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Chief Executive Officers' Perspectives on Characteristics and Conditions Associated with Hospital Financial Distress and Risk of Closure

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CHIEF EXECUTIVE OFFICERS' PERSPECTIVES ON CHARACTERISTICS AND CONDITIONS ASSOCIATED WITH HOSPITAL FINANCIAL DISTRESS AND RISK OF CLOSURE

BY

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CHIEF EXECUTIVE OFFICERS' PERSPECTIVES ON CHARACTERISTICS AND CONDITIONS ASSOCIATED WITH HOSPITAL FINANCIAL DISTRESS AND RISK OF CLOSURE

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Table of Contents

List of Tables

List of Manuscript Tables

Abstract of Doctoral Project Presented to the
Executive Doctoral Program in Health Administration & Leadership
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Degree of Doctor of Health Administration

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Previous research into hospital closures has been unable to identify causal factors in advance. Twelve experienced hospital chief executive officers were interviewed using a semi-structured questionnaire to identify tractable and intractable factors associated with hospital financial distress and risk of closure and to learn how CEO assess and prioritize these factors. Results were coded and analyzed using a grounded theory approach. Five primary themes emerged:

1. Intractable and tractable factors are highly interrelated and are addressed through systems thinking.
2. Intractable issues of local context are among the most significant determinants of hospital viability.
3. Physician culture issues are becoming more critical for hospitals.
4. Unprecedented continuing rates of disruptive change require increasing

learning, adaptation, and innovation by hospital CEOs to succeed.

5. Effective governance, leadership, and community support may help some vulnerable hospitals forestall financial distress and closure for the short- to mid-term future but may not ensure long-term survival.

The data revealed that CEOs are more comfortable working in the realm of tractable factors day-to-day. They are advised to extend their view to incorporate the realities of intractable factors in a longer term planning horizon in order to appropriately address the viability and sustainability of their organizations.

Chapter I

INTRODUCTION

Hospitals close every year in the United States. After a wave of closures in the 1980s, the hospital failure rate declined throughout the 1990s and the industry remained relatively stable for the next decade. However, significant new reimbursement changes created by the implementation of the Affordable Care Act along with other external competitive, regulatory, operational and financial pressures on the industry might be expected to again accelerate the incidence of closure, especially among the large percentage of hospitals left vulnerable from years of operating under conditions of financial distress.

Hospital closures remain an important phenomenon for study. While there exists a sizeable body of research into the phenomenon, little has been published in the last decade. The greatest number of studies in the literature explored data from the 1980s and 1990s, an era during which Medicare, the single largest payer of hospital services, changed its reimbursement structure from a cost basis to a prospective payment system and during which over one-sixth of the nation's nearly six thousand hospitals closed.

The literature reports many hospitals currently operate under financial distress, leading some to file bankruptcy or close each year. The frequency of rural hospital closures has been increasing over the last few years (The University of North Carolina Rural Health Research Program website, 2015). Alternatives to local or neighborhood hospitals typically exist nearby in most communities when an urban or suburban hospital

closes, but the closure of a hospital in more isolated rural locations as well as some urban markets may affect access to care, resulting in extensive travel distances for certain segments of the population. Because even small hospitals represent important social and economic entities, often serving as the primary provider of care and the largest employer in single hospital communities, their loss can be especially problematic.

Hospitals have long been considered the center of health care in a community, the place where people come together in times of need to receive and deliver care that is usually part of a broader mission. Therefore, the closing of a hospital represents more than an economic dilemma; it has political and emotional ramifications as well.

The rate of change is increasing in the healthcare environment. After decades of expansion, the hospital industry is now in a phase of transition and contraction (American Hospital Association [Annual Report], 2016). The implementation of the Affordable Care Act is increasing regulatory and reporting burdens on hospitals at the same time it is creating pressure for decreased reimbursement. Shifting populations, technological improvements, and economic pressures have led to changing patterns of demand for both inpatient and outpatient hospital services. In addition, decreasing reimbursement from third-party payers and increasing competition from both traditional and nontraditional entities are placing increased stress on the traditional hospital business model, frequently leading to financial distress, and in the most extreme situations, bankruptcy, conversion to an alternative non-hospital entity, or outright closure.

The literature is rife with descriptive and statistical analyses of closed facilities, but few researchers have attempted to prospectively examine hospital operations for the purpose of identifying predictive factors and addressing weaknesses in order to prevent

hospital closures. Further, there are no known studies that engage professional hospital chief executive officers to learn about the tractable and intractable factors that lead to hospital closure. Such executives potentially possess the greatest front-line knowledge about hospital risks of closing and how to address those risks. The research project addresses this gap in the literature by using a grounded theory methodology to seek and analyze opinions and perceptions of hospital chief executive officers. Outcomes are expected to inform the research about characteristics and conditions that place community hospitals at risk for closure and how CEOs think about those issues in the management of their organizations. Further, the research should reveal the tactics they have deployed, their success (or lack thereof), and the outcome measures used to evaluate success.

Background and Need

The total number of short-term general acute care hospitals in the United States expanded greatly beginning in 1945 and reaching a peak of almost 6,000 facilities in 1975. The steady growth was largely the result of financing mechanisms created through the Hospital Survey and Construction Act of 1946, commonly known as the Hill-Burton Act, and further because of the creation of the Medicare and Medicaid programs in 1965. The hospital count declined throughout the last quarter of the century before stabilizing at around 5,000 organizations. Many of the closures occurred after Medicare changed its reimbursement policy with the implementation of the Prospective Payment System in 1983 (Williams, Hadley, & Pettengill, 1992).

An annual count of hospitals, however, does not adequately explain changes in the industry during this period as facilities continued to close every year while other new

hospitals opened, often in different locations. In addition, collected data fails to address impending hospital closures. For over three decades, the literature has been spotted with forecasts of new waves of closures, typically predicted as the consequences of decreasing reimbursement, increasing regulations, technological advancements, declining demand for traditional general hospital services, competition, and other societal changes. A 2016 study identified 673 rural hospitals at risk of closure based on publicly reported data (iVantage Health Analytics, 2016). Today's predictions are not drastically different than those cited in the late 1980s, when some authors forecasted the potential closure of up to 1,000 of the hospitals in greatest distress and for many of the same reasons (Goldsmith, 1989; Mullner & McNeil, 1986).

This research into closures typically explored structural determinants such as size, ownership, competitive environment (i.e. proximity to other hospitals), diversification of services, business volumes, and financial performance data, and almost always after the event. Most of the research, however, is descriptive in nature and fails to develop a theoretical framework from which to understand the phenomenon of closure (Gifford and Mullner, 1988). Hernandez and Kaluzny (1983) stated, "While descriptive research is necessary, it is not sufficient," noting the absence of systems and data to systematically identify hospitals at risk. They further recommended that future research focus on attempts to "identify economic and social indicators that could predict hospital closure" (p. 426), a challenge accepted by few. Those studies attempting to predict potential distress and risk of closure have not been generally validated or widely applied.

The phenomenon of hospital closures is well documented. Although the literature identifies both tractable and intractable factors related to closure, analysis does little to

examine their interactive effects. Lee and Alexander (1999) recognized the problem inherent in examining organizational changes independently since variables are often related and interdependent, making it difficult to identify actual causes of closure or financial distress. The problem is further confounded by the fact some hospitals closed while many others similarly structured, located, and positioned, continued to survive. Mick and Morlock (1990) referred to the failure to identify a clear "causal connection between factors correlated with closure" as a "fundamental problem" in previous research (p. 453).

This reductionist approach fails in its intent to inform hospital CEOs who generally view issues as part of systems rather than individual problems. To be useful for informing preventive change management for hospitals in distress that may be at risk of closing, we need to understand:

a. The leading tractable indicators of risk and potential closure; and

b. How they are affected by the presence of intractable indicators.

Problem Statement

The viability of hospitals is influenced by both organizational and environmental factors, some of which are tractable in nature, that is, capable of being managed by the organization to control the extent of their impact, while others are intractable, that is, beyond the organization's control. Anecdotal evidence indicates experienced hospital chief executive officers can prospectively assess these risk factors and the status of hospitals' financial and operational health in a holistic manner, much as an experienced clinician can assess patient health. However, the factors and dimensions used by professional administrators to perform such an assessment are poorly understood and not

well described in the literature. Thus, we are unable to turn individual insight into conceptual assessment models that can be tested and disseminated.

Research Questions

Three research questions will be answered by this study:

1. What factors or categories of factors do practicing professional hospital chief executive officers believe to be the leading tractable indicators, conditions, or characteristics that place hospitals in distress or at risk of closure?
2. What factors or categories of factors do they believe to be the leading intractable indicators, conditions, or characteristics that place hospitals in distress or at risk of closure?
3. How are the identified characteristics assessed and prioritized for action by CEOs?

Population

The study proposes to interview practicing professional hospital chief executive officers. Candidates for interviews will be selected by the researcher based on their presumed expertise as evidenced by their current status as a hospital CEO and a minimum of ten years' experience in hospital leadership and management, some of which will have occurred in non-urban or rural not-for-profit hospitals of 200 beds or less, which represents the cohort most at risk for financial distress and potential closure. Candidates are likely to participate because of professional desire to contribute to the body of research knowledge in the field as well as their interest in the current relevance of the topic.

Assumptions

Practicing hospital CEOs are presumed to possess the most current, comprehensive, and relevant information about the factors that threaten hospitals. Because of their unique vantage point and familiarity with the general environment as well as individual problems facing their facilities, they potentially have the greatest degree of insight into issues that affect both immediate and long-term viability of their facilities. They are also well positioned to understand the interactions between such factors and the prioritization required for management actions and resource deployment to address the issues identified.

By virtue of occupying the CEO position in a going concern, they also, at least nominally, have thus far met the challenges required to lead their organizations in a viable manner. It is expected they will be able to offer insights into past actions as well as future plans for continuation of success.

The proposed research assumes CEOs with experience in smaller hospitals have relevant insights not necessarily shared by those who have spent their careers in larger, more sophisticated environments unaffected by many of the issues surrounding financial distress or potential closure.

Finally, the use of a grounded theory methodology with a convenience sample of subjects is expected to generate sufficient data from which to develop meaningful themes and draw conclusions that will inform the literature and support the development of a significant research project.

New Contribution

This study proposes to gather and examine the opinions and perspectives of hospital chief executive officers regarding the situations and circumstances that place

hospitals at risk of closure, and how they think about and act on those factors. It seeks to delve into the knowledge and thought processes of those who potentially possess the most relevant knowledge of the topic: the leaders of hospitals organizations that are, at least statistically, most at risk of failure. Using a grounded theory approach, their insights are expected to be useful for identifying themes and patterns present in the practice of hospital administration that enable hospital CEOs to recognize and respond to threats to organizational viability. From these insights, the study expects to inform the literature regarding prediction of hospital distress and closure as well as preventative actions to be considered in order to address hospital failure in advance, possibly averting closure.

Chapter II

LITERATURE REVIEW

Purpose

A review of the literature was conducted to establish a foundation from which to understand the topic of hospital distress and closure based on prior research relevant to this study. The review encompasses the body of research into the phenomenon of hospital distress and closure for the purpose of designing research into understanding how CEOs think about factors that potentially lead to hospital distress and closure. It also explores other qualitative research about the opinions and perspectives of CEOs regarding such issues.

Criteria for Inclusion and Exclusion

Concern about the issue of hospital closures began to surface in the literature in the late 1970s as the industry began its first wave of contraction. This review generally excludes studies prior to 1980 because of their presumed lack of relevance to the current state of the hospital industry. It selectively considers studies published beginning in 1980 and later, several of which, at least theoretically, also cover some data from the mid-to-1ate 1970s. Limited popular news articles are included for illustrative purposes in light of the observations of Kennedy & Dumas (1983) who noted, "Much of the literature on closed or financially distressed hospitals has consisted of news and feature or opinion articles discussing the problem" (p. 491).

Except for purposes of background information and context, this study is not

concerned with the effects or results of hospital closure on patient care, access, residential populations, local economies, or neighboring hospitals, although each of those topics may be of interest to other researchers. This study does not attempt to comprehensively analyze cause and effect with respect to hospital closures, since the phenomenon is clearly complex and multi-factorial in nature. Instead, it proposes a grounded theory approach to develop and understand new insights into the phenomenon as a basis for further research (Glaser & Strauss, 1967).

Review Process

The review of the literature began in August 2015, with a search of OVID and PubMed databases for articles published since 1980 using the search terms "hospital," "organization," and "closure." The search generated 1,680 articles. All article titles were reviewed for relevance. Adding "distress" further reduced the search output to 240 article references, all of which were reviewed for relevance.

A second search using the terms "hospital" and "closure" but limiting the databases to "health professions" generated 4,194 results. All titles were reviewed for relevance. Limiting this search further to "public health" databases reduced the output to four articles, none of which were deemed relevant to the topic. A third search using the terms "hospital," "closure," and "predict" generated 237 references, all of which were reviewed for relevance.

A third search using the terms "qualitative," "research," "interview," "hospital," and "administrator" returned 108 results, one of which was relevant to methods proposed for the current research but not to the specific topic. Another search using the terms "qualitative," "research," "CEO," and "hospital" returned four articles. One was relevant

to the methods proposed but none to the research. Additional searches were conducted using the terms "CEO" and "perceptions," returning three results, but none regarding closure.

Each relevant article was retrieved and reviewed and its bibliography explored to identify additional pertinent articles, with each additional article similarly retrieved and reviewed in an iterative fashion until no further references of relevance were identified. Additionally, searches using the search criteria "similar articles" and "additional articles by this author" generated additional results that were reviewed for applicability, again until saturation was achieved.

While numerous articles contained significant background information about hospitals that had closed and hospitals at risk for closure, only 13 studies addressed a methodology or tool to predict which hospitals were at risk for closure prior to the event, or to prescribe potential tactics and strategies to prevent closure.

Thirteen studies were discovered that researched the perspectives of practicing hospital chief executive officers or administrators using written survey instruments. Six also included personal interviews. None of the research investigated the issue of predicting hospital closure although one retrospective study conducted in the 1980s interviewed the former CEOs of a sample of closed hospitals to gain their opinions as to the causes. Two studies used in-depth interviews on specific hospital closures but the studies involved physicians and mayors, not hospital CEOs.

In addition to PubMed, the NLM Gateway of the U.S. National Institutes of Health was searched for meeting abstract results using the same search terms and combinations. Eight abstracts were returned, three of which represented the findings of

researchers previously identified and retrieved through their articles documenting the reported studies of interest. Other NLM databases including Locatorplus were searched, returning no unique findings. Finally, news articles on the topic of closure were retrieved and reviewed for relevance.

Throughout the course of the work, search updates and reviews were conducted to identify new and additional published research of relevance on closure, financial distress, and CEO perspectives, adding to the bibliography as appropriate.

Organization

The literature review begins with identification of the problem and its importance then reviews the historical background of the hospital industry, including a brief analysis of the role of the hospital in society. It further examines the statistical history of the industry's expansions and contractions. Next, the review analyzes the studies conducted from the 1980s forward to identify factors and trends of hospital distress and closure and places them in context with regard to the current period. It then examines the role of public policy and legislation as well as other changes and forces likely to affect hospital performance leading to closure. Past efforts to predict hospital closures are reviewed. Finally, the efforts to identify literature on qualitative research involving in-depth interviews and grounded theory studies on perspectives of CEOs regarding issues of hospital performance, distress, and closure are reviewed.

Literature Review

The Role of Hospitals in the Community

The modern hospital's history in the United States as an organized social enterprise dates back to the mid-1700s. The nation's first hospital opened in

Pennsylvania under Ben Franklin's leadership and through his public support (Griffith & White, 2007). Originating in a popular petition, Pennsylvania Hospital was chartered by an act of the legislature signed into law by the Governor on May 1, 1754 (Franklin, 1817).

Over the next two hundred years, development of science and teaching methods gave rise to improved education of physicians and established the hospital as a center of care in the community. Many hospitals were charitable organizations, caring for the poor, indigent, and homeless, as few patients had the ability to pay for services, although for-profit hospitals were known as early as the 1800s. While well-to-do members of society more frequently were cared for at home, hospitals have always had unique relationships to their communities including providing relief for the poor and suffering, handling the burdens of illness for employers, protecting the community from communicable diseases, and serving as institutions of education for nurses, medical students, and physicians (Post, 1908).

Because of the nature of their missions and ever increasing demand on their services, many hospitals struggled financially through the years. They found relief when cost-based reimbursement came into existence in Dallas, Texas with the creation of the first Blue Cross hospital insurance plan. It proved to benefit both hospitals and their patients (Johnson & Johnson, 1986).

In modern times, the relationships between citizens and their hospitals are often multi-faceted and extend beyond the health-related aspects into economic and emotional realms. Many hospitals have the support of ecclesiastical organizations but are often outright publicly owned. A local hospital is often the primary source of care for many in

the community, particularly in rural, economically disadvantaged, or other underserved areas. "The rural hospital is a vital component of the rural health care system and important institution in rural communities from a functional, symbolic, and economic perspective. The hospital, along with the church and the school, represent the elements through which rural communities define themselves" (Moscovice & Rosenblatt, p.29). To place the rural hospital issue in perspective, "Half of all community hospitals in the United States are located in non-metropolitan areas. Hospitals with less than 100 beds (the majority of which are in rural areas) represent one-half of all community hospitals in the country, but account for only 15 percent of the total bed supply and admissions" (p. 31). Some of the same community-oriented arguments also apply to urban neighborhoods, which often have their own identities and barriers to access.

Recognizing the unique place hospitals occupy in their communities, the act of establishing a facility does not guarantee its perpetual existence. "In today's climate of sharply rising health and hospital costs, most analysts reject the notion that every community or neighborhood should have its own state-of-the-art medical facility" (Altman and Kilstein, 1983, p. 588). And yet, hospitals are important enough to society that a significant number of communities are willing to subsidize their local hospitals through tax support. As the authors further observed, "most communities will not voluntarily choose to close a local hospital" (p. 588).

The Problem of Hospital Closures – Why This Topic is Important

Understanding the causes of hospital closures and how CEOs might address and prevent them is a pertinent topic of interest for two important reasons. First, hospitals are significant to their communities in terms of health care, economics, and infrastructure.

Second, there is also the concern that the rate of closures is projected to increase as a result of changes in the industry, creating economic and access problems in many communities across the United States.

Closure Defined

The OIG (1989) in its reports defined a closed hospital as "one that stopped providing general, short-term acute inpatient services" in the year in question (p. 5). Mergers and other changes in ownership were not considered closures if the facility remained open for inpatient services, and neither was a facility that reopened in the same calendar year after closing. By extension, two facilities that merged and closed one location was regarded as an official closure, as was a hospital that built and moved into a new facility at a different location. However, in the latter circumstance, the new facility opening offset the closure in official counts. As an example, in the year 2000, six of the 22 closures recorded were relocations to new facilities and three were consolidations (OIG, 2003).

Policy perspectives on closures

Closure of a single community hospital is relatively insignificant to the nation's health care system. Hospitals that close, according to the literature, are generally smaller than average. Further, the majority of the population previously served by most closing facilities is generally able to access other health care facilities that are, on average, less than ten to twenty miles from the site of the closed facility, and typically no more than thirty miles in the case of some rural closures (OIG, 1989). In a recent study, one of the first published on the topic, researchers found patients in communities affected by hospital closures had no worse health outcomes after the closures, based on mortality

rates and readmissions (Joynt, Chatterjee, Orav, & Jha, 2015).

Hospitals are clearly not immune to market pressures. Duke (1996) noted the shift of market power away from hospitals in the changing health care system while questioning whether hospitals were resistant to change. Both state and federal governments have a long stated objective of reducing utilization of healthcare services through policy action such as controls on reimbursement and licensed bed capacity of hospitals, leading to the conclusion not all closures have an overall negative impact on their communities or on the healthcare system at large.

Hospitals unable to grow and prosper in the wake of such changes reacted in different ways, including closure, merger, affiliation, or conversion to other types of providers, such as skilled nursing care facilities (SNF), long-term acute care (LTAC), and urgent or ambulatory care operations with outpatient services only. In some cases, two hospitals merged to better serve a community with a single, larger facility. Closing one caused minimal negative impact in terms of access to services and strengthened the surviving entity. The action also potentially saved some hospitals from imminent closure, reduced duplication of services and equipment, and reduced overall system overhead (OIG, 1991).

"At the policy level, the results tend to support the argument that hospital closures, both rural and urban, are occurring among under-utilized hospitals. Therefore, these closures should not raise undue public concern. This does not mean that particular rural hospital closures do not cause access problems or do not adversely impact the local economy. Rather, there is little justification for protecting all rural hospitals. A better alternative is to target particular hospitals whose closures would cause hardship. Future

research should focus on improving our ability to identify those facilities" (Ozcan & Lynch, 1992, p. 222).

Research on closed California hospitals indicated competition and demand factors significantly contributed to closure and provided evidence that the small, lower quality hospitals were more likely to close (Mobley & Frech, 1994). McLafferty (1992) concurred: "The fact that the facilities with the lowest occupancy rates are closing suggests that the closure process is efficiently weeding out those hospitals unable to meet minimum demand thresholds" (p. 1673). Mayer, Kohlenberb, Sieferman, and Rosenblatt (1987) indicated the closing of some hospitals with poorer quality outcomes might actually be better for a community from a public policy perspective. Harrison (2007) commented, "With respect to closures, a purge of the 'correct' hospitals, in terms of excess capacity and inefficient use of resources, appears to occur" (p. 471). In studying mergers, consolidations and closures, he noted mergers might have saved some weaker hospitals from inevitable closure.

The Governor of New Jersey, Jon Corzine, decided that the problem of hospital efficiency and closure was too important to be left entirely to the marketplace. In 2006, he took the unusual step of forming a commission to identify essential hospitals and financially distressed hospitals in the state and then to strengthen the state's hospital system by allowing distressed hospitals considered non-essential to close. The program is administered through the state's Certificate of Need policy and seeks to balance the powers of markets with government to ensure access in an environment of limited resources. New York and Maryland have similar programs to address the issue of closure, and Maryland's program helps address costs of closing a hospital including

payment of non-insured bonded indebtedness (*NJ Commission Report on Rationalizing Health Care*, 2008).

Economic impact of closures

While other participants in the health care arena regard closures from a policy, payment, statistical, or theoretical framework, such factors and statistics do not tell the entire story, especially when considered from the viewpoint of communities affected. Hospitals, particularly those classified as rural and sole community hospitals, are important contributors to their local economies. Beyond their value as the locus of health care delivery, they are also typically among the largest employers and generators of payroll incomes in many communities, creating both direct and indirect taxes through the influx of funds from government programs and other insurers.

Hospitals also give rise to and support the establishment of local health care businesses such as physician practices, pharmacies, physical therapy centers, hospices, nursing homes, and home health agencies, among others. Their presence can also help attract other organizations and spur development in other sectors (Muus, Ludtke, & Stratton, 1994). Other community benefits accrue from downstream business, often expressed as a multiplier in calculating total economic impact on local businesses, industries, and households with respect to job creation and additional value (Doeksen & Schott, 2003).

Individuals employed in hospitals and health related industries are generally among higher earning employees compared to other industries, particularly in smaller communities. A study of 103 counties whose hospitals closed in the 1980s revealed reductions in earned income after the closure compared to similar counties without a

closure event. Growth of the county's labor force was also measurably less (Probst, Samuels, Hussey, Berry, & Ricketts, 1999).

Media response to closures

Because of the economic, political, emotional, and potential patient care impact, hospital closings are newsworthy events, often receiving the attention of the national media. The New York Times has published several articles on individual hospital closures, including its coverage of the 2015 closure of Mercy Hospital Independence in Independence, Kansas (Smith & Goodnough, 2015). USA Today featured an in-depth series about the pressures, causes, and effects of closures on small rural communities and their citizens when their hospitals face potential or actual failure (O'Donnell & Ungar, 2014).

Local political and taxpayer responses to closures

Taxpayers are also important constituents of local community hospitals, often providing tax support and remaining legally responsible for indebtedness incurred by their facilities. Elected officials in some communities are holding referenda to determine whether local government should back hospital bond issues or increase tax support to maintain facilities in distress or facing closure (Goodman, 2015). While many communities continue to support their local hospitals through their property tax digests or local sales taxes, others are declining to accept additional financial risk or responsibility. For example, voters in Bowie, Texas recently rejected a referendum to create a taxing district that would have supported its 51-bed community hospital and potentially saved it from closure, at least temporarily (Commins, 2015).

At an even more extreme political level, the court system is sometimes involved

in bankruptcy situations or contractual disputes surrounding hospital closures. Such was the case of Hutcheson Regional Medical Center, a 179-bed not-for-profit hospital located near Chattanooga, Tennessee that closed before a bankruptcy judge approved its sale to an investor group (Jett, 2015a). It subsequently reopened with limited services under new management with an ownership change pending (Jett, 2015b).

Taxpayer sentiments are also evident in the decisions by the states refusing to expand Medicaid. Hospital observers in the states that have refused expansion point to the decision as a denial of funding and an additional source of pressure for hospitals, particularly smaller, rural, and critical access hospitals. Evidence for their argument includes the closure of 33 rural hospitals between 2010 and 2014 in states that did not expand Medicaid compared to only 9 in expansion states. The difference is attributed to the higher percentage of residents who are insured when Medicaid expands, according to the North Carolina Rural Research Program (Holmes, 2015).

American Hospitals: Statistics and Trends

The American Hospital Association recognizes a number of types of hospitals, among them general, specialty, psychiatric, long-term acute care, public, private, and governmental hospitals. The largest group is composed of general or community hospitals. Under its comprehensive definition, general hospitals include "all nonfederal, short-term general, and other special hospitals. Other special hospitals include obstetrics and gynecology; eye, ear, nose, and throat; rehabilitation; orthopedic; and other individually described specialty services. Community hospitals include academic medical centers or other teaching hospitals if they are nonfederal short-term hospitals. Excluded are hospitals not accessible by the general public, such as prison hospitals or

college infirmaries. Any hospital may be registered with the AHA if it is accredited as a hospital by the Joint Commission on Accreditation of Healthcare Organizations or is certified as a provider of acute services under Title 18 of the Social Security Act or meets certain alternative requirements as a general, special, rehabilitation and chronic disease, or psychiatric hospital" (American Hospital Association [AHA], 2016).

How many hospitals are there?

The number of hospitals and hospital beds available in the United States has fluctuated throughout modern history. In one of the first official accounts of such statistics in 1818, the 5,323 hospitals in existence then had a combined total of 612,251 beds. By 1944 the number of hospitals had grown to 6,611 (MacEachern, 1946).

The year 1946 saw the passage of landmark legislation leading to the growth of the American hospital industry. The Hill-Burton Act provided a mechanism for states to expand and build new nonprofit and public facilities (Hospital Survey and Construction Act, 1946). In that year, according to the AHA, 6,125 hospitals were registered in the United States, of which 4,444 were classified as nonfederal short-term general and other specialty hospitals. The numbers peaked at 7,174 total hospitals in 1974 and 5,979 nonfederal short-term hospitals in 1975 (AHA, 2016).

The number of hospitals then began to trend down, reaching 5,708 total and 4,915 short-term hospitals by 2007. The AHA's latest publicly available data reported a total of 5,627 registered hospitals in 2014, of which 4,945 were classified as nonfederal short-term hospitals. Those hospitals represented 789,000 total staffed beds, down from a high of over 1.7 million beds in 1965 and over a million in the early 1980s (AHA, 2016). Appendix A summarizes the number of U.S. hospitals by year.

How many hospitals closed?

Although statistics from the American Hospital Association are most frequently cited, the Association cautions: "The data are based on replies to an annual survey" (American Hospital Association [AHA], 2016, p. v), and not all openings and closings are reported. At the behest of Congress and other interested parties, the Office of the Inspector General of the U.S. Department of Health and Human Services produced reports on hospital closure at least annually between 1987 and 2000. In addition to the AHA data, they also considered information from the Health Care Financing Administration (HCFA) databases as well as other sources including "contacts with State hospital associations, State licensing and certification agencies, State health planning agencies, officials associated with closed hospitals or hospitals nearby, and local public officials." These studies excluded closed "psychiatric, rehabilitation or other specialty hospitals" (OIG, 1989, p. 1).

The numbers of closures differ between the two sources. For example, the AHA reported a net loss of 69 hospitals in 1987 while the OIG report indicated that 69 hospitals closed but 13 new hospitals opened and eight of the closed hospitals re-opened during the following year, resulting in a net loss of only 48 hospitals for the year (OIG, 1989). In the year 2000, the final year of the annual OIG investigations into hospital closure, the Centers for Medicare and Medicaid Services (CMS) Hospital Cost Report Information System (HCRIS) listed 4,657 hospitals as participating in the Medicare program and noted 64 closings, 24 new hospital openings, and five re-openings for a net loss of 35 hospitals (OIG, 2002, p. 7). AHA statistics reflect 69 closures and 44 openings for a net loss of only 25 hospitals. The OIG discontinued its annual studies after

reporting on data from the year 2000, after which only AHA data was regularly published. Table 1 includes the count of hospital openings, closings, and reopenings using HCFA/CMS data compiled by the OIG.

Table 1. Hospital Closures by Year, 1987 – 2000

Year	Closures	Openings	Reopenings	Net Change
1987	69	13	8	-48
1988	88	4	4	-80
1989	76	11	5	-60
1990	56	7	2	-47
1991	57	8	1	-48
1992	50	7	0	-43
1993	42	8	5	-29
1994	16	6	7	-3
1995	37	4	1	-32
1996	37	4	1	-32
1997	38	2	1	-35
1998	43	12	2	-29
1999	64	20	2	-42
2000	64	24	5	-35

Note: Adapted from OIG (1989 – 2000) *Hospital closure*. Washington, DC, GPO

Table 2 includes the count of hospital openings and closings from the year 2000 forward as reported by the Medicare Payment Advisory Commission data book (2015). The data does not include reopenings of previously closed hospitals.

Table 2. Hospital Closures by Year, 2000 – 2013

Year	Closures	Openings	Net Change
2000	69	44	-25
2001	63	48	-15
2002	34	49	15
2003	46	73	27
2004	63	85	22
2005	32	65	33
2006	28	37	9
2007	28	32	4
2008	24	39	15
2009	30	41	11
2010	5	39	34
2011	12	20	8
2012	17	17	0
2013	25	15	-10

Note: Adapted from *AHA website (n.d.)* and *Medicare Payment Advisory Commission* data book (2015). Washington, DC, GPO

What are the trends in the number of hospitals?

The industry lost an average of 25 facilities per year between the years 1970 and 1999, net of new hospital openings. However, net losses accelerated to an average of over 52 per year from 1983 to 1999, owing significantly to the introduction of DRGs through the Medicare PPS program. From 1987 through 2000, the years covered by the OIG's analysis, a total of 737 hospitals closed. These hospitals represented approximately 14.3% of the 5,143 hospitals appearing in the HCFA database at the beginning of 1987, the initial year of the studies (OIG, 1989, p. 7). After considering new hospital openings and reopenings of previously closed facilities, the net loss was 563 hospitals, a reduction of almost 11% from the hospitals in business in the year 1987 and an average of 40 per year.

Fifty-eight percent of the closures between 1990 and 1999 were urban hospitals (OIG, 2001). Even though urban closures outweighed rural closures during this period, the 208 closures of rural hospitals represented 7.8% of all rural hospitals in America (OIG, 2003). There was no categorization of closure differentiating rural and urban hospitals prior to 1998 (OIG report 610, 2003).

An overview of the statistics between 2000 and 2013 appears to reveal a stable industry, reflecting a period in which losses slowed and the numbers of openings almost completely offset the number of closings. However, many communities still experienced the loss of their local hospitals, as 5 to 69 hospitals closed in any given year. Even as the closure trend leveled in the past decade to small numbers, the volume is still of consequence and a cause of concern for rural and other communities at risk.

The Hospital Industry in Transition

Hospital demand for services as measured by admissions and inpatient days has declined steadily for four decades (AHA, 2016). Much of this decline is attributed to improvements in science and technology along with changes in reimbursement initiated by governmental and third party payers. These factors influenced changes in patterns and locations of care and resulted in different types of patients requiring service from general acute-care hospitals than in the past. Much of the care previously provided by hospitals moved to lower cost and sometimes more focused outpatient and specialty care settings. This shift further reduced the demand for inpatient beds and, along with it, inpatient revenues, depriving many hospitals of critical revenue streams required for survival.

Inpatient hospital admissions at community hospitals declined nationally from over 36,000 in 1980 to under 30,000 in 1994, then increased again to 35,761 by 2008. In

2009, the number of admissions began to decline again to fewer than 34,000 in 2013. From 2012 to 2013 alone the total number of admissions decreased by over 800,000, a reduction of 2.4% (AHA, 2016). Hospitals' lengths of stay also decreased precipitously. As a result, average hospital occupancy rates declined slightly but steadily in recent years, from 64% in 2008 to 60% in 2013. Rural hospitals experienced more pronounced declines with the average occupancy rate dropping from 48% to 42% over the same period (Medicare Payment Advisory Commission [MedPAC], 2015). Although these reductions in volume were partially offset by the nation's steady population growth, the growth has been unevenly distributed with notable shifts from rural to urban areas. A macro view reveals that as demographics and population densities migrated, hospitals expanded and new facilities opened to meet demand for services in new locations, offsetting the losses and closures in other regions. These changes have not only affected community hospitals; even many teaching hospitals struggle financially in today's disrupted environment (Christensen, Bohmer, & Kenagy, 2000).

The year 2003 was the last year of positive margins for acute care hospitals under the Prospective Payment System, the mechanism CMS uses to pay the majority of hospitals. In 2013 Medicare margins reached their lowest point on record: -5.3 %. Surprisingly, rural hospitals fared better at an average of -3.3%. Overall Medicare margins were -5.9% for urban hospitals but rose into positive range for the first time in a decade for rural hospitals at 0.2% in 2013, most likely because of the special payment policies for many small and rural facilities (MedPAC, 2015).

Although margins from the Medicare program are important, they are not the only factor contributing to declining hospital performance. The AHA indicates the percentage

of hospitals with negative operating margins between 1995 and 2013 ranged between 27.7% and 42.2%. During the same period, the percentage with negative total margins has fluctuated between 19.4% and 32.4%. After the percentages reached a peak in 2000, they declined but spiked again in 2008. The number of hospitals with both negative operating and total margins increased in 2013, the last year for which published data is available (AHA website, 2015).

As the health care environment changes, hospitals are having to transition from a strategy of building and filling inpatient beds to the creation and management of a more diversified enterprise. This change is now evolving more rapidly with the passage of the ACA and the creation of alternative care models prescribed by CMS. The goal of CMS is to make 50% of provider payments through these new programs and 90% of all payments based on value or quality based structures by the end of 2018 (Health and Human Services, 2015).

Beginning in the 1990s, another change in the industry was the emergence of specialty hospitals, many of which were started by physicians and entrepreneurs. One study on the proliferation of specialty hospitals described the trend as moving away from "the traditional 'do-it-all' hospital model to a 'focused factory' model" (Al-Amin, Zinn, Rosko, & Aaronson, 2010, p. 295). Orthopedic, cardiology, and, to a lesser extent, surgical hospitals have entered the market, possibly facilitated by the closing of some general hospitals.

All of these factors present a picture of the "reshaping" of the health care industry. Survival of community hospitals in the future will depend on their ability to adapt. They will have to become more efficient stewards of available resources. They

will also have to create or capture adequate volumes and market share while continuing to shift costs from patients that pay less than the cost of care to those who pay more than the cost of care as long as cost-shifting opportunities exist. Without adequate volumes and improved internal management and delivery capabilities, many hospitals will require external assistance through continued philanthropic or governmental support to remain viable.

The Influence of Legislation and Financial Policy on the Hospital Industry

The 1940s war economy presented increased demands for hospital care throughout America. It also marked the time when federal legislation began to significantly influence the burgeoning hospital industry. Originated by the American Hospital Association, the Hospital Survey and Construction Act of 1946 was sponsored by Senator Lister Hill of Alabama and Senator Harold Burton of Ohio and enacted as Public Law 79-725 in 1946. Most commonly known as the Hill-Burton Act, the law provided federal funds to aid in the modernization and construction of needed hospitals. Funding from the program was ultimately involved in more than 6,900 construction projects in exchange for hospitals' commitments to provide care for the poor without discrimination (Coleman, 2005).

The growing hospital industry found a new and welcome source of funding when the Medicare and Medicaid programs were established through the Social Security Amendments of 1965. Under these programs, reimbursement for hospital services was based on "reasonable costs" (§ 1814 (b)), a policy that fueled strong growth and development of hospitals and their capital structures for almost the next twenty years.

By the 1970s, concerns about costs of the U.S. health care system began to arise

among policy makers. Uncontrolled inflationary costs and "maldistribution of health care facilities" were first addressed by the passage of the National Health Planning and Resources Development Act of 1974 (§ 2 (a.)). The Act established an official national health planning structure implemented by the states to control costs by controlling expansion of facilities. Continued concerns were stated in the objectives of the Health Planning and Resources Development Amendments of 1979, among whose priorities were "the identification and discontinuance of duplicative or unneeded services and facilities" (§ 102 (12)). The Act further prescribed the development of policies to control costs, promote efficiency, and encourage appropriate use of health care services. It also provided grants for states to study and implement "programs to reduce excess hospital capacity" (§ 1643 (3)).

The hospital reimbursement system changed again drastically in 1983 when regulations were developed under guidance from the Social Security Amendments of 1983. The Prospective Payment System (PPS), as the new program was known, replaced cost-based reimbursement for inpatient hospital services with fixed payments based on Diagnosis Related Groups (DRGs). Under the new formula, payments were set in advance, permitting efficient hospitals to retain profits accrued. At the same time, hospitals also assumed the risks of higher costs, ushering many facilities into periods of financial distress.

The next major legislative change affecting hospitals came with the Balanced Budget Act of 1997. It continued to apply pressure to the industry through reduced payments to hospitals and other medical providers as part of the effort to balance the federal budget. Recognizing the special needs of rural hospitals, it also created the

Medicare Rural Hospital Flexibility Program, which enabled the establishment of critical access hospitals (CAHs). The critical access program made it possible for certain hospitals to return to cost-based reimbursement. To qualify, a hospital seeking to convert to critical access status was required to: be at least 35 miles from another facility (15 miles in certain circumstances of terrain and access); reduce its licensed inpatient capacity to 15 beds and maintain 24-hour emergency services; and limit inpatient stays to 96 hours. Another provision in the law allowed the state in which the hospital was located to grant a waiver to the distance requirement by certifying the hospital was a "necessary provider" (§ 4201). The waiver provision was widely used and significantly increased the number of facilities entering the program. It also improved payments to Medicare Dependent Hospitals, defined as hospitals for whom Medicare recipients represent more than 60% of their inpatient admissions (§ 4204).

In response to what many believed to be the too-severe cuts implemented by the BBA, the Medicare, Medicaid, and State Children's Health Insurance Program Balanced Budget Refinement Act of 1999 restored some of the cuts from the BBA. The legislation also improved the critical access program by allowing CAHs to obtain swing beds, that is, beds that can be used for either acute or skilled nursing care, without a certificate of need. CAHs were also allowed to expand from 15 to 25 beds to add swing beds. While a welcome relief to some facilities, a 2002 study postulated many rural hospitals' financial conditions were increasingly at risk as a result of the BBA and BBRA regulations and were likely to experience "persistent and substantial" losses if they were unable to effectively restructure or attract more insured patients (Stensland, Moscovice, & Christianson, 2002). Nevertheless, the changes created by legislation until then were

absorbed by the industry and the large numbers of hospital closures seen in the 1980s slowed to less than two percent per year.

The major legislative change affecting hospitals in the last decade was the passage of the Patient Protection and Affordable Care Act, signed into law on March 23, 2010. Although its full impact is still evolving and will remain unknown for several years, structures in the law beginning to affect hospitals include incentives to move more care out of hospitals and into other venues, penalties for failures to meet quality and efficiency standards, and movement of Medicare payments to alternative mechanisms outside of PPS. The law envisioned expansion of Medicaid coverage by the states, a change expected to decrease the number of uninsured Americans. When the Supreme Court ruled states had the option but not the requirement for expansion, many declined and only three-fifths have expanded their Medicaid programs through 2015. Other states have seen more of the costs for indigent care shifted to hospitals, adding to their financial pressures and potentially further threatening their survival. Other economic forces are simultaneously affecting the ability of individuals to gain access to and purchase health insurance products individually, through their employers, or through federal and state exchanges created or enabled by the ACA. In addition, high deductible and copayment requirements of many insurance policies result in a classification of patients considered "under insured," leading to increased bad debt for hospitals. These factors also contribute to rising predictions about numbers of hospital closures expected, especially in the rural sector.

While these federal policies introduced major changes to the industry, other lesser-known laws also generated less widespread changes to the general benefit of some

community hospitals. For example, the Tax Equity and Fiscal Responsibility Act of 1982 established provisions for Sole Community Hospitals, providing some financial relief for a subset of vulnerable hospitals serving as the only like facility within their service area, generally defined as a 35-mile radius. Similarly, the Omnibus Reconciliation Act of 1990 increased payments to hospitals with disproportionate indigent care revenues. It also required the development of an outpatient PPS system for hospitals (§ 4151 (2)).

Clearly not all legislation has negatively affected hospitals. About one-third of hospitals in the United States currently benefit from special payment designations that increase payment to them. These incentive programs were created to blunt some of the downside risk of the Prospective Payment System (National Advisory Committee on Rural Health and Human Services, 2012). Up until the implementation of the critical access program, for example, a majority of rural hospitals operated at deficits (Ermann, 1990), a situation further remedied by the establishment of sole community provider status and the swing-bed program (Mullner, Rydman, & Whiteis, 1990).

The evidence of such program modifications' popularity was their widespread adoption. By 2015, 1332 hospitals had been designated as CAHs, up from 41 in 1999, the majority in rural areas (MedPAC, 2015). CAHs now account for 53.5% of all rural hospitals. The proliferation of hospitals electing CAH status led at least one group of researchers to question whether the program has possibly been "oversubscribed" based on the numbers of hospitals that have opted into the former cost-based reimbursement system (Dalton, Slifkin, Poley, & Fruhbeis, 2003, p. 131). In addition, 13% of rural hospitals are designated as Sole Community Hospitals (SCH), 8% are classified as Medicare Dependent Hospitals and 11% are Rural Referral Centers.

Governmental Analysis of Closures, 1987 - 2000

While the years immediately following the implementation of PPS proved beneficial for many hospitals, others experienced difficulty and reported increased financial pressure from the new reimbursement system. A total of 260 hospitals closed between 1985 and 1988, split approximately equally between rural and urban. By the late 1980's, the number of actual and predicted closures of general acute care hospitals garnered the attention of public, governmental, and other legislative leaders, who asked for investigations into the incidence and causes. Such studies took the form of short-term management and program evaluations and are routinely conducted by the Office of Evaluation and Inspections of the Department of Health and Human Services Office of the Inspector General. The office was commissioned to analyze the issue and to enumerate its extent, causes, and effects and the implications for public policy. It delivered its first report in 1989, examining data from closures occurring in 1987. The office subsequently produced annual reports through 2000, along with several other reports covering rural and urban closures and trends. These studies likely represent the most comprehensive and accurate accounting of hospital closures during the period. Its analysts "obtained and aggregated information from State hospital associations, State licensing and certification agencies, State health planning agencies, HCFA data bases, officials associated with closed and nearby hospitals, and local public officials" (OIG, 1993 report 441, p. 2).

The 1989 study indicated both rural and urban hospitals were affected by changes in the environment and responded with similar closure rates, but smaller hospitals with lower inpatient occupancy rates were more likely to close. Among the most significant

findings from a public policy perspective was that utilization by Medicare and Medicaid recipients was similar to that in hospitals that didn't close, satisfying policymakers that government payment policy was not in itself a significant cause of closures. The study identified no general single event or attribution of cause but instead noted several interrelated sources of the financial distress that led to closure. The primary drivers were "declining revenues due to lower admissions, lower third-party reimbursement, and more uncompensated care; and rising costs due to increasing demands for new medical technology, skilled personnel, and facility maintenance, renovation, or replacement" (OIG, 1989, p. 1).

In a separate effort, members of Congress concerned with the impact of closures on small and rural communities requested the United States General Accounting Office investigate the closure of rural hospitals to determine their financial characteristics, the influence of Medicare payment policies, if any, in the events, and those general characteristics that place rural hospitals at risk of closure. Its report, published in 1990, concluded rural location alone did not increase a hospital's risk of closure, but that rural hospitals were more likely to face financial pressures because of declining volumes and subsequent related increasing costs (United States General Accounting Office Human Resources Division, 1990).

The OIG reports through the years indicated most closures have been in hospitals under 100 beds in rural settings and about half of closures occurred among hospitals under 100 beds in urban areas. "During 1990 – 2000, the closed hospitals averaged 39.6 beds compared to an average of 75.4 beds for rural hospitals nationally" (OIG, 2003, Report 610, p. 6). Urban hospitals that closed averaged 112.3 beds compared to 240.5

beds (OIG, 2003, Report 611).

Low inpatient volumes (which also leads to lower revenues) were also cited frequently in OIG analyses. "For rural hospitals that closed in 1996, the average daily census in the year prior to closure was about 5 patients. The urban hospitals that closed had an average daily census of about 38 patients" (OIG 1998, report 110, p.8). "During the 11-year trend period, rural hospitals that closed had an average occupancy rate of 25.4 percent compared to an average of 35.6 percent for rural hospitals nationally" (OIG, 2003, p.7). Urban hospitals fared similarly with an average occupancy rate for the period of 35.9% compared to 53.4% nationally. Causes of low demand are not noted, but speculation could run the gamut from lack of population density to shortages of physicians to the presence of competitors within a convenient range. In summary, the primary reasons for closures both of urban and rural hospitals from 1990 to 2000 were identified as "competition, business related decisions or a low number of patients" (OIG report 610, 2003; OIG report 611, 2003).

The OIG was also concerned with access to care after closures. Reports through the years indicated few patients, generally less than 10%, were required to travel farther than 30 miles to access acute care services after hospitals closed in rural areas or further than 10 miles in urban areas. While outdated facilities were frequently listed as another reason for closure (OIG, 2000), not all facilities were abandoned after closure. Many former hospital facilities were converted to alternate uses including specialty treatment facilities, long term care facilities, rehabilitation facilities, outpatient services/clinics and offices (OIG report 120, 1995, p.12). Other applications included rural health centers, home health agencies, and hospice facilities.

Researchers' Analyses of Closures

The governmental review of hospitals by the OIG and GAO provided useful information for federal policy purposes. It determined to the government's satisfaction federal policy was not generally responsible for the majority of hospital closures.

Other studies indicate hospitals close for a variety of reasons, often related to financial issues. However, financial issues are typically the result of a "complex set of factors which vary depending on the type and size of the hospital and attributes of its local environment (McLafferty, 1982). Alexander, D'Aunno and Succi (1996) postulated the decision to close a hospital is not typically the exercise of a simple binary choice – remain open or close – but is a much more complex phenomenon that can be the response to multiple factors and opportunities faced by organizations undergoing profound change. Longo and Chase (1984) concluded, "there are indeed forces beyond the control of hospital management that lead to eventual failure" (p. 400).

In 1993, Mick editorialized the phenomenon of closure is complex and perspectives vary with many key players affixing primary responsibility on others or external drivers, including management, physicians, or reimbursement. He observed, "It might be impossible to comprehend the myriad converging causal forces. The predictable tendency is to simplify, to clarify, and usually, to blame a reasonable visible target." He further stated, "in fact, it is often impossible to assign simple and well-defined blame for closure" (p. 613). Brecher and Nesbitt (1985) concluded "no statistical analysis is likely to prove capable of capturing the full range of dynamic relationships between a hospital's financial condition, its internal operations, and its changing legal and economic environment" and cautioned observers not to underestimate "the

adaptability and responsiveness of these durable institutions" (p. 297).

Hospital closure remains a highly complex phenomenon with multiple variables analyzed by researchers through the years. Despite numerous efforts, little is understood about the phenomenon and there are few answers about how it can be avoided.

Classification of Factors and Characteristics

To understand the factors and characteristics associated with financial distress and closure, it is helpful to classify them into an organizational taxonomy. One useful classification separates factors into two groups: environmental and operational.

Environmental issues can be considered as those outside the control of the individual organization. According to Landry & Landry III (2009), technology, political factors, stakeholders, customers and competitors are all environmental forces because they "both influence and are influenced by management and corporate policy (p. 256). Other examples include geographic location, local service area demographics, government and third-party (insurer) payment policies, and interest rates. Operational issues are those that can typically be addressed and potentially managed by the organization and its leadership, including staffing, efficiency, technology complement, physician recruitment, cost management, and investment in new services and technologies (Baehr, 1991). Baehr describes two additional categories: demand (some of which is environmental and some attributable to operational issues or failure to address market shifts) and capital financing (which is generally the final result of factors in the other two or three categories above).

Whiteis (1992) classified stress factors affecting hospitals as external, internal, or a combination. "Internal variables are a hospital's characteristics that reflect its ability to

adapt to changes in the health care market, including technological innovation. External variables are characteristics of a hospital's environment, both local and macro-environmental, that put economic pressure on a hospital, forcing it either to adapt or suffer financial instability" (i.e. competitors, policy decisions, political and economic trends) (p. 409). Physician supply and demand can potentially be a combination of internal factors, affected by an organization's recruitment and management policy, and external factors, such as the availability of a sufficient patient base to maintain a viable physician practice.

Yet another research effort classified and grouped variables as environmental, institutional, or strategic. Environmental variables are any factors that affect resource availability, including per-capita income, unemployment rates, physician supply, and reimbursement policies. Institutional variables are attributes of the organization itself including for-profit or not-for-profit status, size, and financial status. Strategic variables include factors such as system participation and diversification (Longo, Sohn, & Shortell, 1996).

According to Longo and Chase (1984), environmental issues were among the most important influences on hospital survival or closure. "While conventional wisdom might cite financial solvency and/or the political decision making process as being responsible for the closing of the hospital, these factors may represent only the most visible signs of impending closure rather than more fundamental predictors" (p.388).

The commonality in each of these efforts is the attempt to identify, define, and separate those factors and characteristics that organizations and their leaders can control from those that cannot be controlled, at least directly or in the short term. In this research

proposal, the two categories of interest are tractable factors – those capable of being managed or controlled, and intractable factors – those not easily managed or controlled.

Specific factors and characteristics associated with closure.

The literature has correlated a number of hospital characteristics with closure of community hospitals. The studies cited covered hospital closure events which occurred from 1960 through 2000. See Appendix B for a list of commonly cited variables. The characteristics or factors most commonly referenced were:

a. size
b. ownership
c. low volumes
d. low diversification
e. competition

Size of hospitals was among the most frequently cited of all characteristics (Kennedy & Dumas, 1983; Nyhan, Ferrando & Clare, 2001; Longo & Chase, 1984; Mullner & McNeil, 1986; Gifford & Mullner, 1988; GAO, 1990; Williams, Hadley & Pettingill, 1992; OIG, 1989 – 2003). Most classified the smaller hospital threshold at 100 beds while others set it at 50. One hundred was often used for urban hospitals and 50 for rural hospitals. The consensus of researchers was smaller hospitals have fewer resources and reserves to weather significant downturns in conditions or negative pressures from policy or competitive changes. In further explanation, Gifford and Mullner offered smaller hospitals "have smaller margins of error because they can not reduce the scope of their operations in response to temporary setbacks" (1988, p. 1292). As far back as 1983, Mullner, Byre & Kubal noted the trend "away from small, independent, individual

institutions and toward integrated, comprehensive health care systems," with some hospitals requiring interventional strategies to survive (p. 450).

Ownership, most commonly for-profit ownership, was also among the characteristics frequently associated with closure (Mayer, Kohlenberg, Sieferman, & Rosenblatt, 1987; Longo & Chase, 1984; Gifford & Mullner, 1988; Whiteis, 1992; Mullner, Rydman, Whiteis & Rich, 1989; GAO, 1990; Williams, et al., 1992; Ciliberto & Lindrooth, 2007), although state and local governmental ownership was also cited as a factor by Mullner and McNeil, (1986) and Mullner, et al., (1989). Research by Mobley and Frech (1994) also identified for-profit ownership as a common factor in closures, noting such organizations have fewer barriers to closure and their owners are more likely to make closure decisions from a rational economic perspective. In contrast, and in spite of the correlations demonstrated in some studies between poor financial performance and closure, Andes and Bazzoli (1995) speculated many not-for-profit hospitals in distress did not actually close but may have other options available to them not as readily available to the for-profit sector. Such resources include philanthropy or subsidies from governmental or charitable entities.

Low volumes of services provided, and, more traditionally, low occupancy has also been tied to closure in many studies (GAO, 1990; Mayer, et al., 1987; Lillie-Blanton, Felt, Redmon, Renn, Machlin, & Wennar, 1992; Kennedy & Dumas, 1983; Longo & Chase, 1984; Whiteis, 1992; Kaufman, Thomas, Randolph, Perry, Thompson, Holmes, & Pink, 2015). Volumes represent perhaps one of the more logical correlations. Any organizational entity governed even partly by economic forces requires a threshold or critical mass in market demand to remain viable. When those volumes are not achieved

and the organization experiences negative margins, the deficit must be offset by outside resources, including taxes, grants or philanthropy. Ozcan & Lynch (1992) discovered both efficient and inefficient hospitals closed as a result of failing to achieve threshold volumes of demand. At some point, if such resources are not available, closure inevitably occurs. McLafferty (1982) noted, "The fact that the facilities with the lowest occupancy rates are closing suggests that the closure process is efficiently weeding out those hospitals unable to meet minimum demand thresholds" (p. 1673).

Low diversification is not necessarily a cause for closure in hospitals. Rather, studies have found the availability of a broader range of services and higher levels of specialization, especially those driven by higher levels of technology such as specialty surgery and advanced imaging technology driven services, potentially improve a hospital's market position and helps protect it from closure (Mayer, et al., 1987; Longo & Chase, 1984; Mullner, Rydman, & Whiteis, 1990; Whiteis, 1992; Longo, Sohn, & Shortell, 1996; Succi, Lee, & Alexander, 1997; Williams, et al., 1992; Ciliberto & Lindrooth, 2007). Rural hospitals that perform surgery are more profitable and financially stronger, and are therefore, one would surmise, less likely to close (Karim, Holmes, & Pink, 2015).

Competition is a natural phenomenon in any business or market. Even though many states still control the numbers of hospital facilities through certificate of need processes, competitive pressures have been increasing in the healthcare system over the past three decades as hospitals expand services and locations to increase market share and profitability (Nyhan, Ferrando, & Clare, 2001; Mayer, et al., 1987; Gifford & Mullner, 1988; Mullner, et al., 1989; Succi, et al., 1997; Lillie-Blanton, et al., 1992). In a study of

Florida hospitals, it was found hospitals in "organizationally dense areas – five or more hospitals within a five-mile radius" were particularly vulnerable to closure (Nyhan, et al., 2001, p. 296). Hospitals have traditionally faced competition from their own physicians as well as from entrepreneurs providing certain highly profitable ancillary procedures and services such as physical therapy, imaging, and outpatient surgery. However, the lowering of barriers to entry in some health care sectors and the increasing number of competitors, especially non-traditional competitors, has also started to affect the marketplace. The blurring of lines between hospitals and non-hospital providers has also contributed to the stress on more vulnerable hospitals.

Another factor identified in studies of closure from the 1980s and beyond is the location of a hospital in a community or region experiencing a decrease in population or economic decline (Mayer, et al., 1987; Lillie-Blanton, et al., 1992; Kaufman, et al., 2015). Demographic shifts from rural to urban areas continue to change the population centers and concentrations across the county, leaving some rural communities without a large enough population to support a hospital. Economic changes caused or reflected by closures and relocations of businesses and industries create economic problems for their towns and regions. These pressures trickle down to hospitals that are left to serve smaller populations and populations with lower percentages of well-insured patients. On a more limited scale, population and demographic shifts also affect cities, as some areas and neighborhoods decline for similar reasons, leaving their local hospitals vulnerable because of higher concentrations of uninsured or more poorly insured residents. For example, examination of urban hospital closures revealed hospitals serving more minority and Medicaid qualified patients were significantly more likely to close (Sagar,

1983; Whiteis, 1992).

Poor financial performance was a factor specifically identified in studies by Williams, et al. (1992) and Ly, Jha, & Epstein (2011). Ly, et al. also found hospitals with margins in the bottom 10% of U.S. hospitals were more likely to score lower on quality measures and close. Poor financial performance, a logically assumed cause of closure, is more likely often the result of other factors previously discussed. It is also associated with other related financial performance indicators, including poor efficiency (Ciliberto & Lindrooth, 2007), high debt load, length of stay, days in receivables (Oswald, Gardiner, & Jahera, 1992), and lack of investment in plant, eroding liquidity, and deteriorating capital resources (Cleverly, 1993).

Other notable factors identified by multiple researchers include absence of accreditation by The Joint Commission (Mullner, et al., 1989; Williams, et al., 1992), and high costs per case or admission (GAO, 1990; Williams, et al., 1992; Cleverly, 1993). Participation in a multi-hospital system negatively correlated with closure in studies by Mobley and Frech III (1994) and Mullner, et al. (1999) while authors of another, later, study presented contradictory findings (Ramamonjiarivelo, Weech-Maldonado, Hearld, & Pradhan, 2014). Lee and Alexander (1999) correlated closure with significant organizational change, including downsizing and change in the organization's chief executive officer.

Financial distress: precursor to closure?

Some researchers investigated the topic of financial distress in hospitals. The antecedents to financial distress and closure are common (Almgren & Ferguson, 2015). McCue (1991) defined financial distress as a position of negative cash, noting that the

ultimate definition of financial distress is bankruptcy. In many if not most cases, financial distress immediately precedes hospital closure events and the early stages of financial distress may be leading indicators of closure. According to an observer from the capital markets, "At a distressed hospital, you can usually look back three to five years and see an aging medical staff, an unwillingness to recruit new physicians, and management that's waiting too long to think about diversifying the medical staff" (Johnson, 1992, p. 130).

Other findings in research on financial distress closely track with the research on closure. For example, studies on bond defaults and bankruptcies identified such factors as declining financial ratios, low volumes and market shares, higher levels of competition from proximity to urban areas, and lower levels of efficiency (higher expenses per discharge). In addition, distressed facilities were already typically more highly leveraged with lower debt service coverage ratios (McCue & Clement, 1996; Morey, Scherzer, & Varshney, 2004). Some aspects of this phenomenon have changed over time, with lower Medicare and Medicaid volumes generally associated with problems until recently where higher proportions of fixed payers and more managed care has become more of a liability (Kim, 2010, p. 53).

In one of the earliest studies of its kind, Walker and Pitts (1987) analyzed the application of financial distress prediction models for industry to hospitals. The most notable study of the era was Altman's model from 1968 that used ratio analysis to predict bankruptcy. This and other studies, the authors noted, concluded "most models predicting hospital financial distress are restricted, flawed, or both" (p. 15). However, the application of Altman's Z-score in at least two modern studies appeared to show promise

of validity in specific if not general cases (Ramamonjiarivelo, Weech-Maldonado, Hearld, & Pradhan, 2014; Langabeer, 2006).

Interestingly, one early study into hospital financial distress in urban hospitals revealed few differences between hospitals whose operations generated surpluses and those who operated at a deficit. The authors' findings suggested "the solution to the problem of financial distress lies largely outside the individual hospital" and is heavily influenced by payer mix and reimbursement (Hadley, Mullner, & Feder, 1982, p. 1287).

Adaptive behaviors, or why haven't more hospitals closed?

Hospitals clearly exhibit behaviors and perform in ways not fully explained by either economic or governmental public policy precepts. Rosenberg (1987) observed hospitals represented a conglomeration of interests outside of normal market forces. As a group they have proven to be very resilient but they are also very bureaucratic. About the unique nature of hospitals, Lee and Alexander (1999) posited, "First, hospitals operate in a highly institutionalized environment. They achieve societal support and maintain their survival by having a proper connection to, and conforming to the requirements of, accreditation organizations, medical and professional associations, and government agencies." "Second, hospitals operate under complex and fragmented controls by federal and state governments" (p. 928). While this complexity may stifle change and prevent quick reorganization to meet the demands of a changing environment, it can also offer some level of protection from extinction.

Duffy and Friedman (1993) studied hospitals from the early '80s that had a five-year history of chronic losses to identify what happened next. Over the next five years, only about ten percent of the group actually closed, prompting the authors to surmise

such hospitals reach an equilibrium point through "sponsorship" that might include payments from a local government, parent organization, loan forgiveness, grants, and other forms of transfer. They also noted hospital profit margins, although popularly used in hospital research, may not be the best measure of how hospitals perform and whether or not they are likely to close. From a purely financial sense, as long as there are reserves or subsidies that enable a hospital to meet its immediate cash requirements, community hospitals tend to remain open far past the point that an ordinary or for-profit facility might merge with another organization, file bankruptcy, or simply close. Obviously, community support is a large factor in such decisions.

Consolidation through mergers or joining a multi-hospital system has been considered by a number of rural hospitals facing financial uncertainty. As an adaptive response to increasing financial pressures and declining volumes, merger activity in the US hospital market peaked in 1996 (Harrison & McDowell, 2005) before declining for several years and then beginning to escalate to record levels over the last decade (MedPAC, 2015) and tends to occur more in regions with higher population and organizational density (Sinay, 1998). However, Halpern, Alexander, and Fennell (1992) concluded such affiliation does not decrease the odds of closure. In fact, affiliation with an investor-owned system actually increased the probability of closure in their study sample.

As discussed earlier, taking advantage of opportunities for legislative relief has been an effective adaptation exercised by some hospitals. Converting to critical access status, seeking special designations such as SCH and MDH status, or applying for swing beds are among the most frequent responses to financial pressures for many small and

rural facilities.

In some cases, bankruptcy represents a viable option to reduce immediate financial distress in the short term, especially for larger facilities with higher utilization (Bazzoli & Cleverly, 1994). However, the Bazzoli and Cleverly study provided no long-term evidence of the effectiveness of bankruptcy, noting circumstances that led to bankruptcy were similar to those leading to closure. In another research effort, Landry and Landry (2009) found two thirds of the facilities filing bankruptcy in their study between 2000 and 2006 eventually closed anyway. The facilities' characteristics were similar to those that closed directly without the interim step of bankruptcy; they were small, independent (non-system), and for-profit, and they were similarly affected by poor management, high levels of competition and changes in reimbursement as causal agents.

Hospitals adapt by becoming more efficient, changing structures, reducing staff, and merging or affiliating with systems and larger institutions (Mullner & McNeil, 1986). In some cases, the governing organization of a distressed hospital responds by privatizing, an option that has occasionally been used even by public and teaching hospitals (Ramamonjiarivelo et al., 2014).

Finally, adaptation can include reorganizations that result in exiting the hospital business but remaining involved with a community's health care system to meet other needs. Some facilities have successfully responded to the increasingly difficult environment by converting to other uses, including specialty health care facilities such as nursing homes, psychiatric hospitals, and primary care centers. Others have found opportunities to continue to serve their communities by converting to functions that were not health related including housing and educational applications (Harmata & Bogue,

1997).

Small and Rural Hospitals

Small and rural hospitals are worthy of separate consideration in the discussion of closure and potential risk of closure because of their absolute numbers as well as the proportion of facilities at risk. "Half of all community hospitals in the United States are located in non-metropolitan areas. Hospitals with less than 100 beds (the majority of which are in rural areas) represent one-half of all community hospitals in the country, but account for only 15 percent of the total bed supply and admissions" (Moscovice & Rosenblatt, 1985, p. 31). The GAO studies of 1990 and 1991 concluded rural hospitals are more likely to close because of the prevalence of the high risk characteristics associated with closure, and not just because they reside in rural areas. Since 2010, the rate of rural hospital closures has increased, a trend that is expected to accelerate (Kaufman et al., 2015). According to the North Carolina Rural Health Research Program, 76 rural hospitals have closed between January, 2010 and July, 2016 (The Cecil G. Sheps Center for Health Services Research, 2016).

Much of the discussion in the literature regarding hospital closure centers on the plight of rural hospitals. Rural hospitals are in general more sensitive to public policy and other economic changes, partially because of their small size and lower access to resources (Moscovice and Stensland, 2002). Contemporaneous with the GAO and OIG studies, the Hospital Research and Educational Trust and the Section of Small or Rural Hospitals of the American Hospital Association published a seminal study on the closure of rural hospitals. They concluded PPS disproportionately affected smaller and rural hospitals (Enman, 1989). Congress responded by passing new legislation to the benefit

of this class of beleaguered organizations. "Rural hospitals have survived in the present system partly because Medicare payment policies that were discriminatory to rural hospitals have been blunted by legislation and partly because there was a justification for the location and mission of hospitals in rural places" (Ricketts III & Heaphy, 2000, p. 418). Because of the many dynamics of rural areas, including the changing demographic and economic environment, Mick (1993) observed, "most rural hospitals remain open despite heavy odds against them" (p. 614). In partial explanation of the tenacity of rural hospitals and their ability to survive, "a plausible hypothesis is that rural communities have a greater stake in preventing the closure of distressed hospitals because of their importance to the community and the more limited opportunities which rural residents have for alternate sources of care" (Mayer, Kohlenberg, Sieferman, & Rosenblatt, 1987, p. 327).

Rural communities find it more difficult to attract and retain physicians, a key element in the long-term survival of hospitals, especially smaller ones. Many small hospitals are aging and have difficulty maintaining an up-to-date complement of expensive technology that has become standard including computed tomography (CT) and magnetic resistance imaging (MRI) scanners, digital imaging and monitoring equipment, and operating room technology required by surgeons. Competition among facilities has increased with respect to their abilities to recruit and retain staff through higher salaries and recruit patients through aggressive marketing campaigns. Regulatory oversight with respect to payment policy changes has reduced the inpatient utilization of services, adding to the financial burden of hospitals, and in particular those with already limited resources. Finally, financial inputs into most hospitals, particularly smaller

hospitals, have become more limited as both governmental and insurance payers are controlling costs better (OIG, 1989).

Small and rural hospitals are also subject to many other societal changes and consumer trends including ease of mobility, changing shopping patterns, and the availability of more and better information about health care and health care providers. More patients are bypassing the nearest hospital for care at larger hospitals in other nearby communities because of increased awareness of specialty services and concerns over quality and technology, among other factors (OIG, 1989; Kralewski & Moscovice, 1992; Rosenbach & Dayhoff, 1995).

"In summary, we know a good deal descriptively about rural hospital closure and have some economic impact estimates. The underlying research design problems and the lack of large-sample studies mean, however, that we still have much to learn about the causes and consequences, particularly on health care delivery and the population's health, of this dramatic form of strategic management activity" (Mick & Morlock, 1009, p. 454).

Previous Efforts to Predict Hospital Closure

Up until 1983 with the advent of the Prospective Payment System for inpatient care, hospitals had not been subject to the same business and financial pressures as other industries. They have, in essence, been insulated from typical market forces, which theoretically makes it more difficult to predict which hospitals will close and which will survive.

One of the earliest works that attempted to explain or predict which organizations are prone to survive offered only a generalist look. Alexander, Kaluzny, and Middleton (1986) proposed a population ecology perspective to explain which hospitals or systems

might survive in different types of environments, and developed a prediction model. However, the literature provides no indication of its adoption or use in the industry.

Financial ratio analysis was used as the basis for prediction tools developed by Cleverly (1985) and Wertheim & Lynn (1993). Both purported to predict whether a hospital was at risk for closure, but neither has seen widespread use or validation of their predictions through later studies. However, they did note "a hospital's financial performance represents only one aspect of its overall health" (1993, p. 540). Coyne & Singh (2008) used data from solvent and bankrupt hospital systems to identify leading (predictive) financial ratios that foretold future financial distress and bankruptcy. These results, however, were for large systems and not individual hospitals or small systems of hospitals.

Gardiner, Jahera, and Oswald (1992) applied discriminate analysis to two groups of hospitals – not-for-profit and proprietary – using sets of variables associated with general "financial health (liquidity, leverage, profitability, and efficiency) plus measures of competition and length of stay" (p. 441) in an effort to identify financially troubled hospitals prior to closure. They demonstrated the model's ability to predict closure with a reasonable degree of accuracy when applied to a group of hospitals in Alabama post-PPS and five New York State hospitals over a four-year period from1998 to 2001 (Morey, Scherzer, & Varshney, 2004). There is no documentation that the model was utilized or validated elsewhere.

A contingency model developed by Drain, Godkin, & Valentine (2001) focused on the external environment affecting rural hospitals linked to supply and demand of hospital services, including resource leakage factors such as free care and resource

assistance in the form of grants and subsidies. Almgren and Ferguson (2015) tested four models in urban Chicago to explain closures. A recently proposed model has been developed to predict future financial distress in critical access hospitals based on measures of profitability, reinvestment, size, competition, market size, and unemployment rates (Holmes & Pink, 2011).

Each of these models added to the literature on predicting hospital closures, but none have yet been validated using large samples or data on hospitals that actually closed, and none have found their way into widespread acceptance or usage in the industry.

Other Research Involving Perspectives of Hospital CEOs

This research proposal was originally inspired by a qualitative study conducted in 2007 exploring the opinions of hospital and hospital system CEOs with respect to the relevance of research regarding quality and cost issues to the ways executives think about such issues in operational settings. Researchers conducted semi-structured interviews with a convenience sample of hospital and hospital system CEOs to identify and prioritize major factors affecting cost and quality issues in their organizations. Their perceptions as to whether current research was providing evidence for effective decision-making were also explored. Major findings of the study identified a gap between current health services research and operational imperatives of highest priority to managers of hospitals and hospital systems. They also discovered hospital leaders tend to think systemically about issues as interrelated rather than individually (i.e. productivity, staffing, quality) and that the needs of hospitals likely vary according to type (rural vs. urban, for example) and size, particularly when considering such variables as

performance metrics. A significant conclusion of the study indicates the importance of improved communications between managers and researchers, especially with regard for the need of researchers to consider the input of managers in developing research agenda and questions to improve the effectiveness of research outcomes that are practical and usable by organizational leaders (Alexander, Hearld, Jiang, & Fraser, 2007).

Hospital chief executive officers represent a population of key informants with highly valuable operational and strategic knowledge and experience with the propensity to inform the research in the form of new contributions. Yet searches of the literature revealed a dearth of research efforts into their perceptions with regard to any topic.

Studies using a survey methodology.

When CEOs were consulted, the inquiry typically took the form of standardized surveys, usually conducted by mail. Glasser, Peters, and MacDowell (2006) studied CEO perceptions of provider shortages and recruitment in rural Illinois hospitals, Rondeau and Wagar (2002) examined their perceptions of organizational dysfunction in managing restructuring and workforce reduction in Canadian hospitals, Khaliq and Walston (2010) studied CEO perceptions on professional development activities, and Khaliq, Thompson, and Walston (2006) analyzed perceptions of CEO regarding CEO turnover, all using structured questionnaires. Hospital CEOs were surveyed by Langabeer and Yao (2012) to examine the role of optimism in strategic decision-making and a questionnaire format was also used to study trends in perceptions of CEOs regarding leadership and succession planning (Collins, 2009). Collins' research was repeated in 2012 to compare results and understand trends (Collins, McKinnies, Matthews, & Collins, 2013). Walston and Chou (2011) used a structured survey to examine CEO perceptions on organizational consensus

on hospital restructuring outcomes. Questionnaires and interviews were used by consultants from Deloitte Consulting LLP to gather information from health system CEOs about the future of the healthcare industry and their planned responses (Deloitte Center for Health Solutions, 2012). CEOs were surveyed along with other hospital or health care leaders but were not used as the sole informants in studies by Feldheim (2000), Vasilevskis, Knobel, Wachter, & Auerbach (2009) and Palvia, Lowe, Nemati, & Jacks (2012). None of the studies addressed the issues of hospital financial distress or closure.

Studies using an in-depth interview methodology

In-depth interviews were used even less often to gather information from practicing hospital CEOs with regard to their perceptions about topics of interest. CEO perceptions were explored through personal interviews regarding competition and strategic response (Alexander, Burns, Morrisey, & Johnson, 2001). Sussman (1985) used an in-depth interview model to examine the expanding role and function of CEOs of multi-hospital systems and Groves (2006) conducted a qualitative study involving personal interviews to examine perceptions of CEOs regarding best practices in succession planning. Joshi and Hines (2006) conducted a qualitative study involving interviews of chief executive officers and their respective hospital board chairpersons regarding their perceptions of the hospital board's role in quality and patient safety. A qualitative study involving semi-structured interviews with hospital CEOs in Canada examined the relationship between leadership and priority setting (Reeleder, Goel, Singer, & Martin, 2005). Administrators were among the professionals interviewed in a qualitative study designed to define the impact of hospital rapid response teams (Benin,

Borgstrom, Jenq, Roumanis, & Horowitz, 2012). Again, the issues of hospital financial distress and closure were not explored in any of these efforts.

With respect to issues relating to distress and closure, qualitative interviews of hospital CEOs and CFOs were used as part of an analysis to describe and help understand the state of Pennsylvania hospitals (DelliFraine, Davis, Holt, & Baronner, 2010). In what appears to be the only study of its type, administrators of 29 hospitals that closed in 1987 were interviewed to gain their perspectives on the process of hospital closure. The structured interviews used both open and close-ended questions and addressed topics including how far in advance the administrator was aware the hospital would close and what advance indicators of closure existed. It also addressed decision-making regarding the closure and projected effects on the community. Results identified cash flow insufficiency, previous employee layoffs, and high ratios of bad debt as leading indicators of near term closure (Taggert & Mullner, 1989). The most recent relevant study on hospital closures involved case studies on three closed hospitals. Research data included interviews with community stakeholders to learn what factors contributed to the closure of their hospital, among other issues. The hospitals' former CEOs were not involved (Wishner, Solleveld, Rudowitz, Paradise, & Antonisse, 2016). Findings included demographic issues, competition, patient mobility, reimbursement, corporate business decisions, and failure to adapt to changing healthcare models as relevant factors in the three closings.

Although CEOs were not consulted, an interesting pair of qualitative studies about hospital closures involving interviews examined the phenomenon from the perspectives of two different groups: mayors and physicians. As an indication of how perspectives

differ, mayors of communities whose hospitals closed between 1980 and 1988 assigned fault, in order, as government reimbursement policies and structures, physician shortages and recruitment issues, and poor hospital management (Hart, Pirani, & Rosenblatt, 1991). Physicians interviewed about the same events cited reimbursement and then poor management, specifically stating that actions of doctors were not significantly contributory (Pirani, Hart, & Rosenblatt, 1993).

Finally, CEO perspectives on both disparities in care delivery and pay for performance initiatives were explored in a qualitative study using in-depth interviews by Weinick, Chien, Rosenthal, Bristol & Salamon (2010). This study was the only research effort identified in the literature search that used a grounded theory approach.

To summarize, no research has been identified to date that examines the perspectives of practicing hospital CEOs on the conditions and characteristics that place their hospitals at risk of financial distress and closure. Using a grounded theory research methodology, the researcher expects to gain information about how CEOs identify, think about, and address both tractable and intractable factors that contribute to closure and develop new theoretical knowledge that will advance the profession and serve as the basis for future research.

Conclusion

In some respects, many American community hospitals are at a crossroad in their lives. "The paradox faced by not-for-profit hospitals is that their charitable mission makes it increasingly difficult for the organization to survive in today's competitive market. The likelihood of hospital failure increases as more charity care is provided, more Medicare patients are served, and more uncompensated care is rendered" (Harrison

& Sexton, 2004, p. 192-193). Add to these pressures the high deductibles under the ACA, increasing bad debt, and decreasing reimbursements, and hospitals find themselves at greater risk than ever. But this problem set only speaks to one part of the dilemma.

As far back as 1995, in an essay entitled *Reinventing the American Hospital*, Shortell, Gillies, and Devers observed the structural changes of the healthcare system, predicting its evolution from an acute-care hospital-centric inpatient delivery model to one that was based on a more holistic primary care system, embracing population health and disease prevention. "Although the forces driving hospitals to reconsider their mission are many, they center on issues of cost containment, new forms of payment, technological developments, consumer preferences, and state and national health reform efforts" (p.132). It would appear such a future is now much closer. The old systems of delivery are fragmented. The new systems that will be required to deliver care in the future increasingly value flexibility, communication, and collaboration between more players in the continuum of care in order to deliver improved health outcomes rather than health care services.

It is more important than ever to understand the characteristics and conditions that place hospitals at risk of financial distress and closure. But the historical context of the past can only serve as foundation for the actions originating in the executive suites of today's hospitals. The risks CEOs perceive today and the ways in which they assess those risks and take actions to meet new challenges are vital aspects of new theories on organizational leadership that will inform both the literature and leaders as to future opportunities to learn, conduct research, and lead.

Chapter III

METHODOLOGY

This study represents a phenomenological inquiry with the opinions of individual hospital CEOs as the unit of measure. Data for the study will be gathered through in-depth key informant interviews with a purposeful sample of practicing hospital CEOs, conducted by a single researcher either in-person or by phone. Because little is known about the topic and understanding is inadequate to explain current circumstances with regard to the prevention of hospital closures, a qualitative methodology using a grounded theory approach was selected (Glaser & Strauss, 1967; Richards & Morse, 2013; Charmaz, 2014). The researcher will begin the interviews with standardized open-ended questions, exploring further concepts as they emerge throughout the discussion process. Saturation is expected to occur within a sample of 12 to 24 participants. Interviews will be recorded and transcribed and results coded for analysis using a qualitative research analysis software tool such as Atlas.ti. Coding will be validated using a sampling process with a second coder to ensure consistency and reliability. In grounded theory coding is conducted in stages to refine the data and develop emerging themes (Charmaz, 2014). Codes will be established from the data as discrete ideas and concepts are identified in responses to interview questions and in free-form discussion as recorded in the transcripts. A final set of codes will be applied to all transcripts. Memos will be used to document relevant aspects of codes, categorization of codes, and their relationships with one another as well as to compare and contrast codes and to explore developing themes.

Operational Definitions

For the purposes of this research project, the following definitions shall be considered:

Chief Executive Officer: The senior officer responsible to a corporation or board of trustees for the operation of a hospital facility.

Hospital: General, acute-care facilities providing inpatient services and registered by the federal government as participating in the Medicare program.

Hospital closure: A previously operating hospital "that stopped providing general, short-term, acute inpatient services…" Further, in accordance with the definitions promulgated by the Office of the Inspector General of the Department of Health and Human Services, a hospital closure is not considered to have occurred if the original facility continues to provide inpatient care after a merger or sale or if it closes and reopens during the same calendar year. However, in a departure from the OIG definition, a closure was considered to have occurred if a merger resulted in the termination of inpatient services at a previously occupied location but not if a hospital closed to move to a new location (OIG, 1989).

Intractable factor: A factor affecting or influencing the operational and financial viability of an organization that is generally considered outside of the ability of a typical organization to manage or control in the short term, i.e. location, population density, federal policy, and competitive landscape.

Tractable factor: A factor affecting or influencing the operational and financial viability of an organization that is generally considered within the ability of a typical organization to manage or control in the short term, i.e. financial management, diversity

of services, technology complement, and medical staff size.

Urban area: "Urbanized Areas (UAs) of 50,000 or more people and Urban Clusters (UCs) of at least 2,500 and less than 50,000 people. The Census Bureau's urban areas represent densely developed territory, and encompass residential, commercial, and other non-residential urban land uses" (United States Census Bureau website, n.d.).

Rural area: "All population, housing, and territory not included within an urban area" (United States Census Bureau website, n.d.).

Sample Selection and Recruitment Strategy

The study will be conducted using a purposive sample. The unit of analysis is the individual hospital chief executive officer. Candidates for interviews will be selected based on his/her presumed expertise as practicing professional hospital chief executive officers. Although they may currently serve in larger organizations or systems, their experience will include direct responsibility for or working with smaller hospitals potentially experiencing the characteristics of risk for financial distress and closure. Selection criteria include:

a. Current service as a hospital CEO;
b. At least ten years' experience in hospital leadership and management; and
c. Experience in not-for-profit hospitals of 200 beds or less.

See Appendix C for the proposed candidate selection profile.

Data Collection

Interviews will be conducted in-person or by phone and will be recorded. Interviews will begin with structured general interview questions. See Appendix D for the complete questionnaire. Emerging concepts will be explored in more detail

throughout the interview process. The data is expected to reveal theory and themes common in hospitals under distress and at risk of failure as identified by professional hospital leaders.

Table 3. Relationship Mapping of Interview Questions to Research Questions for Data Collection.

Research Question	1	2	3
Interview Question	5, 6, 9, 13	10, 11, 13	7, 8, 12, 14, 15, 16, 17

Limitations and Delimitations

Limitations that affect the ability to draw general conclusions from the study include the small sample size. Even though interviews will be conducted to the point of saturation, there is a likelihood other factors and themes exist that will not be identified during the study.

The study will be limited to CEOs with experience in small not-for-profit hospitals (under 200 beds), which historically represent one of the most significant cohorts of hospitals at risk of closure. The study will also be limited to hospital CEOs currently practicing in the southeastern United States and principally in the state of Georgia. While other states' hospital CEOs may express similar opinions, those are outside of the scope of this investigation.

The final study must also be evaluated with respect to bias of the researcher, a practicing hospital chief executive officer with experience as CEO in multiple small hospitals including several at risk of closure and one that underwent closure during the CEO's tenure.

Protection of Human Subjects

The researcher will present the study for approval by the Institutional Review Board, proposing expedited review. Subjects will be invited to participate via letter explaining the research project and informed consent of subjects obtained prior to conducting the interview. Confidentiality will be maintained in work products and final reports. Interviews will be recorded and transcribed. All data will be stored on the researcher's password protected personal computer not available or accessible by other individuals. No personal individual protected health information will be collected nor will any data that presents unreasonable business or personal risk to any participant.

Chapter IV

ARTICLE MANUSCRIPT

Introduction

Hospitals close every year in the United States. After a wave of closures in the 1980s principally following the advent of changes to the Medicare reimbursement system, the hospital failure rate declined throughout the 1990s and the industry remained relatively stable for the next decade. However, significant new reimbursement changes created by the implementation of the Affordable Care Act along with other external competitive, regulatory, operational, and financial pressures on the industry might be expected to again accelerate the incidence of closure, especially among the large percentage of hospitals left vulnerable from years of operating under conditions of financial distress.

Few researchers have attempted to prospectively examine hospital operations for the purpose of identifying predictive factors and addressing weaknesses in order to prevent hospital closures. While practicing hospital chief executives potentially possess the greatest specific front-line knowledge on the subject, there are no known studies that engage these professionals to learn how they think about and respond to these issues. This research study addresses this gap in the literature by using a grounded theory methodology to seek and analyze opinions and perceptions of hospital chief executive officers about the tractable and intractable factors that lead to financial distress and risk of closure. Findings are expected to inform the literature about characteristics and conditions that place community hospitals at risk for closure and how CEOs think about

those issues in the management of their organizations. From these insights, the emerging theory will potentially provide a basis for further research into the prediction of hospital distress and closure as well as preventative actions to be considered in order to address hospital distress in advance of closure.

Background

The total number of short-term general acute care hospitals in the United States expanded greatly beginning in 1945, reaching a peak of almost 6,000 facilities in 1975, largely as the result of financing mechanisms created through the Hospital Survey and Construction Act of 1946, commonly known as the Hill-Burton Act, and further because of the creation of the Medicare and Medicaid programs in 1965. The hospital count declined throughout the last quarter of the century before stabilizing at around 5,000 organizations. Many of the closures occurred after Medicare changed its reimbursement policy with the implementation of the Prospective Payment System in 1983 (Williams, Hadley, & Pettengill, 1992).

An annual count of hospitals, however, does not adequately explain changes in the industry during this period as facilities continued to close every year while other new hospitals opened, often in different locations. Collected data fails to address impending hospital closures. Table 1 outlines the recent trends in hospital closures.

Table 1. Hospital Closures by Year, 2000 – 2013

Year	Closures	Year	Closures
2000	69	2007	28
2001	63	2008	24
2002	34	2009	30
2003	46	2010	5
2004	63	2011	12
2005	32	2012	17
2006	28	2013	25

Note: Adapted from *AHA Hospital Statistics* (2016).

For over three decades, the literature has been spotted with forecasts of new waves of closures, typically predicted as the consequence of decreasing reimbursement, increasing regulations, technological advancements, declining demand for traditional general hospital services, competition, and other societal changes. A 2016 study identified 673 rural hospitals at risk of closure based on publicly reported data (iVantage Health Analytics, 2016). Today's predictions are not drastically different than those cited in the late 1980s, when some authors forecasted the potential closure of up to 1,000 of the hospitals in greatest distress and for many of the same reasons (Goldsmith, 1989; Mullner & McNeil, 1986).

Previous research into closures explored structural determinants such as size, ownership, competitive environment (i.e. proximity to other hospitals), diversification of services, business volumes, and financial performance data, and almost always after the event. The majority of research, however, is descriptive in nature and fails to develop a theoretical framework from which to understand the phenomenon of closure (Gifford and

Mullner, 1988). Hernandez and Kaluzny (1983) stated, "While descriptive research is necessary, it is not sufficient," noting the absence of systems and data to systematically identify hospitals at risk. They further recommended future research focus on attempts to "identify economic and social indicators that could predict hospital closure" (p. 426), a challenge accepted by few. Those studies attempting to predict potential distress and risk of closure have not been generally validated or widely applied.

Although the literature identifies both tractable and intractable factors related to closure, analysis does little to examine their interactive effects. Lee and Alexander (1999) recognized the problem inherent in examining organizational changes independently since variables are often related and interdependent, making it difficult to identify actual causes of closure or financial distress. The problem is further confounded by the fact some hospitals closed while many others similarly structured, located, and positioned continued to survive. Mick and Morlock (1990) referred to the failure to identify a clear "causal connection between factors correlated with closure" as a "fundamental problem" in previous research (p. 453).

This reductionist approach fails in its intent to inform hospital CEOs who generally view issues as part of systems rather than individual problems. To be useful for informing preventive change management for hospitals in distress that may be at risk of closing, we need to understand:

a. The leading tractable indicators of risk and potential closure; and

b. How they are affected by the presence of intractable indicators.

Problem Statement

The viability of hospitals is influenced by both organizational and environmental factors, some of which are tractable in nature, that is, capable of being managed by the organization to control the extent of their impact, while others are intractable, that is, beyond the organization's control. Anecdotal evidence indicates experienced hospital chief executive officers can prospectively assess these risk factors and the status of hospitals' financial and operational health in a holistic manner, much as an experienced clinician can assess patient health. However, the factors and dimensions used by professional administrators to perform such an assessment are poorly understood and not well described in the literature. Thus, we are unable to turn individual insight into conceptual assessment models that can be tested and disseminated.

Research Questions

Three research questions will be answered by this study:

1. What factors or categories of factors do practicing professional hospital chief executive officers believe to be the leading tractable indicators, conditions, or characteristics that place hospitals in distress or at risk of closure?
2. What factors or categories of factors do they believe to be the leading intractable indicators, conditions, or characteristics that place hospitals in distress or at risk of closure?
3. How are the identified characteristics assessed and prioritized for action by CEOs?

New Contribution

This study gathered and examined the opinions and perspectives of hospital chief executive officers regarding the situations and circumstances that place hospitals at risk

of closure, and how they think about and act on those factors. It explored the knowledge and thought processes of those who potentially possess the most relevant knowledge of the topic: the leaders of hospitals organizations that are, at least statistically, most at risk of failure. Using a grounded theory approach, their insights were used to identify themes and patterns present in the practice of hospital administration that enable hospital CEOs to recognize and respond to threats to organizational viability.

Methodology

This study represents a phenomenological inquiry with the opinions of individual hospital CEOs as the unit of measure. Data for the study was gathered through in-depth key informant interviews with a purposeful sample of practicing hospital CEOs conducted by a single researcher in-person. The average interview length was less than one hour.

Because little is known about the topic and understanding is inadequate to explain current circumstances with regard to the prevention of hospital closures, a qualitative methodology using a grounded theory approach was selected (Glaser & Strauss, 1967; Richards & Morse, 2013; Charmaz, 2014). The researcher began the interviews with standardized open-ended questions (Appendix D), exploring further concepts as they emerged throughout the discussion process. Saturation was determined to have occurred within a sample of twelve participants through continuously comparing new data to prior interviews until experiencing a redundancy of information across respondents. Interviews were recorded and transcribed verbatim. The resulting data was analyzed using Atlas.ti, a qualitative research analysis software tool.

In grounded theory coding is conducted in stages to refine the data and develop

emerging themes (Charmaz, 2014). In the initial code development, one researcher developed codes to describe the data. Codes were established from the data as discrete ideas and concepts were identified in responses to interview questions and in free-form discussion as recorded in the transcripts. To refine the initial codes, the constant comparison method was used to group similar concepts into axial codes. A second researcher independently coded three transcripts and codes were finalized through meetings and discussion of the data. A final set of 40 codes was applied to all transcripts (Appendix E). Coding was validated using a sampling process with a second coder reviewing select transcripts to ensure consistency and reliability. Throughout the study, memos were used to document relevant aspects of codes, categorization of codes, and their relationships with one another. Memos also were used to document circumstances and relevant observations from the interviews along with an initial analysis of both concurrence and conflict with previous data. Finally, memos were used to compare and contrast codes and to explore developing themes in an iterative fashion during the analysis process.

The study was submitted to the Health Sciences South Carolina electronic Institutional Review Board and approved as exempt research. No personal individual protected health information or any data that presented unreasonable business or personal risk to any participant was collected and confidentiality was maintained in all work products and final reports.

Operational Definitions

For purposes of this study, intractable factors were defined as factors affecting or influencing the operational and financial viability of an organization that were generally

considered outside of the ability of a typical organization to manage or control in the short term. These factors were sometimes referred to in the literature as environmental. In contrast, tractable factors were defined as factors affecting or influencing the operational and financial viability of an organization that were generally considered within the ability of a typical organization to manage or control in the short term. These factors were sometimes referred to in previous studies as operational.

Sample Selection

Candidates for interviews were stratified based on their presumed expertise as practicing professional hospital chief executive officers. Although several served in larger organizations or systems at the time, the experience of all CEOs interviewed included current or previous direct executive responsibility for hospitals of less than 200 beds, the hospital size cohort that has historically operated at higher risk of financial distress and closure. Table 2 describes the profile of CEOs interviewed. The average subject had 17 total years of experience as a hospital CEO and nine years in their current CEO role. Three-quarters possessed an advanced degree in healthcare or business administration. Half were affiliated with the American College of Healthcare Executives as either member or fellow and half had leadership experience in the for-profit sector.

Table 2. CEO Profile

Characteristic	Critical Access Hospitals (25 Beds	Small Hospitals (26 – 150 Beds)	Large Hospitals (> 150 Beds)	Total
Hospital size	4	4	4	12
ACHE Status[1]	2	1	3	6
MHA/MBA[2]	2	3	4	9
FP Experience[3]	2	2	2	6
Tenure[4]	12	8	28	17

[1]Membership or fellowship status in the American College of Healthcare Executives
[2]Possession of an MHA, MBA, or other post-graduate degree
[3]For profit hospital or system experience
[4]Average total years of tenure as a Chief Executive Officer

Results

Research Question 1: Intractable Factors

Hospital CEOs readily identified a number of both intractable and tractable factors throughout their interviews. Table 3 itemizes the intractable factors most commonly cited in rank order according to the number of CEOs attributing each as potentially significant to hospital financial distress and risk of closure, and Table 4 illustrates the most commonly referenced tractable factors with CEOs' representative quotations.

Table 3. Ranking of Intractable Factors

Factor	CEO Attributions
Population and issues of local context	12
Policy (federal, state, local)	10
Reimbursement (governmental)	10
Governance and control	9
Physician culture changes	8
Competition	7
Professional shortages	6
Hospital infrastructure	4
Hospital oversupply	3
Cost escalation	2
End of life issues	2

Population and issues of local context. Among the first factors identified by CEOs as intractable were population and other issues of local context. Every CEO spoke extensively of aspects of populations affecting the hospital operation, enumerating the obvious components such as size of the population service area and payer mix. They also elaborated on other population related factors potentially affecting hospital service demand including age, racial and ethnic mix, educational status, employment rates, insurance status and general health status of the population.

The impact of a local community's business and industry base was a common reference of CEOs. They noted the relationship between a hospital's financial strength and the size and percentage of the population employed and insured and were, expectedly, sensitive to the impact of negative demographic changes such as the aging of the population or loss of an industry. According to CEOs, such changes ostensibly increase the vulnerability of a hospital, especially in smaller markets.

Table 4. Representative CEO Quotations by Intractable Factor

Factor	Representative Quotations
Population and Local Context	It has been my observation for a number of years now that geography plays a huge role in the success of a local hospital because you have a number of factors that are essentially population-based factors. Probably one of the biggest is industry, loss of industry in your community. …there's plant closings and other industries that close leaving a huge population of folks with no health care insurance and so you have all of a sudden a big self-pay population Well, we recognize that a small stand-alone rural hospital can't survive by itself, that you've got to be part of something bigger.
Policy	… our position as a safety net hospital. We are required to provide care for patients regardless of their ability or inability to pay. We are also the disaster preparedness source for our county. And so those things are obviously not always compensable. …that's another thing you can't do anything about – unfunded mandates. And well-intended, I'm sure, especially when you're in session and you're trying to come up with laws or regulations that are trying to protect patients. But it's for safety, and who wouldn't be all for mom and apple pie? But the unintended consequence is that it adds costs to the system. Those costs are not costs that you can pass on.
Governmental reimburse-ment	…we're getting paid less than costs for Medicare and Medicaid. It doesn't make sense. There's no other industry out there that's operating with their reimbursement at less than costs. I would say about 65% of our business is government payment, Medicare and Medicaid. We have absolutely no control over the reimbursement rates, the reimbursement methodologies.
Governance and control	I have come in the last 10 or 15 years to appreciate even more so the connection to the governance of the hospital and the success of the hospital. I don't expect that anybody who's going to been seen as a successful hospital administrator or CEO is going to rely on the board to run the hospital day-to-day but it shapes so much of the future. Having an effective community-based board to help us, help keep us on target, has emerged as one of the more crucial aspects of success. … that's one of your true anchors or safety nets to keep your organization from closing at some point in the future. So, if you've got a good engaged board with good governance, then the organization has a chance to thrive. If you've got a dysfunctional board, in my opinion, good CEOs won't want to come, and as a result you'll probably have a dysfunctional organization as well. It really does start at the top.

Physician culture changes	Back when medicine was probably a lot simpler than what it probably is today and fee-for-service and physicians could do well when they came out of training and hung their shingle and feed their families, that has changed with the complexity of medicine. Physicians don't want to run their own businesses. The whole work-life balance thing is a big theme. They want to have normal hours, so to speak, and they don't want the headaches of running a business. And so your medical staffs are shifting from independent practitioners to employed physicians. Thirty-five years ago, a doctor would come to town. He'd go borrow money from the bank, set his practice up. He would not work for the hospital – wouldn't even think about it. And he would work seven days a week, tirelessly, by himself in a small community. We'd find him a partner and one or two other guys would come in and they would work from 7:00 in the morning until 7:00 at night. The new population of doctors coming out want[s] to work five days a week. They really don't want to have a hospital practice.
Competition	But as you know, especially in small communities, there are very few good-paying patients and so if somebody comes in and cherry-picks those folks, … it'll change our business model. You don't have a free market system now. When one payer must take everyone who walks in the door and the other can pick and choose who they want to take, it is not a fair playing field.
Professional shortages	Because we're in a small rural community, we do not have a lot of physicians. We have a hard time attracting physicians. So, we've had to kind of change our focus a little bit and look at nurse practitioners and things of that nature... And we have no specialists. That's an issue. Everyone has to leave town to get to a specialist. …particularly in our case, if we don't have a sufficient primary care base of physicians or providers, mid-level providers, to take care of patients, we would cease to exist. Because primary care feeds all other ancillary services, surgeries, even women's primary care…

Policy. Governmental policy constituted another group of factors consistently cited by CEOs as intractable with significant impact on hospitals' viability. The most frequently mentioned were regulations issued by CMS and other federal agencies. Closely following were corresponding state actions, such as their decisions regarding Medicaid expansion after the implementation of the PPACA. CEOs overwhelmingly spoke of governmental action as a constant pressure on hospitals, from licensure to duties required under EMTALA regulations. The first response of one CEO when asked to

identify intractable factors was to identify their hospital's position as a safety net hospital. Another CEO spoke of many new governmental requirements as "unfunded mandates."

Governmental reimbursement. Closely related to federal and state policy were corresponding intractable issues of governmental reimbursement. Hospital CEOs frequently noted their inability to negotiate or affect payment rates from either Medicare or Medicaid which, when combined, constitute the greatest source of payments to many hospitals. Similarly, CEOs spoke of only being able to react to new regulations that potentially reduce reimbursement including recent changes in observation status and value-based purchasing rules. Such rules routinely reduce payments and apply penalties for failing to meet certain governmentally determined performance thresholds.

CEOs of Critical Access Hospitals were especially sensitive to issues of government reimbursement, even though they operate under cost-based reimbursement. More than one CEO recounted sequestration as yet another policy issue impacting hospital reimbursement, reducing payments to hospitals by 2% as a result of the 2012 federal law designed to reduce the budget deficit.

Governance and control. Two thirds of CEOs interviewed named governance issues among the intractable factors affecting their hospitals, at least in the short term. Responsibility for the viability and sustaining existence of a hospital as a business and community enterprise ultimately falls to its appointed or elected governing body. CEOs frequently spoke of the importance of a strong relationship with their boards. Conversely, two CEOs discussed ineffective and inappropriate board leadership as an organizational risk.

Physician culture changes. Seventy-five percent of CEOs interviewed discussed issues related to the changing physician culture as intractable factors. They cited the rising trend of physician employment along with changing expectations of many doctors for a more favorable work/life balance. This trend has also given rise to the hospitalist movement, introducing yet another responsibility and expense for hospitals.

Competition. Hospital CEOs were highly aware of the changing competitive landscape affecting their organizations. Several discussed the complexities of Certificate of Need legislation and potential changes to or elimination of the law that would allow increased competition.

Professional shortages. The supply of physicians, nurses, and other professionals was frequently identified as an intractable issue, particularly in smaller and rural communities. CEOs cited recruitment and retention as constant challenges demanding constant attention.

Other intractable factors. Several hospital CEOs interviewed discussed the oversupply of hospitals as a general problem statewide and nationally that would lead to more closures. Cost escalation throughout the system was cited as an intractable factor by two CEOs, notably with regard to the fact that hospitals are both consumers and suppliers of goods and services. One, for example, mentioned the threat of rising health care costs of his own employee group as one of his more significant day-to-day challenges. Other factors identified as intractable included national health care utilization trends including the movement of hospital services from inpatient to lower reimbursed outpatient settings, aging hospital infrastructure issues, and costs associated with end-of-life issues.

Research Question 2: Tractable Factors

Practicing hospital CEOs also readily identified a number of tractable factors as illustrated in Table 5.

Table 5. Ranking of Tractable Factors

Factor	CEO Attributions
Reimbursement (insurance)	10
Physician recruitment and retention	10
Leadership and culture	9
Service line management	9
Cost and expense management	8
Community support	7
Cash management	6
Marketing management	6
Patient experience	6
Quality management	6
Talent management	5
Market behaviors	5
Recruitment and retention of non-physician staff	3

Table 6 contains representative quotations by CEOs for the most commonly cited tractable factors.

Table 6. Representative CEO Quotations by Tractable Factor

Factor	Representative Quotations
Insurance reimbursement	Well, stand-alones are at risk more than anything of the whims of payers deciding to reduce their fee schedules, and they try to do that every year. So, that event could put our small hospitals out of business once [a major insurer] walks in and says, "We want a deeper discount or we're going to send all of our hospital patients 35 miles up the road to the next closest hospital."
Physician recruitment and retention	It is challenging to find physicians. Being a rural community you have to find a physician that wants a slower-paced lifestyle living in a rural

	community, you know, wants to be close to some of the recreational activities that are surrounding our community. That really helps. What hurts sometimes in being in a smaller community is that there is call associated with it.
Leadership and culture	Culture is everything because I can't anticipate what needs to happen at every point of contact where that patient moment of truth comes where someone either does the right thing or doesn't do the right thing. And if the culture's right they're going to do the right thing more often than not, and that's really about all I can ask for.
Service line management	… we're always trying to look for new services that we can do well within our facility. … we're trying not to pretend to be something we're not. We can't be all things to all people. … what do we need to send someplace else?
Cost, expense, and cash management	You've got to have good control over your expenses. Your payroll is your biggest expense and so you've got to make sure that you're right-sized, you don't too many employees. And also, a challenge for a rural hospital is benefit package. So salaries, wages and benefits, understanding that salaries are really the only thing you have control over. You have to flex down when census is down, recognizing that you can only flex so low. You have to make sure that you have good pricing on your supplies, make sure you are getting the very best deals you can get. Make sure you inventory is not inflated, make sure that you don't have a lot of cash tied up in that inventory, making sure that you are tracking that whole process from the time that it's purchased until the time that it's charged out to the patient and that you are not failing to capture those charges. So, supplies and staffing are the two biggest things that have to be managed and have to have good processes around them.
Community support	But, we need to be really, really good at what we're doing and we need to make sure that the community is confident in us. So the loyalty of our community was really part of our balanced score card. … you want to constantly be out there in the face of the community. We also want our staff, and particularly administrative staff and physicians, out in front of the community. We want to be involved with various organizations with the community, be involved with the church, be at the chamber of commerce functions. We want to support the community events. … they see our name and know that we're giving back.

Insurance reimbursement. Among the most cited tractable factors were issues related to reimbursement. CEOs noted the need to negotiate contractual rates and conditions with managed care providers, even while acknowledging the upper hand held by insurance providers and their limited success in the arena. CEOs also noted the declining rates paid to hospitals and the end of cost-shifting opportunities previously

available to hospitals to compensate for shortfalls resulting from governmental payments and indigent care. Several also believed the power of insurance companies was increasing to the great disadvantage of hospitals in general, including their capability to exclude some providers through creation of "narrow networks."

Physician recruitment and retention. While the physician shortage was most often discussed as an intractable factor, CEOs generally turned the focus in conversation to their strategies for physician recruitment and retention. Almost all recounted stories of both success and failure in adapting to the increasing competition for professional staff. They each responded to the challenge with carefully planned strategic initiatives tailored to their specific issues and opportunities to enable their hospitals to remain viable.

Two hospitals had programs in place to identify potential physician candidates and support them through medical school in exchange for future service to their community. Another hospital CEO addressed small community limitations by partnering with physicians in a neighboring community to work part time in their smaller town, increasing local access and supporting the hospital with a cost-effective, low-risk solution.

Leadership and culture. CEOs identified issues of leadership and organizational culture as significant factors with the ability to impact current and long-term performance of a hospital. They often spoke of shared "purpose" and "vision" and the importance of alignment of philosophy to the work of hospital staffs. Further, they expressed belief that culture affected performance and led to the improved patient care and organizational outcomes.

Service line management. CEOs were highly cognizant of delivering a service complement appropriate to their communities within the parameters of quality and available resources, regardless of the size of their institutions. They verbalized the general understanding of every hospital's limitations with regard to its range of services and also talked of creative solutions to build business and bring new revenues into their organizations.

Cost and expense management and cash management. Among the basic functions of any business executive is the management of revenue and expense. Closely related is the management of cash flow. In the hospital industry where the ability to affect revenue opportunities are limited, such issues are elevated in importance and require the direct attention and routine oversight of the chief executive. The importance of these functions is elevated even further in smaller facilities, based on comments and explanations during interviews. One smaller hospital CEO considered daily expense and cash management one of his primary functions.

Community support. Only a few hospitals in the sample received direct community funding from the local tax digest or from philanthropic efforts, according to the CEOs interviewed. Community support was more often spoken of in terms of patronage and willingness to utilize local physicians and hospitals for the services they were capable of providing.

Community support works both ways, according to several CEOs who discussed the ways the hospital staff interacted with the community beyond providing health care and serving as an employer.

Patient experience, quality, and marketing management. Patient experience is highly integrated with quality management, and both are receiving heightened focus by hospital CEOs. In turn, under the increasing development of more consumer-driven behaviors as a result of increased competition and high deductible health plans, CEOs are paying more attention to getting their messages out to potential patients, both through word of mouth and traditional marketing routes. CEOs discussed these issues in connection with one another and one CEO specifically connected the three.

Other tractable factors. Other tractable factors mentioned were the issues of shortages of nurses, technical, and managerial staff, and the issues of market behaviors and talent management.

Research Question 3: Prioritization of Characteristics by CEOs

Five distinct themes emerged from the data, as illustrated in Table 7.

Table 7. Primary Themes

Theme	Research Question
CEOs perceive intractable and tractable factors as highly interrelated and address them through systems thinking	1, 2, 3
Intractable issues of local context significantly affect hospital viability and sustainability	1
Physician culture issues are becoming more critical for hospitals and CEOs must increasingly consider their impact	1
Unprecedented continuing rates of disruptive change require increasing learning, adaption, and innovation by hospital CEOs to succeed	1, 3
Effective governance, leadership, and community support may help some vulnerable hospitals forestall financial distress and closure for the short- to mid-term future but may not ensure long-term survival	3

Theme I: CEOs perceive intractable and tractable factors as highly interrelated and address them through systems thinking.

By definition, organizations are unable to change or eliminate intractable factors. CEOs easily cited factors over which they have no control with significant agreement among the sample. Most, however, quickly turned the conversation from intractable factors to their responses and plans for dealing with such issues. The lines between tractable and intractable factors began to blur in conversation. Many factors initially labeled as intractable such as community size had been ameliorated by breaking them into smaller components representing more tractable factors. For example, one CEO dealing with a small hospital and limited population developed a specialized service to draw patients from outside their own community, thereby increasing volumes and revenue. The physician shortage, an intractable factor affecting another small hospital, led its CEO to respond to a joint venture with a larger competitor to bring part time specialists into his hospital to perform surgical cases.

CEOs interviewed in the study clearly understood the effects of intractable factors but considered the responsive adaptation required to create and maintain a sustainable operation among their primary responsibilities. One CEO specifically stated, "I think that's the way you respond to the intractable: with [the] tractable." Even though their strategies remained anchored in reality, successful CEOs focused on analysis, teamwork, collaboration, and innovation to manage the negative aspects of the intractable while advancing their organization's objectives.

Not surprisingly, significant issues and problems emanating from either intractable or tractable factors were seldom seen as individual problems capable of being resolved in isolation. Instead, most crossed multiple traditional structural boundaries of tasks and departments and required systems approaches for effective resolution. For example, a problem of delays in patient treatment might not be able to be resolved effectively without understanding each of the steps and the roles of each individual engaged in the process. Interesting to note, however, were different CEOs' perspectives on prioritization of such factors, largely influenced by the size and condition of the organizations they led. For example, small hospital CEOs spoke more frequently about physician issues, cash flow, and expense management while larger hospital CEOs spoke more frequently about leadership, board influence, and vision. It was clear that smaller hospital CEOs were more sensitive to the narrow margins produced in small operations and regarded both intractable and tractable factors driving variations in activity, expenses, and cash flow with a higher degree of personal attention. When CEOs addressed strategic planning, smaller hospital executives spoke more often of survival and issues of more immediate import rather than longer-term plans for transition of the larger health care system.

Theme II: Intractable issues of local context affect hospital viability and sustainability.

Factors relating to issues of population and local context were identified by hospital CEOs as important determinants of hospital success. Cited by all CEOs as a group of important but intractable factors, characteristics influencing hospital service demand extend beyond the size of the population and include age, racial and ethnic mix,

educational status, employment rates, and insurance, economic, and general health status. One CEO stated, "It has been my observation for a number of years now that geography plays a huge role in the success of a local hospital because you have a number of factors that are essentially population-based factors." Hospitals are also affected by changes in these factors, becoming more vulnerable if a population contracts, industry leaves, or indigent care levels increase.

In addition, the progressive transformation of the healthcare industry from an inpatient to outpatient service focus as well as the introduction of new regulations, technologies, and other market forces have reduced the number of inpatient admissions and hospital lengths of stay, further applying pressure on organizations that have traditionally relied on inpatient volumes for financial success. CEOs noted that a combination of these factors or in some cases a single factor such as closure of a major industry can affect a hospital's viability.

Theme III: Physician culture issues are becoming more critical for hospitals and CEOs must increasingly consider their impact.

Physicians find themselves at the center of the ongoing transformation of America's health care system and are responding in ways that can significantly impact hospital operations. Perhaps the most obvious change is the rise of the employment model. Physicians find it increasingly difficult to independently bear the financial risk of increasing regulatory requirements and operational complexity. Many younger physicians are also seeking a better work/life balance and are unwilling to invest the time or money required to run an independent practice of medicine. Both circumstances have

led more physicians to exchange the independent private practice model for the financial security and stability of a salaried hospital position.

CEOs are highly dependent on physicians as a critical element for a successful hospital operation. These intractable cultural changes require hospitals to take on the new costs and risks associated with physician practices just to maintain services in many communities. CEOs are increasingly required to understand, manage, and integrate these complex and potentially costly businesses into the operations of their local hospital and health systems. Small hospitals are especially vulnerable to the shift. According to one CEO, "We're just one doctor away from having a tough day."

But not all physician-related changes are negative. The CEO of a larger community hospital observed, "I think physician leadership has been a pleasant surprise. I've seen some really bright stars emerge from our physician group and that lends itself to this concept of dyad management between clinical and administrative." In his opinion, physicians can become natural partners in hospital leadership given the opportunity and structure.

Theme IV: Unprecedented continuing rates of disruptive change require increasing learning, adaption, and innovation by hospital CEOs to succeed.

CEOs verbalized an understanding of the unprecedented rate of change now occurring in health care as an intractable factor in itself and expected it to continue and likely accelerate over the next decade. Rather than focusing on the problems to the exclusion of the larger picture, CEOs interviewed focused instead on the future and maintaining the organization's direction and momentum. They pointed to their responses to both tractable and intractable factors, sometimes in the form of "war stories" in which

they or their organization were faced with difficult circumstances. Successes were recounted but CEOs were not reluctant to discuss failures. In those cases, they spoke of the learning emanating from the situation and its usefulness in their personal professional development or in the life of the organization. Again, rather than belaboring or enumerating the problems resulting from the rate of change, CEOs focused their comments on the need to adapt to the evolving environment.

The complexity of hospitals is well known and documented in the literature (Drucker, 2002) and their CEOs manage enterprises influenced by many complex and intractable factors and forces. Yet in interviews, no CEO related an overly pessimistic outlook. Only one CEO interviewed in the sample indicated that his hospital was in immediate jeopardy, and none indicated plans to close or significantly alter structure or repurpose a facility in the face of declining demand. However, several spoke specifically about the impending closure of other facilities:

> We have too many hospitals. That's reality. No one wants to hear that but there's too many hospitals…
>
> So there [is] certainly more capacity than we can support. With transportation being a lot easier today, with highways and things that have been constructed, and people's willingness to travel longer distances for healthcare, a lot of those hospitals that were created back fifty years ago, they really don't need to be here.
>
> There has to be a tipping point … a point where those intractable demographics, decline in the community economic situation… [is] going to trump whatever you do from a management or executive standpoint.

Several CEOs in the sample had established affiliation agreements with other larger organizations as a survival strategy and several others had become involved in collaborative efforts that did not involve change of ownership or control.

Theme V: Effective governance, leadership, and community support may help some vulnerable hospitals forestall financial distress and closure for the short- to mid-term future but may not ensure survival.

Hospitals are significant organizations in any community but in smaller communities they are frequently one of the largest employers and serve as the epicenters of health care with their medical staffs, emergency rooms and clinics. While many struggle, operating on the verge of failure, many others are highly respected and appreciated by their communities as economic engines.

Dedication and commitment on behalf of management, board, medical staff, employees, and volunteers represents at least one component of success in maintaining hospital viability in organizations of all sizes. Hospital CEOs often spoke of their organizations using words such as mission, calling, stewardship, and servant leadership. Another CEO stated, "I've always said we have a sacred responsibility to our communities that we serve. And they rely upon us for that service." Such intense personal commitment and dedication to a cause, especially by visionary organizational leaders, almost certainly contributes to hospitals' historical resilience.

The presence of effective leadership and the relationship between the CEO and the governing body was identified by several CEOs as a significant factor in the sustainability of hospitals. Similarly, the lack of leadership was cited as a risk factor. The smaller the hospital, the more critical the leadership abilities of the CEO and board might be, at least in the short term. CEOs specifically discussed the importance of the relationship between the board chair and the chief executive related to the risks required of organizational leadership and especially in challenging times. While good governance

was viewed as an asset that helped hospitals survive and thrive, poor leadership at the board level conversely was cited as an additional risk.

As intractable forces threatened the viability of fragile hospitals in past times, facility and community leaders traditionally responded through support in the form of patronage, tax subsidies, and philanthropic efforts. In many cases, organizations appearing on the verge of failure to an outside observer might continue to operate because of such support from their local citizens. CEOs saw one of their responsibilities as helping the community understand the value they provide to the community, not only through healthcare services but also through their impact on the local economy and their ability to attract industry to the community. And yet, several acknowledged traditional approaches will not be enough to save every hospital.

Discussion

Hospitals are highly complex and highly regulated organizations and exist for the most part as community resources. A number of tractable and intractable factors threaten their historic positions as providers of care, community employers, and corporate citizens. Our findings suggest several of these factors, if left unaddressed, have the ability to increase the risks of community hospitals and may serve as a catalyst for financial distress and eventual closure. The continued existence of hospitals, particularly those in small and rural settings, cannot be assumed. And yet, our findings also indicate some CEOs are more focused on operational rather than strategic issues. Failure to shift from managing to leading their organizations with a longer term perspective will likely result in more closures, some of them preventable.

Hospital CEOs must increase their awareness of national and regional trends that

are causing increased hospital stress. They need to work to best protect their hospitals from effects of these factors and position them for survival and growth, recognizing traditional approaches including partnerships and politically difficult approaches such as repurposing acute care facilities might represent feasible options. In the face of such rapid change and transformation, industry experts do not expect all full-service acute care hospitals to survive, at least not in their current form.

CEOs' prioritization of factors in their daily work depended on the size, complexity, and condition of their hospital. Consistent with previous research (Alexander, et al., 2007), the study showed that most issues facing health care executives were complex and required CEOs to adopt a systems approach integrated with other relevant priorities and resources.

Interestingly, even in the midst of discussions about hospital closures, only one CEO acknowledged that his hospital was in short-term danger. However, some CEOs were strategically seeking outside assistance in the form of affiliations, mergers, and regional consortia, sometimes even with partners previously considered as competitors.

Adaptation to both internal and external factors presented to their hospitals has proven to be one of successful CEOs' most important skill sets. However, change in response to specific immediate threats require a different perspective than the change required for innovation to position hospitals in an uncertain future environment. Lack of resources and higher levels of volatility forces small hospital CEOs to focus more on day-to-day operational issues while CEOs of larger organizations are more likely to have a higher degree of flexibility for priority-setting. CEOs of larger organizations also

typically work in a more insular structure, permitting them to spend more time on longer-term strategic initiatives and creating a larger buffer for error and experimentation.

Development of a predictive model. CEOs were unanimous and optimistic in their belief a model might be developed to help predict future financial distress and risk of closure for hospitals. Along with traditional financial ratios, it was conjectured, the model would benefit by including other non-financial factors such as the quality of the leadership team and board and the presence or absence of subsidies, consistent with previous findings (Velez-Gonzalez, Pradhan, & Weech-Maldonado, 2011).

Applications and next steps. Hospital CEOs can use the information derived from this study to more fully understand the factors identified in analyzing their own hospitals' risks and vulnerabilities. The next steps could include an assessment of their organization with respect to the relevance of each factor, using relevant themes in a planning context. CEOs would benefit from frank assessments of leadership and governance capabilities in their own organizations and the potential of affiliations and partnerships to acquire needed assets and capabilities.

Finally, CEOs should assess their hospitals' operations in light of community needs, assets, and goals. Citizens continue to look to their local hospitals for assistance in times of need and hospital leaders should plan for coming transitions and how to best position their local hospitals to fulfill their missions in and for the communities they serve. CEOs in highly vulnerable organizations should consider the possibility their communities might be better served by developing new delivery models for providing local health as alternatives to the traditional full-service acute care hospital.

Study Limitations and Delimitations

The study was limited to a purposive sample of CEOs, affecting the ability to draw general conclusions from the data. Even though interviews were conducted to the point the researchers considered to constitute saturation within the sample of twelve interviews, there is the potential that other factors and themes exist but were not identified. The study was limited to hospital CEOs currently practicing in the state of Georgia. Other states' hospital CEOs' perspectives may differ but were outside of the scope of this investigation. CEOs selected for interviews all had experience in leading community hospitals of less than 200 beds in size during their careers. CEOs of other types and size hospitals may have been of different opinions, but such were again outside the scope of this study.

The final study must also be evaluated with respect to bias of the researcher, a practicing hospital chief executive officer with experience as CEO in multiple small hospitals including several at risk of closure and one that underwent closure during the CEO's tenure. Potential bias was mitigated through the collaborative development and review of the codebook by a second researcher experienced in qualitative studies and coding. The second researcher also conducted a second review of a sample of coded interviews for agreement and consistency.

Suggestions for Future Research

Opportunities for further research include extension of the developed theory by conducting similar in-depth interviews with CEOs who have presided over organizations that closed. Similarly, as many weaker organizations have been merged into or acquired by larger competitors or systems, it would be valuable to learn whether similar characteristics exist in merged organizations as well and whether there are differences

between organizations that closed in comparison to organizations that survived through a merger or other formal affiliation. Further research might also reveal whether such mergers or acquisitions resulted in strengthening either or both organizations.

Given the optimism of CEOs regarding the potential for development of a model to predict financial distress and closure, future research opportunities exist for the purpose of creating and validating such a model for application to hospitals. Finally, in consideration of the intensity and rate of change facing hospitals, opportunities exist to examine change management strategies and conduct additional research to inform the change management literature with respect to hospital financial distress and closure.

Conclusion

For this study, we drew upon the expertise of practicing hospital CEOs to learn about factors affecting their hospitals' viability. A sample of twelve CEOs from a range of hospital sizes and types were interviewed to gain their perspectives about the intractable and tractable factors that potentially cause financial distress in hospitals and lead to closure. The study also explored how CEOs think about and prioritize these issues in the operation of their organizations.

The primary intractable or environmental factors cited by half or more of CEOs interviewed were those related to: population and characteristics of local context; federal, state, and local policy; governmental reimbursement; hospital governance and control; physician culture changes; competition; and professional shortages. The most cited tractable or operational factors identified by CEOs were classified as: reimbursement from insurance companies; physician recruitment and retention; leadership and culture; service line management; cost and expense management;

community support; cash management; marketing management; and patient experience.

Five primary themes emerged: intractable and tractable factors are highly interrelated and are addressed through systems thinking; intractable issues of local context are among the most significant determinants of hospital viability; physician culture issues are becoming more critical for hospitals; unprecedented continuing rates of disruptive change require increasing learning, adaptation, and innovation by hospital CEOs to succeed; and effective governance, leadership, and community support may help some vulnerable hospitals forestall financial distress and closure for the short- to mid-term future but may not ensure long-term survival.

The data revealed that CEOs are more comfortable working in the realm of tractable factors day-to-day. They are advised to extend their view to incorporate the realities of intractable factors in a longer term planning horizon in order to appropriately address the viability and sustainability of their organizations. However, as in times past, the highly dedicated, industrious, creative, and courageous CEOs at the helm of America's hospitals will likely outperform expectations as they help lead the industry's transformation.

REFERENCES

Al-Amin, M., Zinn, J., Rosko, M. D., & Aaronson, W. (2010). Specialty hospital market proliferation: Strategic implications for general hospitals. *Health Care Management Review*, *35*(4), 294-300. http://dx.doi.org/10.1097/HMR.0b013e3181e04a06

Alexander, J. A., Burns, L. R., Morrisey, M. A., & Johnson, V. (2001). CEO perceptions of competition and strategic response in hospital markets. *Medical Care Research and Review*, *58*(2), 162-193.

Alexander, J. A., D'Aunno, T. A., & Succi, M. J. (1996). Determinants of profound organizational change: Choice of conversion or closure among rural hospitals. *Journal of Health and Social Behavior*, *37*, 238-251.

Alexander, J. A., Hearld, L. R., Jiang, H. J., & Fraser, I. (2007). Increasing the relevance of research to health care managers: Hospital CEO imperatives for improving quality and lowering costs. *Health Care Management Review*, *32*(2), 150-159.

Alexander, J.A., Kaluzny, A.D., & Middleton, S.C. (1986). Organizational growth, survival and death in the U.S. hospital industry: A population ecology perspective. *Social Science and Medicine*, 22(3), 303-308.

Almgren, G., & Ferguson, M. (2015). The urban ecology of hospital failure: Hospital closures in the City of Chicago, 1970-1991. *The Journal of Sociology & Social Welfare*, *26*(4), 5-25.

Altman, D., & Kilstein, S. M. (1983). Hospital closures in perspective. *Health Services Research*, *18*(3), 587-592.

American Hospital Association. (2015). *AHA Hospital Statistics, 2015 edition*. Retrieved from AHA website: www.aha.org/research/rc/stat-studies/fast-facts.shtml

American Hospital Association. (2016). *AHA hospital statistics: A comprehensive reference for analysis and comparison of hospital trends* [Annual report]. Chicago, IL: Health Forum LLC, an affiliate of the American Hospital Association.

American Hospital Association website. (n.d.). www.aha.org/research/reports/tw/chartbook/2015/table4-1.pdf

American Hospital Association website. (n.d.). www.aharesourcecenter.wordpress.com/2015/07/21/update-hospital-closures-and-openings-2000-2013/

Andes, S., & Bazzoli, G. (1995). Consequences of hospital financial distress. *Hospital & Health Services Administration*, *40*(4), 472+.

Baehr, R. A. (1991). Financially troubled hospitals: Diagnosis and prescription. *Topics in Health Care Financing*, *17*(3), 1-9.

Balanced Budget Act of 1997, Pub. L. 105-33 111 Stat. 251 § 4201 (1997).

Bazzoli, G. J., & Cleverly, W. O. (1994). Hospital bankruptcies: An exploration of potential causes and consequences. *Health Care Management Review*, 19(3), 41-51.

Benin, A. L., Borgstrom, C. P., Jenq, G. Y., Roumanis, S. A., & Horowitz, L. I. (2012). Defining impact of a rapid response team: Qualitative study with nurses, physicians and hospital administrators. *BMJ Quality & Safety*, *21*(5), 391-398. http://dx.doi.org/10.1136/bmjqs-2011-000390

Brecher, C., & Nesbitt, S. (1985). Factors associated with variation in financial condition among voluntary hospitals. *Health Services Research*, *20*(3), 267-300.

Charmaz, K. (2014). *Constructing grounded theory* (2nd ed.). Los Angeles, CA: Sage Publications.

Christensen, C. M., Bohmer, R. M., & Kenagy, J. (2000). Will disruptive innovations cure health care? *Harvard Business Review*, *78*(5). www.hbr.org.

Ciliberto, F., & Lindrooth, R. C. (2007). Exit from the hospital industry. *Economic Inquiry*, *45*(1), 71-81. http://dx.doi.org/10.1093/ei/cb1010

Cleverly, W. O. (1985). Predicting hospital failure with the financial flexibility index. *Healthcare Financial Management*, *39*(5), 29-33, 36-38.

Cleverly, W. O. (1993). More efficient hospitals are closing. *Healthcare Financial Management*, *47*(4), 82-85.

Coleman, S. K. (2005). *The Hill-Burton Uncompensated Services Program* (98-968 C). Washington, DC: Government Printing Office.

Collins, S. K. (2009). Succession planning: Perspectives of chief executive officers in US hospitals. *The Health Care Manager*, *28*(3), 258-263.

Collins, S. K., McKinnies, R. C., Matthews, E., & Collins, K. S. (2013). Succession planning: Trends regarding the perspectives of chief executive officers in US hospitals. *The Health Care Manager*, *32*(3), 233-238. http://dx.doi.org/10.1097/HCM.0b013e31829d7386

Commins, J. (2015, November 18). As Texas hospital closes, baffled mayor mulls options. *Health Leaders Media*. Retrieved from www.healthleadersmedia.com

Coyne, J. S., & Singh, S. G. (2008). The early indicators of financial failure: A study of bankrupt and solvent health systems. *Journal of Healthcare Management*, *53*(5), 333-345.

Dalton, K., Slifkin, R., Poley, S., & Fruhbeis, M. (2003). Choosing to convert to Critical Access Hospital status. *Health Care Financing Review*, *25*(1), 115-132.

DelliFraine, J., Davis, L., Holt, H., & Baronner, L. (2010). *Rural Hospital Financial Conditions*. Retrieved from Rural Pennsylvania Legislature website: www.rural.palegislature.us/Rural_Hospital_Financial_2010.pdf

Deloitte Center for Health Solutions. (2012). *A look around the corner: Health care CEOs' perspectives on the future*. Retrieved from www.2.deloitte.com/content/dam/Deloitte/us/Documents/life-sciences-health-care/us-ishc-hcp-emr-integration.pdf

Doeksen, G. A., & Schott, V. (2003, June 10, 2003). Economic importance of the health-care sector in a rural economy. *The International Electronic Journal of Rural and Remote Health Research, Education, Practice and Policy*. Retrieved from www.rrh.org.au/articles/subviewnew.asp?ArticleID=135

Drain, M., Godkin, L., & Valentine, S. (2001). Examining closure rates of rural hospitals: An assessment of a strategic taxonomy. *Health Care Management Review*, *26*(4), 27-51.

Drucker, P.F. (2002). *Managing in the next society.* New York: Truman Talley Books.

Duffy, S. Q., & Friedman, B. (1993). Hospitals with chronic financial losses: What came next? *Health Affairs*, *12*(2), 151-163.

Duke, K. S. (1996). Hospitals in a changing health care system. *Health Affairs*, *15*(2), 49-61.

Enman, C. M. (Ed.). (1989). *Rural hospital closure: Management and community implications*. Chicago, IL: American Hospital Association.

Ermann, D. A. (1990). Rural health care: The future of the hospital. *Medical Care Review*, *47*(1), 33-66.

Feldheim, M. A. (2000). Administrators and mergers: A study of administrators' perceptions. *Journal of Health and Human Services Administration*, *23*(3), 248-273.

Franklin, B. (1817). *Some account of the Pennsylvania Hospital; from its first rise to the beginning of the fifth month, called May, 1754*. Philadelphia: United States' Gazette.

Gardiner, L. R., Jahera, J. S., & Oswald, S. L. (1996). Prediction of hospital failure: A post-PPS analysis. *Hospital & Health Services Administration*, *41*(4), 441-460.

Gifford, B. D., & Mullner, R. M. (1988). Modeling hospital closure relative to organizational theory: The applicability of ecology theory's environmental determinism and adaptation perspectives. *Social Science & Medicine*, *27*(11), 1287-1294.

Glaser, B.G. & Strauss, A.L. ((1967). *The discovery of grounded theory: Strategies for grounded research.* New Brunswick, NJ: Aldine Transaction.

Glasser, M., Peters, K., & MacDowell, M. (2006). Rural Illinois hospital chief executive officers' perceptions of provider shortages and issues in rural recruitment and

retention. *The Journal of Rural Health*, *22*(1), 59-62. http://dx.doi.org/10.1111/j.1748-0361.2006.00007.x

Goldsmith, J. (1989). A radical prescription for hospitals. *Harvard Business Review*, *67*(3). Retrieved from www.hbr.org/1989/05/a-radical-prescription-for-hospitals

Goodman, J. (2015, November 4). Hospital authority to ask for more taxpayer help. *The Metter Advertiser*. Retrieved from www.metteradvertiser.com

Griffith, J. R., & White, K. R. (2007). *The well-managed healthcare organization* (6th ed.). Chicago, IL: Health Administration Press.

Groves, K. S. (2006). View from the top: CEO perspectives on executive development and succession planning practices in healthcare organizations. *The Journal of Health Administration Education*, *23*(1), 93-110.

Hadley, J., Mullner, R., & Feder, J. (1982, November 11). The financially distressed hospital. *The New England Journal of Medicine*, *307*, 1283-1287. http://dx.doi.org/10.1056/NEJM198211113072035

Halpern, M. T., Alexander, J. A., & Fennell, M. L. (1992). Multihospital system affiliation as a survival strategy for rural hospitals under the Prospective Payment System. *The Journal of Rural Health*, *8*(2), 93-105.

Harmata, R., & Bogue, R. J. (1997). Conditions affecting rural hospital specialization, conversion and closure: A case-based analysis of threat and change. *The Journal of Rural Health*, *13*(2), 152-163.

Harrison, J. P., & McDowell, G. M. (2005). A profile of US hospital mergers. *Journal of Health Care Finance*, *31*(3), 15-24.

Harrison, J. P., & Sexton, C. (2004). The paradox of the not-for-profit hospital. *The Health Care Manager*, *23*(3), 192-204.

Harrison, T. D. (2007). Consolidations and closures: An empirical analysis of exits from the hospital industry. *Health Economics*, *16*, 457-474. http://dx.doi.org/10.1002/hec.1174

Hart, L. G., Pirani, M. J., & Rosenblatt, R. A. (1991). Causes and consequences of rural small hospital closures from the perspectives of mayors. *Journal of Rural Health*, *7*(3), 222-245.

Health Planning and Resources Development Act of 1979, Pub. L. No. 96-79, § 102, 93 Stat. 593 (1979).

Health and Human Services. (2015, January 26). *Better, smarter, healthier: HHS sets clear goals and timeline for shifting Medicare reimbursements from volume to value* [Press release]. Retrieved from http://www.hhs.gov/about/news/2015/01/26/better-smarter-healthier-in-historic-announcement-hhs-sets-clear-goals-and-timeline-for-shifting-medicare-reimbursements-from-volume-to-value.html

Hernandez, S. R., & Kaluzny, A. D. (1983). Hospital closure: A review of current and proposed research. *Health Services Research*, *18*(3), 419-436.

Holmes, M. (2015, January 8). Financially fragile rural hospitals: Mergers and closures. *North Carolina Medical Journal*, *76*(1), 37-40. Retrieved from www.ncmedicaljournal.com

Holmes, M., & Pink, G. H. (2011). *Risk of financial distress among critical access hospitals: A proposed model* [Policy brief]. Retrieved from Flex Monitoring Team: www.flexmonitoring.org/publications/pb20/

Hospital Survey and Construction Act of 1946, Pub. L. No 725, § 601, (1946 & Suppl.).

iVantage Health Analytics (2016). Rural Relevance Study white paper. Retrieved from www.ivantageindex.com/rural-relevance-downloads/

Jett, T. (2015a, December 17). Hutcheson Medical Center to reopen to patients next week. *Chattanooga Times Free Press*. Retrieved from www.timesfreepress.com

Jett, T. (2015b, December 22). Three weeks after closing, hospital is back in business. *Chattanooga Times Free Press*. Retrieved from www.timesfreepress.com

Johnson, E. A., & Johnson, R. L. (1986). *Hospitals under fire: Strategies for survival*. Rockville, MD: Aspen Publishers.

Johnson, J. (1992, July 5). 1992 bond defaults provide key lessons for other hospitals. *Hospitals*, *66*(13), 130.

Joshi, M. S., & Hines, S. C. (2006). Getting the board on board: Engaging hospital boards in quality and patient safety. *Joint Commission Journal on Quality and Patient Safety*, *32*(4), 179-187.

Joynt, K. E., Chatterjee, P., Orav, E. J., & Jha, A. K. (2015). Hospital closures had no measurable impact on local hospitalization rates or mortality rates, 2003-11. *Health Affairs*, *34*(5), 765-772. http://dx.doi.org/10.1377/hlthaff.2014.1352

Karim, S. A., Holmes, G. M., & Pink, G. H. (2015). The effect of surgery on the profitability of rural hospitals. *Journal of Health Care Finance*, *41*(4). Retrieved from www.healthfinancejournal.com

Kaufman, B. G., Thomas, S. R., Randolph, R. K., Perry, J. R., Thompson, K. W., Holmes, G. M., & Pink, G. H. (2015). The rising rate of rural hospital closures. *The Journal of Rural Health*. http://dx.doi.org/10.1111/jrh.12128

Kennedy, L., & Dumas, M. B. (1983). Hospital closures and survivals: An analysis of operating characteristics and regulatory mechanisms in three states. *Health Services Research*, *18*(4), 489-511.

Khaliq, A. A., Thompson, D. M., & Walston, S. L. (2006). Perceptions of hospital CEOs about the effects of CEO turnover. *Hospital Topics: Research and Perspectives on Healthcare*, *84*(4), 21-27.

Khaliq, A. A., & Walston, S. L. (2010). Hospital chief executive officer perspectives on professional development activities. *The Health Care Manager*, *29*(3), 251-264.

Kim, T. H. (2010). Factors associated with financial distress of nonprofit hospitals. *The Health Care Manager*, *29*(1), 52-62. http://dx.doi.org/10.1097/HCM.0b013e3181cca2c5

Kralewski, J. E., & Moscovice, I. (1992). Rural Health Care: An American perspective. *Leadership in Health Services*, 1(6), 12-15.

Landry, A. Y., & Landry III, R. J. (2009). Factors associated with hospital bankruptcies: A political and economic framework. *Journal of Healthcare Management*, *54*(4), 252-272.

Langabeer, J. (2006). Predicting financial distress in teaching hospitals. *Journal of Health Care Finance*, *33*(2), 84-92.

Langabeer, J. R., & Yao, E. (2012). The impact of chief executive officer optimism on hospital strategic decision making. *Health Care Management Review*, *37*(4), 310-319. http://dx.doi.org/10.1097/HMR.0b013e318235243b

Lee, S. D., & Alexander, J. A. (1999). Managing hospitals in turbulent times: Do organizational changes improve hospital survival? *Health Services Research*, *34*(4), 923-946.

Lillie-Blanton, M., Felt, S., Redmon, P., Renn, S., Machlin, S., & Wennar, E. (1992). Rural and urban hospital closures, 1985-1988: Operating and environmental characteristics that affect risk. *Inquiry*, *29*(3), 332-344.

Longo, D. R., & Chase, G. A. (1984). Structural determinants of hospital closure. *Medical Care*, *22*(5), 388-402.

Longo, D. R., Sohn, M., & Shortell, S. M. (1996). The etiology and determinants of hospital closure. *Journal of Health Care Finance*, *22*(3), 34-48.

Ly, D. P., Jha, A. K., & Epstein, A. P. (2011). The association between hospital margins, quality of care, and closure or other change in operating status. *Journal of General Internal Medicine*, *26*(11), 1291-1296. http://dx.doi.org/10.1007/s11606-011-1815-5

MacEachern, M. T. (1946). *Hospital organization and management* (2nd ed. ed.). Chicago: Physicians' Record Company.

Mayer, J. D., Kohlenberg, E. R., Sieferman, G. E., & Rosenblatt, R. A. (1987). Patterns of rural hospital closure in the United States. *Social Science & Medicine*, *24*(4), 327-334.

McCue, M. J. (1991). The use of cash flow to analyze financial distress in California hospitals. *Hospital & Health Services Administration*, *36*(2), 223+.

McCue, M. J., & Clement, J. P. (1996). Assessing the characteristics of hospital bond defaults. *Medical Care*, *34*(11), 1121-1134.

McLafferty, S. (1982). Neighborhood characteristics and hospital closures: A comparison of the public, private and voluntary hospital systems. *Social Science & Medicine*, *16*(19), 1667-1674.

Medicare, Medicaid, and State Children's Health Insurance Program Balanced Budget Refinement Act of 1999, Pub. L. 106-113 113 Stat. 1501 § (1999).

Medicare Payment Advisory Commission. (2015). *Health care spending and the Medicare program: A data book*. Washington, DC: Government Printing Office.

Mick, S. S. (1993). Causes of rural hospital closure. *Journal of the American Board of Family Practice*, *6*(6), 612-614.

Mick, S. S., & Morlock, L. L. (1990). America's rural hospitals: A selective review of 1980s research. *Journal of Rural Health*, *6*(4), 437-466.

Mobley, L. R., & Frech, III, H. E. (1994). Firm growth and failure in increasingly competitive markets theory and application to hospital markets. *International Journal of the Economics of Business*, 1(1), 77-93. http://dx.doi.org/10.1080/758540500

Morey, J., Scherzer, G., & Varshney, S. (2004). Predicting financial distress and bankruptcy for hospitals. *Journal of Business and Economics Research*, 2(9), 89-95.

Moscovice, I., & Rosenblatt, R. A. (*1*985). A prognosis for the rural hospital. Part I: What is the role of the rural hospital? *The Journal of Rural Health*, 1(1), 29-40.

Moscovice, I., & Stensland, J. (2002). Rural hospitals: Trends, challenges, and a future research and policy analysis agenda. *The Journal of Rural Health*, *18*(5), 197-210.

Mullner, R., Byre, C. S., & Kubal, J. D. (1983). Hospital closure in the United States, 1976-1980: A descriptive overview. *Health Services Research*, *18*(3), 437-450.

Mullner, R. M., & McNeil, D. (1986). Rural and urban hospital closures: A comparison. *Health Affairs*, *5*(3), 131-141.

Mullner, R. M., Rydman, R. J., & Whiteis, D. G. (1990). Rural hospital survival: An analysis of facilities and services correlated with risk of closure. *Hospital & Health Services Administration*, *35*(1), 121-137.

Mullner, R. M., Rydman, R. J., Whiteis, D. G., & Rich, R. F. (1989). Rural community hospitals and factors correlated with their risk of closing. *Public Health Reports*, *104*(4), 315-325.

Muus, K. J., Ludtke, R. L., & Stratton, T. D. (1994). Perceived causes and effects of closing a rural hospital. *Health Values: The Journal of Health Behavior, Education & Promotion*, *18*(6).

National Advisory Committee on Rural Health and Human Services. (2012). *Implications of proposed changes to rural hospital payment designations* [Policy brief]. Washington, D,C.: U.S. Department of Health and Human Services.

National Health Planning and Resource Development Act of 1974, Pub. L. 93-641 88 Stat. 2225 § 2(a.) (1974).

National Health Planning and Resource Development Amendments of 1979, Pub. L. 96-79 93 Stat. 592.

New Jersey commission on rationalizing health care resources, final report 2008. (2008).

Nyhan, R., Ferrando, M. B., & Clare, D. (2001). A population ecology study of hospital closures in Florida between 1965 and 1995. *Journal of Health and Human Services Administration*, *24*(3), 295-319.

O'Donnell, J., & Ungar, L. (2014, November 12). Rural hospitals in critical condition. *USA Today*. Retrieved from www.usatoday.com

Office of the Inspector General. (1989). *Hospital closure: 1987* (OAI-04-89-00740). Washington, DC: Government Printing Office.

Office of the Inspector General. (1990). *Hospital closure: 1988* (OEI-04-89-01810). Washington, DC: Government Printing Office.

Office of the Inspector General. (1990). *Hospital closure: 1989* (OEI-04-90-02440). Washington, DC: Government Printing Office.

Office of the Inspector General. (1991). *The effects of hospital mergers on the availability of services* (OEI-04-90-02400). Washington, DC: Government Printing Office.

Office of the Inspector General. (1992). *Hospital closure: 1990* (OEI-04-91-00560). Washington, DC: Government Printing Office.

Office of the Inspector General. (1992). *Hospital closure: 1991* (OEI-04-92-00440). Washington, DC: Government Printing Office.

Office of the Inspector General. (1993). *Trends in rural hospital closure: 1987-1991* (OEI-04-92-00441). Washington, DC: Government Printing Office.

Office of the Inspector General. (1994). *Hospital closure: 1992* (OEI-04-93-00500). Washington, DC: Government Printing Office.

Office of the Inspector General. (1995). *Hospital closure: 1993* (OEI-04-94-00120). Washington, DC: Government Printing Office.

Office of the Inspector General. (1995). *Trends in urban hospital closure 1987-1993* (OEI-04-95-00050). Washington, DC: Government Printing Office.

Office of the Inspector General. (1996). *Hospital closure: 1994* (OEI-04-95-00100). Washington, DC: Government Printing Office.

Office of the Inspector General. (1996). *Hospital closure: 1995* (OEI-04-96-00060). Washington, DC: Government Printing Office.

Office of the Inspector General. (1998). *Hospital closure: 1996* (OEI-04-97-00110). Washington, DC: Government Printing Office.

Office of the Inspector General. (1999). *Hospital closure: 1997* (OEI-04-98-00200). Washington, DC: Government Printing Office.

Office of the Inspector General. (2000). *Hospital closure: 1998* (OEI-04-99-00330). Washington, DC: Government Printing Office.

Office of the Inspector General. (2001). *Hospital closure: 1999* (OEI-04-01-00020). Washington, DC: Government Printing Office.

Office of the Inspector General. (2001). *Hospital closures: 1990-1999* (OEI-04-02-00180). Washington, DC: Government Printing Office.

Office of the Inspector General. (2002). *Hospital closure: 2000* (OEI-04-02-00010). Washington, DC: Government Printing Office.

Office of the Inspector General. (2003). *Trends in rural hospital closure 1990-2000* (OEI-04-02-00610). Washington, DC: Government Printing Office.

Office of the Inspector General. (2003). *Trends in urban hospital closure 1990-2000* (OEI-02-00611). Washington, DC: Government Printing Office.

Omnibus Reconciliation Act of 1990, Pub. L. 101-329 104 Stat. 1388 § 4151 (1990).

Oswald, S., Gardiner, L., & Jahera, Jr., J. (1992). Indicators of hospital closure under PPS and Blue Cross/Blue Shield cost-based reimbursement. *Journal of Hospital Marketing*, *6*(2), 149-182.

Ozcan, Y. A., & Lynch, J. R. (1992). Rural hospital closures: An inquiry into efficiency. *Advances in Health Economics and Health Services Research*, *13*, 205-224.

Palvia, P., Lowe, K., Nemati, H., & Jacks, T. (2012). Information technology issues in healthcare: Hospital CEO and CIO perspectives. *Communications of the Association for Information Systems*, *30*(1), 293-312.

Patient Protection and Affordable Care Act, Pub. L. 111-148 124 Stat. 119 § (2010).

Pirani, M. J., Hart, L. G., & Rosenblatt, R. A. (1993). Physician perspectives on the causes of rural hospital closure, 1980-1988. *Journal of the American Board of Family Practice*, *6*(6), 556-562.

Post, A. (1908, May 28). The hospital in relation to the community. *Boston medical and Surgical Journal*, *CLVIII* (22), 823-828.

Probst, J. C., Samuels, M. E., Hussey, J. R., Berry, D. E., & Ricketts, T. C. (1999). Economic impact of hospital closure on small rural counties, 1984 to 1988: demonstration of a comparative analysis approach. *Journal of Rural Health*, *15*(4), 375-390.

Ramamonjiarivelo, Z., Weech-Maldonado, R., Hearld, L., Menachem, N., Epane, J. P., & O'Connor, S. (2014). Public hospitals in financial distress: Is privatization a strategic choice? *Health Care Management Review*, 1-11. http://dx.doi.org/10.1097/HMR.0000000000000032

Ramamonjiarivelo, Z., Weech-Maldonado, R., Hearld, L., & Pradhan, R. (2014). Public hospitals in peril: Factors associated with financial distress. *Journal of Health Care Finance*, *40*(3), 14-30.

Reeleder, D., Goel, V., Singer, P. A., & Martin, D. K. (2005). Leadership and priority setting: The perspective of hospital CEOs. *Health Policy*, *79*(1), 24-34. http://dx.doi.org/10.1016/j.healthpol.2005.11.009

Richards, L., & Morse, J. M. (2013). *Readme first for a user's guide to qualitative methods* (3rd ed.). Los Angeles, CA: Sage Publications.

Ricketts III, T. C., & Heaphy, P. E. (2000). Hospitals in rural America. *Western Journal of Medicine*, *173*, 418-422.

Rondeau, K. V., & Wagar, T. H. (2002). Managing the workforce reduction: Hospital CEO perceptions of organizational dysfunction. *Journal of Healthcare Management*, *47*(3), 161-176.

Rosenbach, M. L., & Dayhoff, D. A. (1995). Access to care in rural America: Impact of hospital closures. *Health Care Financing Review*, *17*(1), 15-37.

Rosenberg, C. E. (1987). *The care of strangers: The rise of America's hospital system*. New York: Basic Books.

Sagar, A. (1983). Why urban voluntary hospitals close. *Health Services Research*, *18*(3), 451-475.

Shortell, S. M., Gillies, R. R., & Devers, K. J. (1995). Reinventing the American hospital. *The Milbank Quarterly*, *73*(2), 131-160.

Sinay, U. T. (1998). Hospital mergers and closures: Survival of rural hospitals. *The Journal of Rural Health*, *14*(4), 357-365.

Smith, M., & Goodnough, A. (2015, October 8). Closing a hospital, and fearing for the future. *The New York Times*. Retrieved from www.nytimes.com

Social Security Amendments of 1965, Pub. L. 89-97 79 Stat. § 1814 (b) (1965).

Social Security Amendments of 1983, Pub. L. 98-21 97 Stat. 65 § 601 (1983).

Stensland, J., Moscovice, I., & Christianson, J. (2002). Future financial viability of rural hospitals. *Health Care Financing Review*, *23*(4), 175-187.

Succi, M. J., Lee, S. D., & Alexander, J. A. (1997). Effects of market position and competition on rural hospital closures. *Health Services Research*, *31*(6), 679-699.

Sussman, G. E. (1985). CEO perspectives on mission, healthcare systems, and the environment. *Hospital and Health Services Administration*, *30*(2), 21-34.

Taggert, M. P., & Mullner, R. M. (1989). Appendix A - Rural hospital closure: The perceptions of former administrators. In C. M. Enman (Ed.), *Rural hospital closure: Management and community implications* (pp. 23-39). Chicago, IL: American Hospital Association.

Tax Equity and Fiscal Responsibility Act of 1982, Pub. L. 97-248 96 Stat. 324 § 101 (1982).

The Cecil G. Sheps Center for Health Services Research. (2016). *Rural hospital closures*. Retrieved from NC Rural Health Research Program website:

https://www.shepscenter.unc.edu/programs-projects/rural-health/rural-hospital-closures/

The University of North Carolina Rural Health Research Program website. (2015). https://www.shepscenter.unc.edu

United States Census Bureau website. (n.d.). www.census.gov

United States General Accounting Office Human Resources Division. (1990). *Rural hospitals: Factors that affect risk of closure* (GAO/HRD-90-134). Washington, DC: Government Printing Office.

Vasilevskis, E. E., Knobel, R. J., Wachter, R. M., & Auerbach, A. D. (2009). California hospital leaders' views of hospitalists: Meeting needs of the present and future. *Journal of Hospital Medicine*, *4*(9), 528-534. http://dx.doi.org/10.1002/jhm.529

Velez-Gonzalez, H., Pradhan, R., & Weech-Maldonado, R. (2011). The role of non-financial performance measures in predicting hospital financial performance: The case of for-profit system hospitals. *The Journal of Health Care Finance*, 38(2), 12-24.

Walker, C. L. & Pitts, M. W. (1987). Are hospital managers served by current models for predicting financial distress? *Health Care Strategic Management*, *5*(4), 15-23.

Walston, S. & Chou, A.F. (2011). CEO perceptions of organizational consensus and its impact on hospital restructuring outcomes. *Journal of Health Organization Management,* 25(2), 176-194. http://dx.doi.org/10.1108/14777261111134419

Weinick, R. M., Chien, A. T., Rosenthal, M. B., Bristol, S. J., & Salamon, J. (2010). Hospital executives' perspectives on pay-for-performance and racial/ethnic

disparities in care. *Medical Care Research and Review*, *67*(5), 574-589. http://dx.doi.org/10.1177/1077558709354522

Wertheim, P., & Lynn, M. L. (1993). Development of a prediction model for hospital closure using financial accounting data. *Decision Sciences*, *24*(3), 529-546.

Whiteis, D. G. (1992). Hospital and community characteristics in closures of urban hospitals, 1980-1987. *Public Health Reports*, *107*(4), 409-416.

Williams, D., Hadley, J., & Pettengill, J. (1992). Profits, community role, and hospital closure: An urban and rural analysis. *Medical Care*, *30*(2), 174-187.

Wishner, J., Solleveld, P., Rudowitz, R., Paradise, J, & Antonisse, L. (2016, July 7). *A look at rural hospital closures and implications for access to care: Three case studies.* (Issue brief). Retrieved from http://kff.org/report-section/a-look-at-rural-hospital-closures-and-implications-for-access-to-care-three-case-studies-issue-brief/

APPENDIX A

U.S. Hospitals by Year, 1946 – 2014.

Year	Number	Beds	Net Change
1946	4444	473,000	-
1950	5031	505,000	587
1955	5237	568,000	206
1960	5407	639,000	170
1965	5736	741,000	329
1970	5859	848,000	123
1971	5865	867,000	6
1972	5843	884,000	-22
1973	5891	903,000	48
1974	5977	931,000	86
1975	5979	947,000	2
1976	5956	961,000	-23
1977	5973	974,000	17
1978	5935	980,000	-38
1979	5923	988,000	-12
1980	5904	992,000	-19
1981	5879	1,007,000	-25
1982	5863	1,015,000	-16
1983	5843	1,021,000	-20
1984	5814	1,020,000	-29
1985	5784	1,003,000	-30
1986	5728	982,000	-56
1987	5659	961,000	-69
1988	5579	949,000	-80
1989	5497	936,000	-82
1990	5420	929,000	-77
1991	5370	926,000	-50
1992	5321	923,000	-49
1993	5289	921,000	-32
1994	5256	904,000	-33
1995	5220	874,000	-36
1996	5160	864,000	-60
1997	5082	855,000	-78
1998	5039	842,000	-43
1999	4977	831,000	-62
2000	4934	825,000	-43

U.S. Hospitals by Year, 1946 – 2014 (Continued).

Year	Number	Beds	Net Change
2001	4927	828,000	-7
2002	4949	823,000	22
2003	4918	815,000	-31
2004	4942	810,000	24
2005	4956	804,000	14
2006	4947	805,000	-9
2007	4915	803,000	-32
2008	5026	810,000	111
2009	5023	807,000	-3
2010	4995	806,000	-28
2011	4983	799,000	-12
2012	5010	802,000	27
2013	4986	797,000	-24
2014	4945	789,000	-41

Note: Adapted from AHA Hospital Statistics, 2016 annual report, reflecting total nonfederal short-term general and other special hospitals

APPENDIX B

Hospital Characteristics Identified with Closure

Characteristic	Study	Dates
Small (< 100 Beds)	Kennedy & Dumas (1983)	1960-1980
	Nyhan, Ferrando & Clare (2001)	1965-1995
	Longo & Chase (1994)	1976-1980
	Mullner & McNeil	1980-1985
	Gifford & Mullner (1988)	1980-1985
	GAO	1985-1988
	Lillie-Blanton, et al. (1992)	1985-1988
	Williams, Hadley & Pettingill (1992)	1985-1988
	OIG (1989-2003)	1987-2000
For-profit ownership	Mayer, Kohlenberg, Sieferman & Rosenblatt (1987)	1970-1980
	Longo & Chase (1994)	1976-1980
	Gifford & Mullner (1988)	1980-1985
	Whiteis (1992)	1980-1987
	Mullner, Rydman, Whiteis & Rich (1989)	1980-1987
	GAO	1985-1988
	Lillie-Blanton, et al. (1992)	1985-1988
	Williams, Hadley & Pettingill (1992)	1985-1988
	Ciliberto & Lindrooth (2007)	1989-1997
Low volumes / occupancy	GAO	1985-1988
	Mayer, Kohlenberg, Sieferman & Rosenblatt (1987)	1970-1980
	Lillie-Blanton, et al. (1992)	1985-1988
	Kennedy & Dumas (1983)	1960-1980
	Longo & Chase (1994)	1976-1980
	Whiteis (1992)	1980-1987
	Kaufman, et al. (2015)	2012-2014
	Ozcan & Lynch (1992)	1988
Low diversification	Mayer, Kohlenberg, Sieferman & Rosenblatt (1987)	1970-1980
	Longo & Chase (1994)	1976-1980
	Mullner, Rydman, Whiteis & Rich (1989)	1980-1987
	Whiteis (1992)	1980-1987
	Longo, Sohn & Shortell (1996)	1984-1988
	Succi, Lee & Alexander (1997)	1984-1991
	Williams, Hadley & Pettingill (1992)	1985-1988
	Ciliberto & Lindrooth (2007)	1989-1997

Presence of local competitors	Nyhan, Ferrando & Clare (2001)	1965-1995
	Mayer, Kohlenberg, Sieferman & Rosenblatt (1987)	1970-1980
	Gifford & Mullner (1988)	1980-1985
	Mullner, Rydman, Whiteis & Rich (1989)	1980-1987
	Succi, Lee & Alexander (1997)	1984-1991
	Lillie-Blanton, et al. (1992)	1985-1988
Declining population or economy	Mayer, Kohlenberg, Sieferman & Rosenblatt (1987)	1970-1980
	Lillie-Blanton, et al. (1992)	1985-1988
	Kaufman, et al. (2015)	2012-2014
Poor financial performance	Williams, Hadley & Pettingill (1992)	1985-1988
	Ly, Jha & Epstein (2011)	2006-2007
Non-accreditation by the Joint Commission	Mullner, Rydman, Whiteis & Rich (1989)	1980-1987
	Williams, Hadley & Pettingill (1992)	1985-1988
Ownership	Mullner & McNeil (1986)	1980-1985
	Mullner, Rydman, Whiteis & Rich (1989)	1980-1987

APPENDIX C

Interview Candidate Selection Profile

Critical Access Hospitals	Small Community Hospitals (26 – 150 Beds)	Large Community Hospitals (> 150 Beds)	Other Hospitals (System or Investor-Owned)
A	D	H	K
B	E	I	L
C	F	J	M
Etc.…	Etc.…	Etc.…	Etc.…

APPENDIX D

Research Questionnaire

Introduction

Thank you so much for agreeing to talk with me today. Hospital closures are frequently in the news, along with warnings of a future that will generate more closings due to a variety of reasons. The purpose of this study is to explore the perceptions and insights of hospital CEOs into the phenomenon of hospital closure, more specifically to gain a clearer understanding of how practicing CEOs think about their organizations with respect to the conditions and characteristics that potentially place their hospitals at risk of closure.

Previous literature indicates leadership in hospitals, as in any complex organization, requires the ability to understand, interpret, and act upon a wide range of factors, circumstances and characteristics to successfully manage the business. Today we are most concerned with those factors that are present and can place a hospital organization at risk of failure.

Some of these characteristics or conditions can be labeled as "intractable," meaning that they represent factors the organization has little or no ability to change or influence. Some studies have called these environmental factors. Other characteristics are "tractable," that is, they can reasonably be expected to be addressable or capable of being influenced by the CEO and his or her leadership team. Some researchers have called these operational factors.

Today I'd like to ask you to identify and talk about some of these characteristics and conditions and how you see them affecting your organization. Further, I'd like to get

your ideas on how you think about them singly or together and how you work to address them so as to best position your organization for continued and sustainable operational success.

Questions

1. How long have you been the organization's CEO?
    a. How long in total have you held CEO positions during your professional career?
    b. In what size organizations?
    c. In what type of organizations?
2. Please describe:
    a. Your education.
    b. How you arrived at your current position, including your background if in other than in hospital administration positions.
3. Are you affiliated with the American College of Healthcare Executives, and in what capacity (not affiliated, member, fellow or life fellow?)
4. Let's begin with the factors that could be labeled as environmental or "intractable," meaning that there is little that a CEO can do to change or eliminate them. What do you see as the major factors of this type that are most likely to contribute to your hospital's (or any hospital's) risk of financial distress that could eventually lead to closure?
5. To simplify further, what intractable factors left unaddressed do you think could eventually cause your hospital to close?

6. Taking these factors one at a time, is there much you believe you can do about them, and if so, what?
7. How do you think about or work on strategies and tactics to combat or mitigate their effects on your organization?
8. In your thinking, is there a difference between "factors" as we've discussed them and "events" that could lead to closure?
9. Turning now to factors that might be considered as "tractable," or operational, what do you see as the major factors of this type that put your hospital at risk for closure, or if left unaddressed, could eventually cause your hospital to close?
10. Taking these factors one at a time, what do you believe you can do about them?
11. As we discussed for intractable factors, how do you think about or work on strategies and tactics to combat or mitigate their effects on your organization?
12. Now thinking again about these two categories of factors – intractable and tractable:
    a. How might they be related?
    b. How do they interact with and affect one another?
13. From the factors we've identified, is there a single priority (or maybe a small set of two or three priorities) you would rank in importance above all others that have to be addressed to enable your organization to survive? If yes, what are the priorities? (If no, why not?)
14. Some hospitals close while others that seem to be similarly structured and situated remain open. Can you think of factors that enable such hospitals that might be at equivalent risk of closure to continue to operate and remain viable?

15. The literature on hospital closure has traditionally reported on statistics and characteristics of hospitals that declare bankruptcy, close or otherwise fail, while little research has been performed regarding prediction or foreshadowing of hospital closure. What is your perspective as to whether a model could be fashioned from specific risk factors that could predict whether a hospital faced probable closure?
16. Is there anything you'd like to clarify or expand upon from our conversation today or do you have any other ideas or related topics that you think would add to understanding these factors and their interrelationships?

Thank you for your participation. Once transcribed, I will send you a copy of the transcript so you may correct or address any errors or omissions.

APPENDIX E

Codes and Definitions

<u>CEO and Hospital Characteristics</u>	
CEO Characteristics	Education, background and experience in for-profit hospitals, not-for-profit hospitals, and system hospitals
CEO ACHE Affiliation	Affiliation and status in the American College of Healthcare Executives
CEO Hospital	Classification of the CEO's current hospital size and type (for-profit, NFP, teaching, rural or urban, critical access)
<u>Intractable Factors</u>	
Population / Local Context	The qualities of the community's population served by the hospital, including population size and density, location (rural or non-rural), age distribution, education, health, economic and industrial status, distance to neighboring hospitals
Policy	Factors emanating from governmental laws and plans, including regulations and requirements of licensure and operations
Federal	Factors associated with federal law and regulations promulgated by CMS and other federal agencies including Medicare, OSHA, FDA, DEA, etc.
State	Factors associated with state law and regulations promulgated by the state's agencies including Medicaid, state licensure boards, etc.
Local	Factors associated with local laws and regulations promulgated by city and county governments including taxes and subsidies paid by and to local hospitals
Government Reimbursement	Payments to hospitals and physicians for inpatient and outpatient services from governmental agencies, primarily Medicare and Medicaid
Physician Culture	Factors observed in the changing physician culture, including physicians moving from independent business owners to a hospital employment model, changes in

	working conditions and hours, and hospital organizational engagement
Utilization Trends	Environmental trends in hospital service demand, such as shifts from inpatient to outpatient service locations, decreasing hospital inpatient volumes, increasing ER volumes
Professional Shortages	Scarcity and shortages of professional healthcare workers including physicians, nurses, and technologists
Events	Factors that have the capability to damage or close a hospital or place it into an immediate condition of severe financial distress, including natural disaster (tornado, flood, earthquake or fire), loss of a primary doctor or other referral source, major malpractice, quality, or public relations event, infrastructure failure, elimination of a financial subsidy or introduction of a competitor into the market
Cost Escalation/Inflation	Increases in operating costs of service and supply inputs into the operations of hospitals from inflation as well as the actions of vendors, suppliers, and contractors
Governance/Control	Ownership, governance, and control structure of the hospital (governmental or not-for-profit) and the resulting actions of the governing body
End of Life Issues/Costs	Societal issues surrounding end of life that may introduce additional costs for hospitals managing patients' terminal illnesses, such as maintenance of intensive care life support and extended therapies and lengths of stay
Competition/Retail	Provision of services by another organization in or adjacent to the local hospital's service area including services provided by new and non-traditional competitor such as an urgent care center, retail clinic or telemedicine service
Hospital Oversupply	Extent to which more hospitals, beds, facilities, or services exist than are required to meet the needs of a population. Excess capacity.
Hospital Infrastructure	Age and utility of the hospital's physical plant

Tractable Factors

Cost/Expense Management	Control of operating costs and expenses within the budgetary constraints and financial limits of the organization
Cash Management	Monitoring supply and use of cash to ensure continuous operations of the enterprise
Insurance Reimbursement	Payments from managed care providers, including Blue Cross/Blue Shield, United Healthcare, Aetna, Cigna, Humana, etc.
Recruitment/Retention	Strategies for attracting providers and staff to build and maintain adequate service levels and volumes
Physicians	Addresses issues of scarcity and specialization to ensure the provision of desired services locally
Nurses/Techs	Addresses similar issues required to maintain an adequate talent pool for the provision of inpatient and outpatient hospital services
Community Support	Degree to which the community utilizes the services of a local hospital and its physicians and the extent to which the community's citizens are willing to support the organization operationally, socially, and financially
Patient Experience	Hospital competition strategy focused on on customer service, convenience, hospitality, patient satisfaction and patient relationships
Quality Management	Hospital performance on measures promulgated by CMS and other entities to compare outcomes in hospitals and reward or penalize organizations through reimbursement based on performance. Also known as Value Based Purchasing or Pay for Performance programs.
Service Line Management	Determination of the appropriate ranges and levels of services to be provided to the community, including establishment, maintenance, or discontinuation of specific services as a strategy to ensure overall viability of the organization
Leadership/Culture	The activities of the CEO, board, and leadership team to establish the vision and executed plans for the sustaining

	hospital operation and resulting environment created by such actions
Talent Management	Recruitment, retention, deployment and development of leadership and operational staff for the effective operation of the organization
Marketing Management	Growth and development of business through marketing and community relations
Market Behaviors	Choices made by members of the service area population to use a local facility, physician or other hospital service or to travel outside of the market for services available locally
Strategies and Solutions	
Affiliate/Collaborate	Agreement between hospitals to pursue common interests in a relationship that does require modification of ownership interests of any participant
Divest/Merge	Actions by a hospital to cede ownership to another hospital or hospital system or to share control and blend its interests into another entity
Subsidize	Action by an outside entity, typically a unit of government or other hospital, to dedicate resources for the continued operation and development of a hospital
Convert/Repurpose	Conversion of an acute care hospital to a specialty hospital or a non-acute entity providing different services, such as outpatient care, long-term care, psychiatric care, senior living, etc.
Increase Efficiency	Improve probability of survival through reduced waste and lowered costs
Adapt/Innovate	Positive organizational responses to tractable and intractable factors
Lobbying/Economic Develop	Efforts to influence legislation, rules, and regulations to create a more favorable operating environment and to promote local and regional economic development to attract business, industry, and other infrastructure improvements for the overall benefit of the community

Predictive Model	The opinions of CEOs regard the feasibility of developing a model to predict hospital financial distress and risk of closure in advance
Good quotes	Identification of strong illustrative quotes for application in the context of documentation