain various information on healthcare organizations such as financial statement data, utilization data, and facility characteristics. Cost reports collected as part of this multiple case study were from the Hospitals-2010 subsystem of HCRIS utilizing the Centers for Medicare and Medicaid (CMS) 2552-10 form. Financial data provided in the cost reports are only accurate as of the time the information was validated and verified. CMS is not responsible for any information that may be misrepresented or altered (RAND Corporation, 2020; U.S. Department of Commerce, 2020).

The financial data presented in this doctoral project is not meant to provide the reader with a detailed assessment of the participating rural hospitals' overall financial performance. Financial indicators were chosen based on evidence from the literature of key measures that have been found to predict financial distress and closure among rural hospitals. Research has provided evidence that low levels of profitability, liquidity, and equity increase the likelihood of a rural

hospital experiencing some degree of financial distress (B. G. Kaufman, Thomas, et al., 2016; RCHI, 2017; Thomas et al., 2016). For example, researchers have discovered that closed rural hospitals had a significantly lower total margin, operating margin, current ratio, days cash on hand, and higher debt levels. Other factors contributing to financial distress and unprofitability include payer mix, outpatient revenue, low occupancy, and costs associated with uncompensated care (Adaniya, 2016; AHA, 2019; Chartis Center for Rural Health, 2020; GAO, 2018; B. G. Kaufman, Thomas, et al., 2016; Mason, 2017; Pink & Holmes, 2018; RCHI, 2017; Richman & Pink, 2017; Thomas & Pink, 2019; Weeks, 2018). Table four provides the reader with definitions of the financial measures included in this project.

Table 4: Definitions of Financial Measures

<b>Financial Measure</b>	<b>Calculation</b>	<b>Operational Definition</b>
<i>Profitability</i>		
Operating Margin	Operating income / Operating revenue	Measures operating expense control relative to operating revenue. Positive value signifies an operating profit as operating expenses are less than operating revenue.
Total Margin	Net income / Total revenue	Measures control of expenses to revenues. A negative value indicates total expenses are more than total revenues.
<i>Liquidity</i>		
Current Ratio	Current assets / Current liabilities	Measures number of times short-term assets can pay short-term obligations. Value greater than one signify that current assets are greater than current liabilities.
Days Cash on Hand	[(Cash on hand ad in banks + temporary investments + other investments) / (Total expenses – Capital related Costs)] / Days in period	Number of days an organization can cover expenses if cash was not received or collected.
<i>Capital Structure</i>		
Equity Financing	Net assets / Total assets	Percentage of total assets financed thru organization's equity.
<i>Revenue</i>		
Total Unreimbursed, Uncompensated Care, Medicaid, and SCHIP Cost	Total unreimbursed cost + Total uncompensated care	Measures total unreimbursed cost for Medicaid, SCHIP, state and local indigent care programs, and cost of non-Medicare uncompensated care.
Outpatient Revenues to Total Patient Revenues	Total outpatient revenue / Total patient revenue	Percentage of total revenues that are for outpatient revenues.
Medicare Outpatient Payer Mix	Outpatient Medicare charges / Total outpatient charges	Percentage of total outpatient charges that are from Medicare patients.
Medicare Inpatient Percentage	Medicare discharges / All inpatient discharges	Percentage of inpatient discharges that are Medicare patients.
Medicaid Inpatient Percentage	Medicaid discharges / All inpatient discharges	Percentage of inpatient discharges that are Medicaid patients.
<i>Utilization</i>		
Occupancy Rate	All inpatient days / Bed days available	Utilization of inpatient beds over a one-year reporting period.

Note: Table adapted from: (Crews et al., 2013; Flex Monitoring Team, 2019; B. G. Kaufman, Thomas, et al., 2016)

Purposeful sampling was used in this multiple case study to provide a range of business models, and hospital characteristics based on the success case study approach, where researchers explore factors that contribute to a successful outcome for the phenomenon under study (Hogle & Moberg, 2014). Participating hospitals respondents indicated having either implemented a new business model within their organization in the last five years or have recently decided on a new business model to implement. Four rural hospitals located in the southeastern US were initially selected to participate in the doctoral project. The doctoral student contacted each rural hospital chief executive or administrator via email and further discussed the logistics of the doctoral project over the phone. All four rural hospitals originally agreed to participate in the doctoral project. However, during the data collection phase of the doctoral project, one rural hospital dropped out due to challenges associated with the response to the COVID-19 pandemic. Table five provides a high-level summary of the three participating rural hospitals.

Table 5: Participating Rural Hospitals

<b>Hospital</b>	<b>Year Originally Built</b>	<b># of Inpatient Beds</b>	<b># of Services</b>	<b>Independent Hospital?</b>	<b>CAH?</b>	<b>Business Model Selected</b>
A	1999	25	14	No	Yes	Inpatient Behavioral Health Hospital
B	1957	25	15	Yes	Yes	Long-Term Tracheostomy and Ventilator Program
C	1954	15	12	No	No	Patient-Centered Medical Home

*Note:* CAH = Critical Access Hospital

Semi-structured key informant interviews were performed to gather an understanding of the key factors rural hospital stakeholders considered when deciding on the most appropriate business model for their organization. Stakeholders were invited to participate in the interviews



via email invitation (see Appendix A). The doctoral student utilized an interview protocol (see Appendix C) to guide the discussion and ensure consistency among the interviews. Interviews were conducted by phone from February to March 2020 and lasted, on average, 45 to 60 minutes. Before each interview, the doctoral student received verbal consent to audio record the discussion from the participants. Key informant interviews were transcribed utilizing Trint artificial intelligence software. After each interview, participants were provided a copy of their interview transcript to review the accuracy of their recorded responses.

Thematic analysis was performed utilizing NVivo 12 qualitative research software. An inductive coding process was used in the analysis. Codes were continuously refined until thematic saturation was reached. Memos were used to record ideas, impressions, reflections, and emerging themes from the analysis.

The presentation of the findings from this multiple case study will begin with a detailed profile for each participating hospital. The profiles will include information on the surrounding community's demographics and characteristics, hospital background, the specific challenges faced by each hospital that lead to the decision to implement a new business model, and an overview of the selected business model. Afterward, a detailed analysis of the key informant interviews will be presented, including a descriptive overview of participants and identified key themes that emerged from the qualitative data.

## **Results**

### **Hospital and Community Profile for Hospital A**

This doctoral project defines the participating rural hospitals' surrounding community as the county within which the hospital resides.

**Population and Demographics.** Based on population estimates, the population of

Hospital A's county slightly decreased by 1.6% from 17,797 in 2010 to 17,505 in 2018.

According to County Health Rankings, 88.8% of the county's population lived in a rural area (County Health Rankings, 2020b; U.S. Department of Commerce, 2020). Table six provides an overview of Hospital A's county population demographics compared to its state.

Table 6: Comparison of Population Demographics between Hospital A's County and State.

<b>Population Demographics</b>	<b>County</b>	<b>State</b>
% Female	45.5%	51.3%
% Male	54.5%	48.7%
% <18 Years of Age	15.4%	22.4%
% 18 – 64 Years of Age	63.4%	61.7%
% 65 Years and Older	21.2%	15.9%
% Non-Hispanic White	88.4%	63.1%
% Non-Hispanic African American	4.4%	21.4%
% American Indian/Alaskan Native	0.7%	1.6%
% Asian	0.5%	3.1%
% Native Hawaiian/Other Pacific Islander	0.1%	0.1%
% Hispanic	5.4%	9.5%

*Note.* Adapted from County Health Rankings, 2019 Rankings (County Health Rankings, 2020b).

Population demographic data depicted in Table 5 were collected from the 2019 County Health Rankings, which utilized data from 2017. The majority of Hospital A's county residents are male (Male, 54.5% versus Female, 45.5%). The county has an aging population as there are more residents 65 years of age and older (21.2%) than residents below the age of 18 (15.4%). Moreover, the county has a larger percentage of residents aged 65 and older than the state (15.9%) (County Health Rankings, 2020b). One key informant stated when asked about the demographics of the county: “It is an aging population. Most young folks when they graduate from college, [they stay away]. There are not a tremendous amount of job opportunities to move back, so the population of the county remains fairly constant.”

The county is predominately White (88.4%) and has a small percentage of residents who are African American (4.4%), American Indian/Alaskan Native (0.7%), Asian (0.5%), and Native Hawaiian and other Pacific Islander (0.1%). The county has a smaller percentage of residents of Hispanic origin (5.4%) compared to the state (9.5%) (County Health Rankings, 2020b).

**Social and Economic Characteristics.** Table seven summarizes key social and economic characteristics of Hospital A’s county compared to the state.

Table 7: Comparison of Social and Economic Characteristics between Hospital A’s County and State.

<b>Social &amp; Economic Characteristics</b>	<b>County</b>	<b>State</b>
<i>Housing</i>		
Persons per Household	2.15	2.52
Number of Households	6,587	-
Owner-occupied Housing Unit Rate	74.7%	65.0%
Median Home Value	\$150,600	\$165,900
Median Gross Rent	\$765	\$877
<i>Education</i>		
Did Not Graduate High School ( $\geq 25$ Years of Age), Estimated	17.7%	12.6%
High School Graduate or Higher, Adult Residents ( $\geq 25$ Years of Age)	82.3%	87.4%
Bachelor’s Degree or Higher. Adult Residents ( $\geq 25$ Years of Age)	20.6%	30.5%
<i>Employment and Income</i>		
% Unemployed <sup>a</sup>	4.4%	4.6%
Median Household Income (2018 Dollars)	\$38,134	\$52,413
Per Capita Income in Last 12 Months (2018 Dollars)	\$20,253	\$29,456
Persons in Poverty	16.8%	-
Mean Travel Time to Work for Workers $\geq 16$ Years of Age, Minutes	21.5	24.5

*Note.* Adapted from US Census Bureau, five-year estimate, 2014 – 2018 (U.S. Department of Commerce, 2020).

<sup>a</sup> Data is from County Health Rankings, 2019 Rankings (County Health Rankings, 2020b).

**Housing.** The US Census Bureau reported 6,587 households within Hospital A's county with just over two persons (2.15) per household based on a five-year estimate (2014 – 2018). Nearly three-fourths (74.7%) of housing units within the county are owner-occupied, which is higher than the percentage of owner-occupied housing units at the state level (65.0%). The median home value in the county is \$150,600, which is lower than the state median of \$165,900. The median gross rental payment in Hospital A's county is \$765, which is lower than the state median of \$877 (U.S. Department of Commerce, 2020).

**Education.** A majority of adult residents 25 years of age or higher (82.3%) in Hospital A's county have earned a high school degree or higher, while 17.7% did not graduate high school. Also, slightly more than one-fifth (20.6%) of county residents have completed a bachelor's degree or higher. Overall, compared to the state, the county has lower percentages of high school (state, 87.4%) and college-educated residents (state, 30.5%) (U.S. Department of Commerce, 2020).

**Employment and Income.** According to the 2016 community health needs assessment, tourism is the leading industry in Hospital A's county, which generates an estimated \$51 million in sales annually (Hospital A, 2016). The 2019 County Health Rankings reported an unemployment rate for residents ages 16 or older of 4.4% for the county, which is slightly lower than the 4.6% unemployment rate at the state level (County Health Rankings, 2020b). Although the county's unemployment rate is lower than the rate at the state level, key informants indicate that finding a job within the area is difficult. The difficulty can be attributed to the seasonality of the tourism industry within the county. For example, workers at a local ski resort could be furloughed for the spring and summer months, which can create financial challenges for these residents.

The median household income and per capita income for county residents between 2014 and 2018 were \$38,134 and \$29,456 (2018 dollars) respectfully. Approximately 16.8% of county residents are living in poverty, according to the US Census Bureau. Also, compared to the state, residents 16 years of age or older within the county on average have a shorter one-way commute to work (County, 21.5 minutes versus State, 24.5 minutes) (U.S. Department of Commerce, 2020).

**Health.** Table eight provides a snapshot of Hospital A's county's health status, as reported by the 2019 County Health Rankings.

Table 8: Comparison of Health Behaviors, Outcomes, and Access between Hospital A’s County and State.

<b>Health Factors</b>	<b>County</b>	<b>State</b>
<i>Health Behavior</i>		
Obesity Rate	29%	30%
Physical Inactivity Rate	25%	23%
Access to Exercise Opportunities	100%	73%
Smoking Rate	19%	18%
Excessive Drinking Rate	18%	17%
Alcohol-Impaired Driving Deaths	20%	30%
<i>Health Outcomes</i>		
Life Expectancy	77.6	78.0
Adults Reporting Fair or Poor Health	18%	18%
Average Number of Poor Physical Health Days	3.9	3.6
Average Number of Poor Mental Health Days	4.2	3.9
Diabetes Prevalence	13%	11%
<i>Care Access</i>		
% Uninsured	18%	12%
Ratio of Population to Primary Care Physicians	2,920:1	1,420:1
Ratio of Population to Mental Health Providers	260:1	440:1
Preventable Hospital Stays	4,617	4,702

*Note.* Adapted from County Health Rankings, 2019 Rankings (County Health Rankings, 2020b).

**Health behavior.** According to the 2019 County Health Rankings, 29% of adults age 20 or older are obese in Hospital A's county, which is slightly lower than the percentage of obese adults at the state-level (30%). One-fourth (25%) of adult residents age 20 and older report no leisure-time physical activity, which is two percentage points higher than the percentage of adults reporting no physical activity at the state-level (23%). Although the percentage of adults reporting no physical activity is high compared to the state, 100% of county residents reported adequate access to locations for exercise. According to the 2019 community health needs assessment, Hospital A partners with the local YMCA to promote physical activity and nutrition through several programs (Hospital A, 2019; County Health Rankings, 2020b).

The 2019 County Health Rankings reports that approximately 19% of Hospital A's county are current smokers, which is one percentage point higher than the percentage of current smokers at the state-level (18%). The percentage of adults (18%) reporting binge or heavy drinking in Hospital A's county is slightly higher than that of adults reporting excessive drinking at the state level (17%). Approximately one-fifth (20%) of driving deaths involved alcohol-impaired drivers (County Health Rankings, 2020b).

According to the 2019 community health needs assessment, substance abuse was identified as a health concern among residents due to an increase in alcohol abuse, misuse of prescription drugs, and opioid-related police calls in recent years among teenagers and adults. As part of the community health needs assessment, a public survey reported that only 25% of participants kept prescription medication in a locked place to limit access to friends and family members (Hospital A, 2019).

**Health outcomes.** Hospital A's county has a high incidence and prevalence of numerous chronic diseases, including diabetes, stroke, cancer, and heart disease. Currently, 13% of the

adult population within the county ages 20 and above have been diagnosed with diabetes. Also, the 2019 community health needs assessment reported that from 2013 – 2017, Hospital A's county had a higher cancer rate than the state. Hospital A has actively been engaged with the community to address the challenges associated with chronic diseases proactively. For example, Hospital A contributes resources to support the implementation and sustainment of chronic disease prevention and management programs for conditions such as diabetes (Hospital A, 2019).

The average number of years a resident of Hospital A's county can expect to live is 77.6 years, which is slightly lower than the state's life expectancy (78.0 years). Eighteen percent of county residents report being in fair or poor health, which is on par with the percent reporting fair or poor health at the state-level (18%). The 2019 County Health Rankings reports that within the last 30 days, residents reported an average of 3.9 poor physical health days and 4.2 poor mental health days which is higher than the state (Poor physical health days, 3.6; Poor mental health days, 3.9) (County Health Rankings, 2020b). Table nine shows the top ten causes of death within Hospital A's county from 2014 to 2018.

Table 9: Top Ten Causes of Death in Hospital A's County for All Ages, 2014 – 2018.

<b>Causes of Death</b>	<b>Rank</b>
Diseases of the Heart	1
Cancer – All Sites	2
Chronic Lower Respiratory Disease	3
Alzheimer's Disease	4
Other Unintentional Injuries	5
Pneumonia and Influenza	6
Cerebrovascular Disease	7
Nephritis, nephrotic syndrome, and nephrosis	8
Septicemia	9
Diabetes Mellitus	10

*Note.* Table adapted from (NC DHHS, 2019).

*Care access.* Hospital A's county has a higher percentage of the population under the age of 65 (18%) who are uninsured compared to the percentage of uninsured residents at the state level (12%). The seasonality of employment within the county's tourism industry could be one underlying cause of the high uninsured rate. According to one key informant:

The industry within the county is generally tourism, which is seasonal. Ski resorts employ a lot of seasonal employees during the winter months and then furlough them for the rest of the year, which means that many of those people don't have an employer sponsored insurance program.

As of January 1, 2020, Hospital A resides in a state that has not yet expanded Medicaid to individuals with incomes up to 138% of the federal poverty level (Kaiser Family Foundation, 2019).

The 2019 community health needs assessment identified substance abuse prevention and access to mental health services as health priorities within the county (Hospital A, 2019).

According to the 2019 County Health Rankings, Hospital A's county had a lower population ratio to mental health providers (260:1) compared to the state (440:1). However, the county had a higher ratio of the population to primary care providers (PCPs) (2,920:1) compared to the state (1,420:1), indicating potential access to care issue within the county. The county had a lower preventable hospital stay rate (4,617) than the state (4,702). The county has been identified as a low-income population health professional shortage area (HPSA) for primary care, HPSA for mental health, and a medically underserved area by the Health Resources and Services Administration (HRSA) (County Health Rankings, 2020b; HRSA.gov, 2020a, 2020b).

**Hospital Background and Impetus for Change.** The current hospital is a product of a merger between two hospitals within the county that were not financially viable (Blankenship,



2019). Hospital A opened its doors to the surrounding community in 1999 as a 25-bed critical access hospital (CAH). Today, the hospital offers various healthcare services, including family and internal medicine, inpatient acute care, cardiopulmonary rehabilitation, cardiovascular, imaging, laboratory, occupational therapy, pediatrics, emergency, physical therapy, speech therapy, surgery, and behavioral and psychiatry services. The hospital's behavioral health services include a 10-bed inpatient behavioral health unit (Hospital A, 2020).

Hospital A is a member of a regional healthcare system that serves approximately 100,000 people and includes two hospitals, a cancer center, a rehabilitation center, a wellness center, and more than ten medical practices (Hospital A, 2019, 2020).

***Impetus for change.*** Hospital A, like most rural hospitals, has experienced financial challenges resulting from declining reimbursement from Medicare and Medicaid, high uninsured rate within its community, outmigration of the younger population, and decreasing inpatient utilization. For example, the hospital recently had to close its obstetrics unit due to challenges associated with shrinking volumes and payer mix dominated by Medicaid. One Hospital A key informant stated:

We closed our OB services about five years ago because we were predominantly a Medicaid service for deliveries. And our volume was shrinking. Even though, we offered a high-quality service with great patient satisfaction scores, we just couldn't make it on Medicaid. When, you know, you're only getting like 20 some percent of charges based on the declining volume and the reimbursement. It didn't make sense financially. And we had to make a decision about where we wanted to put our capital dollars. Do we want to put them in something that's going to serve a hundred and some people a year or into the emergency department that serves thousands?

Table ten provides a summary of key financial indicators for Hospital A for calendar years 2016 and 2017.

Table 10: Key Financial Indicators for Hospital A for Calendar Years 2016 and 2017.

Financial Indicator	Calendar Years		% Change CY16 to CY17	CY2017 South Median
	CY 2016	CY 2017		
<i>Profitability</i>				
Operating Margin	-2.43%	-5.47%	-125%	-0.38%
Total Margin	-2.43%	-5.47%	-125%	0.20%
<i>Liquidity</i>				
Current Ratio	2.75	2.75	0%	1.42
Days Cash on Hand	7.70	5.94	-23%	14.37
<i>Capital Structure</i>				
Equity Financing	61.74%	61.76%	0%	48.38%
<i>Revenue</i>				
Total Unreimbursed and Uncompensated Care, Medicaid, and SCIP Cost	\$2,247,942	\$1,974,683	-12%	\$1,826,396
Outpatient Revenues to Total Patient Revenues	66.87%	67.91%	2%	74.85%
Medicare Outpatient Payer Mix	38.62%	38.62%	0%	30.21%
Medicare Inpatient Percentage	53.64%	52.48%	-2%	45.09%
Medicaid Inpatient Percentage	8.34%	5.93%	-29%	2.62%
<i>Utilization</i>				
Occupancy Rate	22.28%	19.02%	-15%	36.43%

*Note.* Hospital-specific financial data is from the HCRIS provided through the RAND Corporation (CMS, 2020a; RAND Corporation, 2020).

Data from Table 10 was collected from Medicare cost reports from the HCRIS for calendar years 2016 and 2017. The 2017 calendar year median financial values were calculated using cost reporting information from hospitals in the 2010 South census region of the US (CMS, 2020a; RAND Corporation, 2020; US Census Bureau, 2018). The data were filtered to include general short-term acute hospitals with  $\leq 25$  inpatient beds who were designated as a CAH.

Hospital A's operating margin worsened from -2.43% in calendar year 2016 to -5.47% in calendar year 2017. In 2017, Hospital A had a lower operating margin than the 2017 south

median of -0.38%. Also, Hospital A's total margin decreased from -2.43% in 2016 to -5.47% in 2017. The total margin in calendar year 2017 was lower than the 2017 south median of 0.20% (CMS, 2020a; RAND Corporation, 2020).

In calendar years 2016 and 2017, Hospital A had a current ratio of 2.75, which was higher than the 2017 south median of 1.42. Hospital A's cash on hand decreased by 23% from 7.70 days in calendar year 2016 to 5.94 days in calendar year 2017. Hospital A had a lower number of days cash on hand than the 2017 south median of 14.37 days. The percentage of equity financing remained relatively high for Hospital A at approximately 61% over 2016 and 2017. Hospital A receives significant philanthropy support from its surrounding community, which enhances its overall equity according to the executive key informant (CMS, 2020a; RAND Corporation, 2020).

Costs associated with unreimbursed and uncompensated care decreased by 12% from \$2,247,942 in calendar year 2016 to \$1,974,683 in calendar year 2017. However, Hospital A's cost associated with unreimbursed and uncompensated care was higher than the 2017 south median of \$1,826,396. A majority of Hospital A's total patient revenue was from outpatient services in both 2016 (66.87%) and 2017 (67.91%). However, Hospital A had a lower percentage of outpatient revenue to total patient revenue compared to the 2017 south median (74.85%). In calendar years 2016 and 2017, Medicare patients accounted for 38.62% of outpatient charges for Hospital A, which was higher than the 2017 south median of 30.21%. The majority of inpatient discharges in 2016 and 2017 were from Medicare and Medicaid patients, which was higher than the 2017 south median. Hospital A's occupancy rate decreased by 15% from 22.8% in calendar year 2016 to 19.02% in calendar year 2017, which was far below the south median of 36.43% (CMS, 2020a; RAND Corporation, 2020).

The 2019 community health needs assessment identified access to mental and behavioral health services as a priority for both Hospital A's county and region. According to one Hospital A key informant, a community crisis center closed unexpectedly due to financial reasons about ten years ago. Also, key informants from Hospital A noted increasing boarding of behavioral health patients within Hospital A's ED, which created cost challenges for the organization. Furthermore, other resources within the county and region, such as law enforcement officers, were not always clear on where to take behavioral health patients. Hospital A did not have the capacity to meet the mental and behavioral health demand within the community. According to the 2019 community health needs assessment, Hospital A could admit only 560 psychiatric patients from over 5,000 psychiatric patient referrals in 2016 while demand for acute inpatient services continued to decline (Hospital A, 2019). One Hospital A key informant stated:

Our average daily census on the medical side was about seven or eight patients. It has since dropped to about six. Our behavioral health census in our ten-bed unit was sitting at about nine to nine and a half...we know that we're not going to make it [financially] with [acute inpatient] census.

**Hospital A's New Business Model.** In late 2012, the last psychiatric patients were moved out of a prominent psychiatric hospital in Hospital A's state capital, which had been in operation since 1856. Just over three years later, the state sold the property to the local government for \$52 million (Goldsmith et al., 2016). The state's General Assembly later appropriated \$18 million from the sale of the psychiatric hospital's property into a fund as part of the state's plan to improve access to behavioral healthcare services through the creation of 150 inpatient behavioral health beds across the state (NAMI, 2017; NCDHHS, 2017). According to HRSA in 2014, 30 counties within the state were designated as mental health HPSAs, including

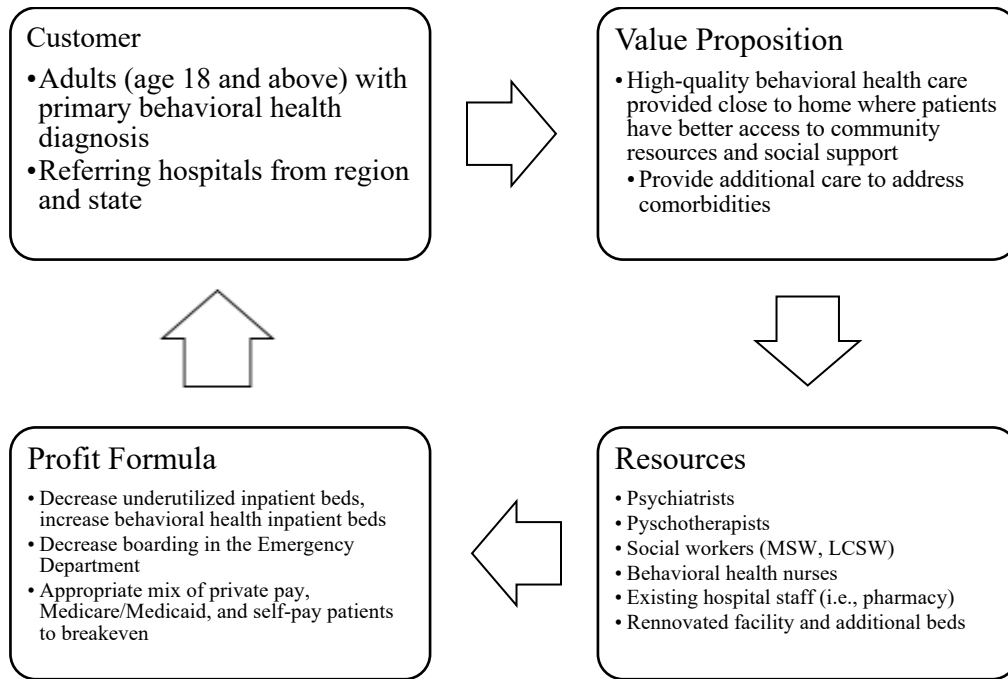
Hospital A's county. The state's goal was to reduce travel time to behavioral health inpatient beds, decrease wait times for behavioral health patients waiting for inpatient placement in the ED, and provide care for patients on Medicare, Medicaid, TRICARE, or were unable to pay (NCDHHS, 2017).

When the state announced the grant, Hospital A leaders started to consider how the grant could help the hospital address its behavioral health capacity challenges. According to a Hospital A key informant:

So we started thinking about how we could develop more inpatient behavioral health beds with our existing space. And we kind of landed on converting all of the existing inpatient medical beds into behavioral health beds and right sizing our medical beds for just a little more than our average daily census to create just a little capacity.

Ultimately, Hospital A proposed to the state to expand their behavioral health inpatient beds by 27, bringing the total to 37 while decreasing their inpatient beds from 25 to eight. On May 31, 2017, the state announced that Hospital A was awarded \$6.5 million to help improve the availability of inpatient psychiatric and substance abuse treatment beds within its region of the state (NAMI, 2017; NCDHHS, 2017). Figure three illustrates the business model Hospital A is currently working on to implement.

Figure 3: Hospital A’s Inpatient Behavioral Health Business Model



*Note:* The business model was formulated using information from key informant interviews and publicly available information.

Hospital A's behavioral health business model became the focus of the 2019 community health needs assessment action plan. In addition to the constructing a behavioral health hospital on its campus, Hospital A will create a designated space to treat patients experiencing a behavioral health crisis within its ED. Also, Hospital A will be designated a crisis destination in the two counties where the broader health system's hospitals operate (Hospital A, 2019).

The inpatient behavioral health business model will target patients with a primary behavioral health diagnosis and patients with a secondary diagnosis of substance abuse from Hospital A’s county and region. Although Hospital A is prioritizing patients within its region, the hospital will admit behavioral health patients needing inpatient care from across the state.

Hospital A's goal is to provide its behavioral health inpatients high-quality care close to home by building upon its already existing successful behavioral health program. According to one Hospital A key informant:

We have a high-quality program. Our patient satisfaction scores are very high. We don't employ "warm bodies". We go through a stringent process to select psychiatrists and other employees. And we want to make sure that they culturally fit within our organization before we make them an offer.

Also, Hospital A's existing behavioral health inpatient program works to connect patients with appropriate resources within the community before discharge, including the provision of a limited supply of medication, even if the patient is unable to pay for it. Building on this foundation, Hospital A stakeholders believe they will continue to provide the quality and service patients expect from them as they expand services.

Hospital A stakeholders believed the hospital would not continue to be financially viable over the long-term if it continued to rely on the traditional acute care inpatient model. With the new behavioral health inpatient business model, Hospital A stakeholders trust that they will have no issues in keeping the new beds full based on the region and state's behavioral health needs. According to one Hospital A key informant, hospital stakeholders do not anticipate the organization will profit from the model as the ultimate goal is to breakeven. Additionally, since Hospital A did not eliminate its acute inpatient services, the organization will have the capability to treat its behavioral health inpatients' comorbidities, which one key informant stated could help Hospital A expand its patient population. The 37-bed behavioral health inpatient hospital is scheduled to open in June 2021.

## Hospital and Community Profile for Hospital B

**Population and Demographics.** According to the 2019 community health needs assessment, the primary service area for Hospital B is its surrounding county (Hospital B, 2019). The overall population of Hospital B's county slightly decreased by 2.2% from 6,798 in 2010 to 6,648 in 2018 based on population estimates. The County Health Rankings estimated that 60.4% of the county's population lived in a rural area in 2010 (County Health Rankings, 2020b; U.S. Department of Commerce, 2020). Table 11 compares the population demographics of Hospital B's county to its state. Population demographic data from the 2019 County Health Rankings is from 2017.

Table 11: Comparison of Population Demographics between Hospital B's County and State.

<b>Population Demographics</b>	<b>County</b>	<b>State</b>
% Female	51.4%	51.4%
% Male	48.6%	48.6%
% <18 Years of Age	25.5%	23.8%
% 18 – 64 Years of Age	58.3%	62.3%
% 65 Years and Older	16.2%	13.9%
% Non-Hispanic White	64.9%	52.4%
% Non-Hispanic African American	26.7%	31.5%
% American Indian/Alaskan Native	0.9%	0.5%
% Asian	0.4%	4.3%
% Native Hawaiian/Other Pacific Islander	0.1%	0.1%
% Hispanic	5.9%	9.8%

*Note.* Adapted from County Health Rankings, 2019 Rankings (County Health Rankings, 2020b).

The majority of residents in Hospital B's county are female (51.4%). The proportion of females (51.4%) and males (48.6%) in the county are similar to that of the state (females, 51.4%; males, 48.6%). The proportion of residents less than 18 years of age (25.5%) and 65 years and older (16.2%) in the county are slightly larger than in the state population (< 18 years, 23.8%; ≥



65 years, 13.9%). The 2019 community health needs assessment reports between 2010 and 2017, the proportion of residents less than 18 years of age decreased by 4.9% while the proportion of residents 65 years and older increased by 22.7% (County Health Rankings, 2020b; Hospital B, 2019).

Overall, Hospital B's county has a less diverse population when compared to the state. A majority of residents are White (64.9%), which is higher than the proportion of Whites in the state population (52.4%). Compared to the state, Hospital B's county has a smaller proportion of African Americans (26.7% versus 31.5%), Asians (0.4% versus 4.3%), and residents of Hispanic origin (5.9% versus 9.8%). The proportion of American Indian /Alaskan Native in Hospital B's county is larger than the state (0.9% versus 0.5%) while the proportion of Native Hawaiian/Other Pacific Islander (0.1%) is similar to the state (County Health Rankings, 2020b). Between 2010 and 2017, the proportion of White and African American residents decreased (White, -3.4%; African American, -5.0%) while the proportion of Hispanic residents increased by 64.3% (Hospital B, 2019).

**Social and Economic Characteristics.** In 2004, Truven Health Analytics and Dignity Health developed the community need index (CNI). The CNI is a composite measure of a community's need for various healthcare services. The measure comprises an average score of five different socioeconomic barriers: income, culture (i.e., percentage of the population that is a minority), education, health insurance, and housing. According to the CNI, all zip codes within Hospital B's county are recognized as high community need areas (Hospital B, 2019; Dignity Health, 2020). Table 12 summarizes the key social and economic characteristics of Hospital B's county compared to its state.

Table 12: Comparison of Social and Economic Characteristics between Hospital B’s County and State.

<b>Social &amp; Economic Characteristics</b>	<b>County</b>	<b>State</b>
<i>Housing</i>		
Persons per Household	2.51	2.71
Number of Households	2,502	-
Owner-occupied Housing Unit Rate	72.1%	63.1%
Median Home Value	\$57,100	\$166,800
Median Gross Rent	\$410	\$968
<i>Education</i>		
Did Not Graduate High School ( $\geq 25$ Years of Age), Estimated	29.2%	13.3%
High School Graduate or Higher, Adult Residents ( $\geq 25$ Years of Age)	70.8%	86.7%
Bachelor’s Degree or Higher. Adult Residents ( $\geq 25$ Years of Age)	11.1%	30.7%
<i>Employment and Income</i>		
% Unemployed <sup>a</sup>	4.6%	3.9%
Median Household Income (2018 Dollars)	\$25,236	\$55,679
Per Capita Income in Last 12 Months (2018 Dollars)	\$16,538	\$29,523
Persons in Poverty	25.8%	-
Mean Travel Time to Work for Workers $\geq 16$ Years of Age, Minutes	18.0	28.4

*Note.* Adapted from U.S. Census Bureau, five-year estimate, 2014 – 2018 (U.S. Department of Commerce, 2020).

<sup>a</sup> Data is from County Health Rankings, 2019 Rankings (County Health Rankings, 2020b).

**Housing.** The U.S. Census Bureau reports 2.51 persons per household and 2,502 total households throughout the county between 2014 and 2018. Close to three-fourths (72.1%) of the households in Hospital B's county were owner-occupied, which was higher than the state (63.1%). The median value of a home in the county was \$57,100, which is significantly lower than the state's median home value of \$166,800. Also, the county's median gross rental payment (\$410) was lower than the median gross rental payment (\$968) at the state-level (U.S. Department of Commerce, 2020).

**Education.** Hospital B's county has a lower percentage of adults age 25 years and older who are high school (70.8% versus 86.7%) and college-educated (11.1% versus 30.7%).

According to one Hospital B key informant, the county has seen an outmigration of residents with a bachelor's degree or higher from the county as they move to larger urban communities. Also, compared to the state, Hospital B's county has a larger percentage of its adult population who did not finish high school (29.2% versus 13.3%) (U.S. Department of Commerce, 2020).

**Employment and Income.** The 2019 community health needs assessment conducted a public survey and focus groups to understand the community's needs and concerns better. In both the survey and focus groups, residents voiced their concerns over the lack of adequate employment in the county (Hospital B, 2019). According to the County Health Rankings, Hospital B's county had a higher unemployment rate than the state (4.6% versus 3.9%) (County Health Rankings, 2020b). The median household income between 2014 and 2018 in the county was \$25,236 (2018 dollars), much lower than the state's median household income of \$55,679. Over the same period, the per capita income for the county was \$16,538, which was also low compared to the state (\$29,523). The U.S. Census Bureau reports approximately 25.8% of Hospital B's county residents live in poverty. The average travel time to work for county residents 16 years and older was 18.0 minutes, which is lower than the state's average of 28.4 minutes (U.S. Department of Commerce, 2020).

**Health.** Table 13 summarizes the key health measures reported by the 2019 County Health Rankings for Hospital B's county compared to its state.

Table 13: Comparison of Health Behaviors, Outcomes, and Access between Hospital B’s County and State.

<b>Health Factors</b>	<b>County</b>	<b>State</b>
<i>Health Behavior</i>		
Obesity Rate	52%	32%
Physical Inactivity Rate	27%	28%
Access to Exercise Opportunities	5%	75%
Smoking Rate	24%	17%
Excessive Drinking Rate	13%	14%
Alcohol-Impaired Driving Deaths	10%	22%
<i>Health Outcomes</i>		
Life Expectancy	72.7	77.8
Adults Reporting Fair or Poor Health	27%	18%
Average Number of Poor Physical Health Days	4.8	3.4
Average Number of Poor Mental Health Days	4.8	3.9
Diabetes Prevalence	25%	12%
<i>Care Access</i>		
% Uninsured	17%	16%
Ratio of Population to Primary Care Physicians	6,730:1	1,530:1
Ratio of Population to Mental Health Providers	No Data	730:1
Preventable Hospital Stays	7,636	4,930

*Note.* Adapted from County Health Rankings, 2019 Rankings (County Health Rankings, 2020b).

**Health behaviors.** Overall, harmful health behaviors were more prevalent in Hospital B's county when compared to their state. According to the 2019 County Health Rankings, over half of the adult population ages 20 and older (52%) reported being obese, which was higher than the percentage of obese adults at the state level (32%). Over one-fourth (27%) of adult county residents reported no leisure-time physical activity compared to 28% of state residents. Only five percent of the population in Hospital B's county reported adequate access to exercise facilities, which was considerably lower than the percentage reporting adequate access at the state level (75%) (County Health Rankings, 2020b; Hospital B, 2019).

Close to one-fourth (24%) of county residents smoke, which is higher than the smoking rate for Hospital B's state (17%). Compared to the state, Hospital B's county has a lower percentage of adults reporting excessive drinking (13% versus 14%) and percentage of driving deaths involving alcohol (10% versus 22%). According to the 2019 community health needs assessment, Hospital B's county had higher rates of sexually transmitted diseases (644 per 100,000 population versus 571 per 100,000 population) and teenage pregnancies (66 per 100,000 population versus 32 per 100,000 population) compared to its state (County Health Rankings, 2020b; Hospital B, 2019).

***Health outcomes.*** In 2019, the County Health Rankings ranked Hospital B's county as one of the worst counties in the state for health outcomes. The average life expectancy of residents in Hospital B's county (72.7) was approximately five years shorter than the state's average life expectancy of 77.8 years. Over one-fourth (27%) of adult residents reported being in fair or poor health, which was higher than the percentage of adults at the state level (18%). Over the last 30 days, county residents reported an average of 4.8 poor physical health days and poor mental health days, which was higher than state levels (poor physical health days, 3.4; poor mental health days, 3.9). One-fourth of adults age 20 and above (25%) have been diagnosed with diabetes, which was higher than the prevalence of diabetes in the state (12%). According to the 2019 community health needs assessment, county residents with diabetes have been consistently higher than hospitalization rates at the state level since 2004 (County Health Rankings, 2020b; Hospital B, 2019).

Hospitalization rates for cardiovascular diseases in the county have been consistently higher than the state since 2000, specifically for hypertension and obstructive heart disease. Also, hospitalization rates for respiratory diseases, including asthma and pneumonia, in the county are

generally higher in comparison to the state but are declining. In the years 2011 to 2015, Hospital B's county had a higher age-adjusted cancer rate for all sites (479.2 per 100,000 individuals) compared to the state (454.6 per 100,000 individuals). Additionally, the 2019 community health needs assessment reported an age-adjusted all-cause mortality rate of 1,199.1 per 100,000 individuals for the county, which was higher than the state's rate of 794.1 per 100,000 individuals (Hospital B, 2019). Table 14 displays the top ten causes of death in Hospital B's county.

Table 14: Top Ten Causes of Death in Hospital B's County.

Causes of Death	Rank
Ischemic Heart and Vascular Disease	1
Malignant Neoplasms o the Trachea, Bronchus, and Lung	2
Alzheimer's Disease	3
Cerebrovascular Disease	4
All COPD except Asthma	5
Septicemia	6
Pneumonia	7
Nephritis, nephrotic syndrome, and nephrosis	8
Diabetes Mellitus	9
All Other Mental and Behavioral Disorders	10

*Note.* Table adapted from (Hospital B, 2019).

**Care access.** The 2019 County Health Rankings reports that 17% of Hospital B's county population under the age of 65 do not have health insurance, which is slightly higher than the state's uninsured rate of 16%. As of January 1, 2020, Hospital B's county resides in a state that has not expanded Medicaid to residents with income levels up to 138% of the federal poverty level (Kaiser Family Foundation, 2019).

According to the 2019 community health needs assessment, county residents overall had a favorable perception of Hospital B and reported no issues in accessing healthcare within the county. However, county residents reported an inadequate supply of PCPs and specialists in the

area (Hospital B, 2019). The 2019 County Health Rankings reported a population to PCPs ratio of 6,730:1, which was much higher than the state's ratio of 1,530:1. Also, Hospital B's county had a higher rate of preventable hospital stays (7,636) compared to the state (4,930). The 2019 community health needs assessment found lower utilization of preventable services, including diabetic hemoglobin A1C and mammography screenings in the county compared to the state for years 2014 and 2015. The 2019 County Health Rankings did not provide a population ratio to mental health providers for Hospital B's county. Hospital B's county has been designated as a low-income population HPSA for primary care, high needs geographic HPSA for mental health, and a medically underserved area by HRSA (County Health Rankings, 2020b; Hospital B, 2019; HRSA.gov, 2020a, 2020b).

**Hospital Background and Impetus for Change.** Hospital B initially opened to the surrounding community as a 48-bed community hospital in 1957. In the summer of 2000, the hospital was granted CAH designation by the Centers for Medicaid and Medicare Services (CMS). The organization moved to a new 25-bed facility in 2007, where it is currently located today. Hospital B offers a variety of healthcare services, including hospital-based ambulance services, emergency services, radiology, laboratory, swing bed services, physical therapy, pulmonary rehabilitation, respiratory therapy, gastroenterology, dietary, nursing services (i.e., care transition and CHF clinic), and acute inpatient services. Within the last two years, Hospital B has established two additional services: a medical stabilization program and a primary care practice (Hospital B, 2020).

Hospital B is an independent CAH that is operated by the Hospital Authority of the county. The Authority is a public corporation governed by a board of directors comprised of members from the county who are nominated by the County Commissioners. The Authority

Board provides oversight on the hospital operations, including approval of major expenditures and long-term debt (Hospital B, 2020).

*Impetus for change.* Hospital B has faced significant external and internal challenges over the years that have threatened the organization's long-term financial sustainability. Hospital B's surrounding community is comprised of an aging and declining population with high unemployment, low income, low levels of education, high uninsured rate, and high prevalence of unhealthy behaviors and chronic diseases. Hospital B's community profile shares many characteristics found in rural communities where a hospital has either experienced financial distress or closure. Both Hospital B's key informants understood that the surrounding community would not be able to support the hospital's traditional acute care inpatient model. One key informant stated, "[We] realized our community was not going to keep our hospital open. There was not enough flu, viruses, runny noses, and whatever. We were not going to survive."

In 2017, the future of Hospital B was in serious doubt. One key informant noted financial auditors voicing concern over the long-term financial sustainability of the organization at a board meeting stating, "if you do not turn this [hospital] around [financially] within a couple of years, this hospital will close due to multiyear losses." In the previous year, the Hospital Authority approached the County Commission to secure additional funding from the county, totaling approximately \$300,000 annually (Hospital B, 2020). The hospital reported a \$700,000 loss in 2017 (Miller, 2019). At one point, Hospital B was averaging a daily inpatient census of 2.3 patients with only three days of cash on hand. Furthermore, the hospital had to pay back \$145,000 to Medicare because the organization did not manage its costs appropriately. Also, one key informant stated the hospital had several bad financial contracts costing the organization significant amounts of money for very little value in return.



Although Hospital B's facility was rebuilt in 2007, its infrastructure was not well maintained over the years. According to one key informant:

For our building that's aesthetically pleasing, 10 years old, rebuilt 2007...but some of these structural issues that people had just let go like, you know, you should have two boilers. We had one boiler down that had been down for two years. We're supposed to have three hot water heaters, we were running on one hot water heater. The HVAC system was a huge mess.

As of early 2019, Hospital B required significant renovations to its facility totaling approximately \$3 million (Miller, 2019). Table 15 summarizes the key financial indicators for Hospital B for calendar years 2016 and 2017.

Table 15: Key Financial Indicators for Hospital B for Calendar Years 2016 and 2017.

Financial Indicator	Calendar Years		% Change CY16 to CY17	CY2017 South Median
	CY 2016	CY 2017		
<i>Profitability</i>				
Operating Margin	-14.69%	-10.37%	29%	-0.38%
Total Margin	-8.16%	0.39%	105%	0.20%
<i>Liquidity</i>				
Current Ratio	2.32	2.47	6%	1.42
Days Cash on Hand	57.21	75.96	33%	14.37
<i>Capital Structure</i>				
Equity Financing	-33.75%	-32.57%	3%	48.38%
<i>Revenue</i>				
Total Unreimbursed and Uncompensated Care, Medicaid, and SCIP Cost	\$1,948,681	\$1,853,725	-5%	\$1,826,396
Outpatient Revenues to Total Patient Revenues	82.41%	81.25%	-1%	74.85%
Medicare Outpatient Payer Mix	27.94%	27.52%	-2%	30.21%
Medicare Inpatient Percentage	49.88%	49.47%	-1%	45.09%
Medicaid Inpatient Percentage	10.29%	10.66%	4%	2.62%
<i>Utilization</i>				
Occupancy Rate	18.26%	20.14%	10%	36.43%

Note. Hospital-specific financial data is from the HCRIS provided through the RAND Corporation (CMS, 2020a; RAND Corporation, 2020).

Data from Table 15 was collected from Medicare cost reports from the HCRIS for calendar years 2016 and 2017. According to administrative records obtained by the doctoral student, Hospital B's Medicare cost reports have been audited through June 30, 2016. The 2017 calendar year median financial values were calculated using cost reporting information from hospitals in the 2010 South census region of the U.S. (CMS, 2020a; RAND Corporation, 2020). The data were filtered to include general short-term acute hospitals with  $\leq 25$  inpatient beds who were designated as a CAH.

Hospital B had a negative operating margin for both calendar years 2016 (-14.69%) and 2017 (-10.37%). Although Hospital B's operating margin improved by 29% in 2017, Hospital B still performed lower than the 2017 South median of -0.38%. The organization's total margin improved from -8.16% in 2016 to 0.39% in 2017, which was slightly higher than the 2017 South median of 0.20%. Hospital B's current ratio increased by 6% from 2.32 in calendar year 2016 to 2.47 in 2017, which was higher than the 2017 South median of 1.42. Days cash on hand increased by 33% from 57.21 days in calendar year 2016 to 75.96 days in 2017, which was higher than the South median of 14.37 days (CMS, 2020a; RAND Corporation, 2020).

Hospital B reported negative equity financing for calendar years 2016 and 2017 due to multi-million dollar long-term debt from the U.S. Department of Agriculture for construction of the new hospital facility that opened in 2007 (CMH, 2020b). Equity financing increased slightly by 3% from calendar years 2016 (-33.75%) to 2017 (-32.57%) which is lower than the 2017 South median of 48.38% (CMS, 2020a; RAND Corporation, 2020).

Hospital B's total cost associated with unreimbursed and uncompensated care in calendar year 2017 was \$1,853,725, which was 5% lower than calendar year 2016 (\$1,948,681) and higher than the 2017 South median of \$1,826,396. Over 80% of total patient revenues are from

outpatient revenues for calendar years 2016 (82.41%) and 2017 (81.25%), which is higher than the 2017 South median of 74.85%. In calendar years 2016 and 2017, less than 30% of outpatient charges were for Medicare patients (2016, 27.94%; 2017, 27.52%), which is slightly lower than the 2017 South median of 30.21%. Together, Medicare and Medicaid patients accounted for slightly over 60% of inpatient discharges in calendar years 2016 (60.17%) and 2017 (60.13%), which was higher than the 2017 South median of 47.71%. Hospital B's occupancy rate increased by 10% from calendar year 2016 (18.26%) to 2017 (20.14%). However, most inpatient beds were not utilized as evidence by the occupancy rate, which was lower than the South median of 36.43% (CMS, 2020a; RAND Corporation, 2020).

After a few unsuccessful attempts to create service lines to increase volume at Hospital B that were low cost to the organization, one key informant realized it was time to do something different:

I felt like if we didn't try something different, we're just dead in the water. I mean we were really just literally waiting for patients to come in and it was not working... We had to decide that we had to look for services or strategic lines to reside outside of our community because our community was not going to save us; but we had to be here so we could save our community.

Another Hospital B key informant added, "We're not going to survive as a typical, you know, critical care hospital that's waiting on, you know, services to walk in the door. We're gonna have to create our own services."

**Hospital B's New Business Model.** Before officially starting as chief executive officer (CEO) of Hospital B, the CEO researched other CEOs of CAHs who were able to successfully turnaround their hospitals. One particular CEO caught the attention of Hospital B's CEO, who

operated a hospital within the same state. The CEO successfully saved their hospital from the brink of closure to making a multimillion-dollar profit last year. Hospital B's CEO, on the first day of employment, reached out to the CEO for help. According to Hospital B's CEO:

I called her, cold called her and said, I'm [Hospital B's new CEO]. It's my first day as CEO at [Hospital B]. I've researched you; I know what I know, and I know what I don't know. And I said, I know that I need a mentor. Would you consider doing that?

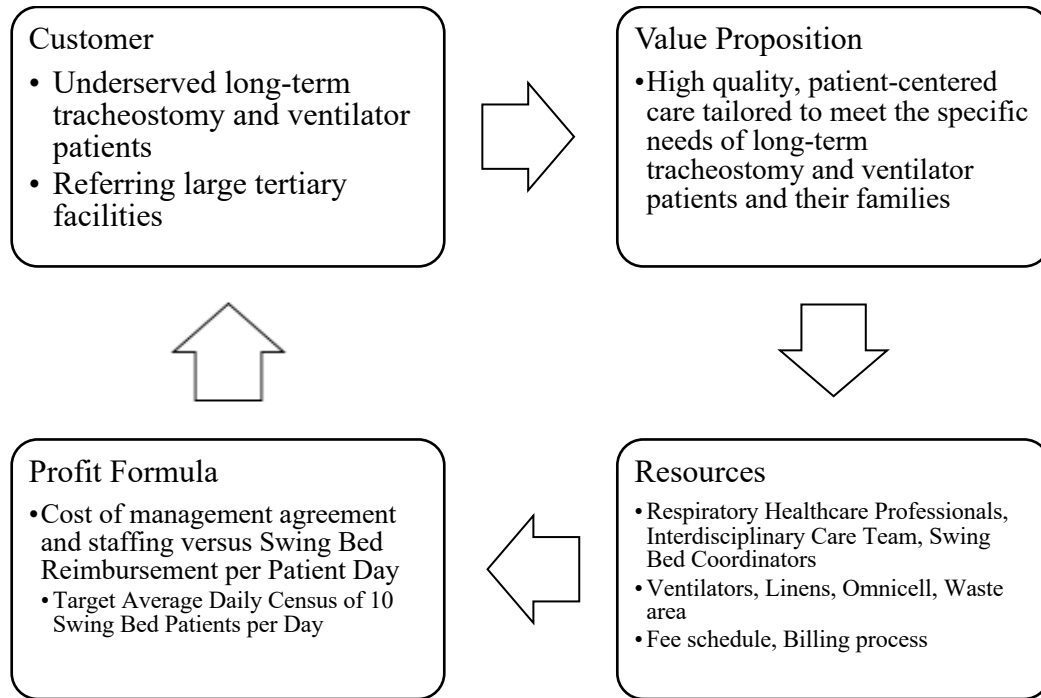
Ultimately, the CEO agreed to be the key informant's mentor. The two started regular meetings, both in-person and over the phone, and developed a tight relationship over time. Hospital B's CEO recounts one conversation with their mentor:

She said, your hospital has got to be the saddest thing I've seen in years. And she said, the reason I'm so drawn to helping you is because I see myself in you where I was over ten years ago. She said some of the scenarios that you brought to me is the same thing that I went through.

Hospital B later partnered with the mentor's rural hospital to develop a swing bed program to provide care to underserved long-term tracheostomy and ventilator patients. The goal was to provide transition care for long-term tracheostomy and ventilator patients before being placed in a nursing facility (Hospital B, 2020). CAHs, participating in Medicare with CMS approval, are allowed to use their beds interchangeably for acute or skilled nursing-level care (CMS, 2020b). In August 2018, Hospital B formally entered into a management services agreement with the mentor's CAH to fully develop and implement the swing bed program. The initial goal was to provide care for an average of ten long-term tracheostomy and ventilator patients per day. Hospital B, through the agreement, received business, quality, and operational

support (Hospital B, 2020). Figure 4 displays the long-term tracheostomy and ventilator swing bed business model developed at Hospital B.

Figure 4: Hospital B’s Long-Term Tracheostomy and Ventilator Swing Bed Business Model



*Note:* The business model was formulated using information from key informant interviews and publicly available information.

Before Hospital B implemented its swing bed business model, only one or two other hospitals within the state offered care to long-term tracheostomy and ventilator patients. One key informant noted that most hospitals are not equipped to provide care to these types of patients. Hospital B stakeholders saw this as an opportunity to save the hospital while providing care to an underserved patient population. Hospital B stakeholders viewed larger tertiary facilities as customers as well. Research conducted by Hospital B stakeholders showed that larger tertiary hospitals were losing thousands of dollars on long-term tracheostomy and ventilator patients because few surrounding organizations were capable or willing to accept the patients for care. According to Hospital B's CEO, the hospital was able to accept patients from across the state and

neighboring state. Also, compared to nursing homes, both key informants felt Hospital B was positioned to provide better value to patients and their family members in the form of high quality, patient-centered care.

According to Hospital B's CEO, the hospital was taking a huge risk in developing and implementing the model. The hospital had to invest a significant amount of financial resources upfront to secure the necessary staff, ventilators, equipment, and supplies needed to provide care to long-term tracheostomy and ventilator patients. Less than two years after implementing the model, the new business model saved Hospital B from closure. Hospital B's CEO stated:

And just to give you an example of a change it made in our bottom line, I think my first year here, in 2017 we closed the year with \$730,000 in swing bed revenue, that's just swing bed revenue. In 2018, we closed with \$760,000. This past year in 2019, we closed the year with \$5.2 million in revenues from swing bed alone...[We] have gone from a hospital that's going to close to adding 40 FTEs. We've increased our revenue. We've updated so much antiquated equipment. I mean, we went from paper pharmacy to where we bought Omnicell...The swing bed [model] has allowed us to hire a physician, hire a mid-level, expand our FTEs, buy I.V. pumps. I mean, our old IV pumps - they no longer made them anymore. So, we were down to a few, so almost \$150,000 in upgrades there. We have an infection control nurse now, social services, swing bed coordinators. So, we have expanded our services greatly, all based on that [swing bed model].

Another Hospital key informant stated, "Our cash on hand...I think when we started, we had less than a million, maybe. Now we got almost three million dollars of cash on hand."

More importantly, the success of the swing bed business model at Hospital B has allowed the organization to begin addressing the healthcare needs of the community. In 2019, Hospital B

was able to recruit an internist who has opened a primary care practice in the county. The hospital has also added a medical stabilization program for patients with substance abuse challenges, is opening a wound-care clinic, and assisting in the development of a wellness center for the county (Miller, 2019). In 2019, Hospital B was recognized as hospital of the year in the southeast U.S. for providing exemplary leadership in rural hospital improvement (Hospital B, 2020). Hospital B has also garnered attention from the L.A. Times, New York Times, Politico Magazine, and Time Magazine for their dramatic turnaround according to one key informant.

### **Hospital and Community Profile for Hospital C**

**Population and Demographics.** According to the US Census Bureau, the population of Hospital C's county has decreased from 26,948 in 2010 to 24,877 in 2018, a 7.7% decrease, based on 2018 population estimates (U.S. Department of Commerce, 2020). The County Health Rankings and Roadmaps program estimated that in 2010, 78.5% of the county's population lived in a rural area. Hospital C's county is mostly a rural area covering 536 square miles.

Approximately 60% of the landmass in the county is classified as forestland (Hospital C, 2016).

Table 16 illustrates the population demographics of Hospital C's county compared to the demographics of the state.

Table 16: Comparison of Population Demographics between Hospital C’s County and State.

<b>Population Demographics</b>	<b>County</b>	<b>State</b>
% Female	47.8%	51.3%
% Male	52.2%	48.7%
% <18 Years of Age	19.7%	22.4%
% 18 – 64 Years of Age	62.5%	61.7%
% 65 Years and Older	17.8%	15.9%
% Non-Hispanic White	44.6%	63.1%
% Non-Hispanic African American	48.4%	21.4%
% American Indian/Alaskan Native	1.0%	1.6%
% Asian	1.5%	3.1%
% Native Hawaiian/Other Pacific Islander	0.1%	0.1%
% Hispanic	4.1%	9.5%

*Note.* Adapted from County Health Rankings, 2019 Rankings (County Health Rankings, 2020b).

Population demographics data from the 2019 County Health Rankings used data from 2017. The majority (52.2%) of Hospital C's county residents are male, which is slightly higher than the percentage of male residents (48.7%) at the state level. Residents aged 18 to 64 years accounted for 62.5% of the county's population, slightly higher than the state (61.7%). More residents in the county are younger than 18 years (19.7%) than residents 65 years of age or older (17.8%). However, Hospital C's county has a larger population older than 65 compared to the state (15.9%) (County Health Rankings, 2020b).

Forty-eight percent (48.4%) of county residents are African American, 44.6% are White, 1.5% are Asian, and 1% are American Indian/Alaskan Native. Only 4.1% of county residents are of Hispanic origin. Compared to the state, Hospital C’s county has a larger percentage of African American residents (County, 48.4% versus State, 21.4%), and smaller percentage of both White (County, 44.6% versus State, 63.1%) and Hispanic (County, 4.1% versus State, 9.5%) residents (County Health Rankings, 2020b).



**Social and Economic Characteristics.** Table 17 summarizes some of the key social and economic characteristics of Hospital C’s county compared to the state.

Table 17: Comparison of Social and Economic Factors between Hospital C’s County and State.

<b>Social &amp; Economic Characteristics</b>	<b>County</b>	<b>State</b>
<i>Housing</i>		
Persons per Household	2.47	2.52
Number of Households	9,516	-
Owner-occupied Housing Unit Rate	66.9%	65.0%
Median Home Value	\$89,300	\$165,900
Median Gross Rent	\$705	\$877
<i>Education</i>		
Did Not Graduate High School ( $\geq 25$ Years of Age), Estimated	19.5%	12.6%
High School Graduate or Higher, Adult Residents ( $\geq 25$ Years of Age)	80.5%	87.4%
Bachelor’s Degree or Higher. Adult Residents ( $\geq 25$ Years of Age)	9.6%	30.5%
<i>Employment and Income</i>		
% Unemployed <sup>a</sup>	5.3%	4.6%
Median Household Income (2018 Dollars)	\$39,126	\$52,413
Per Capita Income in Last 12 Months (2018 Dollars)	\$20,124	\$29,456
Persons in Poverty	20.5%	-
Mean Travel Time to Work for Workers $\geq 16$ Years of Age, Minutes	28.3	24.5

*Note.* Adapted from US Census Bureau, five-year estimate, 2014 – 2018 (U.S. Department of Commerce, 2020).

<sup>a</sup> Data is from County Health Rankings, 2019 Rankings (County Health Rankings, 2020b).

**Housing.** The US Census Bureau estimates that between 2014 – 2018, there were approximately 9,516 households with an average of 2.47 persons per household within Hospital C's county. The majority (66.9%) of housing units within the county are owner-occupied with a median home value of \$89,300, which is considerably lower than the state median home value of \$165,900. Also, the median gross rent payment per month within the county is lower than at the state level (County, \$705 versus State, \$877) (U.S. Department of Commerce, 2020).

**Education.** Compared to the state, residents of Hospital C's county have a lower percentage of residents aged 25 years or older who have completed a high school degree or higher (County, 80.5% versus State, 87.4%) and a higher percentage of adult residents who did not graduate high school (County, 19.5% versus State, 12.6%). Approximately 9.6% of adult county residents have earned a bachelor's degree or higher, which falls short of the percentage of adults with college degrees at the state level (30.5%) (U.S. Department of Commerce, 2020).

**Employment and income.** According to the 2019 County Health Rankings, the unemployment rate of county residents aged 16 years or older in 2017 was 5.3%, which is higher than the state's unemployment rate of 4.6% (County Health Rankings, 2020b). The median household income in 2018 dollars for county residents between 2014 and 2018 was \$39,126. During the same period, the per capita income of county residents was \$20,124. An estimated 20.5% of county residents live in poverty (U.S. Department of Commerce, 2020).

Historically, the local economy relied heavily on the textile industry. With the erosion of the textile industry, the availability of jobs, and the economy's overall state has worsened. Unemployment and availability of jobs have been identified as a community concern within the county in the last two community health needs assessments performed in 2012 and 2016 (Hospital C, 2012, 2016). The state annually ranks all of its counties based on their economic well-being. A county's economic well-being is based on factors such as unemployment rate, median household income, population growth, and adjusted property tax base per capita. Since 2007, Hospital C's county has been categorized as tier one and is ranked within the top 25 of the most economically distressed counties in the state (NC Department of Commerce, 2019). The average travel time for workers aged 16 years or older is 28.3 minutes indicating that residents potentially are driving out of the county for work (U.S. Department of Commerce, 2020).

**Health.** Hospital C’s county has consistently ranked as one of the unhealthiest counties within its state. According to the 2019 County Health Rankings, the county ranked as one of the worst counties in the state for health outcomes (County Health Rankings, 2020b). Table 18 provides an overview of the health status of Hospital C’s county compared to the state.

Table 18: Comparison of Health Behaviors, Outcomes, and Access between Hospital C’s County and State.

<b>Health Factors</b>	<b>County</b>	<b>State</b>
<i>Health Behavior</i>		
Obesity Rate	36%	30%
Physical Inactivity Rate	28%	23%
Access to Exercise Opportunities	6%	73%
Smoking Rate	22%	18%
Excessive Drinking Rate	15%	17%
Alcohol-Impaired Driving Deaths	21%	30%
<i>Health Outcomes</i>		
Life Expectancy	74.0	78.0
Adults Reporting Fair or Poor Health	23%	18%
Average Number of Poor Physical Health Days	4.3	3.6
Average Number of Poor Mental Health Days	4.3	3.9
Diabetes Prevalence	14%	11%
<i>Care Access</i>		
% Uninsured	13%	12%
Ratio of Population to Primary Care Physicians	2,310:1	1,420:1
Ratio of Population to Mental Health Providers	1,000:1	440:1
Preventable Hospital Stays	6,436	4,702

*Note.* Adapted from County Health Rankings, 2019 Rankings (County Health Rankings, 2020b).

**Health behaviors.** Obesity has been an ongoing health challenge for the residents of the county. The 2019 County Health Rankings reported that 36% of adult county residents aged 20 years or older were obese, which is defined as an individual having a body mass index of greater or equal to 30 kg/m<sup>2</sup> (County Health Rankings, 2020b). The challenges with obesity are not

limited to adults. The 2016 community health needs assessment reported that 37.5% of children aged two through four in 2012 (last available data) were reported to be overweight and obese, which was higher than the state level (29.4%) (Hospital C, 2016). The 2019 County Health Rankings reported that 28% of county residents were physically inactive, and only 6% had access to exercise opportunities, which exacerbated the challenges with addressing obesity (County Health Rankings, 2020b).

Twenty-two percent of adults within the county currently smoke, which is two percentage points higher than the percentage of current smokers at the state level (18%). Other health behavior measures reported include the rate of excessive drinking (15%) and the percentage of driving deaths with alcohol involvement (21%), which were both lower compared to the state (County Health Rankings, 2020b).

The 2016 community health needs assessment of Hospital C's county highlighted sexually transmitted diseases (STDs) as an additional concern. When the assessment was released, Hospital C's county had the state's highest rate of new gonorrhea cases while also experiencing a rise in syphilis cases (Hospital C, 2016).

***Health outcomes.*** County Health Rankings reports Hospital C's county life expectancy to be 74.0 years, four years less than the state's life expectancy. Nearly one-fourth (23%) of adult county residents reported being in fair or poor health with an average of 4.3 poor physical health days and poor mental health days. Additionally, the county has a higher prevalence of diabetes (14%) among adult residents aged 20 or older, which is three percentage points higher than the state (County Health Rankings, 2020b). Table 19 displays the top ten causes of death within the county for the years 2014 – 2018.

Table 19: Top Ten Causes of Death in Hospital C’s County for All Ages, 2014 – 2018.

Causes of Death	Rank
Diseases of the Heart	1
Cancer – All Sites	2
Cerebrovascular Disease	3
Chronic Lower Respiratory Disease	4
Diabetes Mellitus	5
Alzheimer’s Disease	6
Septicemia	7
Nephritis, nephrotic syndrome, and nephrosis	8
Other Unintentional Injuries	9
Pneumonia and Influenza	10

*Note.* Table adapted from (NC DHHS, 2019).

**Care access.** According to a public survey conducted as part of the 2012 community health needs assessment, 56% of residents surveyed did not agree they had access to good healthcare within the county. Furthermore, 41% of residents reported lack of access to specialists, 12% felt they lacked access to doctors and other healthcare professionals, 14% did not have access to adequate transportation to seek healthcare services, and 18% received healthcare services outside of the county (Hospital C, 2012). According to the 2016 community health needs assessment, 44% of public survey participants indicated that the care they needed was not available in the county (Hospital C, 2016).

The County Health Rankings reports that 13% of the county population under the age of 65 are uninsured, one percentage point higher than the uninsured percentage at the state level (12%). Additionally, Hospital C resides in a state that has not expanded Medicaid (Kaiser Family Foundation, 2019). The ratio of county residents to primary care physicians (PCPs) (2,310:1) and mental health providers (1,000:1) is high compared to the state (1,420:1 PCPs; 440:1 mental health providers) (County Health Rankings, 2020b).

The high ratio of county residents to a PCP presents access to primary care challenges

within the county that could exacerbate challenges associated with managing chronic diseases and diabetes. According to the County Health Rankings, the number of preventable hospital stays is higher in the county (6,436) when compared to the state (4,702) (County Health Rankings, 2020b; Hospital C, 2016). Hospital C's county has been designated a high needs geographic HPSA for primary care, a low-income population HPSA for mental health, and a medically underserved area by the HRSA (HRSA.gov, 2020b, 2020a).

**Hospital Background and Impetus for Change.** The history of Hospital C begins in 1913 when the organization initially opened as a sanatorium, the county's first facility to offer healthcare services. The sanatorium was replaced by a newly constructed hospital in 1954, owned and operated by the county. A large multi-state healthcare system later acquired the 52-bed Hill-Burton-era hospital in 1997 (Hospital C, 2015, 2019a).

***Impetus for change.*** Hospital C's county has faced significant challenges over the years that have negatively affected its residents' health and wellness as well as the long-term financial sustainability of the hospital. The county's health status is, in fact, a reflection of its socioeconomic challenges. The erosion of the textile industry, high unemployment, and lack of good-paying jobs within the county has made it difficult for residents to afford healthcare. Many residents do not have access to health insurance or have become reliant on government payers such as Medicaid. As a result of these challenges combined with the lack of access to PCPs, the county has consistently been ranked as one of the least healthy counties in the state consisting of a population with numerous comorbidities such as hypertension, diabetes, and heart disease (Hospital C, 2016).

An assessment conducted on Hospital C's patient population found that only 19% of residents had an established relationship with a PCP. Therefore, Hospital C's emergency

department (ED) became the PCP for the surrounding community (Hospital C, 2015, 2019b). As part of the 2012 community health needs assessment, a public survey found that 8.9% of the residents used Hospital C's ED for primary care. However, according to the ED Director at the time, about half of the ED visits were for conditions that could have been treated outside of the ED setting (Hospital C, 2012). Later analysis revealed that around 40% to 60% of cases seen within the hospital's ED could have been treated in a less costly primary care setting (Hospital C, 2019b). According to one key informant, high utilization of the ED by patients with government insurance or no insurance for non-emergent reasons presented a financial challenge for Hospital C. Many of the patients using the ED had numerous comorbidities and health issues which made the episode of care more costly for the patients and the organization.

Hospital C faced additional financial challenges resulting in the loss of an estimated eight to ten million dollars a year (Hospital C, 2019b). Stagnant population growth in the county mixed with outmigration of the younger population with college degrees left a patient base dominated by residents who were uninsured or reliant on government payers. The organization experienced declining inpatient volumes and, at one point, had an average daily census between three and five inpatients for its 52-inpatient bed facility (Hospital C, 2019b). In addition to population outmigration, the hospital experienced patient outmigration as residents with access to transportation sought care outside of the county due to the limited number of services offered and negative perception of the organization within the community. Also, Hospital C was operating in an aging facility. According to one key informant, it would have been more expensive to renovate the current facility than to build a new facility altogether. Table 20 summarizes key financial indicators for Hospital C for the 2012 calendar year compared to similar hospitals.

Table 20: Key Financial Indicators for Hospital C for Calendar Year (CY) 2012.

<b>Financial Indicator</b>	<b>CY 2012</b>	<b>CY2012 South Median</b>
<i>Profitability</i>		
Operating Margin	-17.09%	-0.23%
Total Margin	-16.90%	0.97%
<i>Liquidity</i>		
Current Ratio	1.40	1.97
Days Cash on Hand	5.14	39.87
<i>Capital Structure</i>		
Equity Financing	53.52%	56.48%
<i>Revenue</i>		
Total Unreimbursed and Uncompensated Care, Medicaid, and SCIP Cost	\$2,035,812	\$3,404,807
Outpatient Revenues to Total Patient Revenues	66.22%	69.41%
Medicare Outpatient Payer Mix	25.06%	20.43%
Medicare Inpatient Percentage	56.48%	41.26%
Medicaid Inpatient Percentage	13.14%	10.18%
<i>Utilization</i>		
Occupancy Rate	10.91%	39.40%

*Note.* Hospital-specific financial data is from the HCRIS provided through the RAND Corporation (CMS, 2020a; RAND Corporation, 2020).

The 2012 calendar year median financial values were calculated using cost reporting information from hospitals in the 2010 South census region of the US (CMS, 2020a; RAND Corporation, 2020; US Census Bureau, 2018). The data were filtered to include general short-term acute hospitals with  $\leq 100$  inpatient beds who were not designated as a critical access hospital (CAH). Compared to the median, Hospital C had lower levels of profitability and liquidity in calendar year 2012. Hospital C reported costs totaling \$2,035,812 associated with unreimbursed and uncompensated care, Medicaid, and SCIP, which was lower than the region's median. Also, outpatient revenues to total patient revenue (66.22%) were three percentage points lower than the South median. Medicare patients accounted for one-fourth (25.06%) of outpatient charges throughout the year. In 2012, Hospital C was more reliant on government payers than its



comparison group as Medicare and Medicaid patients accounted for 69.62% of inpatient charges. Hospital C's occupancy rate in calendar year 2012 was 10.91%, indicating that many inpatient beds were not fully utilized throughout the year, which was lower than the South median of 39.40% (CMS, 2020a; RAND Corporation, 2020).

**Hospital C's New Business Model.** Given the significant financial challenges Hospital C faced, the broader healthcare system was left with two options. Either close the aging facility that was operating continuously at a loss under the traditional acute care inpatient model or come up with a new business model altogether. If the healthcare system decided to leave, the county and region would have become a healthcare desert. Residents would have no access to emergency or inpatient care, exacerbating the health challenges associated with diabetes, cardiovascular disease, and other chronic conditions the community was already struggling with (Hospital C, 2015, 2019b).

The healthcare system ultimately decided to stay after considering the overall health status of the community and mission of the broader organization. One healthcare system stakeholder was quoted as saying:

So we're here with outcomes that weren't very good, but we didn't want to leave this rural community. We wanted to make sure this community had access to high-quality healthcare. We thought we were the right system to do it. And quite honestly, since we are a mission-driven organization, we realized that if we left this rural community, there wasn't anyone else that was going to come in behind us (Hospital C, 2019b).

Hospital C stakeholders decided to build a new facility under a new business model that focused on improving the overall health status of its surrounding residents through a community-based model (Hospital C, 2015, 2019b). However, in 2012, there was no existing benchmark

model the healthcare system could quickly adapt, so the stakeholders decided to innovate and create one (Hospital C, 2015). According to key informants, healthcare system leaders visited healthcare facilities across the country who were further along in their journey in adopting a patient-centered medical home model to help determine if this model was the right model for Hospital C. Ultimately, Hospital C stakeholders decided the medical home model was the right model to implement at Hospital C to both improve the overall health status of the community and the financial sustainability of the organization (Hospital C, 2015, 2019b).

A patient-centered medical home is a collaborative care delivery model where a team of healthcare professionals, coordinated by a patient's PCP, ensures the patient receives high-quality care when and where they need it (ACP, 2019; Hospital C, 2020). The goal of Hospital C stakeholders was to establish the organization as a healthcare hub within the community with acute inpatient care, emergency care, and population health services (Hospital C, 2019b). One key informant described the new model using a diabetic patient as an example:

So of course, it's labeled patient-centered because all of the services are built to be wrapped around that particular patient and coordinated throughout their journey through the health care system. So, if someone comes in, and I keep going back to diabetics, because that's what we see a lot of. They come in and you're seen by your primary care physician. While you're here, you could also see a diabetic educator. We have our dietitian available to you at that time. So you are seen by everyone from a, even a Healthquest, to be able to get your medicine. So, it's designed to be able to provide all the support that patient would need to stay out of the hospital.

Hospital stakeholders aimed to create a healing environment in the new facility, which included soothing color schemes, floors with curve and flow, and lights that could be dimmed.

Healthcare system stakeholders engaged the staff at Hospital C to assist in the development of the new facility's design. A multi-disciplinary team of nurses, providers, registrars, radiology technicians, and other healthcare professionals, using lean concepts and principles for patient flow, built a miniature hospital model that was incorporated into the facility's final design (Hospital C, 2015).

The new 43,000 square-foot, \$20 million healthcare facility opened on July 14, 2014, under the patient-centered medical home model (Hospital C, 2015). The new facility offered a variety of healthcare services, including 24/7 emergency care, radiology, laboratory, pharmacy, surgery, rehabilitation, and diabetes management services. Acute inpatient care continued to be provided under the new model. However, Hospital C reduced the number of inpatient beds from 52 in the old facility to 15 in the new facility. Also, to improve access to care to specialty services, the new facility included office space for rotating specialists complete with a check-in area and exam rooms (Hospital C, 2015, 2019b). In the new facility, the primary care clinic was co-embedded within the ED. Two of the primary goals of Hospital C's new model was to transition patients who utilized the ED for non-emergent issues to a lower level of care while also helping these patients establish a relationship with a PCP to move patients from episodic to longitudinal care (Hospital C, 2015, 2019b). For example, within the co-occupied unit, patients would receive a medical screen upon arrival and then transitioned to the appropriate level of care (Hospital C, 2019b).

Under the new business model, Hospital C proactively addresses healthcare needs through its mobile health unit. One Hospital C key informant explained how the mobile health unit worked:

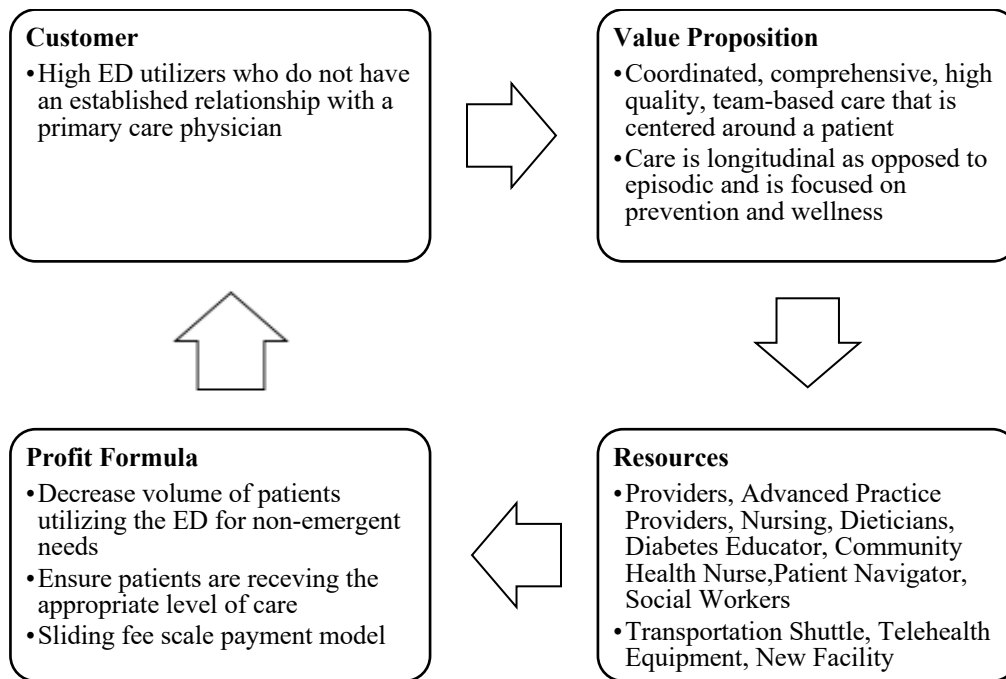
We do have a nurse who goes out on our mobile unit. We send that unit out to hotspots in the county so we will look at our data and through our analytics, determine where we are seeing the most ED visits from. And then the bus will be deployed to that area so that we could either screen folks or educate about utilizing primary care. A lot of people come out, they have their blood pressure checked, that kind of thing, and found to be very high. So depending on how high it is, [they] may see the emergency department physician that day and then be scheduled to follow up at [the primary care clinic]. Or if it's someone who says, you know, I used to have a doctor and now I don't so we would get in touch with [the primary care clinic] and get them scheduled to be seen by a physician.

Hospital C also made it a priority to establish constructive relationships within the community with local churches and civic organizations to provide health screenings and education on health and wellness in the ongoing effort to improve the health of surrounding residents to keep them out of the ED and hospital (Hospital, 2019b).

Hospital C also made it a priority to address some of the community's socioeconomic challenges within the new model. Not all residents within the community have access to adequate transportation, which poses a challenge for residents to attend healthcare appointments. Therefore, Hospital C created a van service that would pick up residents at their homes so that they could make it to their appointments (Hospital C, 2015). Hospital C's surrounding community has lower median household income, higher unemployment rate, and uninsured rate than the state (County Health Rankings, 2020b; U.S. Department of Commerce, 2020). Understanding the surrounding community had financial challenges in accessing healthcare, Hospital C created a pharmacy payment-assistance program that offers a small fee for medications donated by pharmaceutical companies (Hospital C, 2015). Multiple key informants

mentioned that a sliding fee schedule was also implemented so that no patient would be turned away from care based on their ability to pay. Figure five illustrates the business model Hospital C created and implemented in 2014.

Figure 5: Hospital C’s Patient-Centered Medical Home Model



*Note:* The business model was formulated using information from key informant interviews and publicly available information.

In the first year of the new business model's operation, 2,631 patients who otherwise would have been seen in Hospital C's ED were successfully transitioned into primary care. By transitioning patients to the appropriate level of care and improving access to telemedicine and predictive analytics, the organization improved financially from losing, on average, \$7,000 a month to breaking even and, on some occasions, turning a profit (Hospital C, 2015). Table 21 compares key financial measures for Hospital C before and after implementing the new business model.

Table 21: Key Financial Indicators for Hospital C for Calendar Years 2012 and 2017.

Financial Indicator	Calendar Years		% Change
	CY 2012	CY 2017	
<i>Profitability</i>			
Operating Margin	-17.09%	3.12%	118%
Total Margin	-16.90%	3.68%	122%
<i>Liquidity</i>			
Current Ratio	1.40	0.09	-94%
Days Cash on Hand	5.14	129.12	2,412%
<i>Capital Structure</i>			
Equity Financing	53.52%	-8.72%	-116%
<i>Revenue</i>			
Total Unreimbursed and Uncompensated Care, Medicaid, and SCIP Cost	\$2,035,812	\$3,239,418	59%
Outpatient Revenues to Total Patient Revenues	66.22%	93.98%	42%
Medicare Outpatient Payer Mix	25.06%	25.26%	1%
Medicare Inpatient Percentage	56.48%	43.85%	-22%
Medicaid Inpatient Percentage	13.14%	9.63%	-27%
<i>Utilization</i>			
Occupancy Rate	10.91%	7.78%	-29%

*Note.* Hospital-specific financial data is from the HCRIS provided through the RAND Corporation (CMS, 2020a; RAND Corporation, 2020).

Table 21 compares financial information from calendar years 2012 and 2017, utilizing cost reporting information from HCRIS. Calendar year 2017 is the most recent full year of cost reporting information available. Since the implementation of the new business model, Hospital C has drastically improved its profitability and liquidity. There has been significant improvement in the organization's operating margin. In calendar year 2017, almost three years after implementing the organization's new business model, the operating margin has improved by 118% from -17.09% in calendar year 2012 to a positive operating margin of 3.12% in calendar year 2017. Also, Hospital C's total margin has improved by 122% from -16.90% in calendar year 2012 to 3.68% in calendar year 2017 (CMS, 2020a; RAND Corporation, 2020).

Hospital C has improved its days cash on hand significantly from 5.14 days in calendar year 2012 to 129.12 days in calendar year 2017. However, Hospital C's current ratio decreased from 1.40 to 0.09 from calendar years 2012 to 2017. The equity financing level has decreased from calendar year 2012 (53.52%) to calendar 2017 (-8.72%). The decrease in equity financing could be due to the debt associated with the construction of the new facility. In calendar year 2017, Hospital C experienced higher costs associated with unreimbursed and uncompensated care (2012, \$2,035,812 versus 2017, \$3,239,418) (CMS, 2020a; RAND Corporation, 2020).

The percentage of outpatient revenue to total patient revenue has increased by 42% from calendar years 2012 to 2017 from 66.22% to 93.98%. The Medicare outpatient payer mix stayed roughly over the same period at around 25%. In calendar year 2017, Medicare and Medicaid patients accounted for approximately 53% of inpatient discharges compared to 69.62% of inpatient discharges in calendar year 2012. The decrease indicates that the organization may be less reliant on government payers and or are keeping these patient populations out of the hospital through its patient-centered medical home. Finally, over the same period the occupancy rate decreased from 10.91% to 7.78% as the organization's primary objective is to provide patients preventative care to avoid hospitalization (CMS, 2020a; RAND Corporation, 2020).

### **Findings from Key Informant Interviews**

The following section will provide the reader with findings from the thematic analysis of the key informant interviews to answer the central research question: How do rural hospital stakeholders determine the most appropriate business model for their organization? Snowball sampling was used to select interview participants from the three participating rural hospitals who were involved, either directly or indirectly, in the hospitals' business model decision-making process. A total of nine hospital administrators, clinician, and community stakeholders

participated in the interviews, as shown in Table 22.

Table 22: Key Informant Interview Participants

<b>Participant</b>	<b>Hospital</b>	<b>Role</b>
1	A	Administrator
2	A	Community Stakeholder
3	B	Administrator
4	B	Community Stakeholder
5	C	Administrator
6	C	Administrator
7	C	Administrator
8	C	Community Stakeholder
9	C	Clinician

**Research Question #1: What critical factors do rural hospital stakeholders consider when determining the most appropriate business model for their organization?**

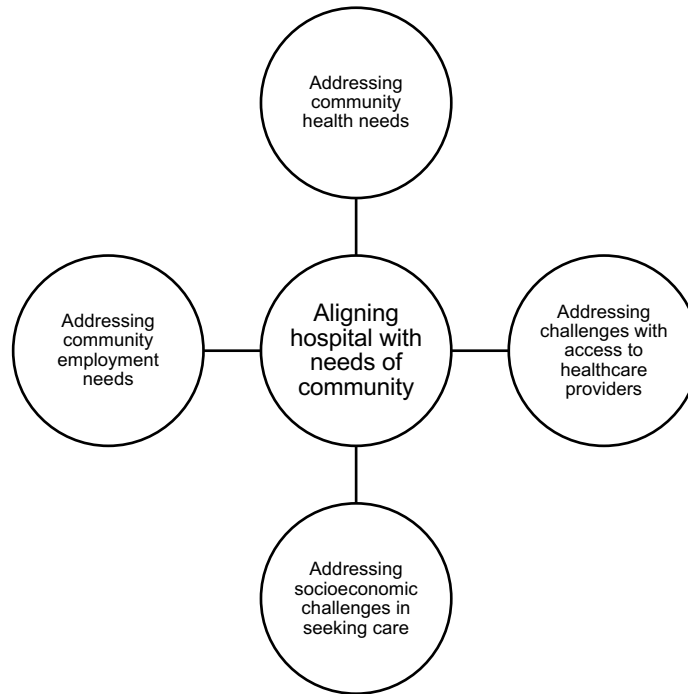
**Theme 1: Aligning hospital with the needs of the community.** All three rural hospitals included in the doctoral project faced similar internal and external challenges that threatened the organization's long-term financial sustainability. All hospitals faced declining profitability, declining inpatient volume, and an inpatient payer mix dominated by Medicare and Medicaid. Moreover, the rural hospitals' surrounding communities had lower levels of income, education, higher unemployment, and a higher percentage of residents without health insurance compared to their states. The communities were found to comprise mostly of aging populations with many health challenges, including lower access to care, such as primary care.

Interview participants noted that financial improvement was essential; however, it was not the sole deciding factor. Instead, each hospital strived to understand the communities' specific needs and how they could shift their services to meet the identified needs. Four specific community factors were taken into account when deciding on the most appropriate business model: 1) community health needs, 2) access to healthcare provider challenges, 3)



socioeconomic barriers to seeking care, and 4) community employment needs (see Figure 6).

Figure 6: Nodal Map for Theme: Aligning Hospital with Needs of the Community



***Addressing community health needs.*** Communities, both rural and urban, throughout the country have different and unique needs. Many stakeholders noted the importance of identifying the community's specific health needs and developing services to meet that need. For Hospital A, behavioral health was identified as one of the current needs within its community. The hospital aims to provide behavioral health patients treatment closer to home where they will have more support from their friends, families, and better access to local resources. As one informant explained:

[We have] a real need for more behavioral health. It goes back 50 years, way before you were born, when they decided they were going to sort of push all of the folks that needed mental healthcare out of state institutions and push them out on to the community. So, everybody will talk about the opioid crisis as a real thing, but it's more about, there really

is no long-term care places for people who have mental health issues to be treated. So, we see it in everyday life here...The police departments and all those folks just don't have anywhere to take folks that are really sick. And there is a difference in how society values mental health as opposed to physical health, in my opinion...It's a big part of everyday life in our community. So, providing what our long-term goals are, is to make sure that the overall health of our community is better served...Our ultimate job is to determine what the needs of the community are.

Hospital B, compared to the other hospitals, was in a unique situation. As an independent hospital, Hospital B could not tap into resources a larger healthcare system could provide to help turnaround the organization. The hospital had to implement a new business model that targeted patients from outside the community to save the hospital from closure. However, the ultimate goal was always to address the health needs of the community. Hospital B was able to reinvest revenue gained from its successful long-term tracheostomy and ventilator swing bed model to develop services that met the specific health needs of its community. One key informant stated:

The cash that has generated [from swing bed model] has allowed us to, you know, open that [family medicine] practice, allowed us to, you know, do other things to enhance the services for the hospital and community." Another key informant mentioned, "We have to trek 40 minutes to the nearest gym. So that's one of my priorities, trying to raise enough money for a new wellness center for the community.

Hospital B's community also faces challenges with opioid and alcohol abuse. The hospital was able to secure a \$750,000 grant to open medical stabilization services, which would not have been possible if the organization closed. One key informant explains:

We did start taking care of patients who need help going through the withdrawal process. So, it's just like a regular admission. We have protocols in place. Patients like it so much better because they [can say they were] an inpatient at [Hospital B] instead of saying [they were] an inpatient at such and such drug facility.

Meeting the health needs of the community was the central focus of Hospital C's new business model. One key informant summarizes:

And the overall health status is one of the worst of all the counties in [the state]. I think it's 89th out of 100 counties. Which is why we, when this hospital was developed, we developed this medical home model of care...the ultimate goal was to improve the health status of the citizens of [Hospital C's county] by developing a medical home model of care where primary care and primary care services were at the center of that...And the long term goal is to move the patients that are going to the ED unnecessarily for non-emergent care and move them into this medical home model of care.

Another key informant summarized Hospital C's model stating, "This method allows patients to have healthcare that is, hopefully competent, rather than just looking to make money off these patients."

*Addressing challenges with access to healthcare providers.* Improving access to specific healthcare providers such as specialists, primary care, and mental health providers, was a critical factor discussed in many of the interviews. According to the County Health Rankings, many counties across the US do not have a sufficient number of healthcare providers to meet the healthcare needs of their residents. In 2017, there were 6,900 primary care and 5,000 mental health federally designated HPSAs across America, including all three counties included in this doctoral project (County Health Rankings, 2020a). Limited access to specialists, primary care,

and mental health providers can further exacerbate health disparities within rural communities (Wishner, Solleveld, Paradise, et al., 2016). Hospital A could not meet the behavioral health needs of the surrounding communities. One Hospital A key informant explained:

Well, the fact that on our ten-bed unit, our existing ten-bed unit, we get over 5,000 referrals every year for those ten beds. And the reality is that we can only admit about 500 of those. So that's a pretty staggering statistic regarding the need within our state... You know, to get that many referrals for ten beds and to only have the capacity for a lot less than ten percent of those for possible admission was an eye opener.

Furthermore, another Hospital A key informant stated:

I see the patrol cars coming from [various parts of the state] and they're bringing folks and younger folks, older folks for a ten day or two-week treatment plan. So, they're coming from everywhere... So, yeah, you've got folks in the ED and you can't... there's nowhere to transport them. So, they're just stuck there.

The County Health Rankings ranked both Hospital B and C's counties as one of the unhealthiest counties within their respective states. Both communities have a high prevalence of unhealthy behaviors (i.e., obesity), outcomes (i.e., average number of poor physical health days), low access to PCPs, and a high number of preventable hospital stays (County Health Rankings, 2020b). Therefore, improving access to PCPs was a key factor included in discussions regarding the organizations' business model. Although adding primary care services was not part of the swing bed business model, revenue from the model allowed Hospital B to open a primary care practice with a physician that is "all about prevention, exercise, and diet" according to one key informant.

Improving access to primary care was essential for Hospital C. One key informant explains:

I believe, if I remember correctly, only 18 percent had reported having a primary care [provider] and most of the folks were utilizing the emergency department as their primary care for anything from the simple cold or flu to your diabetics and the folks with heart disease. Nobody really saw primary care and further, they did not see any specialists or anybody at that time. So, the decision was made in looking at some of the data from the ED that if we were able to increase access and get folks into primary care, then eventually overtime we were going to increase the availability of for instance, a diabetic educator or perhaps even specialist. And if we could wrap all the services around a patient, eventually, stop utilizing the emergency department, work towards more wellness and eventually towards prevention.

Hospital C stakeholders also aimed to improve the community's access to specialists in their business model. One community stakeholder summarizes:

There's a lot of technology in place, a lot of technology in use. In other words, if somebody has a real serious problem and they have to be admitted here, you know, we can do telemedicine and get a specialist on the line and they can actually see the patient and actually interact with the provider who's on site and determine what needs to be done. And then if they determine that the patient needs to go on somewhere, then they can do that to...So, we've got things in place that actually put us in the position to handle just about any medical need in the county.

***Addressing socioeconomic barriers to seeking care.*** Interview participants noted that cost and access to adequate transportation can be barriers for rural residents who are seeking

care. Rural hospital stakeholders considered how they could address these barriers when deciding on the most appropriate business model for their organizations. For example, Hospital C created a van service to address challenges with access to adequate transportation in their community. According to a Hospital C informant:

One of the barriers that we see to getting primary care as well as other wellness services is transportation, and that is across the community at large...but we do have a shuttle that runs five days a week that picks up patients and brings them to the hospital for their appointments, primarily primary care or other diagnostic testing and take them back home.

The hospitals also considered ways to lessen the cost burden associated with seeking care. One Hospital A key informant stated, “We send every patient home with a one-week supply of medication even if they cannot afford it.” One Hospital C key informant stated:

We have set up a sliding fee. If they are privately insured, then the insurance company pays. They take care of it. And it goes down from there...You pay according to what you got...We don't turn anybody away because they don't have insurance.

Another Hospital C key informant added:

We have somebody who actually, she just left the post, but she would call around and get grants for patients that needed a specialist [who had no] insurance. She also was able to get specialists to see them free of cost. And that makes a big difference to get these things done for the patients. And that's why I think it's a home, medical home.

Hospital A worked to ensure funding would be available to care for indigent patients in their behavioral health model. One key informant summarizes:

A patient who has no payer source through the approval process with the local management entities (LME) can get their admission and stay paid for with a per diem rate per day. So currently three of our ten beds are reserved for our three-way contract...So we've felt very strongly that we want to grow that service. But in order to do that, we also had to have some assurances about payment. So, within our contract for the [behavioral health] beds, I think the contract specifies that at least 50 percent of those beds will be three-way contract bids, which means the state legislature is contractually obligated to allocate money for those additional beds.

***Addressing community employment needs.*** Numerous participants mentioned their community's economic development as a critical factor when developing their respective business models. According to one Hospital A key informant:

[One key] piece is economic development, which I think a lot of folks sort of falls through the cracks, but for me, it's not. We need real jobs. If you're going to have a viable community, you want places where people can work, and people can contribute to keep the community viable...Every community has a three-legged stool. One's education, one's healthcare, and the other one is jobs.

Another Hospital A key informant added, "We are looking to add an additional 50 jobs in a small rural community...and not only for the professional positions, but the support positions also."

Also, Hospital B stakeholders acknowledged the new business model allowed them to hire as much as 40 new full-time employees.

**Theme 2: Rightsizing health services to address community needs.** Across the hospitals studied, stakeholders expressed concern over the long-term financial sustainability of their organizations if they continued to operate in the traditional hospital-based acute inpatient

model. According to a Hospital A stakeholder, “We know that we’re not going to make it with [inpatient] census.” One Hospital B stakeholder stated:

And at my second board meeting, which was the next month, our auditors came in and gave their cost report presentation. And they said, you know, we have ongoing concern if you do not turn this [hospital] around [financially] within a couple of years this hospital will close due to multiyear losses...And in that first year after the cost report, not only were we, cash poor, facilities needed stuff, we had to write Medicare a check for \$145,000 because we did not manage our costs appropriately from the cost report... We had an average daily census of 2.3...[We] realized our community was not going to keep our hospital open. There was not enough flu, viruses, runny noses and whatever. We were not going to survive...I felt like if we didn't try something different, we were just dead in the water. I mean we were really just literally waiting for patients to come in and it was not working.

Another Hospital B stakeholder added, “We’re not going to survive as a typical, you know, critical care hospital that’s waiting on, you know, services to walk in the door.” A stakeholder at Hospital C expressed similar concern over the community's ability to support an acute care inpatient hospital stating:

The makeup of the population and the fact, like I said, we've got a growing aging community and there's little to no growth. So, yeah, a full acute care hospital would not be, the demographics of the community don't support it. The community would want it because they wouldn't have to go elsewhere to get treatment. But like I said the demographics of the community would not support a full acute care hospital.



All stakeholders interviewed noted that in order to improve financially and better serve their communities, they needed to conduct business in a different way. According to a Hospital C stakeholder, “We’ve been doing this [acute care model] for 100 years, and, you know, things have changed. So, where do we need to change to stay competitive and to be more out in front with technology...” Another Hospital C stakeholder added, “You have to look at how to do things differently.” One Hospital C stakeholder argued:

[Hospital administrators] have to get out of their heads what I call the “BIP” principle, “butt’s in beds,” that never works...Some of the smaller [hospitals] push getting admissions so that they have numbers to survive as a facility. I think it’s quality. The push should be quality, taking care of these patients if they need to be admitted then admit them, if they need outpatient, you know, be available give them what they need, you know, and find a way to get it done.

One Hospital A stakeholder summarized:

I think that you really have to evaluate the services that you're offering and recognize that you can't be everything that the community would like for you to be...And you have to be strategic in determining what your core services will be.

All participating rural hospitals included in this doctoral project decided to "rightsize" healthcare services within the business models they implemented. "Rightsizing" services require a healthcare organization to understand the specific needs of a community and then redesign or tailor its services to meet the identified need(s). Rural communities are all unique and have different needs. One rural community may need better access to primary care than inpatient care, while another community may need enhanced access to emergency services (Bipartisan Policy Center, 2018).

Hospital A is currently restructuring its services to provide care to more behavioral health patients based on the needs of the surrounding communities and throughout the state. One

Hospital A stakeholder explains:

So, we started thinking about how we could develop more inpatient behavioral health beds with our existing space. And we kind of landed on converting all of the existing inpatient medical beds into behavioral health beds. And rightsizing our medical beds for just a little more than our average daily census to create just a little capacity. So, our proposal was to expand behavioral health beds by 27, bringing our total to 37 and to decrease our medical beds from the existing 25 to eight...So what we proposed to CMS was that we create two separate hospitals within the confines of this space. So, one would be a behavioral health hospital and the other would be the critical access hospital. That's never been done before.

Hospital B decided to leverage its swing beds and implement a business model that specialized in providing care to long-term tracheostomy and ventilator patients. To provide care to these patients, the organization had to hire specialized staff, purchase specialized equipment, and implement new policies and procedures. The revenue generated from swing bed reimbursement allowed the hospital to implement later other various business models tailored to meet the needs of the community. One Hospital B stakeholder mentioned, "Swing bed was already here, we just had to look for a different line [or patient population]. It helped us...we expanded our services greatly, all based on that [swing bed model]."

Hospital C completely redesigned its services to focus primarily on preventative care through a patient-centered medical home model, which included decreasing inpatient beds from 52 to 15. One Hospital C stakeholder explains:

Um, the decision was made, we were going to build a new replacement facility. And they also looked at the demographics and the health status and everything...and said how can we improve the health status of the county? And the ultimate goal was to improve the health status of the citizens of [Hospital C's county] by developing a medical home model of care where primary care and primary care services were at the center of that, along with a community hospital with an ED and OR and all that kind of stuff...And the ultimate goal is to, over time, folks that continue to use the ED would be rolled over and seen in the primary care setting.

Another Hospital C stakeholder added, "The whole key to the whole thing is having the patient seen at the right level of care at the right time."

**Research Question #2: What resources do rural hospital stakeholders use to determine the most appropriate business model for their organization?**

**Theme 3: Leveraging collaboration and partnership.** The majority of rural hospital stakeholders interviewed provided evidence of leveraging collaboration and partnership when determining the most appropriate business model to implement within their organizations. Evidence from the literature has shown rural hospitals have been successful in leveraging collaboration and partnerships to improve existing services and create new services to meet the needs of their communities (Adaniya, 2016; Bryant, 2017; Clawar et al., 2018; M. Holmes & Thomas, 2019; Irons & Sauer, 2018; RCHI, 2018; Uecker, 2018).

In May 2017, Hospital A was awarded a \$6.5 million grant from the state to increase the number of behavioral health beds within the organization (NAMI, 2017). The state's ultimate goal was to address the lack of adequate behavioral health beds in the state (NCDHHS, 2017).

The state provided its grant recipients tools to help the organizations plan for future success.

According to one Hospital A stakeholder:

During the process, [the state] gave us the tools for us to make sure [increasing behavioral health beds] was the right thing for us to do...[the state] made sure we had internally studied what we were going to do and what we've got to do [for success].

Hospital C stakeholders performed site visits across the country at hospitals that successfully implemented the patient-centered medical home model within their respective organizations to learn from subject matter experts whether the model would work at Hospital C.

One Hospital C stakeholder commented:

[Hospital and healthcare system leaders] went across the country looking at other types of operations, other facilities and just seeing, you know, what was being done in the country as far as healthcare is concerned so they could use that information to determine what they wanted to do with our new facility.

Another Hospital C stakeholder added, “[Hospital and healthcare system leaders] did go to Vermont and looked at several other facilities that were already further down the path with primary care and the medical home model of care.” When asked about the importance of collaboration, a Hospital B stakeholder responded:

There are so many critical access hospitals who are so afraid to share information or knowledge. And when I spoke at Hometown Help this past Fall, I said one of the big things is that I realize, as a critical access hospital leader, we cannot silo ourselves and be in competition with each other. We have to be resourceful. We have to admit the things that we don't know, and we have to reach out for help. And not everyone is going to be willing to help you...There are so many things wrong in healthcare, there is enough

for everybody out there. We don't have to worry about being afraid of not helping each other.

Shortly after filling the role as CEO at Hospital B, the CEO reached out to another rural hospital leader in the state who was able to successfully turnaround their hospital for help and guidance. Shortly thereafter, the leader agreed to be Hospital B CEO's mentor. The two met regularly both in-person and over the phone and developed a close relationship over time. The relationship ultimately resulted in a partnership between the two hospitals to provide care to long-term tracheostomy and ventilator patients. As part of the contract, Hospital B received business, quality, and operational support from the mentor's hospital. Hospital B CEO stated:

So, the swing bed [model]; she really threw me a lifeline because she didn't have to do that. We had to really negotiate a contract because she has shared some trade secrets with us and has helped us develop relationships with people to develop [the model].

When asked about the partnership, another Hospital B stakeholder commented:

So, I mean, the story [Hospital B CEO] developed with their relationship with [mentor]; I'm going to be honest with you, I think it saved the hospital...As far as the agreement, we can take up to, I think fifteen vent patients and I think that Medicare, you know, allows them to be there for 100 days. And so, you know, when they leave they go to [nursing home owned by mentor's hospital]...So we pay [mentor's hospital] a monthly management fee and I can't remember what that number is, but if we were to have one patient a month, that'll pay for the fee. So, you know, everything over that one patient is pretty much, you know, profit to us...Nobody takes for granted the fact that we've got this great opportunity to, you know, generate revenue with a partnership with another hospital.

Hospital B's CEO emphasized the importance of the partnership:

And I don't think I would have [move forward with the swing bed model] if I didn't have [my mentor] saying we're going to help you through the whole process. [Mentor's hospital] did daily calls with us. All of our bedside nurses and respiratory staff went to their hospital and trained at the bedside. The first day we got our patient, [mentor's hospital] had nursing team and respiratory team here. Our physicians called their physicians on a daily basis. So, they really helped. Watched us step by step until they felt comfortable enough that we knew what we were doing.

At the conclusion of the key informant interview, Hospital B's CEO reflected,

If I had not been brave enough to reach out to [my mentor] and if she had not been brave enough to pay it forward and share some of the things that she learned, and she really was great. She said, you know, 'what is going to be great about this is that I am going to help you avoid every problem and mistake we made getting this [long-term tracheostomy and ventilator swing bed] program off the ground to where it's going to be seamless for you'. And she was impressed. She said 'I cannot believe that you did so well your first year and that your nursing and rest of your staff are so hardworking'. And I tell her, 'I promise you that when the opportunity comes forward, I will pay it forward every chance that I get'. And I've said what you've done for me, we are constantly going to pay it forward and hopefully change other people's lives, other facilities. So, whenever someone gets a promotion or whenever there has been other CEOs who been challenged, or they need recognition for something. I'm the first to send flowers, to send a thank you card to just pat them on the back because I was on the other side of that.

**Theme 4: Access to financial resources.** For the rural hospitals included in this doctoral project, the importance of having access to financial resources was an essential factor in selecting the most appropriate business model for the organizations. In 2014, the General Assembly in Hospital B's state created the Rural Hospital Stabilization Committee in response to the rising number of rural hospital closures within the state. The committee later developed a Rural Hospital Stabilization Grant Program. Rural hospitals that have been awarded the grant have used the funds to improve financial processes, reduce excess costs, and create mental health programs (GDCH, 2020; Miller, 2019).

The state selected Hospital B as a grant recipient after the CEO strongly advocated for financial support with a state senator. When asked about the three most important factors that affected the decision-making process when deciding the most appropriate business model, Hospital B's CEO responded:

We had received a \$700,000 rural stabilization grant...I got a phone call from the state who said guess what, 'you've been selected as a rural [grant recipient]'. I could not believe it! Yeah, it really did help me buy all the equipment that I needed [for the long-term tracheostomy and ventilator swing bed model]...The grant helped me recruit a physician. It was a huge, huge, help for us.

Another Hospital B stakeholder also discussed the importance of grant funding to develop and implement a separate business model within Hospital B by stating, "We did receive a grant and not in relation to the vent program, but kind of in correlation, a \$750,000 grant for medical stabilization. That was another project that I think was critical for making the hospital more healthy..."

Hospital A stakeholders also discussed financial support as a key factor in their decision-making process. One stakeholder commented:

So the state approached us and said, ‘we’d like for you to build some behavioral health beds’...[We decided to] take the money the state gave us to renovate. Had we not had the state grant, we wouldn’t be moving forward into the mental health business even though there is a real need for it. I don’t think so.

When asked about the three most important factors that affected the outcome of Hospital A’s decision-making process, another Hospital A stakeholder answered, “First factor was whether we got the [state] grant funding.”

Although Hospital A is part of a regional healthcare system, there was no mention of financial support from the broader system during interviews with Hospital A stakeholders. According to the participants, the development of the business model was largely funded through the state grant and community philanthropy. One Hospital A stakeholder stated:

We are just about finished with the Critical Access Hospital, which entailed new construction for our eight [inpatient] beds, not part of the [state] grant. This is on our dollar and it's actually coming out of some foundation funds that we have. So, it's about a \$5 million project to develop eight beds.

When asked about the community’s contribution, another Hospital A stakeholder commented:

So, the folks in the resort communities here came forward and raised a lot of money and invested a lot of money and built the hospital here. So that was 20 years ago. They've continued to invest in the hospital here. And it's not because they are going to have long-term cardiac care, any of those things. They want a place to take their grandchildren if they fall. They want a place to be stabilized before a helicopter picks them up and takes



them to [larger urban hospital]. So, we've been able to do things that other rural communities just don't have the ability to do in that we have a big donor base. And so, our renovation was done with two big gifts; both were estate gifts.

One Hospital A stakeholder discussed the importance of community philanthropy's role in the development of its behavioral health model, stating, "Our Foundation was responsible for actually putting the [state] grant information together. Our [Foundation] director and I collected a lot of data that was included in the grant proposal that the [Foundation] created."

**Research Question #3: What barriers and facilitators related to adoption and sustainment must rural hospital stakeholders be aware of when deciding what business model is most appropriate for their organization?**

**Theme 5: Leadership and governance.** Leadership was identified as a key factor rural hospital stakeholders must be cognizant of before deciding what business model to adopt. Rural hospital stakeholders must determine whether leadership from the manager-level to the board have the skills and knowledge required to safeguard the long-term sustainability of both the business model being implemented and the organization. Countermeasures must be put in place to address any leadership gaps that are identified within the organization. Five specific areas relevant to leadership were identified during interviews with stakeholders from the three participating rural hospitals, as illustrated in Figure 7.

Figure 7: Nodal Map for Theme: Leadership and Governance



***Board governance knowledge and competency.*** Boards play an essential role in a rural hospital's long-term sustainability. In addition to its governance role, boards engage and help connect a rural hospital to its community. However, research has identified board governance knowledge and competency as a gap among rural hospitals (RCHI, 2018). At Hospital B, board governance knowledge and competency was a critical challenge for the CEO, who stated, "I think there has been such a disconnect from the operations of the hospital with the board; they really did not understand the challenges that we faced." Hospital B's CEO continued:

[For example,] the board is like, well, "why do we charge so much in our lab? We need to reduce the cost so that we can have more volume." I said that is not the case. If you look at our chargemaster, it had not been updated since 2008. Our prices are not any higher than the person next door. I said all of your commercial insurances are in network

for LabCorp. They are not in network with your local hospital. So, you're paying out a network benefit. It's not that we charge more, it's just the way the system is setup. So just getting people educated on [related items] like that is an ongoing process.

Within the last two years, Hospital B had to pay Medicare back \$145,000 because the organization did not manage its costs appropriately. Hospital B's CEO commented on the challenges associated with the board's understanding of the Medicare cost report:

And so getting [the board] to understand how a cost report worked for Critical Access Hospital is still ongoing...In their mind, they were thinking, OK, we're a business, so save money. Don't hire anybody bad. Let's just spend less. And I was like this is a critical access hospital. You cannot do that because whatever Medicare pays us, we have got to make sure our costs are associated as the same or if not more...We just can't take dollars and put it into the bank because we are going to pay it back to the government. They were like "We don't understand that. What do you mean?" I said we have to buy as much stuff as we can. So, I had [auditors] come in and do a report to show me where the largest Medicare utilization was and say these are the four areas that we have got to spend money in or we're going to pay it back to the government at the end of the year...[My mentor] and I had projected over a million dollar payback to Medicare and I was not going to let it happen.

Hospital B's CEO faced other challenges related to board governance. The CEO summarizes:

I know you're not going to believe this, but there was a lot of "good old boy" contracts that were on the verge of fraudulent, if not fraudulent when I got here...I had to talk to some people on the board because they were very involved in these things, and like this

is illegal. You can't have these kinds of contracts. I mean, these are self-serving, you know... The [board] had a lot of alliances in the communities, so some of their decisions or the yes's and no's, had been, I guess, heavily influenced by the relationships in the community. And I kept trying to tell them you can't do that, because of conflict of interest.

Hospital B's state recently passed a law mandating board members at all nonprofit hospitals to attend board training. Hospital B's CEO praised the training stating:

[The state] passed a law that all nonprofit hospital boards had to go through mandated board training and I'm going to tell you something. I know a lot of hospitals do not want that to happen because it's obviously going to be burdened with extra time that they don't have but it has been phenomenal! I mean, it really has changed the thought process of my Board members; it has really made them realize and take seriously the liabilities they have and being open to change.

***Establishing communication channels.*** The literature identified effective communication from leadership as essential to the long-term success of a healthcare organization (Meckstroth, 2013; Piercey, 2010; RCHI, 2017, 2018). Across all rural hospitals included in the doctoral project, establishing communication channels was identified as a facilitator in adopting and sustaining a new business model. Hospital B's new CEO made establishing a communication channel with the board as a high priority. The CEO explained:

My primary goal was to make sure that [the Board and I] had clear lines of communication... I didn't want to talk to them one night a month in our Board meeting, I wanted to make sure that they understand their responsibility and liabilities and not to have any surprises... So that night at the board meeting, my first day, happened to be the

Board meeting where I was voted in and I listed all of the structural issues we were facing and I said not only that, we had three days cash on hand.

Rural hospital leaders at both Hospitals A and C made sure to keep clear lines of communication open during the hospitals' decision-making process with their boards. One Hospital A stakeholder stated:

We (the board) were brought up to date at every meeting...Also, our [healthcare system] CEO does a weekly update to the board, so we are kept apprised of what's going on...So, yeah. Everybody on the Board knew what was going on [as it relates to the behavioral health hospital].

One Hospital C stakeholder described how their advisory council was kept informed throughout the development of their business model:

Well, you know, [the advisory council] were kept in the loop as far as being informed was concerned. [Hospital C's health system stakeholders] kept us up to date with monthly meetings. So, they would always let us know the progress that was being made and where they were as far as what the plans were. Sometimes there would be, we were asked, you know, what are we thinking? That type of thing. And, you know, just for input from the community standpoint.

Also, interviewees described how they opened communication channels with their staff.

One Hospital B stakeholder stated, "I had forums with our employees letting them know what we were going to do and why it was so important, including how much debt we were in." A Hospital C stakeholder described how staff were included in the development of the hospital's patient-centered medical home model, "We actually built the [new] facility in a large warehouse out of

cardboard to make sure the processes that [stakeholders within the organization] were talking about would work.” Another Hospital C stakeholder added:

My philosophy is no one knows the job better than the folks that are doing the job. So, if you don't follow them and get their thoughts and input, you'll build a facility and open and people will say, “what the heck did you do that for?” That doesn't make any sense.

Stakeholders at Hospitals B and C also discussed the importance of having communication channels with elected local leaders. One Hospital B stakeholder commented:

I just think it's important to communicate if you are a hospital authority with your county commissioners. Every year at the end of our fiscal year, I've held a dinner for them just to let them know how the year has ended and what our plans are for the next year.

One Hospital C stakeholder described how the organization communicated with its local leaders during its decision-making process:

[Hospital C health system stakeholders] made the county aware that the facility was no longer suitable. I am also the county commissioner. They let us know that they were having discussions about what to do. They had the option of closing the hospital and just moving out, or the other part of the equation was staying in the county. They went through the process and thankfully, for the county, the decision was made to remain and build a new facility...And like I said they would ask our input from time to time, you know, from a community standpoint, you know, and they also came to the board commissioners' meetings...They will let us know what their plans were, what they were going to do and how they were going to go about it.

***Engaging elected leaders.*** Two rural hospitals included in the doctoral project engaged their elected leaders to implement their respective business models. Hospital B's CEO strongly

advocated for Hospital B to be awarded the Rural Hospital Stabilization Grant with their state senator. Hospital B's CEO stated:

My first month here I called the senator for our area and said, “I want you to go to the legislature and I want to be considered for this grant”...He said [the county] is the least of our hospitals that we think can turnaround and we are really giving this money to hospitals that we feel have a good chance to make it.” I said I can make it if you just give me the money...He toured the hospital and he asked “what do you want from me?” And I said, “I want to put the county on the map. I need your help. We're in your district. Do you want this hospital to close?” he said “no, I do not. And I said “OK”...Well, a couple of months later I got a phone call from the state who said guess what, you've been selected as a rural [grant recipient].

Hospital B's CEO has also engaged the county's representative in the US House of Representatives. The CEO explains:

Reaching out to [our US representative] has been a huge help to me. We were mentioned on C-SPAN. He mentioned the hospital. He recognized us for winning hospital of the year with Hometown Help and we got congressional recognition. So, the recognition that these people have given us has built a trust in other people. So, going out and networking even now, I'm a huge introvert, but having to go out and put myself out there has been something that I've had to learn to grow and do but it really, really is beneficial.

Hospital A aimed to do something no other rural hospital has done before by creating two separate hospitals within the confines of the same space. One hospital will be an eight-bed CAH while the other will be a 37-bed behavioral health hospital. To accomplish the goal, Hospital A

stakeholders had to secure an exception from CMS to create more than ten behavioral health beds within the CAH space. One Hospital A stakeholder summarizes how engaging elected leaders helped the hospital to be granted the exception:

With a lot of work with our senator and our legislators, we were able to get that proposal and the reasons why that would be beneficial to our community in front of the top people in Washington...and we were granted an exception [from CMS]...I also reached out to our local legislator about the importance of this project and what it would mean to the region he serves.

***Rewarding and recognizing staff.*** Implementing a new business model introduces significant change within an organization. Hospital B's CEO discussed the risk the organization took in implementing the long-term tracheostomy and ventilator swing bed model. The CEO acknowledged the success of the model was primarily due to the staff at Hospital B. The CEO describes how staff were rewarded for their success and why it is vital to the long-term success of the model:

My employees have been working so hard in the last two and a half years and I owe them all the credit for all the achievements that we've had...And I asked forgiveness and did not ask for permission, but during hospital week, I gave everybody a 3 percent bonus based on their salaries and I excluded myself so I won't have to ask permission. The board asked, "So why did you do that?" I said you should invest in your employees who have worked hard these last few years. Boost morale, encourage them and say, listen, change has been hard, but you'll get the benefits of change.

***Trust and confidence.*** One Hospital B stakeholder identified trust and confidence in the rural hospital leader as an enabler of success when reflecting:



You know, you got to have faith and confidence in your leadership. The worst thing that you can do to me [as a leader] from the perspective of a Board is to try and micromanage a leader that is fully competent and can do the job. When you [micromanage]; I've been in that position myself where I've been micro-managed. I mean it just takes a lot out of you in the day to day. So, from my perspective as a board member, you need to let your leaders lead. You need to give them the right tools to be able to make decisions. Give them, you know, the confidence they need. Hey, somethings are going to work, and somethings aren't. But, you know, let them lead.

**Theme 6: Community awareness and engagement.** According to the Texas A&M Rural and Community Health Institute, community awareness is defined as the community's level of knowledge of the challenges faced by the local hospital and services offered (RCHI, 2018). Lack of community awareness of services being offered, including why the organization pivoted to the new model, can be a barrier in the successful adoption and sustainment of a new business model. All rural hospitals included in this multiple case study experienced challenges in the surrounding community's understanding of the services being offered under the various new business models. One Hospital A stakeholder stated:

Once we got the grant, we immediately started educating our community as to what this means because, of course, the first thing that the community hears is that we're expanding behavioral health services and are only going to be a behavioral health hospital. We had to get in front of that and dispel those rumors...we are still working that rumor mill [today].

One Hospital B stakeholder recounts a conversation they had with staff concerning the community's misconceptions of services offered under the hospital's new business model:

The [staff] said, well, we heard in the community [the hospital] chose to fill up the entire hospital with swing bed patients, these vent patients, and we won't have a place to go...So, the misconceptions of [the new model] were hard to push through.

A Hospital C stakeholder shared the following experience:

There were some things that were sent out [to the community] prior to the [new] facility opening, but I don't think anybody truly understood how many services and the scope of what we would have in [the new facility]...So, when the building was done and we were getting ready to open, we had an open house...the remarks were consistently, "there's a lot more here than I thought" or "it's bigger than I thought."

A lack of community awareness within rural communities may be attributed to the level of community engagement. The Texas A&M Rural and Community Health Institute defines community engagement as the degree in which the community is actively involved in the decision-making process of what services a hospital may offer. A multiple case study conducted by the Institute found the level of community engagement as a predictor of a rural hospital's long-term success (RCHI, 2018). When asked if Hospital C stakeholders engaged the community during the hospital's decision-making process, a Hospital C stakeholder answered:

No, I don't remember them actually going to each, we have seven municipalities. They didn't reach out to any of the communities that I'm aware of. Of course, our advisory council and the board back at that time, we had good representation of the county. But no, they did not make an effort to go out into each community to get any input or anything like that.

Asked whether stakeholders engaged the surrounding community during the decision-making process, a Hospital B stakeholder answered, "It was an internal [decision]. I did go to the county

commissioners, just to let them know what my strategic plan was, and they were supportive.”

Hospital A stakeholders did not mention engaging the community when developing the proposal to increase behavioral health beds during the interviews, however, the stakeholders quickly moved to engage the community after being awarded the grant. One Hospital A stakeholder summarizes:

We had a community session shortly after we received the grant because we knew that it would hit the newspapers and we wanted [the community] to understand what that means. I also went to several organizations within the community like the Kiwanis and the Rotary. I spoke at the commissioners meeting. I spoke to EMS., the school system, etc., just to try to get the word out there as to, you know, what the project actually is.

Although each rural hospital included in the doctoral project experienced challenges with community awareness and engagement, interview participants provided examples of positively received community outreach tactics. One Hospital A stakeholder provided the following example, “We've had mental health symposiums and invited folks from law enforcement and social services and we're keenly in touch with all those folks all the time including other mental health providers like a day or substance abuse clinics.”

One Hospital C stakeholder commented, “We are very involved in the community in many different ways, different civic organizations, and events. It's important for a community hospital to be involved in the community and have a presence.” One Hospital C stakeholder provided an example:

Just say, for example, at our church, we want to have a health fair. We can set it up with the hospital and they will send the mobile health unit out to the church the day we have the health fair. I think that is a good service for this community.

Another Hospital C stakeholder added:

A year ago, this facility gave volunteer firefighters free physicals. This facility arranged a bus to go out to the fire stations and gave them physicals, made sure the firefighters were well. You would be surprised how many of the firefighters' families called us to say thank you.

Hospital B has worked on establishing relationships with local employers. One Hospital B stakeholder explains:

One thing [Hospital B CEO] has done is developing corporate relationships with [local companies]. So, what we are doing to help the family practice is the employees [of these local companies] can go to the family practice for free; we waive the co-pays.

**Theme 7: Challenges with recruiting healthcare professionals.** Stakeholders from all rural hospitals included in the doctoral project discussed challenges with recruiting healthcare professionals to staff their new business models, which is consistent with the evidence from the literature (Adaniya, 2016; AHA, 2019; Pink & Holmes, 2018; RCHI, 2017; Thomas & Pink, 2019). One Hospital A stakeholder stated:

We work in partnership with mental health providers and other providers in the area, hoping that we can change the long-term part of this [mental health access crisis]. It's not easy because of a lack of psychiatrists and lack of mental health workers; the things we face everyday here...If you were a doctor and you were a psychiatrist and we were recruiting you heavily and you'd say, OK, well, I'm going to come. However, my new wife has a career and she wants to have a job, too. You're also looking at a job in [a nearby city]. So, yeah, we'll make a decision [to hire you] and you go and decide to move

to [nearby city] rather than moving to a rural part of America. So that's a big part of one of the things that we're facing at this point.

Another Hospital A stakeholder added when asked about healthcare professional recruitment challenges:

That is an area that we are concerned about. We are probably going to develop a [contingency] plan for our 2021 budget, just in case we have to bring in some temporary employees for the initial open and up to three to six months after until we can get employees hired and trained because behavioral health training takes a little more time.

A Hospital B stakeholder commented, “So, recruitment...we find it very challenging to recruit [healthcare professionals] to a critical access hospital.” Another Hospital B stakeholder when asked about barriers experienced when setting up the swing bed model answered, “To be honest with you, we tried to get a pulmonary [doctor] and had a real hard time doing that.” One Hospital C stakeholder summarized the healthcare professional recruitment challenges at their organization:

Well, actually, you know, I'm glad you mentioned that because that's another challenge that we have here in [the county]. You know, 20 or 30 years ago, we had maybe a half a dozen physicians. Now we're down to one pediatrician...And then we've got the physician at the primary care facility within the hospital...recruiting physicians is a problem here in the county...And the other thing that I'm hearing is that people graduate out of medical school, a lot of them are not interested in [practicing] in a small rural community...We struggle to get physicians, that is the main challenge here in the county as a whole.

Based on the experiences from the rural hospitals included in this doctoral project, rural hospital stakeholders must consider healthcare professional recruitment as a key factor when deciding on the most appropriate business model to implement within their organizations. If challenges with recruitment exist, rural hospital stakeholders must develop tactics to improve recruitment early to set up the new business model for long-term success. One Hospital A stakeholder explained how the organization was addressing its recruitment challenges:

So, what we have done to try to mitigate the [recruitment] issue is we try to hire people as we are working with local schools, universities and community colleges to offer them experiences either through an internship or even through job shadowing. We expose them to what behavioral health really is and what it isn't and dispel some of those myths about it to get them more interested in behavioral health. As far as the nursing assistant population goes, we go out and speak to every nursing assistant class within the surrounding area and offer them that same experience...As far as psychiatry, the other professional positions like MSW, psychotherapist, they're going to be a little more challenging. There are some programs within a 60-mile radius that we're working with to offer them a behavioral health experience to try to generate interest also.

Hospital B's CEO described one tactic used to recruit and retain nursing staff:

I think sign-on bonuses for nurses are offensive to the nurses that are already here. So, we have a contest every two weeks. If you do not call in, if you sign off on your time, and if you have very little overtime, your name gets put into a drawing. Every quarter we draw for a \$250 cash prize. At the end of the year, we are going to [give away] a brand new 2020 Ford Escape SUV. [We are using this tactic] as part of recruitment and

retention instead of giving a sign-on bonus, because it gets everybody to come to work, it decreases overtime, and motivates [staff] to do what's right.

## **Discussion of Results**

Rural hospitals play a vital role in a rural community's overall health and economic well-being. However, rural hospitals are closing across the country at an alarming rate. In 2019, over 20% of rural hospitals in the US were predicted to be at a high to moderate risk of financial distress, which has been found to precede closure (Thomas et al., 2019b; Thomas & Pink, 2019). A hospital closure within a rural community can further exacerbate the health, care access, and economic disparities present within these communities (Adaniya, 2016; Balasubramanian & Jones, 2016; Clawar et al., 2018; GAO, 2018; B. G. Kaufman, Thomas, et al., 2016; Mitchell, 2019; Pink & Holmes, 2018; RCHI, 2017, 2018; Richman & Pink, 2017; Robles, 2019; Think First NC, 2019; Thomas et al., 2019a; Thomas & Pink, 2019; Wishner, Solleveld, Paradise, et al., 2016).

According to the literature, one of the most significant contributors to rural hospital closure is financial with low levels of profitability, liquidity, and equity increasing a hospital's likelihood of experiencing financial distress (Chartis Center for Rural Health, 2020; M. Holmes & Thomas, 2019; B. Kaufman, Pink, et al., 2016; Piercey, 2010; RCHI, 2017). Multiple studies discovered that closed rural hospitals had significantly lower operating margin and total margin than open hospitals (Adaniya, 2016; GAO, 2018; B. G. Kaufman, Thomas, et al., 2016; Pink & Holmes, 2018; RCHI, 2017). Additionally, Kaufman et al. (2016) found that closed rural hospitals had a lower current ratio, days cash on hand, and higher debt levels. Many internal factors have been found to contribute to financial distress, including payer mix, outpatient revenue, aging facilities, low occupancy, and organizational leadership (Adaniya, 2016; AHA,

2019; Chartis Center for Rural Health, 2020; Mason, 2017; Pink & Holmes, 2018; RCHI, 2017; Thomas & Pink, 2019).

All rural hospitals included in this doctoral project were found to experience similar financial challenges consistent with the literature findings, such as negative operating margin, negative total margin, low number of days cash on hand, a high mix of Medicare and Medicaid inpatient discharges, and low occupancy. Also, board governance competency and knowledge among Hospital B board members were found to contribute negatively to the organization's financial performance. Mismanagement of the hospital's Medicare cost reporting and oversight of the facilities cost the organization millions of dollars.

Recent literature has highlighted the role of a rural community's characteristics as a significant contributor to a hospital's risk of financial distress and closure. Rural hospitals at a high risk of financial distress have been found to serve communities that are older, poorer, less educated, have a high unemployment rate, a higher rate of public insurance, and a higher percentage of residents reported to have poor health compared to urban communities. The characteristics of the rural communities included in this doctoral project were consistent with the findings from the literature (Adaniya, 2016; AHA, 2019; Artiga & Hinton, 2018; Bryant, 2017; Clawar et al., 2018; Freeman et al., 2015; GAO, 2018; M. Holmes & Thompson, 2019; Irons & Sauer, 2018; iVantage, 2016; B. G. Kaufman, Thomas, et al., 2016; Mason, 2017; Meit & Knudson, 2009; Paluso et al., 2018; Pink & Holmes, 2018; RCHI, 2017; RHRG, 2018; Richman & Pink, 2017; Thomas et al., 2015, 2016, 2019a; Thomas & Pink, 2019; Topchik, 2017; Weeks, 2018; Wishner, Solleveld, Paradise, et al., 2016).

The participating rural hospitals' surrounding communities were found to be comprised of aging and declining populations with high unemployment, low income, low levels of education,



high uninsured rate, and high prevalence of unhealthy behaviors and chronic diseases. Each community faced access to care challenges as all communities were designated as HPSAs and medically underserved areas. These external challenges, coupled with financial challenges including, but not limited to, decreasing inpatient utilization, declining reimbursement, and payer mix dominated by Medicare, Medicaid, and self-pay patients, threatened each organization's long-term financial sustainability.

Throughout this rural hospital closure crisis, research has focused primarily on the drivers of financial distress and closure, including the impact on a rural community when its hospital closes. Researchers have recommended rural hospital leaders to develop strategies to address the financial challenges they face. However, research has not fully explored how rural healthcare stakeholders have successfully re-engineered a rural hospital to a more sustainable healthcare delivery model. This multiple case study contributes to the limited literature by exploring factors rural hospital stakeholders considered when determining the most appropriate business model for their organization. The findings presented highlight key factors rural hospital stakeholders should understand and consider before beginning the decision-making process on what business model is most appropriate for their organization. Furthermore, participants provide readers crucial insights on facilitators and barriers to the adoption and sustainment of a chosen business model.

Casadesus-Masanell and Ricart (2010) define a business model as “the logic of the firm, the way it operates, and how it creates value for its stakeholders” (p. 197). A business model consists of four components: the targeted customer or patient population, the unique value proposition provided to the customer, resources required to deliver the value proposition, and the cost of resources and margins required to cover the costs (Hwang & Christensen, 2008; Sharan et al., 2016). Each business model has its own set of tactics or specific plans of action an

organization can undertake to create and capture value in the marketplace (Casadesus-Masaneil & Ricart, 2010; Farnam Street, 2018).

In 2017, the Texas A&M Rural and Community Health Institute (RCHI) published a report with potential strategies rural hospital leaders in Texas could implement to maintain or improve access to care within their communities. The authors concluded a “one size fits all” approach to address financial distress and closure was not realistic. The drivers of financial distress and closure among rural hospitals are multi-faceted (B. Kaufman, Pink, et al., 2016). Therefore, the authors suggest that rural hospitals develop tactics to address the specific challenges they face (RCHI, 2017).

Rural hospitals included in this doctoral project faced similar challenges such as declining profitability, declining inpatient volume, and served communities with numerous socioeconomic and health challenges. However, each hospital developed a different business model to improve its financial situation by addressing the specific challenges they faced, consistent with RCHI's recommendation. Hospital A developed a behavioral health hospital to meet its community's behavioral health needs and better utilize its licensed beds. Hospital B, working within the existing reimbursement structures, developed a robust swing bed model to meet the needs of an underserved patient population that, in turn, enabled the organization to address the health needs of its community. Hospital C converted its organization to a patient-centered medical home model that offers longitudinal care focused on prevention and wellness to a community with poor health and low access to primary care. Moreover, participating hospitals aimed to address the socioeconomic needs of their communities that impact health, such as lack of transportation and employment.

Findings from this doctoral project suggest that when determining the most appropriate business model to implement, rural hospital stakeholders should identify the specific needs of their surrounding community and redesign services to meet the identified needs while leveraging resources within and outside the community. One critical factor participating rural hospital stakeholders considered during their decision-making process was the long-term financial sustainability of maintaining the traditional full acute care inpatient hospital model. In 2018, the Bipartisan Policy Center published a report concluding that not every rural community needs a CAH. The authors argue that rural hospital leaders should "rightsize" healthcare services to meet the community's needs, which may not include inpatient beds. Wisner et al. (2016) suggest that alternative healthcare delivery models may be needed to address the specific needs of rural communities (Bannow, 2018; Betbeze, 2014; Bipartisan Policy Center, 2018; Knopf, 2018, 2018; RCHI, 2017).

In this doctoral project, rural hospitals included all rightsized healthcare services in their selected business models to better serve their communities. For example, Hospital A decreased its inpatient beds from 25 to eight while increasing its behavioral health inpatient beds from ten to 37 to meet demand. Hospital C reduced inpatient beds from 52 to 15 in its new patient-centered medical home model. Lastly, Hospital B better utilized its licensed beds by increasing the percentage of beds used as swing beds for long-term tracheostomy and ventilator patients. These findings suggest that rural hospital stakeholders should consider whether services need to be modified in a new business model to meet the community's identified needs better.

The availability of resources within and outside the surrounding community was a critical factor that affected the participating rural hospital stakeholders' decision-making process. For

example, access to financial resources such as grants and philanthropy were essential when selecting a model. Also, collaboration and partnerships were found to be vital in participating rural hospitals' decision-making process. Hospital C stakeholders collaborated with multiple entities across the country when determining whether the patient-centered medical home model was the most appropriate for their organization. Collaboration and partnerships among rural hospitals and other organizations are a successful tactic in the literature (Clawar et al., 2018; Olden & Szydowski, 2004). For example, Clawar et al. (2018) noted emerging collaboration among CAHs and federally qualified health centers within North Dakota to serve patients within their service areas better while reducing redundant healthcare services. Hospital B's collaboration and partnership with another hospital within the state was a critical element of the organization's successful swing bed business model.

Participants in the multiple case study identified both facilitators and barriers to the adoption and sustainment of a selected business model that rural hospital stakeholders should factor into their decision-making. Organizational leadership has been identified as a contributing factor associated with rural hospital closure, specifically governance knowledge and competency (RCHI, 2017, 2018; Troxell, 2017). Board governance knowledge and competency at Hospital B posed significant challenges to the organization's long-term financial sustainability. Board members at the hospital lacked a clear understanding of the Medicare cost report, allowed questionable financial contracts, and did not practice adequate oversight in the new facility's upkeep, which cost the organization millions. However, Hospital B was able to overcome these challenges by requiring board members to attend board training as mandated by the state. RCHI advocates for rural hospital leaders to implement education and training programs for their boards to ensure effective governance (RCHI, 2017, 2018).

Effective communication by organizational leaders was a key theme present within the literature. Studies have shown that effective communication may be essential to the long-term success of a healthcare organization (Meckstroth, 2013; Piercey, 2010; RCHI, 2017, 2018). In the doctoral project, leaders at all participating rural hospitals successfully demonstrated how to establish communication channels with their boards, staff, elected leaders, other healthcare organizations, and communities. Efforts by leaders at Hospitals A and B to engage elected leaders enabled the organizations to develop and implement their business models successfully. For example, by reaching out and working closely with their legislators, Hospital A was granted an exemption by CMS to create more than ten behavioral health beds in a CAH space. As a result, the organization will be the first of its kind in the nation to create two separate hospitals within the confines of the same space.

Throughout the key informant interviews, rural hospital stakeholders acknowledged their communities were not fully aware of the services being offered by their new business models, even though each hospital implemented tactics to educate their communities. The lack of community awareness may have been attributed to the level of the community's engagement in the hospitals' decision-making process. According to RCHI (2018), community engagement is the degree in which a community is actively engaged in the healthcare organization's decision-making process. Interviews with the rural hospital stakeholders indicated that the decision-making process remained mostly internal to the organizations. Although specific community members were kept informed or allowed to provide feedback, the community was not fully utilized as active partners in the decision-making process. However, the rural hospitals did fully participate and align their future business models with the findings from their community health needs assessments. According the RCHI, the community health needs assessment provides rural

hospital leaders an opportunity to engage and collaborate with community stakeholders to develop plans to improve health, access to care, and other challenges facing the community (RCHI, 2017, 2018). These findings suggest that rural hospital stakeholders should include community engagement as a key factor within their decision-making process to ensure the long-term sustainability of their selected business model.

Research has shown recruitment and retention of healthcare professionals as a contributing factor to financial distress and closure among rural hospitals (Adaniya, 2016; AHA, 2019; Chartis Center for Rural Health, 2020; Clawar et al., 2018; Mason, 2017; Pink & Holmes, 2018; RCHI, 2017; Thomas & Pink, 2019; Troxell, 2017; Weeks, 2018). Findings from this multiple case study indicate recruitment of healthcare professionals as a significant challenge rural hospital stakeholders must factor into their decision-making on what business model is most appropriate for their organization. If the organization is unable to recruit adequate and skilled healthcare professionals, the selected business model will not be successful, leaving the rural hospital in a potentially worse financial state. Hospital A and B stakeholders provide a few recommendations on tactics to implement to improve healthcare professional recruitment. For example, Hospital A works with local schools and universities to offer behavioral health internships and job shadowing opportunities.

**Implications for Practice.** This multiple case study provides rural hospital stakeholders valuable information on what key factors to consider when determining what business model to implement to address the challenges they face. The findings suggest that rural hospital stakeholders should start the decision-making process by analyzing and fully understanding the needs and challenges of their communities. Rural hospital stakeholders included in this multiple case study relied heavily on the community needs assessment process and made a concerted

effort to align the hospitals' future plans with the needs identified in the assessment process. Also, the community needs assessment provides rural hospital stakeholders an opportunity to engage community members early in the decision-making process and improve awareness of the hospital's challenges and services.

After the needs of the community are identified, rural hospital stakeholders need to consider how to better tailor, or rightsize, their services. Stakeholders should strongly consider whether an alternate healthcare delivery model, as opposed to the traditional full-service acute care hospital, would be better suited to meet the needs of the community. The new delivery models may involve partnerships and collaboration with community organizations, local businesses, or other healthcare organizations within the region. Leveraging collaboration and partnerships may help address challenges in recruiting healthcare professionals to work in the new model. Furthermore, rural hospital leaders should engage local, state, and national political leaders to secure needed resources and aid in overcoming barriers associated with the implementation of their selected business model.

An honest assessment of leadership and governance competencies should be conducted before the rural hospital enters the decision-making process to ensure the organization has the leadership structure, knowledge, and skills needed to ensure the long-term success of the selected business model and successfully navigate the organization through significant change. Finally, rural hospital stakeholders should assess how to engage the community as active partners in decision-making beyond the community health needs assessment process when determining the most appropriate business model for the organization.

## **Limitations and Recommendations for Future Research**

The findings from this multiple case study provide rural hospital stakeholders with valuable information on what factors to consider when determining what business model to develop and implement. However, three important limitations should be noted that affect the generalizability of the findings. First, the multiple case study was limited to a purposeful sample of three rural hospitals in two southeastern states. Rural hospitals face different challenges that are unique to their operational environment and the surrounding community. Therefore, there may be additional factors rural hospital stakeholders take into account in their decision-making process that was not uncovered in this multiple case study. Future research on this topic can extend and validate the findings of this multiple case study by interviewing a larger number of rural hospital stakeholders in other parts of the country. It would be valuable to discover if the themes identified in this multiple case study apply to other rural hospitals across the country with varying internal and external challenges.

Second, two out of the three participating rural hospitals are owned by a broader health system. Thus, the findings from this multiple case study may not be generalizable to all independent rural hospitals. Independent rural hospitals have access to fewer resources and face far more significant challenges than health system-owned rural hospitals. Future research should further evaluate the factors independent rural hospital stakeholders consider when determining the most appropriate business model for their organizations. Findings from these future studies should be compared to health system-owned rural hospitals' findings to better understand the differences and similarities in decision-making processes. For example, are independent rural hospital stakeholders more successful in engaging the community as active partners in the decision-making process than health-system-owned rural hospital stakeholders?



Third, due to the COVID-19 pandemic response at each participating hospital, the doctoral student was not able to interview all recruited key informants. A hospital administrator, medical staff leader, community leader, and health system stakeholder (if the hospital is owned by a health system) was recruited from each hospital to ensure consistency during the case study. However, due to COVID-19, only one medical staff leader was available to participate in the key informant interviews. Moreover, the doctoral student was unable to interview any health system stakeholders. The doctoral student attempted to include the stakeholders in the case study by providing the option to submit responses to interview questions via email. However, the doctoral student received no response from the stakeholders.

Further research should focus on understanding how a rural hospital determines the most appropriate business model for their organization from the perspective of medical staff leaders. Future research should also explore how health system stakeholders determine a rural hospital's role within their system. For example, if a rural hospital is in financial trouble, what factors do health system stakeholders consider when deciding the future of the rural hospital? Finally, although outside the scope of this multiple case study, future research should examine the impact of COVID-19 on the rural hospital closure crisis to determine if the pandemic is exacerbating existing financial distress and closure drivers. Future studies may be able to identify successful strategies rural hospital stakeholders have implemented to address the challenges associated with the response and financial impact of COVID-19.

## **Conclusions**

Many rural hospitals throughout the country are experiencing financial challenges. In 2019, more than 20% of rural hospitals in the US were predicted to be at a high to moderate risk of financial distress (Thomas et al., 2019b; Thomas & Pink, 2019). As of February 2020, 166

rural hospitals have closed in the US. The majority of those closures, 124, have occurred in the last nine years (GAO, 2018; B. G. Kaufman, Thomas, et al., 2016; Pink & Holmes, 2018; Sheps Center, 2020; Topchik, 2020). The rural hospital closure crisis seems to be accelerating as opposed to stabilizing, which may worsen as the COVID-19 pandemic continues.

Rural hospitals are an essential pillar of the rural community as they play a vital role in the community's overall health and economic well-being (AHA, 2019; RHHub, 2018a). A rural hospital closure can further exacerbate the health, care access, and economic disparities that already exist within these communities (Adaniya, 2016; Clawar et al., 2018; GAO, 2018; B. G. Kaufman, Thomas, et al., 2016; Mitchell, 2019; Pink & Holmes, 2018; RCHI, 2017, 2018; Richman & Pink, 2017; Robles, 2019; Thomas et al., 2019a; Thomas & Pink, 2019). Research within the last ten years has shed light on the drivers of financial distress and closure among rural hospitals. However, there is limited information available within the literature on what strategies rural hospital stakeholders have successfully implemented to mitigate the risk of financial distress and closure.

The purpose of this doctoral project was to explore the factors rural hospital stakeholders consider when determining the most appropriate business model for their organization based on the specific financial and contextual challenges they face. Seven primary themes emerged from key informant interviews with nine rural hospital stakeholders from three rural hospitals in the southeastern US with varying business models and characteristics: aligning the hospital with the needs of the community, rightsizing health services to address community needs, leveraging collaboration and partnership, access to financial resources, leadership and governance, community awareness and engagement, and challenges with recruiting healthcare professionals.

The findings from this multiple case study provide rural hospital stakeholders insights on what critical factors to consider when deciding on the most appropriate business model to implement within their organization. Each rural community and hospital are different. Therefore, a "one size fits all" approach to addressing financial challenges among rural hospitals is not feasible. To mitigate the risk of financial distress and closure, rural hospital stakeholders must understand the needs of their surrounding communities and redesign their services to meet the identified needs. Findings from this multiple case study show that meeting the community's needs may not require an acute care hospital model. It may require a different model altogether. Also, rural hospital stakeholders should leverage resources within and outside the surrounding community when determining the most appropriate business model. For example, this multiple case study provides evidence that leveraging collaboration and partnerships with other healthcare organizations can be essential in the successful implementation of a new business model.

This doctoral project also shows the critical role leadership plays in the adoption and sustainability of an organization's selected business model. Before initiating the decision-making process, rural hospital stakeholders should assess whether they have competent leadership in place that is resourceful and understands how to operate in a resource-limited and complex environment. Rural hospital leaders included in this multiple case study used their leadership skills to obtain financial resources, open critical communication channels with various stakeholders, and develop mutually beneficial partnerships. Also, rural hospital stakeholders should consider offering training and education to board members to improve governance and oversight. Finally, the multiple case study results highlight community engagement as a critical area requiring attention during the decision-making process to understand the needs of the community better and improve awareness of the rural hospitals' services and challenges.

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## **APPENDIX A: INVITATION TO PARTICIPATE**

[INSERT DATE]

Dear [INSERT NAME].

My name is Brian Wiggs and I am a Doctor of Health Administration (DHA) candidate at the Medical University of South Carolina. I am conducting a doctoral project entitled “Mitigating the Risk of Financial Distress and Closure in Rural Hospitals.” Rural communities all across the United States are losing their hospitals at an increasing rate, further exacerbating the disparity in care between rural and urban communities. Since 2005, 166 rural hospitals have closed with a majority of closures, 124, occurring in the last eight years. Studies that have examined the drivers of rural hospital closure have illuminated the need to develop strategies to address the financial challenges facing hospitals serving rural communities. However, there are a limited number of studies published on what strategies to implement to lower the risk of financial distress and closure.

The objective of this doctoral project is to explore factors rural hospital stakeholders consider when determining what strategies to pursue based on the specific financial and contextual challenges (i.e., market characteristics) the organization faces.

I would like to interview you in-person to learn about the strategies being implemented at [INSERT HOSPITAL NAME]. The interview will take 60 minutes or less of your time. A short (30 minutes or less) follow-up interview by phone may be necessary for clarification if needed. In addition, I welcome any documentation or additional information that you feel may supplement the interview. I understand that the provision of any supplemental documentation is strictly voluntary.

Your participation in the interview is also voluntary. The attached document provides further information about this project including your role as the participant and key points related to confidentiality of your participation.

Please respond to this email indicating your intent to participate by [INSERT DATE]. Thank you in advance for your time and consideration. If you have any questions, I may be reached at [INSERT PERSONAL PHONE NUMBER].

Sincerely,

Brian Wiggs

DHA Candidate

Medical University of South Carolina



## **APPENDIX B: OVERVIEW OF PARTICIPANTS' ROLE IN PROJECT**

### **Doctoral Project Title:**

Mitigating the Risk of Financial Distress and Closure Among Rural Hospitals

### **Introductory Statement:**

Rural communities all across the United States are losing their hospitals at an increasing rate. Since 2005, 166 rural hospitals have closed with a majority of closures, 124, occurring in the last eight years. Studies that have examined the drivers of rural hospital closure have illuminated the need to develop strategies to address the financial challenges facing hospitals serving rural communities. However, there are a limited number of studies published on what strategies to implement to lower the risk of financial distress and closure.

### **What is the purpose of this doctoral project?**

The purpose of the doctoral project is to explore the factors rural hospital stakeholders consider when determining what strategies to pursue based on the specific financial and contextual (i.e., market characteristics) challenges the organization faces.

### **What will I do in this project?**

Your participation will involve a semi-structured interview that will take one hour or less. A short follow-up interview by phone may be necessary for clarification of your comments if needed. The interview will be recorded, only with your permission. Participants and organizations will remain anonymous. Your participation in this project is voluntary. You are free to refuse to participate in the project or withdraw your consent and discontinue participation at any time without penalty or loss of benefits.

### **Confidentiality:**

All individual responses and any supplemental data provided by the participants will be

kept confidential. Your individual name, including names of participating hospitals, will not be disclosed.

As a participant in this project, you should understand the following key points:

1. You may decline to participate or withdraw from participation at any time without penalty.
2. Your identity and the organization will be kept confidential.
3. The interviews will only be recorded with your permission. Interviews that are recorded will be transcribed. The doctoral student will utilize a coding process to ensure your anonymity is maintained.
4. Data will be stored in a secure and locked area. The data will be kept for a period of three years and then destroyed.

If you have any questions concerning this project, please contact:

- Brian Wiggs (Doctoral Candidate) – phone number is (919) 360-6329; email address – [wiggsc@musc.edu](mailto:wiggsc@musc.edu)
- Dr. Jillian Harvey (Doctoral Project Committee Chair) – phone number is (843) 792-3431; email address – [harveyji@musc.edu](mailto:harveyji@musc.edu)

## APPENDIX C: INTERVIEW PROTOCOL

### Opening Script

**Interviewer:** “ Ms./Mr. \_\_\_\_\_, thank you for volunteering your time to participate in this project. As you are aware, the number of rural hospital closures in the United States has increased significantly in the last ten years, further exacerbating the disparity in care between rural and urban communities.

A majority of the current literature on this topic focuses on identifying the drivers of financial distress and closure among rural hospitals and the impact on a rural community after closure. However, there are a limited number of studies published on what strategies rural hospitals implement to lower the risk financial distress and closure. The objective of this doctoral project is to explore factors rural hospital stakeholders consider when determining what strategies to pursue based on the specific financial and contextual challenges (i.e., market characteristics) the organization faces.

Today, I would like to gather a better understanding of your experiences and insights related to the decision-making process of selecting the most appropriate strategy or strategies to address the challenges faced by this organization.

The interview will last approximately 60 minutes. Your participation in this interview is completely voluntary. All of your responses in this interview are confidential. If at any time you need to stop, take a break, or return a phone call, please let me know. You may also withdraw your participation at any time. I would like your permission to record this interview, so I may accurately document the information you convey. May I have your permission?

*(WAIT FOR RESPONSE)*

Thank you. If at any time during the interview you wish to discontinue the use of the

recorder or the interview itself, please feel free to let me know. Do you have any questions or concerns before we begin? (*WAIT FOR RESPONSE*)

Then with your permission we will begin the interview.”

### **Interview Questions**

1. Describe your role or relationship with [ORGANIZATION]?
  - a. How long have you been in this role [associated with this organization]?
  - b. What are your major responsibilities in this role?
2. How would you describe the organization’s surrounding community?
  - a. Sociodemographic characteristics [age, race, ethnicity, gender, ses, family size]
  - b. Health status/outcomes [top chronic conditions, mortality, reasons for readmissions, etc.]
3. Describe the strategy (or strategies) that was (were) recently adopted by this organization.
  - a. Who is the target customer or patient population?
  - b. What value is being provided to the target customer or patient population by this strategy?
  - c. What critical resources (i.e., people, technology, equipment, processes) are necessary to provide this value?
  - d. How will the strategy (or strategies) enable the organization to meet its mission?
4. What was [ORGANIZATION]’s reason for action for implementing this/these strategy/strategies?
  - a. What were the internal and external drivers that precipitated the transformation of this organization’s strategy?

5. Describe the decision-making process the organization used to develop the strategy/strategies.
  - a. What were the three most important factors that affected the decision-making process when deciding the most appropriate strategy/strategies?
  - b. What data or information were vital in the decision-making process?
  - c. What tools and resources did you utilize in the decision-making process?
  - d. Among the multiple strategic options you may have considered, why did [ORGANIZATION] ultimately choose to move forward with the strategy/strategies we have discussed?
6. What stakeholders, both internal and external, were involved in the decision-making process?
  - a. Please describe the level of involvement and role if applicable of these stakeholders.
  - b. Did [ORGANIZATION] actively engage the surrounding community in the decision-making process?
    1. If yes, in what ways? Were there any barriers?
    2. If no, why not?/ What were the barriers?
7. Since the implementation of this organization's strategy/strategies, are there perceived or early signs or signals of progress or improvement related to the challenges we discussed earlier?
  - a. Have health outcomes and/or care access within the community improved?
    1. How is this measured?
  - b. What financial impact has the new strategy/strategies had on the organization?

1. How is this measured?
8. What lessons learned would you like to convey to rural hospital stakeholders who are currently in the process of determining the most appropriate strategy to address the challenges faced by their organization?
  - a. When thinking about implementing the strategy/strategies, what was easy? What was difficult?
  - b. When thinking about sustainability of the strategy/strategies, were there any barriers/challenges you experienced that were not anticipated?
  - c. As you implement these strategies, do you foresee any barriers or challenges?
9. Before we conclude the interview, is there anything else that you feel is important related to our topic that we did not discuss today?

**Interviewer:** “Thank you again for taking the time to meet with me today. The vital information that you shared with me today will help to better understand the critical factors rural hospital stakeholders consider when selecting the most appropriate strategy or strategies for their organization. Once transcribed, I will send you a copy of this interview’s transcription for you to review. If the transcription is not accurate, please contact me so that I may address any errors or omissions.”