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Walden University

College of Social and Behavioral Sciences

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Tanya Scherr

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Review Committee
Dr. Anne Hacker, Committee Chairperson,
Public Policy and Administration Faculty

Dr. Christina Spoons, Committee Member,
Public Policy and Administration Faculty

Dr. Tanya Settles, University Reviewer,
Public Policy and Administration Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2016

Abstract

Perceived Effects of the Affordable Care Act on Emergency Preparedness

by

Tanya M. Scherr

MA, American Military University, 2012

BA, American Military University, 2011

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy and Administration

Walden University

November 2016

Abstract

National healthcare as executed through the Patient Protection and Affordable Care Act (ACA) was introduced in 2010, but was discussed for several decades prior to its enactment. Section 5210 of the ACA established funding for a Regular and Ready Reserve Corps (RRRC) to provide support to local healthcare entities with emergency preparedness. It is unknown what impact Section 5210 of the ACA has had on local emergency preparedness, as well as what obstacles are encountered with implementing this piece of legislation at the local level. The purpose of this case study was to understand the obstacles encountered at a local level by healthcare entities by combining rational choice theory and complex adaptive systems through Ostrom's institutional analysis and development theory. Data for this case study were obtained through interviews with 6 hospital emergency coordinators of hospitals in the Tennessee Highland Rim Region. These data were coded and analyzed following Moustakas' modified Van Kaam procedure. Findings from this study concluded that participants perceived that Section 5210 of the ACA did not impact hospital operations at the local level. However, other obstacles including employee turnover, communication, and process standardization and education are perceived to exist in terms of planning and emergency preparedness. The results of this study may impact social change by enhancing state and local policy makers' ability to identify and create a future roadmap for health care policy implementation at local and regional levels.

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Chapter 1: Introduction to the Study

Introduction

Since the 1960s, the United States has created many programs with the intent of providing access to healthcare. The Medicare program was created in 1965 to ensure that adequate healthcare was available for the elderly, but the program comes with specific stipulations for eligibility (Center for Medicare and Medicaid Services, 2013). Medicaid programs were created at the state level at the same time as Medicare to provide healthcare for the economically disadvantaged population, and eligibility for the program determined through various indicators, with income being the primary assessment factor (Center for Medicare and Medicaid Services, 2013). Employers were also obligated to provide access to healthcare insurance contingent upon the number of employees that they employed. While all of these healthcare options have evolved over time due to the efforts of former Presidents such as Roosevelt, Truman, Johnson, and Clinton, it was not until 2010 that a president has been able to accomplish the approval of a healthcare program that would provide the ability for all Americans to receive access to healthcare.

Navigation of healthcare insurance can be confusing, from understanding how to locate necessary information on payer websites to determining what programs or healthcare insurance that one is eligible to obtain. Legislation such as section 1867 of the Social Security Act, later called the Emergency Medical Treatment and Labor Act of 1986 (EMTALA), stated that hospitals were required to provide emergency treatment to individuals presenting with certain conditions such as heart attack or stroke, along with

active labor symptoms in pregnant women (Center for Medicare and Medicaid Services, 2012). However, in the event of natural disasters such as hurricanes or tornados, or a non-natural disaster such as a terrorist attack, local governments have been responsible for budgeting and handling emergency preparedness activities, including mass medical treatment of the wounded (U.S. Government Accountability Office, 2015). Success or failure during disasters—both natural and man-made—can vary due to severity of the disaster, level of advanced planning on the part of citizens, health insurance providers, or local and federal governments (Federal Emergency Management Association, 2011).

Passing a large and complex piece of healthcare legislation can exacerbate the confusion that is sometimes felt by healthcare providers and the public. The Patient Protection and Affordable Care Act of 2010 (ACA) was a sweeping piece of public health policy intended to nationally insure the non-elderly population. In accordance with ACA, all U.S. citizens were required to obtain and maintain a form of health insurance (White House, 2014). In the event that a citizen did not obtain and maintain a form of health insurance for a designated period of time each year, they were required to pay a predefined penalty for being uninsured (Center for Medicare and Medicaid Services, 2014). The first open enrollment period of ACA occurred in October of 2013, and since that time more than 11 million individuals signed up for health insurance (U.S. Department of Health and Human Services, 2014a).

The ACA does not just cover the need for individual health insurance. The Act covers many facets of the healthcare system spectrum and includes a broad range of topics and initiatives. Section 5210 of the ACA created a Regular and Ready Reserve

Corps (RRRC) that can be activated and utilized in times of national emergency (Department of Health and Human Services, 2014b). As with any mandate, the RRRC brought with it several challenges and advantages. This study focused on Section 5210 of the ACA in relation to emergency preparedness and management and the obstacles faced with emergency preparedness and implementing Section 5210 of ACA at the local level.

Background

One of the concerns of emergency preparedness planning is that it is difficult to anticipate or predict what to plan for before it happens. The type of emergency, the number of individuals involved, how widespread the issue is, and available resources are all variables that impact a given emergency (Federal Emergency Management Association, 2011). One variable can significantly change the entire nature of the plan and affect the execution of a successful plan. Additionally, how comfortable residents or citizens feel in relation to emergency services in their county in general can play a large role in how success is perceived in the event of an emergency (Hooten & Zavadksy, 2014). Hooten and Zavadksy (2014) raised a question related to patient satisfaction in relation to emergency medical services providers and how this will affect reimbursement for services as a result of the ACA. They noted that if lower reimbursement was received as a result of lack of patient satisfaction. it is unknown if this also affects budgeting and/or reliance on the RRRC instead of emergency preparedness and planning at the local level.

There is a gap in the knowledge regarding what impact ACA has on geographical areas in terms of emergency preparedness and planning. In 2014, Lister prepared a report for Congress that stated local and state governments control healthcare responses. Emergency planning is not considered a critical expense for hospitals and is oftentimes under budgeted or overlooked entirely, per Lister. Additionally, Pratt and Belloit (2014) reported that changes made as a result of ACA include a strong likelihood of emergency room (ER) closures. Local and state government officials can benefit from my study because in the event of ER or hospital closures, it is unknown what the impact will be to a geographical area's ability to handle larger scale emergencies. This information would be helpful to many different leaders such as policy makers, local government officials, hospital administrators, and hospital boards of directors.

Statement of the Problem

Section 5210 of ACA created a commissioned RRRC that could be activated and utilized in times of national emergency (Department of Health and Human Services, 2014b). A significant amount of federal funding was allocated to the creation and training of this corps: $12.5 million annually from 2010-2014 (Department of Health and Human Services, 2014b). Public Health Emergency Preparedness (PHEP) is not well defined in comparison to other public health initiatives such as immunizations or food safety (Gibson, Theadore, & Jellison, 2012). This can lead to variations in how local organizations define, execute, and measure success in relation emergency preparedness initiatives.

At this time, it is unknown how the ACA has affected the emergency preparedness planning for healthcare systems across the country. With the increase in funding for a government sanctioned team of individuals prepared to respond to emergency situations, changes such as staffing or procedures in operations could occur at the local level to accommodate the implementation of this new corps.

Every geographical area encounters different risks in relation to emergency preparedness. Other unforeseen catalysts for disasters could be secondary measures, such as the weather. In the instance of a fire, how quickly it spreads is directly affected by the current state of the weather that day. For example, if it rains or if the area in question is experiencing a drought, the amount of ground that the fire covers and how quickly it spreads changes.

Other challenges, such as uninsured populations, increased aging populations, and ER overcrowding can all affect a healthcare provider's ability to respond as expected during an emergency event (U.S. Department of Health & Human Services, 2016). Each disaster can create a different set of needs and challenges. For example, if power goes out due to a hurricane, there may be increased need to bring dialysis patients or patients who require supplemental oxygen to the hospital to rely on back-up generators for patient care and treatment that could have otherwise been handled at home.

Additionally, tourism or special events can affect overall population numbers and create a larger need to make additional preparations in case of an emergency event (Camillo, Holt, & Vergilio, 2015). Areas that host large events, such as Nashville, Tennessee or Hollywood, California could need to create additional planning in the event

of an emergency or disaster based on fluctuations in the average number of people in the area at any given time (Camillo, et al., 2015). This study will examine a geographic area that includes both small and large venues (holding more than 1,000 people for an event) in an urban area, as well as rural settings.

Purpose of the Study

The purpose of this study was to understand the effects Section 5210 of the ACA has on healthcare systems, specifically in relation to emergency preparedness planning. The ACA is considered by some U.S. citizens as being the most controversial piece of legislation passed during the Obama administration (Faria, 2012). Additionally, a lawsuit in 2014 included the claim that the use of subsidies to help low-income citizens afford insurance needed congressional approval (King v. Burwell, 2014). Regardless, each local government can prepare the nation for unforeseen catastrophic events and minimize unintended consequences. The successful emergency management of these events often depends on emergency preparedness planning to facilitate stabilization and achieve the intended objective. When these events occur, it is important to have a clear, feasible, and executable plan that includes strong communication with the public population. It is necessary to understand the effects Section 5210 of ACA in relation to emergency preparedness planning in order to continue to prepare the United States for possible disaster.

An example of an epidemic disaster was the Ebola virus outbreak in West Africa in 2014. The tasks that the Centers for Disease Control and Prevention (CDC) had during the outbreak included determining how to support outlying health systems and several

countries. They had to ensure that the virus did not spread to U.S. citizens and also had to consider the best way to protect U.S. borders from the threat of Ebola entering its country through any of the 350 million travelers that enter the United States each year (CDC, 2014b).

During the Ebola outbreak in Africa in 2014, information was available on the internet and through social media, providing a larger and faster reach to a wider population. A simple internet search of the word *Ebola* (Google internet search engine on April 2, 2016) resulted in over 56 million hits, including the current number of fatalities that the disease had caused to date with its most recent outbreak in 2014. Media networks such as ABC news, CBS news, NBC News, and the BBC were at the top of a google search, even before the CDC link emerges for review.

The White House utilized the same social media to influence public perception of the ACA; the Act has been marketed on Twitter, YouTube, and Facebook. One YouTube channel, *Get Covered America*, employed a video utilizing pets asking their owners to sign up for ACA coverage (GetCoveredAmerica.org, 2014). Additionally, after public backlash regarding President Obama's comment about *mom jeans,* the U.S. Department of Health and Human Services (DHHS) used the comment to encourage women to sign up for healthcare coverage by the established deadline (U.S. Department of Health & Human Services, 2014). The White House Twitter page also includes statistics and the benefits of the ACA to those who follow the Twitter feed.

Despite the continued use of social media such as Twitter to publicize the legislation, it is unclear whether local emergency preparedness and planning has become

more relaxed in hospitals located within the Tennessee Highland Rim Region as a result of possible reliance on the new RRRC. It is also unclear if health systems have made adjustments to their policies or processes to create solid planning for emergency preparedness, or if their planning has remained unchanged as a result of Sec. 5210 of ACA. Although the legislation has been deployed across the country, it is unclear whether the implementation of the legislation is reaching healthcare providers at the local level. Currently, a gap exists in the literature regarding healthcare industry changes due to the ACA and whether this Act is a closer step to universal healthcare as a human right or if its existence has created gaps in emergency preparedness.

Research Question

What are the perceptions of hospital emergency coordinators regarding the obstacles that have occurred at the local level in relation to emergency preparedness including those as a result of Section 5210 of the ACA?

Theoretical Foundation and Conceptual Framework

The theoretical framework for this study was based on Morcöl's 2012 complex adaptive systems theory (CAS) and Giddens and Turner's 1988 rational choice theory (RCT). I conducted interviews during this case study with hospital emergency coordinators. I analyzed the data that I obtained through those interviews and reviewed in relation to RCT and/or CAS. I used an initial coding framework and expanded upon that as I analyzed the data. More details regarding this process can be found in Chapter 3.

The basis for RCT is that when someone has to choose between multiple paths they will most likely choose the one that they perceive to have the most benefit or reward (Giddens & Turner, 1988). According to Giddens and Turner (1988), a person's perceptions are based on their past experiences and circumstances that surrounded the experience. For example, a person's former experience with a hospital may determine whether or not they would like to be transported to that same hospital for treatment in times of emergency, regardless of whether or not it is the closest place for treatment.

CAS, as presented by Morcöl (2012) appeared to be a suitable choice for understanding health care organizations. The origin of CAS came from the physical sciences and will be discussed in more detail in the next chapter. Health care systems and organizations are incredibly complex, with varying levels of management and standard operating procedures that change based on how a patient presents themselves for treatment (Paina & Peters, 2012). Health care systems have many different departments, such as registration, nursing, education, and the business office. Each department has its own policies and procedures and must work cohesively with other areas in order to achieve the objectives of the organization. Additionally, health care systems can span multiple organizations, particularly during emergency preparedness or disaster planning. In addition to these variables and complexities, there is also disorganized complexity within emergency preparedness that stems from unknowns such as when a disaster or emergency will strike, or how many patients will be affected and need treatment (Kannampallil, Schauer, Cohen, & Patel, 2011).

In this study, I used a conceptual framework based on Ostrom's institutional and analysis development (IAD) design to link together CAS and RCT. The premise of IAD is that to effectively analyze policy, the actions and decision-making process of the involved individual should be the key focus (Polski & Ostrom, 1999). Per the IAD framework, institutions have minimal impact on policy decisions (Polski & Ostrom, 1999). It is the decisions made at the individual level that impact the operational decisions and implementation guidelines for the policy, which influences the population at large (Sabatier, 2007). Concepts as discussed within IAD help to unify RCT and CAS as they relate to healthcare and emergency preparedness. When key decision makers or groups possess a thorough understanding of the system, they are more likely to coordinate their behaviors at varying intervals in policy (Morcöl, 2012).

When looking at healthcare systems or groups of decision makers within multiple systems, it is imperative that each system or department within the system be evaluated separately. Making decisions about each area and then reviewing the overall process can provide insight into the feedback loops and correlation between departments or organizations, helping identify deficiencies or strengths (Handler, Issel, & Turnock, 2000). Researchers can use this approach to evaluate trends and patterns in the healthcare response system at both at the local agency and larger levels. This can identify resource deficiencies or decision points that have a larger impact on policy implementation and facilitate planning for future efforts. By using the conceptual framework to address the research question, I analyzed inter-related emergency

organizations and identified if any local actions have changed as a result of Section 5210 of ACA.

Nature of the Study

I collected data through the use of interviews with hospital emergency coordinators at several local hospitals. The responses from the interview participants provided insight into challenges or obstacles encountered at a local level in regard to emergency preparedness. This study will possibly bring to light any changes that occurred at the local level to accommodate Section 5210 of the ACA as well as illuminate any burdens faced by hospitals in this region as a result of healthcare legislative changes. In this study, I sought to understand if any obstacles were encountered in relation to emergency preparedness and its relation to Section 5210 of the ACA.

Understanding any changes made or obstacles that occurred may provide a roadmap for executing future healthcare legislation at the local level. If changes or obstacles occurred with one hospital, healthcare leaders may learn from these documented experiences. I collected data through interviews and any documentation related to emergency preparedness at the local level that was supplied during the interviews. I chose this approach because it gave me the ability to learn from the individuals responsible for executing larger legislation at the local level.

Additionally, documentation in the form of privately held policies may be difficult to locate or obtain, and in smaller organizations, this documentation may not exist or be robust enough for comparison purposes. These changes can also help to

determine changes such as staffing and education of staff in relation to emergency preparedness and execution at the local level in conjunction with Section 5210. It may be necessary to extend the process to additional interviews with employees in the organizations if needed to bridge the gap between the data and any possible impact or change as a result of the implementation of Section 5210.

Definition of Terms

Understanding that healthcare is fraught with complex terminology, acronyms, and definitions, it is important to have a common lexicon. The following terms are most pertinent as relates to this proposed study.

Collective Leadership: A relational leadership approach where multiple people work together in varying leadership roles along with technology and processes in ways that improve an outcome (MacPhee, Chang, Lee & Spiri, 2013).

Community Assessment for Public Health Emergency Response (CASPER): A toolkit designed by the CDC to assist decision-makers quickly assess an affected community's needs in time of emergency (CDC, 2015a).

Emergency Management: The function of management that builds the documentation and framework to reduce risk to communities in regards to hazards and disasters (FEMA, 2015b).

Emergency Medical Services (EMS): A virtual, cross-institution service that includes both pre-hospital and in-hospital care provided by both emergency medical agencies and hospital organizations (Poulymenopoulou, Malamateniou & Vassilacopoulos, 2011).

Medicaid: A joint federal and state program that covers the indigent and those of low income (CMS, 2015).

Medicare: A federal health insurance program that covers the elderly and some younger individuals with disabilities such as End Stage Renal Disease (ESRD) (CMS, 2015).

National Health Insurance: Government regulated and partially financed healthcare, where services are also contracted out to for-profit providers (Böhm, Schmid, Götze, Landwehr & Rothgang, 2013).

Natural Disasters: Also called an Act of God. Examples include flood, fire, earthquake, tornado, hurricane, windstorms, volcanoes, tsunamis, extreme cold and lightning (Ready, 2013).

Outbreak: The occurrence of a disease that is more than what would be expected for a particular area (World Health Organization, 2015a).

Public Health Emergency Preparedness: The ability of communities and public health organizations to prevent, predict, respond and recover from health emergencies (Gibson et al., 2012).

Shared Services: A philosophy involving centralizing certain functions of a company or organization that were once handled in separate locations individually (USLegal, 2015).

Universal Healthcare: A concept in which everyone, everywhere can receive health care services without regard to financial status (World Health Organization, 2015b).

Assumptions

There were several assumptions to take into consideration for this study. Assumptions within research include items that are not necessarily within the control of the researcher, but are necessary to the success and validity of the research itself (Leedy & Omrod, 2010). The first assumption was that there have been challenges associated with emergency preparedness in these local hospitals. Local hospital emergency coordinators were expected to provide information related to this aspect and it was assumed that these experiences have been encountered if they chose to participate. Another assumption was that the interview participants will respond honestly when asked questions during the data collection process. This was an assumption as there will be limited methods to determine whether any dishonest answers have been communicated (Patton, 2002).

An additional assumption was that since the organizations in question are within the healthcare industry a separate Institutional Review Board (IRB) process may have to occur for both this university along with the healthcare organization. This process would be necessary to gain permission to access and interview hospital emergency coordinators as an integral part of this study. This assumption meant that interaction with several individuals at the organizations in question would need to occur, along with possible on site meetings in order to gain approval and move forward with the case study.

Scope and Delimitations

The scope of this study was limited to local hospitals located within a geographical boundary specific to the TN Highland Rim region in Tennessee, which

includes Nashville, a popular tourist destination, and a total of thirteen counties within the state. Davidson County has both large and small popular venues due to its country music association (Nashville Music City, 2015). This geographic selection provided the ability to review emergency preparedness planning in an area that requires accounting for multiple scenarios and varying populations at any given time. Within this boundary, or emergency coordinators were interviewed to better understand the challenges associated with healthcare legislation at the local level for these entities. Emergency coordinators in the remaining counties within the selected region could provide information related to rural hospitals, which sometimes encounter different and larger challenges associated with emergency preparedness, as well as additional urban settings without a large tourist population. The TN Highland Rim region was selected because it encompasses both rural and urban areas, allowing the researcher to obtain responses from both types of hospitals and the unique challenges associated with each type of area.

Initial contact began through reaching out to the Tennessee Hospital Association (THA), housed in Nashville, Tennessee and then through contact with the Regional Hospital Coordinators for the TN Highland Rim region. This decision was made in an effort to facilitate making contact with multiple hospitals in an organized fashion, versus reaching out to each individual unit first. The scope was limited to this group in an effort to focus primarily on the implementation of the new piece of legislation establishing a RRRC. The researcher remained open to possibly expanding the scope of the review if necessary, including local health departments, hospitals, fire and rescue, or any additional partners identified during the discovery process or through interviews. This potential

expansion of the scope could help to capture as many of the facets of the complex adaptive health care system as possible.

Populations that were excluded include organizations that do not have a role within emergency preparedness that led to a distinct knowledge of the implementation activities or changes that occurred as a result of Section 5210 of the ACA. Examples of these excluded populations included non-healthcare entities, which can sometimes be engaged as an outlying assisting unit, but not always during a large scale emergent issue. Additionally, specialty hospitals that do not have an ER will be excluded, as it is likely that they have a smaller role in community emergency preparedness from a budgeting and planning perspective. Populations that were included were not limited to age, race, sex or any other factors, but are limited to hospital Emergency Coordinators responsible for emergency preparedness or planning for their organization. Exclusion of non-healthcare entities was due to the assumption that these areas would not encounter any substantial changes as a result of Section 5210. This range helped to fully establish any changes across the local organization as it applied to emergency management or preparedness and minimize limitations of data to one small facet of the organization's population.

Transferability of this data can possibly be utilized to explore additional implementation activities for future healthcare legislation. If the study results ascertain that this particular implementation was a success and met the needs of the local area, it can possibly be used as a roadmap for future implementations, or revisions to a process within a geographical area that was not as successful in their implementation activities.

Additionally, if the study results ascertain that the implementation was not a success, the lessons learned within the study can possibly be utilized to build an effective implementation plan for future activities. Understanding areas of risk or concern can possibly lead to the creation of a project plan that includes additional check points or reviews to help minimize future obstacles during implementation activities.

Limitations

The results of the study were limited to one region within the state of Tennessee, where the largest population is situated within Davidson County, TN. This county is located within middle Tennessee in the United States of America. Since Section 5210 of the ACA has a national effect, the results of this study applied a small subset of the overall population and was limited by geographical location. Results were focused on thirteen counties, in an area of the country that has not recently been directly affected by any of the larger national emergencies presented recently in the U.S. This could have led to different results than a region that has been recently and directly affected by disaster such as Hurricane Katrina or Ebola. An additional limitation would be that qualitative inquiry may not provide the quantitative description or analysis related to budgeting changes as a result of the ACA.

Along with these limitations, access to hospital Emergency Coordinators may be difficult or time consuming to obtain (Patton, 2002). This can be due to scheduling limitations or due to coordination requests being funneled through centralized channels, which may lead to barriers in accomplishing this objective.

Willingness of hospital Emergency Coordinators to approve the organization's participation in this study may also be difficult to obtain. With any research study voluntary participation is necessary. Due to the continued debate surrounding ACA, emergency coordinators may be hesitant to provide any documentation that could bring to light any non-compliance or lack of action in relation to the legislation in question. Individual facility IRB processes will need to occur and be approved along with the Walden IRB process. This can add additional time before interviews and data collection may occur.

Significance of the Study

This study examined how health policy implementation has impacted preparation and execution of emergency preparedness. This research was singular as it sought to incorporate hospitals to determine any changes that may have occurred as a result of the implementation of Section 5210 of the ACA at a local level. At this time, there is no published study of the chosen population for this research. The focus of this study is Section 5210 of the ACA titled Establishing a Regular and Ready Reserve Corps (RRRC) and what impact these changes may have on public safety. The results of this work could identify any changes or accommodations that arose or are expected based on the variations to budgets, policies, and procedures for the organization.

The RRRC can play an important role in improving public safety, but it is imperative that the general public supports changes to the legislation and has confidence in the direction of the program. Without that support, successful policy implementation and execution can be problematic (Kingdon, 1995). With the implementation of national

health care in this country, it is important that new policies and processes are transparent and effective to facilitate the acceptance of the new legislation and improve societal engagement. Throughout the process it is therefore critical that strengths and weaknesses are documented and published and steps taken to improve any emerging deficiencies.

The success or failure of public policy relies on how receptive the public is to a new piece of legislation. The public's perception of the law, coupled with the way that leadership implements and transitions the law from paper into a day-to-day reality can make or break legislation for a country. Leadership is responsible for educating themselves and analyzing successes and failures that are encountered while implementing and executing processes. Through the combined lens of CAS and RCT, this case study documented any changes that occurred with the management and operations of hospitals in the TN Highland Rim Region during the implementation process. By reviewing changes through the study of CAS, researchers, planners, and leaders can possibly find new and inventive ways to meet the needs of each community in terms of emergency preparedness and future health policy implementations.

Summary

Through this study I attempted to understand and document the efforts, planning, and execution of Section 5210 of the ACA as it relates to emergency preparedness for unforeseen events through interviewing hospital Emergency Coordinators. By reviewing these experiences at the local level, I sought to understand if any changes were necessary to successfully implement the new piece of legislation at the local level. By reviewing the outcomes of the implementation and whether the legislation appears to meet the needs

of the community the I sought to document possible helpful practices or identify potential considerations to think about when dealing with future healthcare legislation implementation at the local level. The literature review will be discussed in Chapter 2 and the research strategy will be presented in Chapter 3.

Chapter 2: Literature Review

Introduction

Preparing for emergencies is a complex task with many uncertainties and unpredictable paths. It is unknown what obstacles have been encountered by local hospitals as a result of the effects of Section 5210 of the ACA. This is study is timely in that ACA in general continues to evolve and can sometimes be perceived as controversial in nature. Other large health policy implementations prior to the ACA included Social Security, Medicare, and Medicaid, which targeted certain populations of the United States.

This chapter includes discussion of the research strategy, theoretical foundation, and conceptual framework of the study. Current literature from the last 5 years establishing the relevance of the problem was reviewed will be reviewed along with literature related to the foundation of national healthcare in the United States. Understanding this foundation will establish the reasoning behind my choice for using IAD, RCT, and CAS theories for this study.

Literature Search Strategy

I conducted a search of the literature utilizing several different sources of information. I accessed the Library of Congress web site using the *All Legislation* search function. I searched for terms such as *Affordable Care Act* and *H.R.3590*. Within these sections, I obtained additional history and reviewed related bills to piece together the events leading up to this legislation. I used the Walden online library and Google

Scholar to locate additional resources and articles related to the study from 2011-2015. I used Google Scholar to locate search terms including: *complex adaptive systems (CAS), healthcare, emergency preparedness, rational choice theory (RCT),* and *analysis of CAS*. I accessed several government websites, such as the Centers for Medicare and Medicaid and the Centers for Disease Control to obtain historical and current information related to healthcare and emergency preparedness. Linking Google Scholar to the Walden University library assisted with locating more readily accessible documents for review. I accessed information related specifically to Davidson County via the Nashville.gov and the Census Bureau web sites. I obtained additional county information via the Census Bureau and Google search for Chamber of Commerce web pages. I obtained Tennessee-specific information was obtained through accessing the State of Tennessee website and using the search function to locate information related to Healthcare Coalitions.

Theoretical Foundation

Healthcare systems and the associated day to day operations are complex and include numerous hand offs from one healthcare worker or department to the next to create the same output of patient care (Böhm et al., 2013). From multiple departments and policies based on specific illnesses and ailments, even one hospital or clinic can be complex in nature and operations. Management of any organization can be difficult and, coupled with caring for people while managing operations and financial oversight can be a daunting task. Good coordination between the many departments and healthcare providers can produce better patient care and save money (Berwick & Hackbarth, 2012).

Complexity in healthcare systems is due to multiple departments and how they interact with one another. Due to emergency preparedness initiatives, these individual businesses and organizations must work with other businesses and organizations for the community that they serve. The consideration of a new initiative in relation to emergency preparedness, can require changes in multiple areas, job roles, and organizations in order to successfully implement actions and operations from the top to the bottom of the process.

Origin of Complex Adaptive Systems – Chaos Theory

CAS was developed by Gell-Mann in 1994 from the chaos theory (Gell-Mann, 1994). Chaos theory describes non-linear behavior where organizations can change their current behavior or path to a different one based on variables that come up along the way (Koehler, Kress, & Miller, 2014). Chaos theory emerged out of Poincare's work in the early 1900s on the bifurcation theory in mathematics (Tsonis, 2012). In the bifurcation theory, one change can transform the path or stability of a once linear path into a second path. In 1963, Lorenz took Poincare's work and was able to extend on it to show multiple paths with nonlinear behavior, which lent itself to the chaos theory.

Chaos Theory and Emergency Management

Emergency management response often includes the coordination of multiple organizations that can be a combination of public, private, for profit, and nonprofit (Koehler et al., 2014). Along with this complexity, there are also a number of unknown and unpredictable factors during an emergency (House, Power & Anderson, 2014). Unknown factors include: extent of the emergency, how the emergency will continue to

unfold, whether there are established policies or procedures for EPPM, and awareness of any established processes. Task interdependence, which includes multiple agencies having to depend on each other during emergency response, creates an additional layer of unpredictability (House, et al., 2014). Additional factors can include self-organization of citizens or emergency organizations in the private sector, as well as communication and social media (Koehler et al., 2014). Emergency response and areas of tourism traffic are two complex, nonlinear activities (Speakman & Sharpley, 2012).

Chaos researchers show how each piece of the emergency system interacts with others, that, along with the relationship between resources, can affect the overall outcome of a situation (Koehler et al., 2014). There have been many recent examples of the interaction between tourism and emergency situations. These include: the 9/11 terror attacks, the Mexico H1N1 outbreak, and the Bali bombings. Due to the rate of unpredictability during a state of emergency, it would seem difficult to determine a step-by-step process that an emergency organization could specifically follow in every scenario (Speakman & Sharpley, 2012). In these types of instances, self-organization can occur and stabilize the system at a higher level of order (Speakman & Sharpley, 2012). The success of this form of emergency response depends on these individual teams being able to work effectively as a multi-team system amidst chaos (House et al., 2014).

Complex Adaptive Systems

CAS are characterized by intricate arrangements of people, processes, and/or technology at varying levels (Holland, 2012). Using this definition, several CAS could

include governments and ecosystems, as well as businesses and industries such as healthcare and the automotive industry. One of the challenges associated with a CAS is the intricacy involved with managing the day to day processes and operations while attempting to account for unpredictable elements such as emergencies.

The science of complexity has become significant in the last few decades and has provided links to unify physical and social science theories (Nicolis & Nicolis, 2012). Complexity and the unpredictability of scenarios influenced by emerging and unexpected variances, are characteristics of emergency scenarios and healthcare systems overall.

Complex Adaptive System Phenomena

Aspects of CAS include: path dependence, feedback loops, scale-free networks, emergent behavior, and phase transitions (Paina & Peters, 2012). Path dependence means that outcomes are a result of not only the initial conditions of the situation but are also due to any choices or decisions that are made throughout the process coupled with unpredictable elements that occur along the way (Paina & Peters, 2012). One decision or event can have an effect on the overall organization and for a long period of time. Revisions to actions, policies, and/or procedures can occur as a result to the current state of a situation or event (Bednar, Page & Toole, 2012). Path dependence means that accounting for every scenario created by a policy and procedure would be unlikely as there are too many possible influences within a CAS.

Feedback loops occur when the outcome or output of a process is then used as an input to the same system (Paina & Peters, 2012). Healthcare leaders use these feedback loops to assess supply and demand in relation to health care services, including

community health (Paina & Peters, 2012). Using feedback loops, researchers can identify quality improvement initiatives as well as any process opportunities. In these instances, positive feedback can help confirm that a process is successful and negative feedback can be the catalyst for determining a new path or process.

Governments operate under similar conditions in relation to public policy. In times of upset, changes to legislation based on negative feedback loops can instigate new policy initiatives (Martinez-Garcia & Hernandez-Lemus, 2013). Scale-free networks have a few large focal points but also include an infinite number of additional smaller links (Paina & Peters, 2012). In these instances, changes in a smaller area does not always affect the stability of the overall network. An example of this can include internet usage or even the human brain or body. When one kidney shuts down, the body can continue to perform. If a limb is severed, a human can still survive and adapt. In the instance of a healthcare system, if one janitor is absent, it will not affect the overall operation or ability of the hospital to continue to perform patient care on any given day (Martinez-Garcia & Hernandez-Lemus, 2013).

Emergent behavior is the phenomena of unplanned order, or self-organization. This can happen when smaller entities join together to combat a larger issue (Paina & Peters, 2012); in this instance, the sum of the whole is a very complex system. Emergent behavior can also be unpredictable in nature and the ability to document and account for all scenarios is difficult (Paina & Peters, 2012).

Phase transitions are small areas within a larger landscape that show stress when a critical point is reached as a result of large or fast changes within an environment. The

success of these areas relies on leadership's ability to manage the situation and quickly gather resources and a plan to achieve the necessary objectives. An example of this in healthcare would be when an epidemic occurs (Paina & Peters, 2012). Healthcare providers will need to consider several areas, such as an increase in referrals to one specialty, the increased need for a medication within a population, or the ability to treat an increased number of patients (Paina & Peters, 2012).

Complex Adaptive Systems in Healthcare

Researchers have observed complex systems in several disciplines and are characteristic of a group of diverse yet inter-related processes and agents found in one larger system (Paina & Peters, 2012). Complex systems do not just relate to people, processes, or technology, but can also be used to describe other phenomenon such as diseases or epidemics. Researchers observe these traits within health systems, both public and private (Martinez-Garcia & Hernandez-Lemus, 2013). Healthcare organizations meet the definition of CAS and their staff have the ability to adapt or learn from any experiences that are encountered, coupled with the ability to self-organize when needed (Paina & Peters, 2012).

An example of one of the complexities in healthcare includes multiple handoffs related to patient care. The reduction of patient delays requires the coordination of efforts from healthcare workers, both clinical and non-clinical in nature. Researchers of a case study performed at a California hospital discussed some of these handoffs and challenges (Hall, Belson, Murali & Dessouky, 2013). Taking the example of a patient in the ER, there are several actions, departments, and handoffs necessary to successfully

meet the needs of a patient ER visits require the coordination and efforts of many inter-related departments and processes to provide for one joint outcome (Hall, et al., 2013). The Emergency Department is considered one of the most challenging areas to coordinate to ensure patient care without delays (Hall, et al., 2013).

Not only is an ER a part of a larger hospital, it is also a part of the emergency medical system, which is composed of many other entities outside of the hospital (Hall et al.,2013). An Emergency Medical System (EMS) consists of responders who work with patients prior to reaching the hospital. The EMS system includes, but is not limited to: the emergency dispatchers, police department, fire department, rescue department, first responders, air ambulance, and transport, as well as the ER and its medical staff. EMS responders handle all types of community emergencies including natural disasters, childbirth, injuries, medical conditions, and traffic accidents (EMS, 2015).

Generally, a patient comes into the ER one of two ways. This can occur either through his or her own accord (car, walk-in, etc.), or through some sort of emergency transport, such as an ambulance. The patient will then be greeted by a receptionist or registrar and then meet with a nurse to be triaged to determine the level of severity of the patient's injury or ailment (Hall et al., 2013). Diagnostic testing may need to be performed by additional departments, such as the laboratory for blood draws or radiology for x-rays, computed tomography (CT) scans or magnetic resonance images (MRIs). In some cases, a specialist may need to be contacted to confer with the ER physician related to specific illnesses or injuries (Hall et al., 2013).

A representative from the hospital registration department will need to make contact with the patient and obtain their personal and healthcare information and discuss insurance coverage and any patient financial responsibility for the visit (Hall et al., 2013). However, in the instance of a true medical emergency, this contact cannot occur until the patient is adequately stabilized. In 1986, EMTALA was created to help ensure that each patient receives emergency services whether or not they have the financial capability of paying for life-saving treatment (CMS, 2012). If the patient is admitted, an insurance verification specialist will work to obtain any necessary authorizations in order to move forward with keeping the patient in the hospital overnight as an inpatient.

Each small scope includes entirely separate processes that must be completed in order to move forward to the next step. Once the patient has been cared for and discharged, someone must clean the hospital room and bed and prepare it for the next patient (Hall et al., 2013). This is sometimes a combination of both the nursing staff and the housekeeping staff. The business office staff will then work to bill the insurance for the patient's treatment. This ensures that the hospital is paid for the care that was provided and allows the hospital to remain open and funded so that that medical staff can continue to care for additional patients. In this scenario, cleaning the hospital room is independent of the process of billing the insurance for payment. This example helps to show the inter-related, but not necessarily inter-reliant processes that occur in healthcare systems and patient care.

Administrative individuals such as a hospital Chief Financial Officer (CFO) also play a role in each patient encounter or hospital stay. The CFO or designated staff

ensures that the hospital is adequately budgeted and receiving the cash collections anticipated in order to effectively run the operations housed inside the hospital. A hospital CEO and Chief Operating Officer (COO) ensures that the hospital is adequately staffed and is certified to perform the necessary procedures to care for patients. For instance, hospital executives that want their hospital to be certified to provide trauma care undergo additional reviews and certifications prior to being able to treat patients for these ailments. Additionally, all three positions work to ensure process improvement and efficiency in the hospital setting (Williams, 2012).

Each individual on the team has a separate responsibility and different processes and procedures that they are responsible for during the operation. Each person must understand their part in the procedure yet must work together as a group to ensure success and safety of the patient. Working together and weaving the individual roles and processes into one cohesive and desired outcome can be considered a complex and yet adaptive group of system or processes. The example described in this section helps to substantiate that healthcare is a strong example of a complex adaptive system.

Collective Leadership in a Complex Adaptive System

Complex adaptive systems have multiple moving parts and thus rely upon multiple leaders and levels of leadership for success. In healthcare, these parts must change or adapt based on current health trends in local as well as national and international areas. Understanding that if there is a local flu epidemic there may be an increased patient volume at a hospital and leadership must be prepared to accommodate those fluctuations in the patient population. If a local geographical area has a high tourist

volume, understanding any outbreaks in certain national and international locations can also create the necessity of increased precautions and anticipation of response to issues if they are brought to a local level. With the multiple departments and unpredictable scenarios associated with public health, it is a safe assumption that one leader cannot achieve the management of all of the objectives necessary for a successful operation (MacPhee et al.,2013). Multiple leadership levels are necessary and coupled with multiple department leaders to ensure that each area is functioning at the capacity necessary to achieve and maintain a solid working order. The concept of collective leadership not only exists at a local level but spans across multiple organizations in times of need as experienced through emergency preparedness and response.

Outside of emergency response there is a growing trend of collective leadership in healthcare as evidenced by international super-hospitals that communicate with one another to document and share best practices across multiple communities (MacPhee et al., 2013). Staff from one hospital to the next are beginning to share information and practices amongst one another in an effort to streamline and enhance patient care for this country. Several healthcare systems have moved towards a shared services environment in an effort to make complex operations run more effectively and efficiently. HCA Healthcare, one of the nation's largest private healthcare corporations utilizes this concept in an effort to reduce cost and improve performance (HCA, 2015). This organization's leadership removed the business offices from each hospital within the organization and centralized the processes into multiple shared service centers across the country. By combining efforts and creating subject matter experts for each particular

business office function HCA is able to streamline and thus move resources to more critical areas of operations, such as patient care and clinical services (HCA, 2015). This concept is also utilized for HCA in regards to their supply chain services (SCS), payroll services (PSC), Health Information Management (HIM), and physician credentialing services.

Shared decision making to help improve the efficiency and successful outcome of patient care as well as to reduce costs is a growing trend in recent years and does not just limit itself to leadership. In healthcare, another complexity is that the patient also has a say in the treatment and decision-making that ensues as a result of an illness or ailment. Section 3506 of the ACA does its part to assist with the implementation of facilitating decision making on a shared basis (Lee & Emanuel, 2013). This section of the act finances a new organization that will work to create evidence-based guidelines and standards that will be applied across government health programs and any other interested organizations (Lee & Emanuel, 2013). In the instances in which tested outcomes are identified that assist with reduction in cost and / or an improvement in patient care, the implementation of these practices can be applied across the Medicare program without the need for approval of new legislation (Lee & Emanuel, 2013).

Collective Leadership in Emergency Healthcare

Emergency healthcare extends beyond the basic response of an ambulance to a person's home for an illness or condition requiring immediate attention. The process starts prior to the ambulance or fire engine arriving on a scene. First, a person identifies the need for emergency services and activates the emergency network through a phone

call (commonly 911). At that time the caller will make contact with the first person in the survival chain referred to as a dispatcher. The dispatcher will assess the situation and determine what units and how many will be needed to respond to the situation. The dispatcher also determines if both police and medical care will need to be dispatched to the scene. The dispatcher must determine the location of the issue and will dispatch the closest unit to the scene. During this process the dispatcher must take into account if an emergency unit is already dispatched to a different call or location and make the best choice based on the current environment of the organization.

If the patient requires immediate attention the dispatcher will sometimes have to give instructions for high level medical care over the phone to the caller. For example, if someone is in cardiac arrest the dispatcher is trained to provide instructions on how to perform cardio pulmonary resuscitation (CPR). Once the emergency units arrive on the scene they will reach the patient and provide the necessary care. Observance of the location is a factor for the team to consider when determining access to the patient. Carrying a patient, stretcher, and medical equipment up and down stairs versus an elevator can take physical strength and training to perform the task in a safe manner to minimize the risk of injury. If the patient requires transportation to a hospital the medical crew works cohesively to ensure the patient is cared for while bringing them to a higher level of care. This includes one part of the team driving the ambulance and another remaining in the back with the patient providing care.

Communication with the hospital occurs with the healthcare workers providing an overview of the patient's condition and stability as well as the estimated time of arrival so

that the hospital team can be prepared to transfer and continue care to the patient. If the patient needs immediate advanced healthcare while in route to the hospital the medical team on the ambulance may sometimes coordinate with a physician on site at the hospital to obtain additional instructions. Medical workers on the ambulance, doctors, and hospital employees all work together to ensure the best outcome for the patient.

Emergency care involves many interdependent activities that are distributed amongst many different individuals that make up a larger team. This team can be considered a functional unit of a healthcare organization or system (MacPhee et al., 2013). This functional unit can extend beyond one organization as in the example of EMS which is comprised of emergency medical agencies and hospitals combined. In the instance of emergency healthcare, collective leadership must occur through varying communication methods based on the differences in locations. The emergency dispatch center must be able to communicate with the emergency units. Those fire engines and ambulances must be able to communicate with both dispatch and hospitals when bringing a patient in for additional care and treatment.

For collective leadership to occur in emergency healthcare, all parties must have a solid form of communicating with one another in a timely manner. The sharing of timely and oftentimes standardized information across organizations is an important piece to enhance the continuity of care for each patient. In times of large-scale emergency situations, the ability to prioritize treatment of each patient based on severity must be taken into consideration by each leader to make informed decisions about the ever-evolving emergency situation to bring about the most successful outcome based on

patient population and affected areas (Poulymenopoulou et al., 2015). Lack of timely and reliable communication between multiple organizations in time of emergency management can create obstacles and missed opportunities.

Risks to the Success of Complex Adaptive Systems

Organizations will continue to attempt to improve their performance through learning and adapting to environmental factors and changes (Woods & Branlat, 2011). In order for this to occur a trade-off often happens. This means that while an organization adapts to one scenario it becomes less adapted to a different scenario. RCT would indicate that in order to strengthen the organization's effectiveness, leadership would choose to become more adapted to the more impactful scenarios, and less adapted to the instances that have minimal impact.

How well an organization adapts to changes depends on what the organization has prepared itself for in anticipation of events. The people, processes, and technology help to drive the success or failure of an organization. In response to changes, Woods and Branlat, 2011, assert that challenges to these phenomena happen because there are limitations to any documented policies and processes, the environmental factors change over time and sometimes without warning or in a way that is anticipated, and also because the organization itself will change in response to pressures or challenges. This complexity lends to the challenges associated with successfully implementing change in a healthcare organization.

Several patterns have been identified and are associated with how complex adaptive systems can fail during times of change. These can include decompensation,

working at cross-purposes and getting stuck in outdated behaviors (Woods & Branlat, 2011). Decompensation occurs when a system is over-tasked and can no longer find capacity to adapt to necessary changes. This can occur for several reasons such as budget cuts, staffing cuts, scarce resources, lack of training and expertise or lack of clear direction. Decompensation can also occur when the challenges presented to a specific organization or system grow faster than the system or organization can respond (Woods & Branlat, 2011). This phenomenon can occur slowly and without warning. Organizations can appear to compensate for a new challenge and then suddenly fail without any prior identifiers to help alleviate the impact.

Working at cross-purposes happens when certain roles can work well at a smaller level but not a larger scale. For instance, this can occur within one department when a manager implements a process that makes the team more efficient, but has a negative result and effect on outlying departments and the overall outcome of the connecting processes. This is a concern with emergency systems and other healthcare systems where resources are shared from one area to the next. As new demands are presented for organizations to work through it is important for CAS such as those in the healthcare industry to identify and determine down-stream impact to inter-related process with each operational change (Woods & Branlat, 2011).

Getting stuck in outdated behaviors can occur when an organization becomes too reliant or dependent on past successes and does not adequately prepare for the future (Woods & Branlat, 2011). This can be a concern in relation to emergency management and preparedness due to the complexity and unpredictability of what events will be

encountered and when the event will occur. With changes to healthcare legislation in terms of emergency preparedness and response such as those noted in Section 5210 of the ACA it makes sense for healthcare systems to review their current state of operations and determine what changes or adaptations should occur to embrace new challenges and changes to the local environment.

Conceptual Framework

The conceptual framework of this research sought to combine RCT and CAS theories under Ostom's IAD framework. Ostrom used the IAD framework to explain the way organizations will change as well as operate over time (McGinnis, 2011) and help policymakers enable others to solve problems (Ostrom, 2011). By utilizing a systematic methodology and modeling, leadership within institutions and organizations can make comparative assessments and analysis to assist with changes to policies and processes.

In healthcare and emergency preparedness, successful outcomes can depend upon the ability of management to make rational choices, along with adapting to unpredictable situations as they arise. Changing to accommodate new variables and feedback given can help to create successful outcomes (Ostrom, 2011). The IAD structure works with inputs, action situations, outcomes, evaluations, and feedback. Similar to the feedback loops founds in CAS, the IAD framework takes input into account to process outcomes. Those outcomes are evaluated for feedback. Feedback and adaptive learning help to shape changes in the actions taken within processes (McGinnis, 2011).

Inputs

Inputs can come from a variety of sources such as physical conditions, social conditions, policies, people, processes, and technology (McGinnis, 2011). Prior to Ostrom's work in this subject, it was thought that the only way that a community could share resources in times of disaster was through privatization of resources or through government regulation (Anderies & Janssen, 2012). IAD framework suggests that there is the ability to self-organize based on changing situations or inputs (Ostrom, 2011). In emergency situations, healthcare organizations, and their employees might need flexibility in order to effectively manage the task that they are encountering.

Action Situations

Action situations are where choices are made (McGinnis, 2011). It is here that observations, analysis, predictions, and actions occur as a result of inputs and feedback (Ostrom, 2011). In this part of the IAD framework, there are many social interactions where individuals work together to understand the situation and what causes changes to occur. Analysis of the people, processes, and technology that affect a scenario helps to shape cause and effect based on available information and the possible next steps (Ostrom, 2011). This theory asserts that the larger the scenario, the more cooperation will need to occur from multiple parties (McGinnis, 2011). Action situation also takes into accounts rule and policies that are currently in effect and does not start from scratch based on current factors.

Outcomes

Outcomes are the results that occur due to action situation and inputs / external factors (McGinnis, 2011). Outcomes are not always controllable through human intervention and results are not always clear cut in nature (Ostrom, 2011). In terms of emergency preparedness and healthcare, it may be necessary to take a broader approach to decision making to allow for a larger range of possible strategies. In times of emergency response, it has been observed that public health managers routinely assess situations and develop informal action plans to route resources to better places based on activities that they are encountering (Gibson et al., 2012).

Evaluation and Feedback

Evaluation and feedback create adaptive learning environments and affect new inputs and processes that will occur going forward (McGinnis, 2011). This exercise is designed to help an organization learn better practices to allow it to function consistently even in an inconsistent environment. In policy making on a larger scale, government officials are accountable to the citizens that they serve (Ostrom, 2011). While this accountability should be taken into consideration, it also should not conflict with serving the greater good when making decisions for next steps. PHEP processes should remain flexible due to the necessity of having to scale and select based on departments, organizations and businesses that might need to work together cohesively in times of emergency (Gibson et al., 2012).

Combining RCT and CAS under IAD

When considering the combination of RCT and CAS under Ostom's IAD framework, one must determine which pieces of each theory fits into each unique facet of IAD. The rational choice theory had four pieces that seemed to cleanly fit into two categories of IAD while the pieces within CAS could be placed in more than one category within IAD. Desires, beliefs, and information from RCT, as well as feedback loop from CAS were considered under inputs. Action from RCT, as well as emergent behavior, path dependence, and phase transition from CAS were considered under action situations within IAD. Path dependence, feedback loop, scale free networks, and emergent behavior from CAS were considered under IAD outcomes. Lastly, feedback loop from CAS was considered under IAD evaluation and feedback. Figure 1 provides a visual representation of the summary of how RCT and CAS roll up under Ostrom's IAD framework.

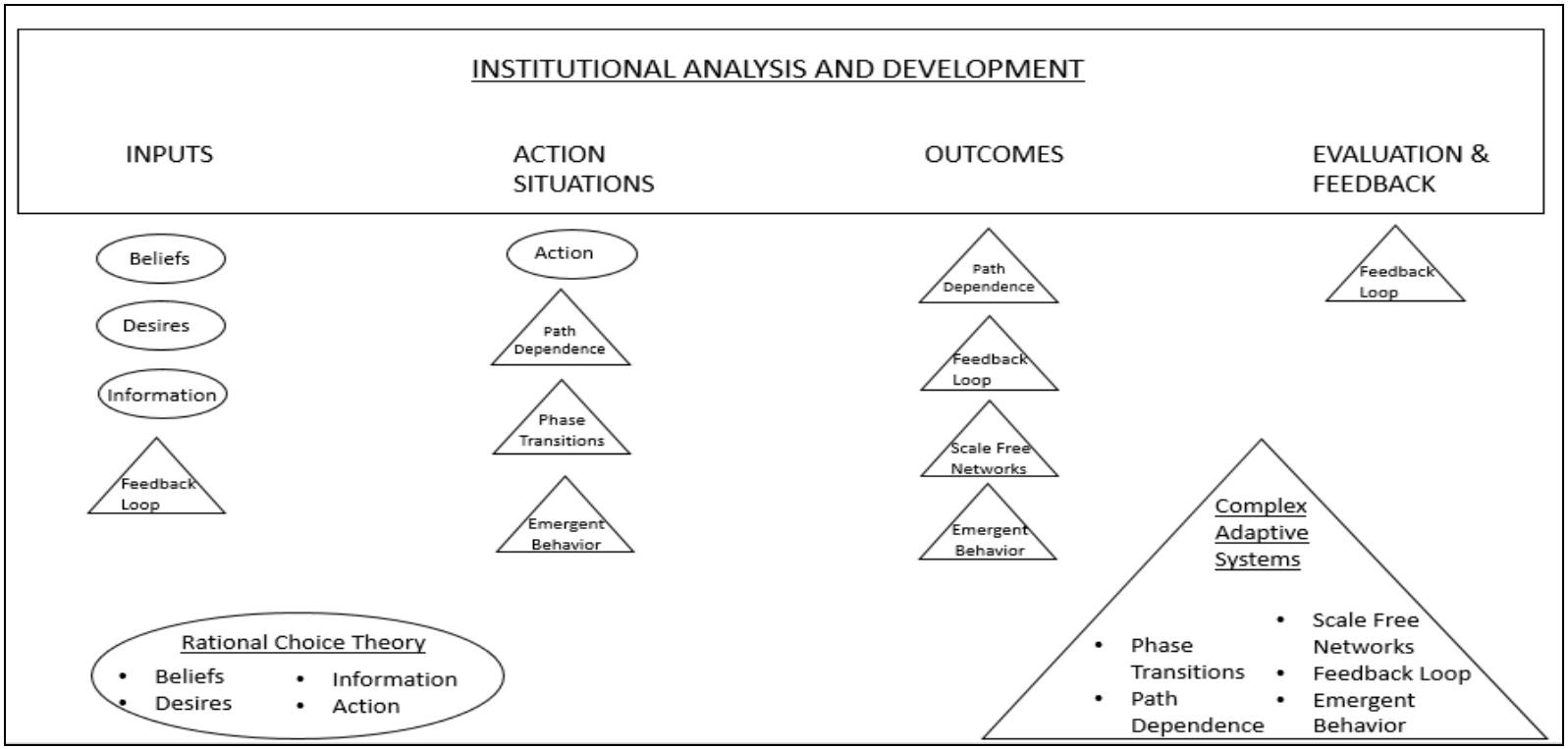

Figure 1. Combining rational choice theory and complex adaptive systems under institutional analysis and development. Rational choice theory and its characteristics are represented by oval shapes and complex adaptive systems and its characteristics are represented by triangles. Institutional analysis and development and its characteristics are represented by the large rectangle.

Review of the Literature

The review of the literature included studies related to the constructs of interest along with the chosen qualitative methodology in terms of CAS as it relates to healthcare. The literature discussed how other researchers have approached the review of CAS along with the strengths and weaknesses associated with these approaches. Next, topics such as federal and local emergency preparedness, planning and management are covered to help provide transparency into the current known documentation related to this topic. Additionally, the review of the literature also included a background of the former attempts at national healthcare in the United States. This background helped to set the stage and to show the progression of former attempts that eventually led to the finished product known as the ACA. Lastly, in addition to this background, the review of the literature also discussed the political process of how a bill becomes a law along with a brief overview of the branches of the government and what the primary responsibilities are for each branch. Understanding the steps taken to bring a healthcare idea or concept to reality through legislation also helps to affirm that healthcare organizations and emergency management can be considered a CAS.

Analysis of Complex Adaptive Systems

Applying models and methodologies associated with CAS is noted as underutilized in public health (Paina & Peters, 2011). In the past, health systems were once considered to be linear in nature, with linear leadership levels throughout the organization in its entirety. However, this is not necessarily the case. In recent times,

health systems are being viewed as more complex entities in nature and as entities that operate based on several phenomena such as emergent behavior and the ability to self-organize (Martinez-Garcia & Hernandez-Lemus, 2013). Phenomena within CAS such as path dependence, feedback loops, scale-free networks, emergent behavior, and phase transitions can be valuable in designing and implementing health policy (Paina & Peters, 2011).

Healthcare System Analysis

While analyzing healthcare systems, one must take into account the large level of complexities within each system (Marmor & Wendt, 2012). When an emergency healthcare system is fully operational, it is able to provide a seamless transition of care from 911 to EMS to hospital treatment (Eastman, MacKenzie, & Nathens, 2013). To date, there have been very few studies that focus on the end to end concept of funding, delivering and regulating the concept of healthcare when compared against several different countries (Marmor & Wendt, 2012). Some studies also focus on patient reported outcomes as a mechanism of evaluating policy changes for a health system. This methodology is time consuming and also has many complexities related to patient confidentiality and also places significant limitations on the population due to willingness to participate and the loss of ability to collect information in the instance in which the patient died during treatment. Due to these limitations and complexities patient reported outcomes was not considered for this study.

Tennessee Hospital Association

The THA was founded in 1938 and is a not-for-profit organization that advocates for hospitals, patients and healthcare providers in the state of Tennessee (Tennessee Hospital Association, 2016). The state is broken up into eight separate membership districts based on geographic location (Figure 2). Each district has its own governing body and works to advocate and implement programs within its own area. The THA web site notes 133 hospital members, of which 29 are in the Middle District (THA, 2016).

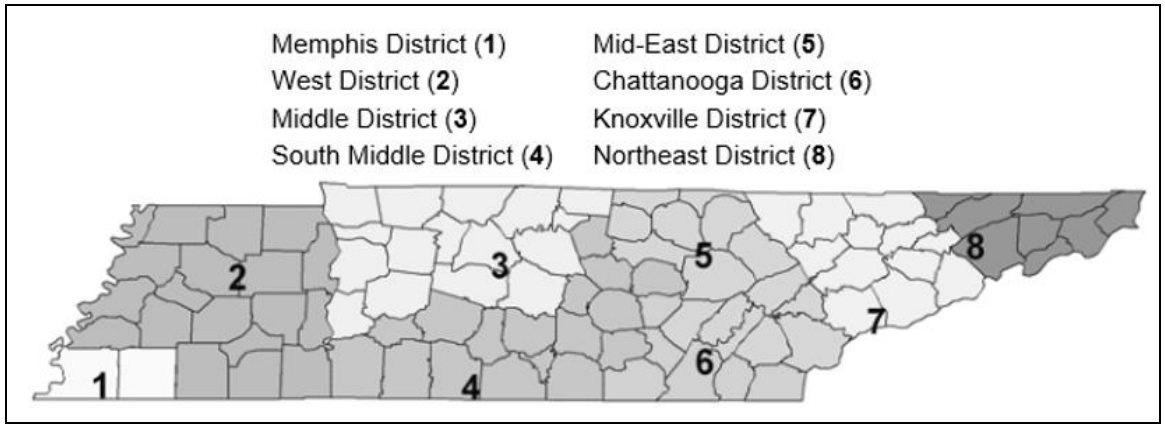

Figure 2. Map of Tennessee Hospital Association membership districts broken out by geographical boundaries. Adapted from Tennessee Hospital Association with permission. (2016). THA Membership Districts. Retrieved from: http://www.tha.com/Default.aspx?pid=21

Healthcare Coalitions in the State of Tennessee

Along with the districts designed by the THA, the state of Tennessee also separates the state into eight separate EMS Regions (Tennessee Department of Health, 2016a). In order to meet the needs of the communities, TN also has eight Healthcare Coalitions (HCCs)that utilize the same zoning as the EMS Regions to facilitate training,

education and preparedness for each region (Tennessee Department of Health, 2016a). HCCs were created in each state under the Office of the Assistant Secretary for Preparedness and Response (ASPR) through the Hospital Preparedness Program (HPP) and were designed to address the need to assist hospitals with the ability to respond to public health events (PHEs) (ASPR, 2011). The geographical region that will be utilized during this research is housed within the TN Highland Rim Region (Figure 3).

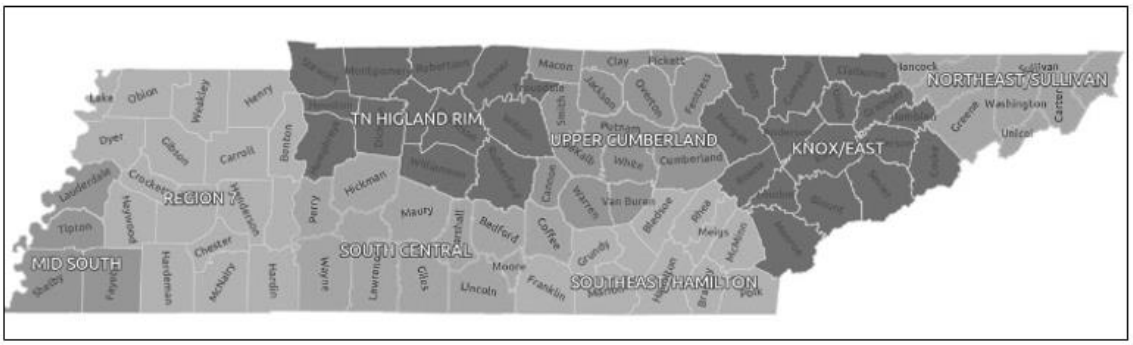

Figure 3. Map of Tennessee Department of Health Healthcare Coalition and EMS Regions. Adapted with permission from Tennessee Department of Health (2016). About Healthcare Coalitions. Retrieved from: https://www.tn.gov/health/article/healthcare-coalitions

Each HCC has at least one Regional Hospital Coordinator. The TN Highland Rim Region currently has two Regional Hospital Coordinators; one coordinator focuses on Davidson County due to its size and population and the remaining coordinator focuses on the remaining counties within the region (Tennessee Department of Health, 2016a). Individuals in this role are responsible for providing support to their respective region and the overall state in meeting national expectations (Tennessee Department of Health, 2016a). These expectations present themselves in the form of national healthcare preparedness capabilities as communicated by ASPR (ASPR, 2012).

Office of the Assistant Secretary for Preparedness and Response (ASPR)

ASPR was created after Hurricane Katrina and serves to help the nation prepare for and minimize any negative impacts to communities in the event of emergencies and disasters (U.S. Department of Health & Human Services, 2016). This office includes several sections in order to execute the aforementioned objective; these include the Biomedical Advanced Research and Development Authority (BARDA), Office of Emergency Management (OEM), Office of Acquisition Management, Contracts & Grants (AMCG), Office of Policy & Planning (OPP), Office of Financial Planning and Analysis (OFPA), and the Office of the COO (U.S. Department of Health & Human Services, 2016). ASPR also provides support in the capacity of connecting medical professionals together through the use of a database called the National Disaster Medical System (NDMS) (U.S. Department of Health & Human Services, 2016). Under the HPP Cooperative Agreement, ASPR assists local health departments through funding that is used for emergency and disaster planning. Each year, ASPR provides close to $350 million dollars nationally to help with this initiative (ASPR, 2012).

Healthcare Preparedness Capabilities

ASPR first produced Healthcare Preparedness Capabilities documentation in 2009 after Hurricane Katrina. This documentation is meant to help healthcare providers identify any gaps in their purview, how to address those gaps and how to build plans for future emergency preparedness (ASPR, 2012). ASPR created the following eight capabilities that the HCCs will need to address in terms of healthcare organizational preparedness:

- Healthcare System Preparedness
- Healthcare System Recovery
- Emergency Operations Coordination
- Fatality Management
- Information Sharing
- Medical Surge
- Responder Safety and Health
- Volunteer Management

These objectives align with eight of the fifteen HPP / PHEP Capabilities that were originally released in 2011 (ASPR, 2012). ASPR created guidance for these capabilities to assist the HCCs through each phase of a disaster cycle that includes mitigation and preparedness, which occur prior to the disaster, the disaster itself, and response and recovery (Figure 4).

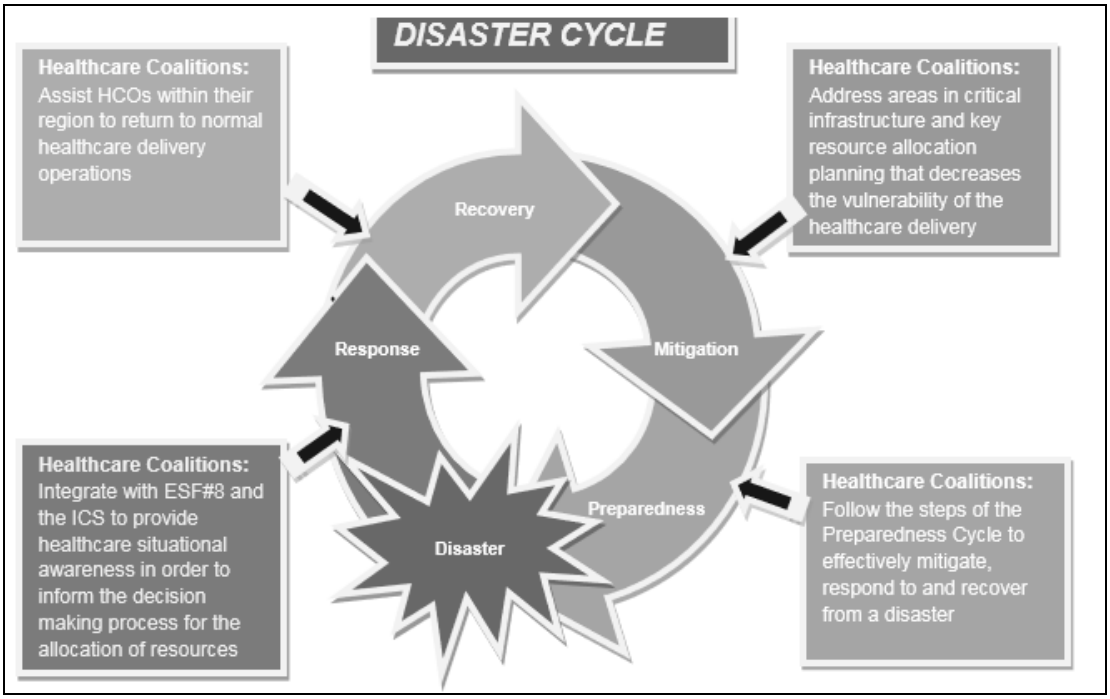

Figure 4. Visual of the Healthcare Coalition during the Disaster Cycle. Adapted with permission from Office of the Assistant Secretary for Preparedness and Response (2012). Healthcare Preparedness Capabilities; National Guidance for Healthcare System Preparedness. Retrieved from: http://www.phe.gov/Preparedness/planning/hpp/reports/Documents/capabilities.pdf

Tennessee Emergency Medical, Awareness, Response and Resources

In order to help organize emergency management and response, the TN Department of Health (TDOH) utilizes and maintains several systems that can be used state-wide during an emergency. These resources when grouped together are referred to as TEMARR, which stands for Tennessee Emergency Medical, Awareness, Response and Resources (Tennessee Department of Health, 2016c). The Healthcare Resource Tracking System (HRTS) can be used locally, within a region or across the entire state of TN as needed. This system can help to provide transparency into the number of beds, services, and assets that are currently available in times of an emergency (Tennessee

Department of Health, 2016c). The Regional Hospital Coordinators can update this system in various increments (every 30 minutes, every 2 hours, etc.) dependent upon how often current, updated information is needed. The Tennessee Countermeasure Response Network (TNCRN) provides transparency into both inventory and patient management. In the inventory management section, resources can be tracked and located for distribution and redistribution as needed. The patient management section provides a variety of assistance down to the individual patient level such as family reunification or repatriation for evacuees. This system is used during facility evacuations, mass casualties, or events where medical shelters are being operated (Tennessee Department of Health, 2016c).

From the avenue of identifying, registering, and tracking volunteers, the state of Tennessee primarily utilizes two systems – TN Volunteer Mobilizer (TNVM) and TN Health Alert Network (TNHAN) (Tennessee Department of Health, 2016c). TN Volunteer Mobilizer is the system where Medical Reserve Corps (MRC) volunteers can register. This site supports both medical and non-medical registration, and also accommodates credentialing for medical volunteers. TNHAN is the application used by both and state and federal agencies that can alert emergency responders in the event of an emergency (Tennessee Health Department, 2015b). When utilized together, both systems work to create a transparent network of staff that can be mobilized at a moment's notice in the event of an emergency that requires additional staffing than is currently at work in the affected area.

There are three additional applications within TEMARR that assist management at the local and larger areas to manage an emergency situation. First, the TNMedMap application is used to combine the information from HRTS, TNCRN, and TNVM applications and transforms the data into a map to provide a visual replication of the data. Along with this application, the TDOH dashboards can be used to take data from HRTS, TNCRN, surveillance programs as well as each individual hospital to create a higher level dashboard summary of incoming data (Tennessee Department of Health, 2016c). Lastly, the WebEOC is a web-based system that allows multiple healthcare providers to share information in real-time with each other. End-users can access this application from any computer that has an internet connection, which allows for ease of access when not physically present in their office during an emergency event.

Geographical Location and Makeup

Davidson County is a county situated in the middle Tennessee area in the United States. It is approximately 526 miles and houses approximately ten percent of the state's population with 668,347 residents out of overall 6.5 million in Tennessee as of the 2014 census (U.S. Census Bureau, 2015a). Davidson County is the second most populous county in Tennessee and within that county, the largest of the eight cities is Nashville. Data from the Census Bureau indicates that Nashville's population is 668,347 (U.S. Census Bureau, 2015b), which leaves a minimal amount of residents in the outlying cities. The population is relatively equal between males and females with a 65% white, non-Hispanic makeup (U.S. Census Bureau, 2015a). Given the statistical information noted above, it is logical that many of the hospitals will most likely come from the

Nashville area, as this is the most populous area within the region. Areas outside of Nashville will include multiple rural areas, where hospital volunteers will be solicited. Since both rural and urban areas experience different challenges, both areas will be open to selection during the research.

Nashville, Tennessee's healthcare community began to take a more structured shape after the inception of Medicare and Medicaid in the 1960's (Nashville Health Care Council, 2015). At that time, three major health care companies settled their offices in Middle Tennessee – Hospital Corporation of America (HCA), Hospital Affiliates International and General Care Corp. (Nashville Health Care Council, 2015). HCA is the first hospital company in the U.S. to be investor-owned and today is not only international, but the largest hospital company in the world (Nashville Health Care Council, 2015). General Care Corp. began as a chain of outpatient surgery centers but transformed into a chain of hospitals. General Care is noted for its model of turning doctors into shareholders for hospitals (Nashville Health Care Council, 2015). Hospital Affiliates International was a hospital chain that shortly merged with HCA. Nashville is also home to Vanderbilt Medical Center, Community Health Systems (CHS), St. Thomas Healthcare system, Capella Health Care, and a variety of other healthcare organizations. Nashville, Tennessee is a large contributor to the healthcare industry. Davidson County houses 14 of the possible 32 hospitals in the thirteen counties of the TN Highland Rim Region (TN Department of Health, 2016b).

Cheatham County, TN is approximately 302 square miles wide with an estimated population of just under 40,000 as of the 2014 census (U.S. Census Bureau, 2015d). The

Cheatham Emergency Management Agency (EMA) was established in 1998 and since that time, they have weathered five presidentially declared emergencies (Cheatham County, 2016). These five emergencies all included inclement weather from ice storms to wind damage, tornadoes, and flooding. In addition to these natural disasters, the Cheatham County web site (2016) notes the following possible threats to the county: aviation emergencies, blood and organ transport, bomb threats, civil disorder, dam failure, energy emergencies, explosions, hazardous material incidents, fires, transportation accidents, terrorism, water rescue and evacuation, and radiological accidents. Cheatham County houses 1 of the possible 32 hospitals in the thirteen counties of the TN Highland Rim Region (TN Department of Health, 2016b).

Dickson County, TN is approximately 490 square miles wide with an estimated population of 51,000 as of the 2014 census (U.S. Census Bureau, 2015d). There are six cities within Dickson County: Dickson, White Bluff, Burns, Charlotte, Van Leer, and Slayden. Of those, Dickson has the majority of the population (Dickson County, TN, 2016). The county was officially declared in 1803 and by the mid-60's, was a prominent party of the railroad efforts at the time. Unlike many of the other county web sites, Dickson County did not list information related to emergency preparedness. Dickson County houses 1 of the possible 32 hospitals in the thirteen counties of the TN Highland Rim Region (TN Department of Health, 2016b).

Houston County, TN is approximately 200 square miles wide with an estimated population of 8,300 as of the 2014 census (U.S. Census Bureau, 2015d). Within Houston County, the largest community is the city of Erin. According to the Chamber of

Commerce web site (2016), this city was founded by Irish immigrants. Each year, this county hosts people from several states during a three-week long celebration of Ireland (Houston County Chamber of Commerce, 2016). Houston County houses 1 of the possible 32 hospitals in the thirteen counties of the TN Highland Rim Region (TN Department of Health, 2016b).

Humphreys County, TN is approximately 531 square miles wide with an estimated population of 18,100 as of the 2014 census (U.S. Census Bureau, 2015d). This county boasts tourist attractions such as Loretta Lynn's ranch and an annual national motocross championship, along with civil war history and attractions (Humphreys County, TN, 2016). Along with a health department and nursing home, Humphreys County houses one of the possible 32 hospitals in the thirteen counties of the TN Highland Rim Region (TN Department of Health, 2016b).

Montgomery County, TN is approximately 539 square miles wide with an estimated population of 172,300 as of the 2014 census (U.S. Census Bureau, 2015d). Montgomery County houses an EMA, along with Fire and EMS. Their web site discusses the four phases of the emergency management cycle as mitigation, preparedness, response, and recovery (Montgomery County, 2016). This county has a Community Emergency Response Team (CERT), with biannual trainings to help the public learn about basic disaster response skills. The county also has a volunteer fire department, storm shelters and an early warning siren system (Montgomery County, 2016). Montgomery County houses two of the possible 32 hospitals in the thirteen counties of the TN Highland Rim Region (TN Department of Health, 2016b).

Robertson County, TN is approximately 476 square miles wide with an estimated population of 68,000 as of the 2014 census (U.S. Census Bureau, 2015d). Robertson County is a self-proclaimed mix of both rural and urban areas. The Robertson County EMA rolls up to the Tennessee EMA (TEMA). Noted as potential hazards in this county are floods, hazardous materials, auto accidents, fires, tornadoes, and other weather related storms (Robertson County, 2016). Robertson County houses one of the possible 32 hospitals in the thirteen counties of the TN Highland Rim Region (TN Department of Health, 2016b).

Rutherford County, TN is approximately 619 square miles wide with an estimated population of 88,900 as of the 2014 census (U.S. Census Bureau, 2015d). Rutherford County includes the cities of Eagleville, LaVergne, Murfreesboro, and Smyrna. The county has several historic sites, including the Bradley Academy Museum, Cannonsburgh Village, Fortress Rosecrans, Stones River National Battlefield, and historic homes including the Oaklands Historic house and the Sam Davis home (Rutherford County Tennessee, 2016). Rutherford County houses three of the possible 32 hospitals in the thirteen counties of the TN Highland Rim Region (TN Department of Health, 2016b).

Sumner County, TN is approximately 529 square miles wide with an estimated population of 172,700 as of the 2014 census (U.S. Census Bureau, 2015d). Sumner County includes the following cities: Gallatin, Goodlettsville, Hendersonville, Millersville, Portland, Westmoreland, and White House. The county web site includes a separate EMS section, that displays a training calendar, pictures of a sixty thousand square foot EMA facility and online assistance with ambulance billing and questions

(Sumner County Tennessee, 2016). Sumner County houses three of the possible 32 hospitals in the thirteen counties of the TN Highland Rim Region (TN Department of Health, 2016b).

Trousdale County, TN is approximately 114 square miles wide with an estimated population of 8,000 as of the 2014 census (U.S. Census Bureau, 2015d). Hartsville is the only city within the county of Trousdale. The Chamber of Commerce is located in a restored Depot from the 1700s and the town includes several Civil War era homes documented on historical registry (Trousdale County Tennessee, 2016). Trousdale County houses one of the possible 32 hospitals in the thirteen counties of the TN Highland Rim Region (TN Department of Health, 2016b).

Williamson County, TN is approximately 583 square miles wide with an estimated population of 205,200 as of the 2014 census (U.S. Census Bureau, 2015d). Williamson County includes the cities of Brentwood, Fairview, Franklin, Nolensville, Thompson's Station, and Spring Hill. The county is known for the historical battle of Franklin from the Civil War in the 1800s. Historical landmarks include the Carnton Plantation, Carter House, Lotz House, McLemore House, and Natchez Trace Parkway, as well as is home to the largest mall in Middle Tennessee (WCCVB, 2016). Williamson County houses two of the possible 32 hospitals in the thirteen counties of the TN Highland Rim Region (TN Department of Health, 2016b).

Wilson County, TN is approximately 571 square miles wide with an estimated population of 125,400 as of the 2014 census (U.S. Census Bureau, 2015d). The county traces its origins back to 1799 (Wilson County Tennessee, 2016). Wilson County EMA

(WEMA) traces its roots back to the 1950s, but was temporarily disbanded after the Korean Crisis (WEMA, 2016). The first ambulance test run occurred in 1964 and the agency's name formally became WEMA in 1991. Wilson County houses two of the possible 32 hospitals in the thirteen counties of the TN Highland Rim Region (TN Department of Health, 2016b).

Consideration for Rural Hospitals

For the purposes of this study, hospitals were classified as either urban or rural based on the classification utilized by the American Hospital Association (AHA). Additionally, each volunteer participant will be asked during the interview if the hospital serves rural, urban or both populations. There are different challenges associated with rural healthcare in comparison to urban healthcare. Over 57 million Americans live in and receive their healthcare in rural areas (American Hospital Association, 2016a). Challenges can include shortages of physicians, lack of health care coverage in comparison to urban, increased mortality due to auto accidents, and lower financial income (National Rural Health Association, 2016). Additionally, the National Rural Health Association (NHRA) asserts that Medicare payments to rural hospitals and physicians is significantly less than their urban counterparts, and may have led to the closure of more than 470 hospitals in the last 25 years (National Rural Health Association, 2016). The Federal Office of Rural Health Policy (2016) states that rural hospitals currently represent more than half of all hospitals in the U.S. and that between 2010 and 2014, 48 of those rural hospitals closed in 23 states across the country. These closures affected close to 800,000 individuals (Thomas et al., 2015).

Rural communities rely on their hospitals, sometimes as their only source of care (American Hospital Association, 2011); these hospitals are oftentimes the largest employer in the community. Additional challenges associated with these areas can include remote geographical regions, limited financial constraints and also a limited workforce. With the passing of ACA and the requirement of healthcare insurance, it is possible that rural hospitals may experience an increase in patient demand that can strain their current resources (American Hospital Association, 2011).

There are many different ways to classify an area as either rural or urban. During their 2010 census review, the U.S. Census Bureau classified an urban area as one where there is 50,000 or more people in the population (U.S. Census Bureau, 2015c). An urban cluster is defined as an area where there is at least 2,500 but less than 50,000 people in the population, and the remaining is classified as a rural area. When evaluating classification of urban versus rural based on the U.S. Census Bureau for this study, urban and urban classifications were combined. Thus, the urban classification was determined based on population size of 2,500 or more as urban and less than 2,500 as rural. The rural or urban classification was determined through the use of the QuickFacts function within the U.S. Census Bureau web site. (U.S. Census Bureau, 2015d). Using this classification system, all possible hospitals would be located in an urban area in this study, so this was not used as a possible classification option.

The AHA classifies rural versus urban hospitals differently than the U.S. Census Bureau. To qualify as a rural hospital in the AHA, at least one of the three following criteria must be met. The hospital should have 100 or fewer beds, 4,000 or fewer annual

admissions or be located outside of a Metropolitan Statistical Area (MSA) (American Hospital Association, 2016b). Currently, 1,600 hospitals in the U.S. qualify for the rural hospital designation under AHA guidelines (American Hospital Association, 2016b). Using this classification system, four of the possible hospitals would be noted as an urban area and eighteen hospitals would be noted as rural.

The Office of Management and Budget (OMB) defines an urban area slightly differently, also using the term MSA. The OMB defines a MSA as an urbanized area with a population of at least 50,000, and uses the term Micropolitan Statistical Area for those that have a population between 10,000 and 50,000 (Office of Management and Budget, 2009). The HCC was queried to determine the methodology used for classifying hospitals within their region as either urban or rural. The HCC does not utilize their own classification for urban and rural hospitals, so the AHA methodology was chosen for this study.

Office of Emergency Management

Emergency preparedness, planning and management (EPPM) occurs at many different levels. These can include international, national, federal, state, and local levels. At a national level, the OEM exists to support state and local agencies when needed (Department of Health & Human Services, 2016). At a local level within Davidson County, an OEM exists as the county's emergency management agency. This office considers itself the local version of FEMA (Metro-Government of Nashville & Davidson County, Tennessee, 2016b). The OEM's primary responsibilities include response,

preparedness, mitigation, coordination of resources, and assistance during disasters or emergencies.

In terms of emergency planning, the OEM has a team that oversees the Comprehensive Emergency Management Plan (CEMP) for disasters. According to their web site, this plan is updated at a minimum of every five years, or at any point that it is deemed necessary that a revision is needed (Metro-Government of Nashville & Davidson County, Tennessee, 2016c). Along with this plan, there is also documentation and stipulations for child care facility emergency preparedness, a downtown Nashville evacuation plan, a multi-hazard mitigation plan, and a hazard analysis. It is noted that the top five current hazards for Davidson County are flooding, winter storms, tornadoes, extreme temperatures (both heat and cold), and thunderstorms (Metro-Government of Nashville & Davidson County, Tennessee, 2016c). Each potential hazard has been given a likelihood score and a subsequent risk factor by the OEM. A comprehensive list of hazards and their risk scores as of 2014 as indicated by the OEM are noted in Figure 5.

Hazard	Impact & Vulnerability	x Likelihood	= Risk Factor
Flooding	35.50	4.50	**160**
Winter Storm	28.92	5.17	**149**
Tornado	28.25	5.00	**141**
Extreme Temperature - Heat	25.50	5.17	**132**
Extreme Temperature - Cold	25.08	5.17	**130**
Thunderstorm	20.42	6.00	**123**
Drought	26.42	4.50	**119**
Hazardous Materials Incident	23.82	4.64	**110**
Earthquake	41.00	2.50	**103**
Manmade - Technological/Terrorism	29.09	2.91	**85**
Dam & Levee Failure	36.75	2.25	**83**
Landslide/Sinkhole	19.00	4.33	**82**
Wildfire	24.73	3.27	**81**
Communicable Diseases	23.36	2.27	**53**

Figure 5. List of potential emergency risks to Davidson County, Tennessee and their risk scoring as of 2014. Adapted with permission from Metro-Government of Nashville & Davidson County, Tennessee. (2016). Davidson County Hazard Analysis and Methodology. Retrieved from: http://www.nashville.gov/Office-of-Emergency-Management/Planning.aspx

In terms of emergency preparedness, the OEM has created a publication titled, Ready Nashville!, which is an informational resource for households to assist with preparing for emergency situations. The document includes multiple checklists and education on how to prepare for an emergency situation at the individual household level. Additional topics include items such as utility disruption and power outages. The resource document then moves into hazard specific information such as weather, fire, disease, terrorism, and structural collapses or explosions (Metro-Government of Nashville & Davidson County, Tennessee, 2016d). Additional considerations are taken for elderly, young children, and pets and the document closes with a list of emergency contact numbers for the county. In times of emergencies at a community level, the local entities would communicate and work with the HCC Regional Coordinators for

assistance and updates on the current situations during and after the emergency is resolved.

Possible Hospital Participants within the TN Highland Rim Region

As noted earlier in Figure 3, the TN Highland Rim Region encompasses thirteen counties within the state of Tennessee: Cheatham, Davidson, Dickson, Houston, Humphreys, Montgomery, Robertson, Rutherford, Stewart, Sumner, Trousdale, Williamson, and Wilson Counties. Utilizing the Joint Annual Report (JAR) search functionality on the TDOH web site, additional information was obtained in order to continue to refine possible hospitals to engage for possible participation in the research. Within this search, it was identified that Stewart County does not have a hospital, so it was not included in the scope of the research.

Of the remaining twelve counties, it was identified that there are a total of 32 hospitals (Appendix A). Hospitals are classified by several categories within the JAR; they are as follows: general medical and surgical, pediatric, psychiatric, tuberculosis, and other respiratory diseases, obstetrics and gynecology, eye, ear, nose, and throat (EENT), rehabilitation, orthopedic, chronic disease, alcoholism, and other chemical dependency, long term acute care (LTAC), and other (TN Department of Health, 2016b). For the purposes of this study, hospitals were narrowed down to include only those within the general medical and surgical category, critical access hospitals, or free-standing ERs. General medical and surgical, as well as critical access hospitals must have an ER in order to be considered. This scope was chosen because this smaller subset is most likely more involved in emergency planning and preparedness activities than the other

classifications noted within the JAR. This brought the number of potential hospitals down from 32 hospitals to 22 hospitals. These 22 hospitals became the possible pool of volunteers for research related to emergency preparedness, along with two regional coordinators for the region, which brings the total potential sample population to 24.

JARs provide a wealth of additional information about each hospital; the following information was obtained from JAR searches for each potential hospital (TN Department of Health, 2016b). All 22 hospitals have 24 hour staffing available for their emergency rooms. Twenty of these hospitals are general medical and surgical, one is a critical access hospital with an ER and one is a free standing ER. Sixteen hospitals belong to a larger health system and six hospitals are not a part of a larger health system. The number of licensed beds for these hospitals range between 12 and 1,026. The average number of daily patients ranges between 4 to 847 per day. Additionally, the total number of annual patients seen in the emergency room ranges between approximately 5,000 to 127,000 patients per year. Total annual revenue for these hospitals range from $4 million dollars to $2 billion dollars annually. Two of these hospitals own or operate their own ambulance service, an additional two hospitals are designated trauma centers, and one hospital is also a designated burn center. Seventeen of the hospitals have heliport access for air ambulances. All hospitals have some form of radio communication within their ER. Of the 22 hospitals, nine have radio communication with 911 dispatch, ambulances, and other hospitals. One hospital has radio communication with ambulances and other hospitals, but not with 911 dispatch and twelve have communication with 911

dispatch and ambulances, but not with other hospitals. A diagram showcasing all potential hospitals and the associated information can be located in Appendix B.

Federal and Tennessee Emergency Management Agency

President Jimmy Carter signed an executive order in 1979 to create the Federal Emergency Management Agency (FEMA), which serves to help the country prepare for and mitigate all domestic disasters (FEMA, 2015a). At the time, there were several other individual disaster agencies that were merged into one larger group under FEMA. Those individual agencies included the Federal Insurance Administration, National Fire Prevention and Control Administration, National Weather Service Community Preparedness Program, and the Federal Disaster Assistance Administration, to name a few (FEMA, 2015a). In 1988, the Robert T. Stafford Disaster Relief and Emergency Assistance Act was signed into public law, that gave FEMA the responsibility of coordinating government-wide relief efforts for state and local government disaster assistance (FEMA, 2015a). In 2003, FEMA was then moved to become a part of the U.S. Department of Homeland Security (DHS), partially as a result of the September 11, 2001 terror attacks on U.S. soil.

FEMA has ten regional offices that work to focus on specific geographical areas and their individual needs. The Region IV office covers many of the southeastern states from Florida through Kentucky, including Tennessee (FEMA, 2015a). The natural risks noted for Region IV include hurricanes, tornadoes, flooding, droughts, ice storms, earthquakes, wildfires, and tropical storms (FEMA, 2015c). These noted natural risks are in alignment with those noted in the Nashville risk document created by the OEM as

discussed earlier. Additionally, this region is noted as having an increased risk for manmade disaster due to the locations of nuclear power facilities as well as chemical weapon stockpiles. The nuclear power facilities currently supply 29% of the country's electrical power supply, but the upcoming addition of nine new sites will increase that percentage up to 51% in coming years (FEMA, 2015c).

Along with federal resources, Tennessee has its own state-wide emergency management agency – TEMA. This agency was originally a part of the Office of Civil Defense, created in 1951, but subsequently changed to TEMA in 1984. The change resulted after a propane disaster in Waverly (Tennessee Emergency Management Agency, 2016). Since then, TEMA has coordinated responses for several emergency events, such as tornadoes, windstorms, and flooding, including a 500 passenger stranded train (TEMA, 2016). The state of TN is credited with having a successful emergency management web site and TEMA achieved permanent national accreditation in 2007 for their emergency management programs (TEMA, 2016).

Crisis Emergency Risk Communication (CERC)

In terms of emergency preparedness and response, the CDC has worked to create a comprehensive collection of resources to help educate health professionals in terms of response and communicating with the public (CDC, 2016a). Due to the chaotic environment and time constraints that often present during times of crisis or emergency, leadership must oftentimes accept less than perfect nature of the choices that have to be made so quickly (CDC, 2016a). The CDC created a Crisis & Emergency Risk Communication (CERC) toolkit to assist public health professionals and emergency

management personnel with effective communication in times of emergencies (CDC, 2016a). This education includes a variety of ways to train including in person, via online webinar training, and also through printed and electronic resources. Materials range from basic information to leadership training and also includes specific training geared towards recent epidemics such as Ebola and Panflu. The documentation contained in each of these learning opportunities were a result of lessons learned during former public health emergencies and research that was performed in the field of emergency risk communication (CDC, 2016a).

Community Assessment for Public Health Emergency Response (CASPER)

In times of disaster response, one of the primary concerns is to minimize adverse health effects, damage, and to restore natural order as well as the delivery of services to the public (CDC, 2015a). The CDC created a rapid needs assessment toolkit, titled, Community Assessment for Public Health Emergency Response (CASPER), that is meant to be used by emergency management officials to evaluate an affected community during those times of need (CDC, 2015b). This publicly accessible toolkit can be used to help prioritize actions and evaluate how to best place resources during an emergency situation. This publication was first created in 2009 and is currently published in its second edition in order to account for additional technological advances that have occurred in data analysis since that time frame (CDC, 2015a). The CASPER toolkit can be used at any level from local to federal during a disaster and assists with learning how to perform a statistical analysis in order to best make decisions for the emergency

scenario that is being encountered (CDC, 2015b). The CASPER toolkit mentions four main objectives (CDC, 2015a) that include:

- Assessing the impact and determining critical health needs
- Understanding the population in the affected area
- Producing household-based information, and
- Evaluating the overall effectiveness of the actions taken through performing a follow up review

This toolkit was created in an effort to help a community make emergency planning decisions any time that a potential effect of any emergency scenario is unknown. The toolkit is not meant to provide any sort of services to community residents, but is more of a management tool to better understand areas of risk and opportunity when planning for emergency situations (CDC, 2015a).

Policy Analysis

In health care systems, policy analysis is complicated by the unpredictable environment in which those systems operate. Some forms of policy analysis focus primarily on information that can help to improve decision making (John, 2012). In order to help ensure success in policy implementation, it is important to make the leap between the decision and direction that was chosen for implementation to how it can feasibly happen at the ground level by the people bringing the decision to fruition operationally (John, 2012).

There has been an increasing emphasis on the use of comparative methods in relation to the review of healthcare policy but the studies are often missing results related

to the actual implementation of the health policy itself (Marmor & Wendt, 2012). The comparative studies recently performed on health policy reform have not taken into account the role of the leaders and employees within the health system and their implementation activities on a local level as it relates to government health policy (Marmor & Wendt, 2012).

Analysis of Documenting Lessons Learned in Emergency Preparedness

Learning in many different industries occurs through a lessons-learned approach. In a lessons-learned approach organizations review recent scenarios to determine things that happened precisely and accurately as well as an obstacles encountered that created new and possibly unforeseen challenges. Through documentation of these efforts organizations can work to prepare themselves for similar experiences in the future and can more readily be prepared and anticipate actions and associated reactions necessary for success. In the field of emergency preparedness, the intent of this practice is to improve quality and minimize any avoidable deaths or injuries as well as financial and economic loss as a result of the event (Savoia, Agboola & Biddinger, 2012). The formal documentation of these practices and lessons learned once incorporated into policies, processes or other documentation can serve as a strong comparison of how things have progressed and an organization has adapted to change.

In 2011, the CDC performed an analysis of emergency preparedness response issues. This was one year after Section 5210 of the ACA was implemented. The review focused on three separate areas that included (1) the ability to coordinate and communicate warnings and notifications to the public and emergency responders, (2) the

ability to share information across multiple locations and organizations, and (3) the coordination of operations through a standardized means (Savoia et al., 2012). The results concluded that there were several identified opportunities amongst local organizations along with an ability to create a centralized repository of these documents for government organizations to share amongst each other (Savoia et al., 2012).

Former Attempts at National Healthcare in the United States

National healthcare for the entire population and not just a subset such as the elderly or indigent is new to the U.S., but this is not due to lack of trying in the past to make this a reality. While President Obama is credited with being the first President to accomplish national healthcare in the United States, the foundation for this success was cultivated over many years and due to the actions initiated by several past presidents (Jacobs & Skocpol, 2012). From the implementation of Social Security through President Bill Clinton's terms in office, each contribution played a part in moving the nation one step closer towards the eventual reality of national healthcare (Jacobs & Skocpol, 2012). Without each of these steps along the way over prior decades, national healthcare as it currently presents might not have been brought to fruition in the same manner.

During the Depression Era, President Roosevelt worked to bring Social Security to the American public, and through the New Deal, established committees to create proposals of adding healthcare into the Social Security Act (Hoffman, 2003). It is thought that one of the reasons that this was not a success was because it was not socialized properly amongst the public and the medical community to gain their support

and buy-in from the beginning. The meetings to establish the concept were held privately and therefore were not originally exposed to the opinion of the public and the healthcare community. Once it became public, the early concept of healthcare reform was met with resistance from healthcare providers in the 1930's and the healthcare agenda was ultimately removed from the New Deal.

In the 1940's the push for healthcare reform arose once again during Truman's term in office. During this time, organized labor began to support the concept of national healthcare, which prompted the creation of the Wagner-Murray-Dingell bill (Hoffman, 2003). The intent of this bill was to provide for a national medical insurance program that would be financed and supported through social security taxes. However, this bill was not supported by the healthcare providers, and most particularly opposed by the American Medical Association (AMA) (Hoffman, 2003). It was noted that the anti-bill campaign created by the AMA eventually led to the removal of many of the congressional members that supported the bill and it did not come to fruition.

President Lyndon B. Johnson's term in office brought about the creation of community health centers (CHCs). These CHCs came about in 1965, approved by the Office of Economic Opportunity as an inclusion to the War on Poverty (Adashi, Geiger & Fine, 2010). CHCs are designed to deliver primary medical care to those who cannot afford substantial healthcare insurance. CHCs were included in the ACA, with the increase in additional staffing to help achieve this concept in a more effective and far-reaching manner.

It was also during Johnson's presidency that the topic of Medicare began to gain momentum (Hoffman, 2003). It was during this time that the elderly population began organizing and supporting the concept of national healthcare for the aged. Their support and voices helped to allow for the passage of Medicare becoming part of the Social Security Act in 1965. It is thought that this initiative was successful because the public and most decidedly the individuals affected by the legislation were socialized to the process and initiative and gave their backing to its implementation.

After the inception of Medicare, there was an amount of time where the country had to begin looking at cost containment measures instead of the thought of expanding healthcare coverage. Moving forward to the 1980's the uninsured population began to increase in the U.S., which sparked new interest in healthcare changes for the country. President Clinton was elected to the White House in 1992 and part of his platform was a desire and commitment towards reforming healthcare for the country (Hoffman, 2003). Clinton's healthcare reform bill did not have a large amount of support but had strong opposition, that ultimately led to its inability to gain traction.

Branches of Government in the United States of America

There are three branches of the United States Federal Government – executive, judicial and legislative. Each branch has a separate set of responsibilities and the authority to handle separate items. The government is set up this way in order to ensure separation of powers. The executive branch houses the President and his advisors, along with several other agencies. This branch holds the responsibility of enforcing the laws of the nation. The agencies and organizations that belong in the executive branch include

the White House, the Presidential Cabinet, Federal Agencies and Commissions, USAGov, the Federal Information Center (FIC), and FedWorld (United States House of Representatives, 2015a). The judicial branch includes the U.S. Supreme Court and the Federal Judicial Center. The Federal Judicial Center serves as a research and education agency for the federal court system.

The legislative branch of the federal government includes both the House of Representatives and the Senate. Together these two entities are referred to as Congress. Along with the House of Representatives, the legislative branch includes multiple organizations, such as the U.S. Senate, Office of Compliance, Library of Congress (LOC), Government Printing Office (GPO), Government Accountability Office (GAO), Congressional Budget Office (CBO), Architect of the Capitol (AOC), and the Center for Legislative Archives, National Archives and Records Administration. The legislative branch has the authority to declare war, control taxes, and policies regarding spending, regulate foreign commerce, and makes all laws (United States House of Representatives, 2015a).

The House of Representatives was first created in 1789 and was originally housed in the state of New York. It was temporarily housed in Philadelphia, Pennsylvania for ten years prior to moving to Washington, D.C. The House has worked to pass significant pieces of legislation that ultimately shape this country's way of life for its citizens and the population. The House handled significant items such as funding the Lewis and Clark expedition, abolishing slavery, granting women the right to vote and the Clean Water Act of 1972 (United States House of Representatives, 2015c). The last two

items paved the way for the future of our country, as well as the House itself. The first African-American was elected to the house in 1870 and in 2007, the first female Speaker of the House was elected.

The intent of the House of Representatives is to represent the people and not focus on the needs of each individual state. The number of Representatives for each state is determined by a method called apportionment which aims to ensure that representation from each state is directly proportionate to the population. The total membership number for the House equals 441 members. 435 of those members are comprised of Representatives divided amongst the 50 states and the remaining number includes six non-voting members. These non-voting members represent specific territories including the District of Columbia, Guam, the Virgin Islands, Commonwealth of the Northern Mariana Islands, American Samoa, and the Commonwealth of Puerto Rico (United States House of Representatives, 2015b).

Forms of Congressional Action

Congress receives their work in the form of a proposal via one of the following four methods: a joint resolution, a concurrent resolution, a simple resolution or a bill (United States House of Representatives, 2015d). A joint resolution can come from the Senate or the House of Representatives and is very similar to a bill. A joint resolution requires a two-thirds approval vote by both the House and the Senate. At that point, the joint resolution is sent to the Administrator of General Services for submission to each state for ratification. One difference between a bill and joint resolution is that a joint resolution does not go to the President for approval. A joint resolution that was created in

the House of Representatives begins with the letters “H.J.Res.” (United States House of Representatives, 2015d).

Topics that will affect operations for both the Senate and the House of Representatives are created for review via a concurrent resolution. These proposals are identified by the letters “H.Con.Res.” when originating in the House of Representatives. When both the Senate and the House of Representatives approve a concurrent resolution, it is then signed by the Secretary of the Senate and the Clerk of the house. These items are not sent to the President for Approval. A simple resolution is created when a topic that concerns operations for either the Senate or the House of Representatives on its own needs to be reviewed. These items are identified by the letters “H.Res.” and are not sent to the President for approval (United States House of Representatives, 2015d).

Lastly, a bill is the most commonly used form of proposal. If the bill originates from the House of Representatives, it begins with the letters “H.R.” and then lists a number. These bills are only sent to the President for action when both the Senate and the House of Representatives work through multiple reviews and both areas approve an identical version of the bill.

From a Bill to a Law

In order for a law to come into fruition, someone must first come up with the idea for the law to be made. Once this occurs, a state Representative sponsors a bill and that bill is then sent to the correct congressional committee to be studied. Once that committee reviews the bill, it is then voted on to be passed, rejected or possibly amended. If the bill passes, it then moves to the Senate and follows the same process above. Once

it goes through another committee review and is voted upon, it will need to again pass by a majority in order to move to a conference committee. A conference committee includes House and Senate members that work out any differences between the House and Senate versions of the bill documents. The culmination of those two documents then goes back to the House and the Senate for a final vote and approval. Then the GPO prints the revised bill and the President of the U.S. has ten days to sign or veto the enrolled bill (United States House of Representatives, 2015d).

Sponsor of the House Resolution (H.R.) 3590

H.R.3590 had 29 co-sponsors, and one original sponsor of the bill. Representative Charles B. Rangel was born in 1930 in New York, NY and has been a part of Congress since 1971. Prior to becoming a part of the U.S. House of Representatives, he served in the Army for four years and received his Juris Doctorate in 1960. Rangel practiced law via private practice until becoming an Assistant U.S. Attorney. Following that, Rangel became counsel for the speaker of the New York State Assembly in 1965 and then joined the President's Commission to Revise the Draft Laws in 1966 - 1970 (Library of Congress, 2015). In 1971 he was elected as a Democrat to the 92nd Congress. He has spent his tenure in New York in Districts 13, 15, 16, 18, and 19 and has served from the 92nd congressional house through the 114th and is still actively serving in 2015 (Library of Congress, 2015).

Representative Rangel is registered with the Democratic Party and served on the Committee for Narcotics Abuse and Control until 1993. Next, he then served on the Committee on Ways and Means from 2009-2010. In 2010, Rangel was also the chair for

the Joint Committee on Taxation. He has sponsored or co-sponsored over 12,000 pieces of legislation during his tenure. The first bill he co-sponsored was in 1973 – H.R.920, a bill to prevent the use of heroin for in any drug maintenance program (Library of Congress, 2014). The first bill that Rangel sponsored was also in 1973 – H.R.3689, the Economic Opportunity Compliance Act.

From 1973-1974 Rangel sponsored many additional bills that range from treatment of prisoners, drug dependency, and substance abuse programs, registration rights, coverage rights for officers and employees of the federal government, food price stabilization, elderly transportation, housing acts, relocation relief, grand jury reform and lead-based poisoning acts. In the 80's Rangel sponsored additional legislation including veteran's assistance, low income housing credits, assault weapon export control, Hurricane Hugo relief, mental health, war on drugs, and nutritional labeling of foods.

Entering into the 1990s, Rangel went on to sponsor legislation that covered topics such as equality in education, discrimination in social clubs, duty-free tourist allowance, narcotics control, assault weapon export control, minority bank preservation, National Law Enforcement Memorial Day, Medicare mental health coverage expansion, trade with Cuba, preservation of Social Security, and minority rights and achievement acknowledgement (Library of Congress, 2015).

At the turn of the century, Rangel sponsored legislation that improved and protected Medicare, Medicaid and State Children's Health Insurance Plan (SCHIP) benefits. SCHIP is a program ran under the DHHS that provides financial relief to states for health insurance to families with children. Additionally, he sponsored tax reduction

acts, cooperative housing, elderly nutrition, ex-offender voting rights, working family tax credits, and emergency unemployment compensation acts. In 2009, Rangel first presented H.R.3590 – Patient Protection and Affordable Care Act.

Committee on Ways and Means

The Committee on Ways and Means is the oldest committee of Congress and serves as the primary tax writing committee for the House of Representatives. The committee was first established in 1789 but was dissolved after a few months. The committee was recreated in 1795 and became a permanent standing committee in 1802 (Committee on Ways and Means, 2015). The committee handles many different areas and has jurisdiction over revenue and any related issues such as trade agreements, debt, tariffs, Social Security, Medicare, and social services programs. The Committee on Ways and Means is comprised of multiple subcommittees, such as Health, Human Resources, Oversight, Select Revenue Measures, Social Security, and Trade.

H.R.3590 and H.R.4872

H.R.3590 passed the House of Representative vote in October of 2009 and then passed the Senate vote in December of 2009. In March of 2010, the new document with resolved differences was created and the bill became Public Law No. 111-148 on March 23, 2010 (Library of Congress, 2014a). This piece of legislation underwent 506 separate amendments to the original documentation at the time of this review (Library of Congress, 2014a).

H.R.4872 makes several changes to H.R.3590 and passed the Senate vote in March of 2010. H.R.4872 is also known as the Health Care and Education

Reconciliation Act of 2010. The summary of this piece of legislation includes health-care related financing changes to the ACA as presented in H.R.3590 (Library of Congress, 2014b). H.R.4872 makes revisions to the penalties that will be infringed upon individuals who choose not to purchase health care coverage. The bill also makes revisions to the penalties associated with employers that choose not to offer coverage to employees as a result of requirements within the ACA. H.R.4872 in conjunction with H.R.3590 are commonly referred to as ACA. The ACA addresses ten separate topics, each identified as a specific title as noted below:

- Title I – Quality, Affordable Health Care for All Americans
- Title II – The Role of Public Programs
- Title III – Improving the Quality and Efficiency of Health Care
- Title IV – Preventing Chronic Disease and Improving Public Health
- Title V – Health Care Workforce
- Title VI – Transparency and Program Integrity
- Title VII – Improving Access to Innovative Medical Therapies
- Title VIII – Community Living Assistance Services and Supports
- Title IX – Revenue Provisions

Title V Health Care Workforce

Title V of the ACA, titled Health Care Workforce, serves multiple purposes related to the health care workforce in the U.S. This section includes information related to funding of scholarships and loan repayment programs that were created to assist low income students with going to school and obtaining a degree for health care related

professions. This section of the act also serves to fund and expand community health care centers as well as support and expand the healthcare workforce. The ACA accomplishes this expansion through creating additional jobs, granting individual state power to recruit healthcare workers, and assisting with financing for school for health related professions. Title V of the ACA encompasses sections 5001 through 5701, including Section 5210.

Section 5210: Commissioned Corps and Regular and Ready Reserve Corps

Section 5210 of the ACA establishes funding and the creation of the Commissioned Corps and RRRC. The RRRC is a new facet of the Commissioned Corps of the U.S. Public Health Service. The RRRC was created in an effort to assist the Commissioned Corps when needed to assist with both routine and emergency public health issues (HHS, 2010). The RRRC is meant to operate in a similar fashion when compared to how the military reserves cooperate in conjunction with active duty military.

Summary

A review of the literature suggested that due to the sheer complexity associated with health systems, it would be appropriate to approach the study through a CAS lens and RCT, combined under the IAD conceptual framework. In addition to this, as a result of the complexities associated with healthcare systems there appeared to be a gap related to understanding obstacles or challenges encountered at a local level for healthcare entities as a result of national healthcare legislation changes. This study can help to fill part of this gap by analyzing Section 5210 of the ACA as it relates to emergency preparedness. Through qualitative interviews with healthcare administrators analyzed

through a CAS approach, I hoped to extend knowledge in the discipline related to this topic.

Chapter 3: Research Method

Introduction

My goal with this study was to gain an understanding of the obstacles that have been encountered by one local healthcare entity related to emergency preparedness in conjunction with Section 5210 of the ACA. Chapter 1 discussed the background of the current problem related to this study. Chapter 2 provided supporting literature to provide the foundation of the topic in its current state, along with a history of attempts at national healthcare in the United States. The purpose of the study was to document and understand, via interviews with hospital emergency coordinators, any revisions to actions or preparation while implementing healthcare legislation at the local level as it relates to Section 5210 of the ACA and emergency preparedness. In this chapter, I explain the research design, methodology, and rationale for research. Additional topics discussed in this chapter include my role as the researcher along with the plan for data collection and analysis.

Research Design and Rationale

Learning about the challenges of EPPM at the local level can determine if any changes may have occurred as a result of Section 5210 of the ACA within each participating hospital. Understanding the how the observed outcomes, such as challenges due to procedural or process changes, compare to the policy implementation objectives can help to evaluate any potential differences or gaps in the proposed intent of the legislation to the execution at the local level. Reviewing at the local level as

communicated via interviews helps to better understand if federal legislation Section 5210 of the ACA was a necessary enhancement to help meet the needs of this one community.

The purpose of this study was to identify how health policy implementation has impacted preparation and execution of emergency preparedness. Specifically, I investigated EPPM in relation to Section 5210 of the ACA. The primary research question is what the perceptions of hospital emergency coordinators are as to the obstacles that have occurred at the local level in relation to emergency preparedness. The evaluation of emergency management and preparedness can show any changes to hospital policies or procedures and determine differences in staffing, how an organization handles an emergency, and what steps the organization took to accommodate the legislation at a local level.

An additional question that was answered is how the Section 5210 of ACA affects the needs of this community. The absence of any affect shows several things. It either shows that this piece of legislation did not meet the needs of this community, or it can mean that this community may not have made any substantial changes to accommodate the legislation. Evaluating these outcomes can help to show what effect the legislation has at a more granular level. Challenges and obstacles are not always documented within policies and procedures; oftentimes, what is seen is the finished product, not the work behind the changes. I documented this effort is by capturing the behind the scenes efforts as communicated from hospital emergency coordinators that are responsible for the overall success of the implementation and execution of EPPM.

There are many designs for qualitative studies. For the purpose of this study, I considered the five traditional approaches as noted by Creswell (date). These five approaches include: ethnography, grounded theory, narrative, phenomenological research, or case study (Creswell, 2009).

Researchers who use the ethnographic approach seek to give a voice to a group of people through observing behavior (Fetterman, 2010). Chavannes and Tibensky documented ethnological theory in the 1700's (Vermuelen, 1995). An example of ethnography is research that demonstrates the concerns of policy makers in terms of public policy decision making (Fetterman, 2014). In instances such as this, an ethnographic approach sheds light on a particular culture or group. Researchers use the ethnographic approach to describe or interpret information related to a particular culture (Creswell, 2013). The study did not focus on the culture of healthcare emergency responders, but sought to understand what challenges have occurred in general, not necessarily focused on the specific individual group of people performing the resulted actions. These parameters suggested that an ethnological research approach would not best suit the needs of this study.

Glaser and Strauss's (1988) grounded theory was created out of what they noted as a necessity to expand upon theories from the past that did not quite cover every sociological scenario. Grounded theorists take the information that they receive and draw new theories or concepts from the data itself (Karmaz, 2014). Researchers use grounded theory to develop a theory based on data that are collected from the field. This approach is not limited to personal observation, but can also pertain to literature reviews or

document analysis (Wolfswinkel, Furtmueller, & Wilderom, 2013). Researchers have used grounded theory to study healthcare. For example, this approach was used in a recent study of families caring for children with middle ear disease, and allowed for an approach that did not require the study and results to fit into an existing framework (Wuest, 2012). I did not seek to develop a new theory in this study; rather, I attempted to chronicle any impact or change as a result of the implementation of Section 5210 of the ACA. Grounded theory was therefore not the best choice for this study.

Researchers use the narrative design when chronicling or exploring the life of an individual (Creswell, 2013) and is based on John Dewey's theory of experience (Clandinin & Caine, 2008). In 2014, a group of researchers performed narrative research to analyze 60 different healthcare conditions in order to establish a set of quality standards for patient care by the National Institute for Health and Care Excellence (NICE) (Ziebland, et al., 2014). Studies of this nature can take a significant amount of time to conduct, as researchers must chronicle each person's experience. The study just mentioned comprised ten years' worth of data collection to come to the conclusion of eight important aspects of patient care (Ziebland et al., 2014). I did not intend for this study to focus on a particular individual or individuals and was not intended to chronicle personal experiences, but to communicate challenges and obstacles associated with healthcare legislative changes for small healthcare entities.

Husserl first developed phenomenology in the early 20th century (Carr, 1970). Husserl's philosophical approach was concerned primarily with the inner driving force or essence of a particular person (Carr, 1970). Researchers collect data for phenomenology

through interviews, document analysis, and observations. Phenomenology can be used in analysis of healthcare processes and events, such as the study utilizing Moustakas' methodology performed to chronicle nurses completing an emergency department orientation (Scott, 2014). Another recent phenomenological study on the topic of healthcare combined this design along with the chaos theory to examine the experience of caring for children who die unexpectedly (Meyer, 2014). The intent of this study was to provide a detailed analysis of the actions and impacts of the event rather than the essence of personal experience; therefore, phenomenology did not appear to be the best approach.

I chose the case study method for this study. Researchers use case studies to develop in-depth analysis and description of a particular case or event and includes analysis in conjunction with reviews from document analysis (Creswell, 2013). Case studies are the preferred method when asking *how* or *why* research questions, as well as when the researcher plans to review something where they will lack control over the behaviors or events (Yin, 2014). Researchers use multiple sources for information in case studies, such as interviews, documents, and policy and procedure data. This study qualifies for case study research design. Analysis included interview responses from the six participants that volunteered for the study. I collected and reviewed data for commonalities and differences based on interview responses.

Role of the Researcher

The role of the researcher was to review, analyze, and document similarities and differences between interview responses as they related to emergency preparedness and Section 5210 at the local level. During the interviews, I worked as an observer as well as

the instrument that documented the experiences of the interviewees as communicated during the data collection process. I did not have any personal or professional relationships with individuals in the study, and any possible professional affiliation was limited. As these individuals are Emergency Coordinators, there was no conflict in terms of subordinate relationships within the workplace. While I am employed in the field of healthcare, there were no personal or professional relationships with any individuals in the study.

Because of my experience in this field, I have knowledge regarding policies, procedures, documentation, and analysis of healthcare legislation and operations. In my current role as a national director of payment compliance, I analyze new and existing healthcare legislation and create policies and procedures to help operationalize these changes within multiple departments in the organization where I am employed. In order to prevent any bias in this capacity, I limited the study to individual hospitals at a local level, and refrained from discussion at a larger organization level when dealing with hospital chains / systems. My experience was limited to the back office processes that occur once a patient has been discharged from the hospital, rather than when they are actively being treated. This knowledge was not particularly relevant to this course of study, which focuses on preparation for front line EPPM. The analysis of the documentation and interview responses did not include opinion related to what is considered a best practice nor suggest additional changes to any existing documentation based on personal experience.

I have been in the healthcare industry for over 20 years and worked in the capacity of patient care as well as administrative positions. I have also worked as a volunteer, as well as a paid capacity. I am a former volunteer firefighter – emergency medical technician (EMT) and have also worked in the capacity of an EMT for multiple organizations in varying departments from 1994-2002. However, this experience was from 14 years ago and healthcare is an ever-changing industry. Any knowledge of emergency preparedness that I gained during that time frame would be outdated in the current state of patient care. During the study, I ensured that my focus remained on the impact related to the local organization and did not show preference toward a particular process or organization in general.

Research Methodology

I chose a qualitative methodology for this study. Maxwell (2013) asserted that qualitative analysis can be beneficial in several scenarios, particularly when one wants to better understand events or specific situations. This study focused on the obstacles encountered at the local level related to ACA and emergency preparedness as perceived by local hospital emergency coordinators. I examined these obstacles from several different angles and theoretical lenses.

Qualitative methodology is also an appropriate methodology to utilize when reviewing non-linear information (Marshall & Rossman, 2014). Healthcare and emergency preparedness, as identified in Chapter 2, fits this criterion. Additionally, qualitative analysis is utilized when trying to determine the order that certain actions or events take place (Maxwell, 2013). The research encompassed a case study that recaps

actions and results from the implementation of one health care legislation, that also fits the aforementioned scenario.

Qualitative analysis is also used when a researcher would like to be able to contribute to policy analysis and community impacts through reviewing documents and understanding the meaning behind the writing (Patton, 2015). This study included the possibility of document analysis in hopes of gaining additional facts regarding the process and possible gaps in the system.

In this study healthcare emergency coordinators were interviewed in their place of employment, capturing the essence of the natural setting where local policy implementation occurs. Quality assurance and policy evaluation are components of running and improving upon the operations of a business. The impact of policy implementation is not always as the policy makers intended it to be (Cochran et al., 2015). This can also apply to the ever-changing healthcare environment.

Participants consisted of hospital emergency coordinators involved in emergency preparedness within the TN Highland Rim Region. The possible pool from where hospitals were chosen for this study is located in Appendix B. I engaged leadership within the THA and the Tennessee HCC to ask for their assistance in reaching out to the hospitals on a larger scale for this research study. This geographical location was chosen due to the existence of large and small venues, as well as its high visibility and tourism factor. Tourism destinations can be vulnerable to crisis or disaster and it is important to be able to provide a safe environment for visitors (Speakman & Sharpley, 2012).

Employee from each individual hospital work together in some facet during emergency preparedness and response and each administrator will have knowledge of EPPM for the geographical area under review. Each organization has some consideration related to budgeting, planning or execution of emergency care activities in the event of a large-scale phenomenon. Additionally, the participants should have long enough tenure in the healthcare system that they could describe practices or procedures prior to and after the implementation of 5210 of the ACA.

I reached out to the designated contacts at both the THA and HCC asking for information related to contacting each member hospital to gauge interest in participating in the study. Each hospital might have their own IRB process instead of being able to work solely through THA or the HCC for that piece of the study. While obtaining and working through this information, I remained open to reaching out to additional affected entities if necessary, including additional healthcare providers or any unusual partners in the emergency preparedness process. In light of the differences between rural and urban hospital communities, I wanted to be able to perform a sample that included both rural hospitals and urban hospitals. Saturation occurred when I interviewed all interested volunteers from the potential hospitals listed in Appendix B.

This central concept of this study was intended to further the understanding of EPPM at the local level in terms of federal legislation and implementation. The phenomenon of interest was the challenges or obstacles that are involved in EPPM at an individual hospital level as it relates to IAD. As a result, each of the four characteristics of IAD framework were listed as a primary code: inputs, outcomes, evaluation, feedback,

and action situations. When analyzing responses from the interviews, I looked for recurrent themes in relation to responses within each of the questions, as well as coded for RCT, CAS, and IAD as noted in the preliminary coding framework, located in Appendix F.

Instrumentation utilized in data collection included the use of a digital recorder during the interview process. I also provided the option to perform telephonic interviews or interviews via Skype in order to best suit the schedules of the participants. While in person and telephonic interviews were used, Skype and Survey Monkey were not chosen as options by any of the participants and thus did not require any additional set up or preparations on my part to accommodate those choices. Interview questions were open ended and created by me. Since the questions were not based on an already existing set of interview questions, I first needed to conduct a pilot study. I performed the pilot study with one of the two regional coordinators that oversee the TN Highland Rim Region. These two individuals have intimate knowledge of the emergency preparedness resources available within the region and were able to answer all questions, as well as provide feedback related to feasibility of the chosen questions. I designed the interview question set to respond to the overarching research question and theoretical framework chosen for this study.

Interviews with hospital emergency coordinators were a reliable source of documentation as these individuals can provide first-hand accounts of any obstacles or challenges that have been encountered in terms of emergency preparedness for their local community. I used Atlas.ti software to look for patterns within coding that was applied

to each document. I also used Atlast.ti when reviewing for similarities and differences within each document.

The following procedures served as the sequential guide for the selection of participants, explanation of procedures, collection and analysis of information, and validation of the subsequent findings. Procedures were broken out into four phases: the pre-study phase, recruitment phase, study phase, and the post-study phase.

During the pre-study phase, I initiated contact with contacts at the THA and the HCC via email. I first reached out to the contact provided on their web site for the applicable geographical district and asked for a contact number to further discuss the study. Since only an email address was provided as a measure of contact, I decided to follow up within one week in the absence of a response. Next, I discussed the study with THA and HCC contacts to gauge interest in becoming a community partner to provide introductions to hospital contacts for the voluntary participant pool. I met on site with the two regional coordinators for the HCC in order to gain agreement to partner with me for research purposes. Next, I obtained a Letter of Cooperation from the HCC (Appendix G) in order to move forward with the Walden IRB process.

After obtaining a Letter of Cooperation (Appendix G), I completed the Walden IRB Process. Next, I conducted the pilot study and presented at an upcoming healthcare coalition meeting to engage possible participants. These monthly meetings include hospital emergency coordinators within the TN Highland Rim Region. At this point in the process, information related to the study, as well as the informed consent document was sent to the hospital Emergency Coordinators to gauge interest in participating

(Appendix C). I compiled responses from these individuals for two weeks, following up at the one-week point with any potential participants that had not responded (Appendix D). Over the next few weeks after this step, I obtained and completed any necessary IRB documentation for each healthcare facility that was interested in participating in the study. Once hospital IRB approvals were completed (if necessary), I scheduled interviews with each participant, taking into account the method of interview contact noted in order of preference (in person, via Skype, telephonically or via Survey Monkey as a last resort).

The study phase began with the first interview. During each interview, the participants all received a copy of the letter describing the proposed study and also signed the Informed Consent document if it was not returned prior to the interview. Within one week after the end of each interview, participants were given a copy of the transcribed interview for final validation of the responses. Participants were given one week to respond back with a confirmation of the transcription, or any changes that they were requesting to the transcription. In the absence of a response, at the one-week mark, it was assumed that the initial transcript was complete and ready for codification.

I began the interview process by thanking the participants for agreeing to meet with me. I reminded each participant that the discussion would last approximately 90 minutes and reiterated that each participant could choose not to answer any question. Participants could also choose to skip a question and come back to it later in the interview. For purposes of confidentiality, I reassured each participant that while THA and the HCC will receive an executive summary of the final results, they would not have any knowledge of

who agreed to participate in this process. I confirmed that they did not have any outstanding questions about the process before we began.

I began the interview portion with a few opener questions that were intended to obtain a background related to each participant's experience level. I then asked several questions related to their hospital. Each participant was asked how long they have been employed in the healthcare industry, how long they have been in their current position, and their primary responsibilities in their current role. In relation to each specific hospital, I asked each participant to confirm whether or not their hospital has an off-site emergency room and how far away that it is located from the main hospital, if applicable. The opener questions ended with each participant being asked if there were any unique circumstances related to their hospital that needed to be taken into consideration for today's interview.

Since there was one research question in this study, all questions were related to the perceptions of each hospital Emergency Coordinator related to the obstacles that have occurred at the local level in relation to emergency preparedness, along with any obstacles encountered as a result of Section 5210 of the ACA. The interview protocol is listed in Appendix E and includes the interview questions being discussed in the next few paragraphs. The interview opened with the participant being asked to provide their opinion of what the most important objectives are in relation to emergency management. Next, I asked what the main considerations that are taken into account in relation to emergency planning and/or preparedness for their specific hospital.

Next, I asked the participants to discuss how the ACA impacted EPPM at their hospital. In this question, I specifically indicated that I was looking for responses other

than those related to the insurance exchange. This question included two additional sub-questions, related to the effects of RRRC in terms of emergency planning and implementation of Section 5210 at the local level. Question number four included discussion related to challenges with implementing EPPM along with three additional sub-questions related to relationships, obstacles, and documentation tying back to the implementation process. Question number five discussed how turnover in hospital staff affects emergency preparedness and question number six aimed to learn how turnover in EMS staff may affect the same. Question number seven discussed the role patient satisfaction and experiences plays in EPPM and question number eight discussed the largest threats to the success of EPPM. Question number nine covered the local resources that are available and question ten followed up with how a hospital would ask for those additional local resources. Question number 11 asked how immediate decisions are made during an emergency or disaster, particularly when there is no documentation that covers the scenario and question number 12 asked how success is measured after an emergency event occurs. The last question asked how hospital leadership goes about making decisions to change any future processes after an emergency event or disaster occurs.

At the close of the interview, I asked each participant if there is anything else that they would like to share before we adjourn for the day. This provided another opportunity for the participant to include any information that I may not have covered in the interview, yet they felt was important to the research study. I thanked each

participant for their time and I reaffirmed that they would receive a copy of the transcript for their review in case there was anything that they would like to add, revise or clarify.

During the post-study phase, digital recordings were converted into electronic transcript so that the data could be analyzed via qualitative analytical software. Participants received a transcript within one week of the interview. I asked each Participant to respond back with a confirmation or any necessary changes within one week of receipt of the transcribed document. All participants responded and I did not finalize results and upload into the system until a response was received. Next, I coded and analyzed the data utilizing qualitative methods through a CAS, RCT and IAD theoretical lens through the use of Atlas.ti software. The preliminary coding for this step is discussed in more detail below and is also noted in Appendix F. I coded each interview using a continuous iterative process instead of waiting until all interviews were completed. If a pattern emerged, or a new code was uncovered, I re-coded for the identified pattern in the prior interviews. Steps were taken to validate data, and did not include needing additional assistance from another individual.

Data collection included interviews with hospital emergency coordinators from each organization noted in Appendix B as they related to EPPM. Data were also collected through analysis of any health system documentation, if provided during interviews. The purpose of this analysis was to gain a foundational understanding of the culture and governance of the organization, as well as the challenges and obstacles that were encountered in policy implementation related to emergency preparedness. Interviews were conducted solely by me and lasted approximately 90 minutes, dependent upon

length of responses from the participants. Data were digitally recorded during each interview session.

Analyzing data in research is intended to help provide documentation to support the findings within the study. Compared to the more structured approach in quantitative analysis, qualitative case study research requires significant input from the researcher, based on their own thoughts and consideration of the data that is presented (Yin, 2014). In order to effectively execute a qualitative case study, Yin (2014) asserted that since case study analysis is underdeveloped in nature, it is recommended to enter the research with a preliminary coding approach in mind. This approach helps to alleviate any potential delays with analysis of the data.

Data were analyzed utilizing the Moustakas' modified van Kaam method (1994). This method included eight steps that help to discover meaning in the responses supplied by each participant. Moustaka's modified Van Kaam method was derived in response to qualitative phenomenological research (1994), but it was suited for this study as well. Steps five and six only required construct for me, as there were not any co-researchers in this study. The eight steps included in this method were as follows:

1. Listing and Preliminary Grouping (Horizonalization)
2. Reduction and Elimination
3. Clustering and Thematizing
4. Final Identification of Invariant
5. Creating Individual Texture Description
6. Creating Individual Structural Description

7. Creating Textural Structural Description
8. Composite Description of Meaning

Utilizing this method, I took the transcription from each interview and analyzed the data from one step to the next. This analysis included coding based on expressions that were relevant to the topic and experience being shared. Expressions or codes noted that did not fit the topic or experience were removed based on responses that were received. Items were clustered to create the core themes of the study, along with the final development of a group composite that represented the entire group of the participants (Moustakas, 1994).

Interview documentation was reviewed to determine the overarching theme that the information was communicating based on the responses that were received. This included a comparative review for similar statements and themes within the responses and how they related to IAD, RCT, and/or CAS. A pattern was identified when a response or data appeared more than once and could be characterized by similarity, difference, frequency, sequence, correspondence or causation (Saldaña, 2016). I performed analysis of the results by uploading the data into Atlas.ti, a qualitative data analysis software. This robust program allowed for analysis of multiple forms of documentation, as well as comparative functionality for multiple documents at once (Atlas.ti, 2015). This program was purchased under student license for two years to assist with analysis of the collected data for this research study. Results were communicated through reports, charts, and tables as themes were identified.

Analysis of qualitative data includes the use of coding (MacLure, 2013). In qualitative research, a code is represented by a specific word or short phrase and the data can be interviews, documents, surveys, observations, or other similar items (Saldaña, 2016). The coding strategy included a review for patterns, recurring themes, and categories. Preliminary coding framework included the review for challenges and obstacles encountered with emergency preparedness at the local level. The primary coding was in relation to the topic being discussed and included the ACA and/or EPPM. Interview questions 3, 3a, and 3b related to ACA and interview questions 1, 2, 4, 4a, 4b, 4c, 5, 6, 7, 8, 9, 10, 11, 12, and 13 related to EPPM. The secondary coding related to the theoretical framework that included RCT, CAS, and IAD. Interview questions 2, 4a, 8, 9, 10, and 11 related to RCT, questions 1, 2, 3, 3a, 3b, 4, 4a, 4b, 4c, 5, 6, 7, 8, 9, 10, 11, 12, and 13 related to CAS, and all questions related to IAD. The tertiary coding related to recurrent themes within the responses and outcomes from each question. Preliminary coding framework was noted in Appendix F.

Each question was reviewed to determine what characteristic of IAD was most prominent within the content. Each question was then assigned a primary IAD characteristic code based on one of those four characteristics: inputs, action situation, outcomes, and evaluation and feedback. Within each question, a secondary question code was assigned based on the topic within the question itself. These codes were reviewed for patterns and themes across the entire participant pool based on responses given during the interviews. The primary coding helped to differentiate if the question relates to EPPM and/or ACA. The secondary coding related to the theoretical framework

and helped to connect each question to RCT, CAS, and IAD. The tertiary coding was based on recurrent themes within the responses from each participant.

The researcher began analysis by reading through each piece of transcribed or uploaded documentation and making notes associated with any information of note. These notes helped to determine the topics and labels that were utilized in the coding process. Every document was reviewed two separate times to review the initial assessment for any possible oversights or inconsistencies. The technique of qualitative research is non-linear in nature and can require multiple looping and revising of steps or coding (Richards, 2014). Coding is cyclical in nature and rarely complete during the first attempt (Saldaña, 2016). This piece of the review uncovers particular patterns that can be associated with coding categories. I remained open to revising and building upon the initial coding framework based upon my findings.

Issues of Trustworthiness

Credibility of the study and its findings are reliant upon creation of appropriate strategies as identified by the researcher. Credibility not only applies to the documentation and test results but also to the researcher. The researcher was the primary instrument in the study and analyzed and communicated the findings. As previously noted I have prior and current experience in the healthcare field and needed to minimize any bias and risk associated with the inadvertent application of personal and professional knowledge to the study.

Qualitative findings should be reproducible by another competent researcher; in the absence of the ability to fully reproduce a study in its entirety, reproducibility can be

considered a minimum standard (Peng, 2012). This was accomplished by re-reviewing results and locating source documentation that led to the codification. I was the only coder during this process, so reliability based on multiple coders was not applicable in this study. As previously discussed in Chapter 1, transferability of the data can possibly be utilized to explore additional implementation activities for future healthcare legislation, but should also be able to utilized for another similar review of a healthcare system.

As a part of ensuring that procedures are handled in an ethical manner, each organization within this study, as well as each individual participant was free to choose whether or not to participate in the data collection process. There was no known risk of harm associated with the participation in this study. Each organization was queried for any IRB process documentation and individual participants were supplied informed consent after being given a clear description of their role in the study. Each participant completed a consent form and confidentiality was protected for all aspects of the study. Any files, written or electronic associated with the research and analysis were maintained in a locked cabinet in my home office.

Only those with a strict need to know were granted access to the data obtained. Other individuals with a need to know could include those employees of Walden University that take an active role in the dissertation process. All identifying information was removed from all documentation prior to validating data. In addition to these measures, IRB approval for both the university and each healthcare entity (if necessary) was obtained prior to collecting and analyzing data.

When applicable, physical data were stored under lock and key in my home office to maintain confidentiality. Electronic documents and data were stored on my personal lap top and is password protected. Digital data were downloaded to my personal computer and stored under password protection. All confidential or proprietary documentation will be destroyed once the established retention period has expired.

All data were clearly labeled and included what entity the information applies to and if it was publicly accessible or privately supplied via request. Clear identification of these items also assisted with ensuring that private information was not accidentally left out in the open and helped to minimize any accidental confusion of entities in the event that documentation was not already labeled with the entity's name.

Summary

A qualitative case study approach was taken to collect and analyze the documentation that was utilized in this research. Bias was minimized to the fullest extent possible through self-awareness and by limiting comparative analysis within each organization itself. Data were collected and stored in an ethical manner that met the requirements of Walden University's specifications. Analysis and coding of information remained within the confines of a qualitative methodology. I remained open to any necessary changes while moving forward with the study, such as the possibility of accepting additional documents during interviews to assist with capturing the essence of the experience being communicated by the participant.

Chapter 4: Results

Introduction

In this chapter, I will present that data that were collected and the results of this study. The purpose of the study was to understand the effects that Section 5210 of the ACA has on healthcare systems, specifically in relation to EPPM.

This study sought to answer this research question: What are the perceptions of hospital emergency coordinators as to the obstacles that have occurred at the local level in relation to emergency preparedness including those as a result of Section 5210 of the ACA? The first section of this chapter provides information related to the pilot study that I performed to validate the interview protocol that I developed for this study. Next, the chapter moves into the setting at the time of the study, the participant demographics and characteristics relevant to the study and the data collection and analysis, including evidence of trustworthiness. The next part presents the results of the study and how they relate to the central research question. The chapter concludes with the summary.

Pilot Study

I received Walden University IRB approval to begin conducting the research for this study on June 17, 2016. The approval number for this study is 06-17-16-0362984. The pilot study where I interviewed one of the regional emergency coordinators for the TN Highland Rim Region using the proposed interview protocol was performed on June 30, 2016. The pilot study took place in the regional emergency coordinator's office. During the pilot study, I determined that one question needed to be altered and a small

change had to be made to the interview protocol. When asking questions out loud, I determined that question four was a copy of question number 3b. Due to this development, it was necessary to submit a change of research procedure to Walden's IRB for additional review and approval. The question wording was changed from, "What have been the greatest challenges you face in implementing RRRC?" to "What have been the greatest challenges you face in emergency planning/preparedness?"

Performing the pilot study allowed me to determine necessary revisions and allowed me the opportunity to practice the full process of transcription and coding of the data. The pilot study was not included in the final results of the study. I learned a great deal from interviewing the participant in the pilot study. The volunteer for the pilot study qualified as a possible volunteer for the actual study. However, their responses could not be used in the final results as I did not receive consent prior to the pilot study. This lowered the amount of total responses by one for the study. This person's responses were included in the executive summary provided to THA and the HCC, but I did not use them as part of the data of this study.

Setting and Demographics

I presented the proposed research to hospital administrators and emergency coordinators within the Tennessee Highland Rim Region at a HCC meeting on July 21, 2016. A few days prior to the meeting, the HCC regional coordinators sent my contact information via email to these potential participants to invite them to participate in the study (Appendix C). The regional emergency coordinators at the HCC sent emails

regarding this study to qualified individuals at all 22 hospitals that met the criteria for the study (hospitals within the Tennessee Highland Rim Region that have an ER). One participant volunteered prior to the presentation on July 21, 2016, reaching out from the initial email sent from the healthcare coalition. Two more participants contacted me after the presentation. Two weeks into the process, I asked the coalition to send the follow up email (Appendix D) to potential participants. This last communication resulted in the addition of three participants.

At the time of this study, there were several events related to EPPM at local and national levels that may have influenced participants and their experience. Beginning in mid-June of 2016, a series of events across the U.S. and also overseas were in the news and sparked questions related to EPPM.

On June 12, 2016, the largest mass shooting in U.S. history occurred at Pulse nightclub in Orlando, Florida (Ellis, Fantz, Karimi, & McLaughlin, 2016). Omar Mateen, a 29 year-old, entered Pulse and opened fire on the crowd. He killed 49 people, wounded 53 others, and kept the remaining nightclub patrons hostage for approximately three hours until the police were able to neutralize the situation (Ellis, et al. 2016). As they were evacuated from Pulse, victims of the shooting were taken to the Orlando Regional Medical Center hospital. Over 40 patients were taken to the hospital within three hours of the initial shooting (Stapleton & Ellis, 2016).

This shooting was the largest mass casualty incident in the U.S. since the September 11, 2001 terrorist attacks. The Pulse shooting brought EPPM to the forefront

of healthcare operations, but also affected the Tennessee Highland Rim Region operations, even though they are located several states away.

The annual Nashville Pride Celebration was on June 24, 2016. Since the Orlando attack targeted a specific population (specifically homosexual men), the Nashville Pride Celebration prompted an increase in security measures since a similar population was expected to attend the festivities (Tamburin, 2016). Nashville also had a vigil that was hosted by the mayor in Public Square Park, to remember the victims of the Orlando shooting (Tamburin, 2016).

After the Pulse shooting, a health emergency emerged in Tennessee. As of June 22, 2016, there were seven reported cases of the Zika virus in the state of Tennessee (Tennessee Department of Health, 2016). The Zika virus spreads through mosquito bites, sexual transmission, or from a mother to her unborn child (CDC, 2016b). The virus was first found in Uganda in the 1940's (CDC, 2015b), and while the virus can be mild for most people, there can be serious consequences for pregnant women and newborn children (Tennessee Department of Health, 2016). At the time of this study, there was no vaccine for Zika virus and it had been found that the virus causes microcephaly in newborns (CDC, 2016b). On June 28, 2016, the Metro Public Health Department (MPHD) of Davidson County, TN confirmed its first case of the Zika virus in a human in the city of Nashville (Metro-Government of Nashville & Davidson County, Tennessee, 2016a).

Both the mass shooting at Pulse and the Zika virus were new and significant events that relate to EPPM. Due to these current events, it is possible that one or both of

these events caused concern within the geographical region of this study. Thus, responses from each volunteer may have been affected as a result of these events.

There were several large gatherings in the Tennessee region during the summer of 2016. Events included the Country Music Association (CMA) Fest, Nashville PRIDE festival, Jazz & Blues Festival, the Cumberland River Catfish Festival, REEL Recovery Film Festival, and the Music City 4th of July celebration (FindFestival, 2016). The Music City 4th of July celebration was expected to have the largest crowd ever in its history, estimated at 250,000, and prompted changes to police protocol and additional security measures (Steimer, 2016). In addition to normal police, EMS and hospital operations, these festivities increase the population in the region and therefore possibly change the EPPM protocols that would be followed in the event of an incident.

On July 5, 2016, news of Baton Rouge police fatally shooting an African American man, Alton Sterling, made national headlines. The fatal shooting of Sterling while being tackled by two officers was captured on video and prompted a civil rights investigation by the Justice Department (Fausset, Perez-Pena & Robertson, 2016). The next day, on July 6, 2016, an additional video was captured of a police officer fatally shooting another African American man, Philando Castile, during a minor traffic violation stop in Minneapolis, Minnesota (Flores & Shoichet, 2016). The shootings reopened past discussions related to racial profiling and excessive use of force by the police.

The day after the Philando Castile shooting, on July 7, 2016, during a *Black Lives Matter* protest in Dallas, TX, a lone shooter opened fire and killed five Dallas police

officers (Fernandez, Perez-Pena, & Bromwich, 2016). The shooter was killed by an explosive device that was delivered by a police remote controlled robot at the scene of what was intended to be a peaceful protest against police brutality (Fernandez, et al., 2016). It was determined that five police officers were killed, seven police officers were wounded, and two civilians were wounded. The shooter had stated that he intended to kill as many white police officers as he could during the protest (Fernandez, Perez-Pena, & Bromwich, 2016). This event triggered arguments between *Black Lives Matter* and the *All Lives Matter* movement, that are still continuing at the time of this writing.

On the morning of Sunday, July 17 2016, a man opened fire on police officers in Baton Rouge, Louisiana, killing three police officers and wounding three more before he was killed. The police officers were taken to a nearby trauma center for treatment while additional police officers stood outside to provide additional security (Carrero, Fieldstadt, & Gutierrez, 2016). The week before this event, four other individuals were arrested in Baton Rouge for a plot to kill police officers, and a fifth person was arrested the day before the shooting (Carrero, Fieldstadt, & Gutierrez, 2016). These active shooter incidents and protests call for additional consideration in relation to emergency preparedness in every city.

Data Collection

Throughout the data collection process, the most challenging obstacle I had to overcome was the finalization of interview appointments with the voluntary participants. Due to the nature of the job roles of the participants, their schedules were very busy and it took multiple communication attempts to secure specific dates and times that best fit the

needs of each volunteer. The majority of the volunteers were able to confirm quickly that their hospital did not require IRB approval. However, I did need to speak with two hospital IRB departments. After speaking with the first hospital IRB department, they were able to confirm that additional IRB coordination was not needed, since I had already obtained approval from Walden University and they felt this covered the requirements of the study. The second hospital required an on-site meeting, as well as a complete application to be uploaded into their IRB system (IRB Net) for review. I submitted that IRB application on August 13, 2016 and it was sent back for a few revisions on August 18, 2016. I uploaded the revisions on the same day that they were requested, and final approval was given by this last hospital on September 9, 2016.

All interviews were successfully completed and data were collected from a total of six participants between the months of July 2016 through October 2016. This number of participants equals a 25% sample for the region. Five interviews were conducted on site at the volunteer participants' place of employment. Interviews took place in their individual offices, providing both privacy and confidentiality during the interview process. One interview was conducted over the telephone. This required the creation of a Google Voice account to facilitate recording. The phone number that was set up for this interview was emailed to the participant and they were asked to call within the agreed upon time frame. Google Voice has an option to record the conversation. I utilized this functionality to capture the dialogue and to facilitate the creation of the transcript for this interview. I did not collect documents from any of the six participants in the study.

In order to maintain confidentiality, the hospitals within the Tennessee Highland Rim Region with an ER and regional coordinators were assigned a number prior to the interviews and labeled H.1 through H.24 and interview candidate numbers 1-6. I used these identifiers during the transcription and coding process to organize and communicate findings. Throughout the results portion of the documentation noted here, H.1 through H.24 will be used to designate hospitals in the study. Participants ranged in job title and position from staff level to administration. Two of the candidates noted during the interviews that they were not the actual hospital emergency coordinator but performed many of the functions of the coordinator due to competing priorities and time constraints. This delegation of responsibility did not affect the responses for the study, as all applicants were able to provide responses to the interview questions.

During an interview on August 11, 2016, another local event occurred within one hour of the interview. A gas odor/possible gas leak was identified at a local junior high school, prompting the evacuation of the entire school. Shortly thereafter, the high school was also evacuated for the same issue (WKRN, 2016). Both schools share a joined campus area. The hospital in question would have been a potential hospital to treat any issues as a result of this incident. However, the schools were cleared of any concern and no additional action was needed from an emergency management standpoint at the hospital.

During the last interview on October 7, 2016, the state of Florida was in the middle of being hit by Hurricane Matthew, a category 4 storm. This emergency coordinator was in the middle of discussing the ability of sending assistance to the state

of Florida from their organization in order to help with the devastation and necessary patient care that was needed. During this storm, it was estimated that over 1,000,000 residents lost power, and several deaths occurred. The hurricane moved up the coast of the state and affected a total of four states in a several day period. The storm also caused significant devastation to the country of Haiti.

Each face to face interview occurred at the volunteer's hospital office location. In some instances, this included travelling for several hours each way to reach the interview site. Each interview lasted less than one hour and all data were audio recorded via face to face interview, with the exception of the one telephonic interview noted earlier. After receiving the first set of emails for potential volunteers, I questioned whether or not I would receive significant participation from the rural population. Prior to setting up remaining interviews, I requested an additional change to IRB protocol to add in two sub-questions related to rural vs. urban needs and challenges. Understanding that while some hospitals did not have a rural designation, they could also either care for a rural population, or assist a rural hospital in times of emergency / disaster. By adding these sub-questions, I was able to capture additional data to help bring transparency into potential challenges associated with this population.

There were no unusual circumstances encountered during the data collection and minimal challenges presented during the interview process. I did need to send a reminder email to the telephonic interview after waiting 15 minutes from the initial interview time agreement. It was determined that the participant's prior meeting had run over, causing a slight delay in the meeting time. Additionally, one of the participants did not provide the

meeting location for the interview until I was already on site; this was cleared up with a quick telephone call once I arrived in the hospital lobby.

Data Analysis

As previously mentioned in Chapter 3Three, I analyzed data utilizing the Moustakas' eight step modified van Kaam method (1994). This process included transcribing each interview, coding, and clustering to identify core themes, and the development of a group composite that represents the entire participant population (Moustakas, 1994). Through the use of Atlas.ti7 software, I reviewed each coded interview transcription and determined emerging patterns and themes that created a representation of the participant pool. Additionally, preliminary coding occurred prior to the interviews to create a foundation for the analysis. Interview questions were coded to reflect the topic of EPPM or ACA. This initial differentiation was created in order to assist with further stratification of interview responses. I reviewed transcripts a second time once all interviews, transcription, and coding was completed. I performed this exercise to identify any inconsistencies in coding responses. I identified several changes in terms of questions related to asking for additional resources; I coded these answers to the resource code instead of the code related to asking for resources. These corrections were made before the final analysis occurred. Additionally, I needed to re-code responses related to the ACA. Some responses were coded to a new code specifically related to ACA instead of placing them in the coded related to impact as originally noted. These corrections were also made before the final analysis occurred.

I created secondary coding prior to interviewing to reflect the questions related to the theoretical framework - RCT and / or CAS. I created this differentiation in order to assist with further stratification of interview responses as they related to the theoretical framework and to validate the proposed conceptual framework for the study. Within these categories, I created additional codes to further analyze and differentiate between each of the characteristics of RCT and CAS. The utilization of these initial and secondary coding strategies allowed me to show multiple views and analysis of the interview responses. By taking the initial codes and recurrent themes and tying them to the characteristics associated with each framework, I was able to move from individual codes to an analysis of how they fit into the framework associated with this study.

Evidence of Trustworthiness

In terms of credibility, while remaining open to exploring additional avenues that may have come up during each interview, I also tried to ensure that all questions in the original protocol were asked in the same manner. As the primary instrument of the study, I minimized bias through avoiding discussion of any personal or professional experience related to EPPM and ACA during each interview. I also remained open and flexible to new information that presented in the coding and during interviews, even when they were different from how I thought the answers would present (Creswell, 2013). To help ensure confirmability, I asked additional questions when needed to help confirm or clarify what a participant was communicating at the time of the interview (Creswell, 2013; Patton, 2015). All identifying information that could be tied back to a specific volunteer or hospital were generalized to protect confidentiality. Each participant was emailed a copy

of the transcript within one week of the interview and was given the opportunity to add or remove any information that they deemed necessary. There were no participants that edited or asked to remove information and all participants replied back agreeing with the transcription as it was originally sent to them. One volunteer replied back with additional information related to their experience with emergency management. This information was noted but did not affect overall results as the experience-related question relays information about the overall years of experience, but not specific organizations, certifications, or other positions that the participants have held.

Qualitative findings should be reproducible in a study (Peng, 2012). When transcribing interviews, there is always an element of subjection that can occur. However, if another researcher were to use the same interview protocol and coding schema, the study should be relatively reproducible. In the instance of interviews, answers could vary based on chemistry between the researcher and the participant, as well as any conditions affecting the participant's personal and professional environment at the time of the study. Additionally, if multiple coders or interviewers are being used, additional steps will need to be taken to ensure continuity in the process when reproducing the study. This study is also transferable for other studies related to implementations for future healthcare legislation as well as utilization in other regions for additional reviews of healthcare systems.

Results by Code

Results will be presented below first based on the coding and then based on the conceptual framework in the next section. Codes will be presented in the order of the

flow of the interview questions to display the natural progression of the responses. In the next section, the codes will be presented in terms of RCT and CAS as they roll up into the overarching IAD framework. Within each of those topics, the findings will be reviewed in terms of recurring topics, emerging themes and non-conforming data. A complete listing of codes and the frequency of their use is located in Appendix H.

Years of Experience and Roles of the Participants

To help summarize experience, time in position and how many volunteers had a specific emergency coordinator role or was balancing multiple roles in their hospital, several demographic questions were asked at the beginning of each interview. This information was captured through using a set of codes not initially considered in the preliminary coding. New codes were added to capture this information. A summary of those findings are represented in Table 1:

Table 1

Opening Participant Demographic Information

Demographic Information	Compiled Responses
Total Years of Experience in the Industry	136
Average Total Years in Current Position	4.8
Number of Participants with Multiple Roles	4

Note. Participant demographic information based on responses during the interview process.

One of the first things that I noticed was all but two participants had a separate, primary role within their organization outside of their emergency preparedness duties.

Responsibilities in each role were scattered in nature. For instance, it is possible to be a hospital CEO, as well hold the role of emergency coordinator. Responses were mixed between their primary role as well as their role as an emergency coordinator for their hospital. It was found that each role was complex in nature, with multiple moving parts and a laundry list of responsibilities that needed to be balanced between dual roles within each organization. On top of emergency preparedness and all that goes with it, participants are responsible for patient clinical care, education, hiring, budgetary oversight, growth of service lines, evaluations, committees, and train the trainer and staff. All participants, with the exception of one, have direct reports that they are responsible for. All but one participant had a primary role that differed from their emergency preparedness role within their organization. Outside of being considered a part of the emergency management team or coordinator in their organization, none of the participants shared the same title for their primary job role. This provided a variety of outlooks on each question that was posed and despite that variety, there was a minimal amount of outlier responses. Of the two participants whose sole position focused on emergency preparedness, their responsibilities included oversight of several campuses within their organization that required much coordination and travel between multiple areas to ensure all objectives are being met in each campus.

An additional question was asked to determine whether there were any unique circumstances related to the hospitals being represented in the study. This was to help ensure that any specific information could be generalized so as not to unintentionally communicate information that could identify a specific participant in the study. All

participants relayed specific information or unique circumstances that needed to be generalized within the executive summary provided to the THA and HCC. This information ranged from specialized services that were only provided by that hospital, or special departments or emergency related areas that could readily identify the hospital that was being represented in the study.

Affordable Care Act / Section 5210: Not a Factor in Local EPPM

The easiest identified trend was that it was quickly determined that while some felt that the ACA in general has effected hospital EPPM operations, Section 5210 has had no effect on the TN Highland Rim Region. Participant H.23 noted that there was "no effect – we have the Medical Reserve Corps". Participant H.21 stated, "that corps has never been activated". Participant H.13 stated, "Honestly, I have not seen any impacts whatsoever. Not to say there isn't any, but I have not been made aware of any in terms of emergency preparedness. I am only vaguely familiar with that little reserve corps and to my knowledge, none of our physicians are a part of that." Additionally, H.21 went on to say, "We have not even considered adopting that into any of our policies or as a resource to reach out to." When queried if there was any particular reason why the RRRC would not be considered, the participant responded: "We feel that for our size, we have sustainability with the resources that we have already made agreements with and are in contact with." H.8 went on to say:

> In terms of Section 5210, I don't see that it has impacted the emergency planning in my area at all. It's great if they have one and if it would be easy to access, but

> anything federal or government has delays. We would need a federal declaration to implement that group.

The varying degrees were only in terms of how familiar each participant was with that section of the act. One outlier response occurred with participant H.9, who acknowledged the RRRC and stated, "when and how they would pull on that corps would depend on what is going on at a 30,000 foot level…and would be four or five rungs higher than me on the pole". This participant felt that the RRRC was a part of their larger plan, but that he was just not privy to the details behind any communication or activation of the RRRC. Participant H.24 felt that the RRRC might have affected ASPR funding, as it was noted that the budget has decreased each year, but then stated that it was more likely a result of current events, such as Ebola.

In discussing the impact of ACA in terms of EPPM, each participant was asked to discuss what impact this legislation has had on their hospital. Participant H.13 noted, "Honestly, I have not seen any impacts whatsoever. Not to say there isn't any, but I have not been made aware of any in terms of emergency preparedness." Participant H.9 brought up changes in terms of reimbursement and budget, including the bundling of some charges into one payment affected budgeting. Participant H.23 talked about a different hospital within the region that had to split its affiliation with a university due to changes related to ACA legislation and Participant H.9 stated that affects from the ACA included making sure that all special need patients are taken care of in times of an emergency event in comparison to just the adult patient.

Objectives: Being Prepared

Participants were asked what they considered to be the most important objectives in emergency management. All responses came back to the overarching summary of being prepared. This presented itself in many different answers and scenarios. Being prepared for this group means being able to reach the largest amount of population possible, including different needs within the population. More than half of the participants brought up special needs related to pediatric populations in times of an emergency event. Additionally, being prepared meant ensuring that everyone was trained and understood their role. Being prepared also included having clear communication and ensuring that everyone was receiving the same message during an event. Understanding the resources that are needed as well as available, and ensuring that communication reaches all entities, including those outside of the hospital were brought up as considerations. Participant H.23 summed it up by saying, "Not to sound cliché, but it really goes back to the boy scout motto 'be prepared'". Objectives brought up during the interviews are reflected in Figure 6:

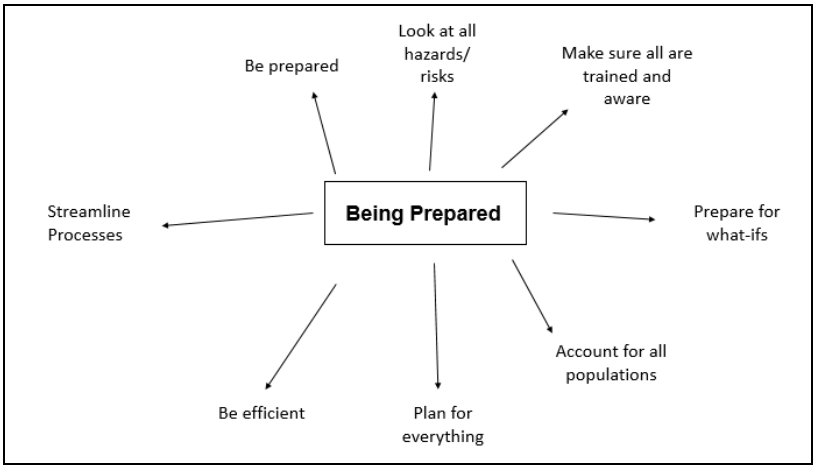

Figure 6. Objectives of EPPM.

Considerations: Hazard Vulnerability Analysis

Each hospital participant was asked what main considerations they take into account when performing EPPM at their hospital. All participants discussed the Hazard Vulnerability Analysis (HVA) during this conversation. According to Participant H.13, "The whole centerpiece of where you start building your emergency plan is basically off of your Hazard Vulnerability Analysis. You take your HVA and you analyze your most important or what are the most likely events to occur and the impact they would have." Participant H.24 also noted that along with the HVA, their organization has additional recommended best practices when filling out the HVA. For all participants, as the HVA is filled out, each item is ranked in order of importance or most likely to occur. Then, each item is reviewed and an action plan is filled out to account for how to handle the event, should it occur. Hospital HVAs are shared with the healthcare coalition and amongst each other in an effort to help ensure that everyone is aware of the hazards within the region, and also to borrow each other's experience and expertise when similar

hazards exist from one hospital to the next. Understanding hazards that can affect one hospital also allows the nearby hospitals to have a better understanding of what events could trigger the transfer of patients from one hospital to their hospital. As Participant H.21 noted, "there is a hospital not too far from a dam so for me, a dam break is not a problem, but for them, because it's 5 miles away, could be a problem".

Additional items mentioned included consideration for unique services provided at a location, such as children specialties, trauma centers, etc. The TN Highland Rim Region includes one of the four pediatric centers in Tennessee. Participant H.9 stated, "there's not really a backup for critical, complex pediatrics in this region". In fact, this one hospital within the region takes in patients from four states in the event of an emergency. Access to critical care for pediatric emergencies in times of an event can be a challenge if a particular hospital is damaged or out of service for any reason.

Another consideration mentioned was communication. In terms of EPPM, consistency in communication was noted as a main consideration. As the TN Highland Rim Region encompasses 13 counties, it is important to assess the ability to consistently communicate across such a large population should there be a large-scale event in this geographical area. Participant H.23 discussed consistency in communication by stating the following: "Consistency is the most important thing because if you're not consistent, people tend to get confused, and especially when you are dealing with a large group, counties, hundreds of miles…square miles…between you."

Current Events: Ebola and Active Shooter Scenarios

Current Events was a new code that was created after the first interview and was mentioned of each participant's own accord within every interview. The mention of current events was a great opportunity to see if any additional changes occurred as a result of any new or current events that affected the city, county, state, country or world as a whole. In terms of current events, every participant mentioned active shooters and the Ebola virus as examples throughout their responses to drive home a point they wanted to discuss. Current events are seen as a training and motivational opportunity to bring everyone around to refocusing on EPPM and each participant noted that as current events take place, those events shape the priority of training topics and preparation that occurs. Participant H.24 noted that funding may be diverted from other items in order to accommodate current events, which could also be a concern. Participant H.13 also noted some brief concern related to how current events are handled from an EPPM perspective:

> Ironically, it factors in a lot. A lot of time I feel like it's a knee jerk reaction. For example, the Ebola thing, when that started coming about, obviously, here at the hospital and local and middle Tennessee we started having all of these meetings, training events and stuff like that. We bought, I can't tell you, how many thousands of dollars of PPE to manage a potential Ebola patient. And now that's going to the side, it's kind of falling off the radar.

Active shooters became a recurring topic of concern in relation to EPPM during each interview. As mentioned previously, our country experienced its largest mass shooting ever shortly before these interviews took place, along with minority and police

officer shootings in the news. Additionally, one county within the TN Highland Rim Region experienced a mass shooting of six individuals within a month of the interviews. As a result of these events, active shooter training and drills became a primary focus in this region. In service trainings, active shooter drills and documentation were all noted as a current focus in EPPM. Participant H.21 stated, "…right now, we are addressing active shooter kits; never in my career did I think…that I would be trying to figure out what should be in an active shooter kit." In addition to training in the event of an active shooter situation, consideration was also noted for understanding the relationship and role that the police department plays in these events. Participant H.13 noted:

> We had to rely heavily on law enforcement for securing our facility because…somebody shot those people for a reason and if they didn't finish the job, there are cases where they come to the hospital to finish it. So we had to lock down the entire hospital and rely on law enforcement to provide that security.

Training: Disaster Drills and In-services

When asked about training related to EPPM, all participants responded and provided examples related to in-services and disaster drills, also referred to as table top exercises. Through coordination by the healthcare coalition, this region participates in regional wide exercises where the group practices response and patient care during a wide-scale event. These events coordinated by the HCC count towards the ASPR grant mentioned in Chapter 2, and for the hospitals, also count simultaneously towards their Joint Commission on Accreditation of Healthcare Organizations (JCAHO) certification. The regional events coordinated by the HCC include several entities including hospitals,

fire, EMS, and other parties. Outside of these events, individual hospitals also have their own disaster drills where they coordinate within their own hospital departments and also sometimes include outside parties, such as EMS in the exercise. Additional training includes in-services, presented at the hospital or the coordinators are sometimes sent out to attend conferences. In addition to training exercises, each participant noted several different types of documentation that is used to help educate staff. This included maps, large manuals, smaller flip books to leave in critical areas of the hospital, power points, agendas, state, and ASPR guidance. Additionally, inventories and necessary contact information is kept on file for east reference. Only one hospital participant was an outlier in terms of discussing written documentation that is kept on file, stating that in their case, they really focus on hands-on training more than they rely on documentation.

Challenges and Obstacles in EPPM: Budget

Challenges and obstacles in relation to EPPM were discussed separately with each participant but were combined for overall results since the responses were so intertwined and repetitive across both topics. One of the primary responses that arose during this portion of the interviews related to the overarching concern about finances or budgeting for EPPM. This presented itself in several different ways throughout each interview. Participant H.8 noted, “No one is focused 365, 24/7 on emergency preparedness”. Participant H.24 similarly noted, “For me, it’s having that full-time, devoted staff.” In dealing with financial constraints and annual budget cuts, some hospitals are faced with multiple challenges. As discussed earlier, many emergency coordinators have dual roles in the workplace and emergency preparedness is not the primary role. Additionally, the

response teams are comprised of volunteers and individuals who also have other primary roles within the organizations. With requests to control costs and manage budget, each individual department has to pay these individuals when they come in for additional training. This leads to potentially paying overtime or having to find coverage for their shift while they train. As Participant H.13 noted:

> They can't do it for free – we have labor laws. Through a cost control measure it's difficult to be able to get that extra money to bring people in to do training and preparation and things like that because we get feedback from corporate that we've got to cut costs. And, of course, our managers and directors have to cut costs and that's a problem when we have to bring these people in because it counts towards their cost center.

Adding onto the challenge of budget cuts comes with the challenge of reducing hours. Participant H.8 shared this concern as a challenge associated with EPPM because reduced hours means less time to ensure that all expectations are being handled correctly:

> …it's difficult to focus on something when you can only give 8 or 10 hours a week. You have to make sure that you meet the O's needs, the state, federal, local E&M needs – they all need to be met and completed. There are OSHA and JCAHO requirements – so making sure it is all met and up to the standard that is required is a huge challenge.

Similarly, Participant H.9 replied, "just having the time to devote to that initiative. Having the time and bandwidth just to pay attention to making sure the general nursing staff and physicians know what to do." The overall perception is a strong desire to have

enough time to fully focus on making sure that every need is being met and that each expectation and requirement is handled fully.

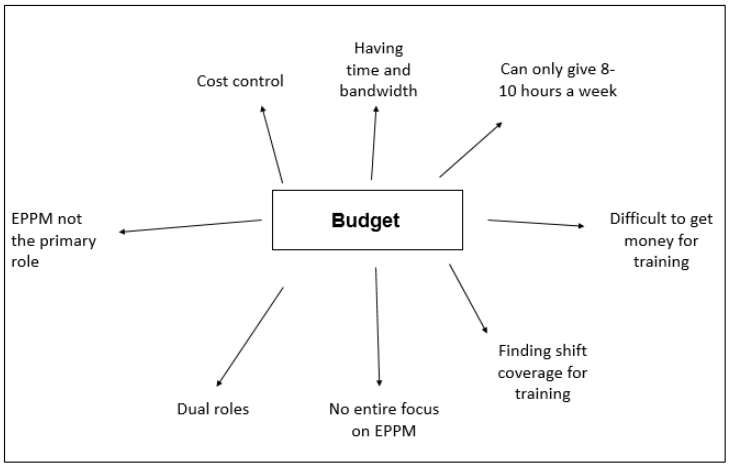

Figure 7. Visual display of responses related to perceived budget concerns.

Challenges and Obstacles in EPPM: Turnover and Education

Every participant with the exception of one noted turnover in hospital staff as a challenge in EPPM. It was also perceived that turnover and education are inter-related in terms of how they affect EPPM. Participants agreed that turnover presents many challenges in terms of EPPM. Turnover includes several different scenarios. In some cases, people stay in their roles long term and retire from the industry. In some cases, employees are promoted into other positions and can no longer support their emergency management responsibilities. In other cases, turnover can occur as individuals leave one hospital to go to a competitor. This presents a challenge for both the hospital in terms of training a new person, and also to the employee who left, since EPPM is not standardized. These individuals need to learn new processes and procedures and even the hospital codes and triage tags vary by hospital. Additionally, there are sometimes

challenges associated with handoff of information as turnover occurs amongst emergency coordinators at each hospital. Participant H.13 shared this example:

> …the person that left, the one before me that was responsible, kind of left me to piece it all together and put together all this stuff that wasn't in place…just the other day, I am finding that we had in place tools, these evacuation tags…we use them to track patients, where they went and their belongings, and just happened to find them the other day and I've been in this job over two years now.

Some of the challenges noted included the ability to maintain an adequate level of proficiency to feel prepared to react and respond to an emergency event. Participant H.13 stated this was a significant impact for his hospital, also stating a remarkably higher turnover rate compared to the national average. Participant H.9 discussed the challenges of having recent graduates during times of an emergency event and the lasting impact that it can have on certain employees:

> And what I have seen too is when you talk about an unusual event or a crisis, if you are talking to a newer staff member, there are just getting their feet up underneath them, just being able to function at a basic level for pediatric emergencies so if you throw something like that at them it can be quite traumatic and upsetting and they won't want to do any of it anymore. You really have to bring a newer staff member along slowly and let them get comfortable in their basic daily work before you start talking about extraordinary circumstances. It delays things too.

Participant H.8 also laughed when asked this question and stated it was a significant challenge. On top of discussing challenges associated with turnover, he also discussed the impact of longer term employees as they age within the role. Examples included difficulty learning new technology and increased challenges related to being able to stay in decontamination suits for an extended period of time. Participant H.23 also perceived turnover as a significant concern:

> Turnover – that's the biggest challenge, because people leave they take on different roles that are entirely unrelated to preparedness and they take that knowledge with them and then they bring in a new person from scratch and we have to bring them up to speed and get them familiar. There are so many moving parts to this and it takes time to brief and get a person up to where they are contributing their part versus taking away. It takes months a lot of times and then administration at the hospital, wherever it is, will pull that person and put them in a different role and put somebody new and you start all over. So turnover is probably the biggest challenge that we have, dealing with staying on the cutting edge of staying prepared. It's really difficult.

There was one outlier response to this question. One participant, H.21 stated that they were fortunate to have significantly lower turnover than the national average. However, this hospital also encounters challenges associated with this topic, but the participant felt that it was more due to expanding staff instead of losing staff in an effort to continue to meet the needs of the patients within their community. In the instance of expansion, they are still required to train new and additional individuals, leaving possible

gaps in being prepared for a large emergency event. This participant stated that one way they attempt to prevent large volumes of turnover is by asking for volunteers to be on the emergency management committee / response team for the hospital. By giving employees the ability to choose, this participant feels that they have found success in mitigating turnover.

Each participant was also asked how turnover in EMS staff can affect their EPPM for their hospital. There were mixed responses to this question in how turnover in EMS affects EPPM for their hospital. Two participants didn't feel there was a challenge or impact. Participant H.23 noted, "EMS is not really a challenge, in terms of turnover, here. We've been real fortunate". H.21 communicated that the EMS in their area is increasing the number of trucks, bringing on 16 additional EMS employees to accommodate this increase in manpower. Participant H.8 felt that EMS turnover was a significant issue, and chuckled when I asked the initial question. "That group as an extreme repository of life experience. And when there is turnover, they leave, or they move into administrative positions, there comes a huge knowledge gap. It's difficult to help them understand." And on a different note, Participant H.9 felt that turnover in their local geographical area was not an issue, but when there is turnover in outlying counties that bring patients to the hospital, there are concerns. "The other smaller outside counties – that stuff affects us pretty significantly…We do an awful lot with the ambulances and outside hospitals so I think turnover will affect their training every time there is a large service turnover."

Vital Relationships: Both Internal and External

Each participant was asked what relationships that they consider to be vital to the success of EPPM. Responses can be divided between internal and external. All responses were similar in nature and in summary, relationships with every internal department or external organization that will be affected or can help is necessary to the success of EPPM. Internally, participants noted coordination with other department managers to be critical in nature. As emergency coordinators, it is important to ensure that each department head knows the emergency plan and understands the process. Participant H.9 noted, "I would want to know who is the administrator or the person who can make decisions for their floor as soon as I can." Also, creating this relationship helps to gain buy-in for training and drills. Participant H.13 discussed the importance of having every department manager and staff on board. This included both clinical and non-clinical departments, as each are necessary and bring something different to the table. H.8 felt strongly about this question, answering immediately,

> Internal – you must have an Administration Champion. Someone in the C-Suite has to have your back and understand what you do and why we are doing it. Emergency Management does not make money. We are a negative revenue department. We are going to cost you money. So someone has to fully understand and support why we are doing this. And we do this because when it is really needed, we need to be able to protect and care for everyone.

From an external standpoint, all participants brought up the same group of individuals. This ranged from local EMS, fire, police, the healthcare coalition and other

hospitals within their region. Additional, local government organizations were noted, including local schools. Participant H.21 noted, "I should include the school system because I can use one of their buses maybe to transport a large population of worried well or minor injured patients". Responses provided for relationships are noted in Figure 8:

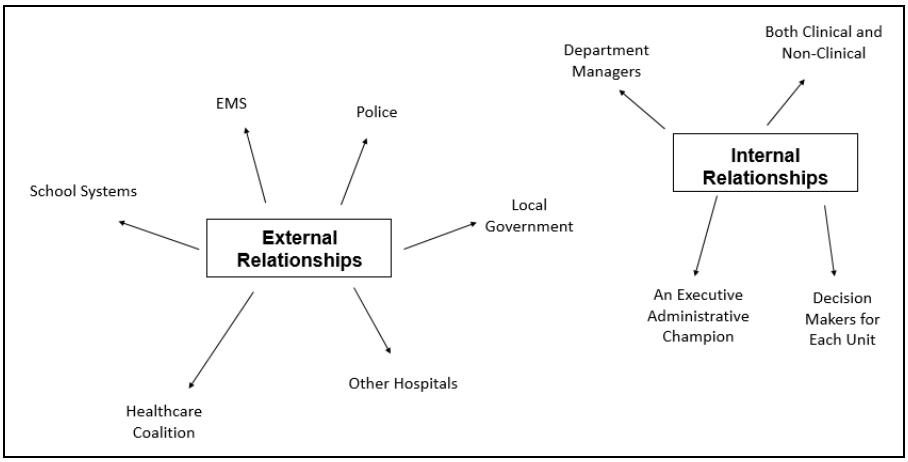

Figure 8. Internal and external relationships perceived to be vital in EPPM.

Available Resources

Each participant was asked to discuss what resources were available to them in times of an emergency event. One participant immediately responded that they can get anything that they need in times of an emergency event and another participant also responded similarly, giving additional resources such as specialty groups that can be called. Two participants noted the ability to reach out to corporate and division resources within their organization. All participants mentioned being able to rely on the HCC or their regional coordinator, not only for equipment but as a resource in times of need. Actual resources that are available ranged from small to large, including equipment, generators, vehicles, water purifiers, clinical staff, and even a mobile morgue. Participant

H.21 stated that it is a JCAHO requirement that a hospital must be able to sustain itself on its own for at least 96 hours during an event. An additional resource that was mentioned was the ability to quickly credential additional clinical staff if needed. Participant H.21 noted, "…we have the ability to bring in a nurse here that might not be able to reach her normal hospital. We use the quick credentialing process to verify her license and then we would be able to put her into the organization". This is also an option for hospitals that are a part of a larger system where credentialing is shared among multiple hospitals within the organization.

After discussing the resources available to each participant during an event, each participant was asked how they would request additional resources if needed in times of emergency or disaster. Responses were consistent in nature and included several different access points, alluding to a somewhat complex process. Participants acknowledged the regional hospital coordinators at the HCC. Each noted other external contacts for additional resources, such as the regional medical communication center (interchangeably called the RMCC or RCC by participants), the EMA and TEMA. H.8 explained that "we would telephone the RMCC and tell them our issues and what we need, or the regional hospital coordinator". Similarly, H.13 stated, "we have two primary go-tos…we just call the regional coordinator and/or EMA and say, 'hey I need this'". There are additional local contacts that are notified if the event is isolated strictly to their county. H.21 noted, "If it is a small event localized to [our] county, the initial call would go to our local EMA here."

Internally, Incident Command at each hospital along with the administrator on call at the time facilitates the request for additional resources. Coordination between all hospital departments to determine the overall resource ask is necessary to help request resources more efficiently. H.9 explained, "in a disaster, you go through the EOC and whoever Incident Command is, because they are tied in to all of the other departments". Thus, resources are determined and communicated from various channels and departments within a hospital to several different entities, based on the resources needed. On top of the internal coordination, consideration for the size of the event, the location of the event, how far-reaching it is, as well as the event and specific resources needed will drive the overall communication that occurs when asking for additional resources.

On top of these processes, there is also additional communication that occurs within the TN Highland Rim Region when resources are being requested. This occurs to make others aware of what is happening so that they are prepared in case patients need to be transferred out or in case the event has the ability to be more far-reaching than initially anticipated. H.21 commented that "…we would put out a HRTS alert that something is going on in [our] county just to make them aware that we might have to transfer patients out or we may be looking for resources outside of the county". One participant also discussed another process still that can be used when the hospital is a part of a larger corporation. When this applies, H.8 noted that the company's division and corporate offices can also be queried for additional resources.

Making Decisions During an Event: Incident Command

Participants were asked how decisions are made in times of an emergency, particularly in the absence of a written policy, procedure, or Standard Operating Process (SOP) that pertains to the scenario. These responses were consistent in nature and all alluded to the Emergency Operations Center (EOC), Incident Command or Incident Commander, and if prior to that being set up, the administrator that is on call during that time frame. Participant H.8 also provided insight related to how to handle things immediately during an emergency event. "We preserve life and limb first. We look to see what's the best course of action and we make the best decision based on what we know at the time. Also, we have incident command, so the incident commander and SMEs will be consulted." This was one topic where all participants seemed entirely on the same page in terms of the established process that should occur in the event of a real-time decision that needs to be made during an event.

In terms of a more global approach, importance was expressed in terms of being able to gauge how significant an event is within one area before making a more global decision to bring in additional resources. The HRTS system was referenced as a resource to keep each other informed about what is occurring in their specific location. It was noted by one participant that it sometimes seems as if the region errs on the side of caution by putting the worst case scenario, and it oftentimes can be something less significant once it is looked into. "But one day, you'll get a HRTS activation saying they're going to have to evacuate 80 patients from the assisted living facility somewhere

and then five minutes later, receive 'event concluded'. The event's over, they didn't have to evacuate 80 people…it's a worst case scenario."

Patient Experience / Satisfaction: Communication

The largest response that emerged from this question came down to communication with the patient. This presented in several different ways during the interviews. Ebola was used as an example in a few of the interviews, as a lessons learned. When the Ebola patient was at the hospital in Texas in 2014, the participants discussed the damage that occurred as a result of communication opportunities. Several participants noted that the patient admissions significantly dropped for a lasting amount of time at that hospital once it was confirmed that there was an Ebola case present. Participant H.23 noted: "I'll use Ebola again. That scare, in Dallas, nobody went to that hospital, because of those fears and concerns. Keeping those fears at bay, is our focus. Because we still need people at our hospitals, and we still need them to get the care that they need."

On another note related to communication, Participant H.9 brought up the importance of having a calm and clear communicator when adjustments need to be made, such as clearing an emergency room away from a window during a hurricane alert. "So just to make sure someone with answers, who can function calmly and be a good liaison to the families is the one who usually starts to clear the waiting room." Participant H.8 brought up communication as well, using the example of a decontamination situation, where you may have to ask the patient to unclothe. "It's all in how you talk to them, how you explain and help them understand why and what needs to happen for their safety, to

help move them away from distrust so we can properly take care of them." Also related to communication, but different in nature, Participant H.24 discussed a unique scenario that related to clear communication with patients. In times of severe weather, this facility also provides clinic appointments and there is a need to communicate when the facility will need to shut down so that patients do not needlessly travel in inclement weather if the facility is not open. Participant H.13 also noted communication as important not just in times of an actual emergency, but also when performing disaster drills.

> For example, when we did a large scale decontamination drill last fall, we made sure to post plenty of ample signage, public notices, "this is just a drill", so that when you see all these police officers and guys running around in hazmat suits you don't freak out.

Several participants noted additional consideration that is needed when dealing with pediatric patients. Pediatric patients present multiple challenges, such as limited clinical resources that are adequately trained. Additionally, several participants mentioned that when dealing with pediatric patients, you also have other people to deal with, including family, extended family, friends, students or teachers depending on the event. This can lead to space resources, seguing into another topic that arose in the conversations. Families will not want to split up during an emergency event, so additional considerations for space must be taken into consideration during events. Participant H.9 noted security concerns related to this scenario.

> Well yeah – you are not going to separate them. And…if you start to separate

families and children in a large scale, massive disaster or crisis, you are asking for a problem…If at any time, you can evacuate a family together, it's a better thing to do…They are not going to let a kid wander away…It's an opportunity for that children to be abducted…With keeping the family together, it's a lot less likely for that to happen…And with service excellence or patient experience, too, the safety is the number one thing most families are worried about, when you're talking about their sick child. I think it is for most adults, too.

A visual summary of how the patient experience and satisfaction responses tie in to communication is shown in Figure 9:

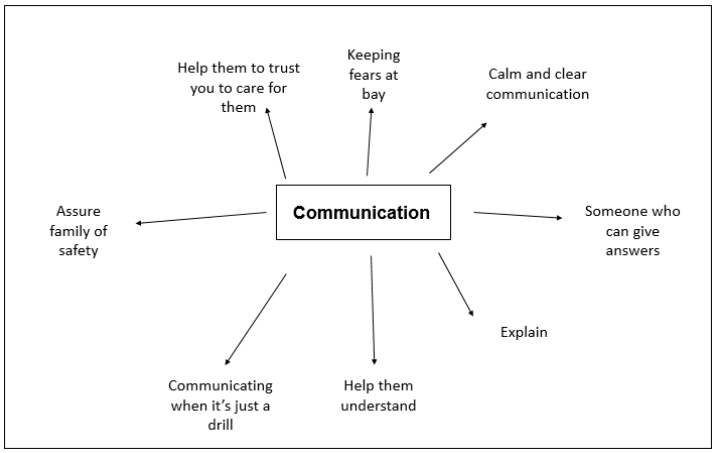

Figure 9. Patient experience and satisfaction responses related to communication.

Rural vs. Urban: Timely Access to Patient Care

Consideration for rural vs. urban hospitals was an emerging code that was created to help differentiate the difference in responses based on rural versus urban, as well as large hospitals versus small hospitals. For the purpose of this study, the smallest hospitals tended to be tied to a rural distinction and the larger hospitals tended to be tied

to an urban distinction. I did not receive participation from any rural hospitals, but was able to obtain information related to some of the differences and considerations that need to be taken into account related to their role in caring for the rural population. Within these responses, I was able to learn several challenges related to rural hospitals, as perceived by the participants within the study. These participants worked in hospitals that are often called upon to assist rural hospitals with patient care when dealing with challenges related to volume or trauma related injuries. These were the two primary scenarios that traditionally prompt necessary assistance and interaction with the outlying rural hospitals within this region. Analysis of all of the responses tied back to an overarching theme related to timely access of patient care in these areas.

One of the primary challenges noted is access to patient care. This includes several factors such as volunteer versus paid staff and the availability of those resources, response times, lower ability to accept certain patient volumes as well the severity or uniqueness of injuries requiring patient care. One example included pesticides being used on farms. When accidentally sprayed with these pesticides, they are considered hazardous materials and require decontamination. These pesticides are not traditionally used in large volumes in the more urban areas, so these types of injuries are few and far between on a day to day basis. Additionally, with caring for populations with farm land, accidents related to heavy farming equipment requires moving patients from a rural hospital into urban hospitals that are better equipped to deal with that level of trauma. Examples included injuries associated with arms or hands being hurt in hay balers or grain equipment. Participant H.21 also noted a unique scenario: “Two years ago we

actually had a man who got gored by a bull, actually ripped his carotid. He actually lived, we were able to save him." Participant H.9 also commented on severity of injuries and volume of patients. Urban hospitals in comparison to rural hospitals in this region have a larger ability to treat more patients at one time. "…a car wreck with seven people is a mass casualty to them…Seven people…with high level trauma would pressure us too, but we wouldn't call it a mass casualty event unless it's…over 20."

Lack of resources was also perceived to be a factor related to timely access to patient care. Some of the rural areas in this region operate on smaller budgets, which necessitates volunteer EMS coverage in some areas. Participant H.9 voiced concern related to availability in times of a large event: "Those volunteers aren't coming if they have to put out a fire in their own house." Additionally, because of scarce resources, some of the rural areas have policies and procedures designed to ensure there is some level of coverage in the county at all times. Participant H.9 discussed this scenario in depth:

> And I know some of these smaller counties actually have very few ambulances where the wheels are turning at the same time. We've had cases before where a hospital needs to transfer a kid but they have to wait until their ambulance gets back to send them. And they might have to wait until there are two ambulances in the county…So we have to wait until someone crosses over the border and then we can send another one. But not every county has the ability to send three people at once anywhere.

Suggestions to mitigate this scenario included building relationships and executing Memorandums of Understanding (MOUs) with additional organizations in order to ensure timely access to patient care. Some suggested organizations that were provided by Participant H.9 included private ambulance services, funeral homes (which have the ability to transport patients lying flat), and nearby military bases. Additionally, in these rural areas, nearby local farms could also potentially provide support by providing farm equipment, trucks, and canvas vehicles that can transport people in times of a larger emergency event.

On a different note, Participant H.21 also discussed a positive attribute to rural counties in times of a natural disaster. Citing past tornadoes as an example, the rural counties in this region tended to have houses spaced further apart due to larger volumes of farm land. In these instances, catastrophic damage was perceived to be minimized by this participant because even though land was damaged, there was less housing within the space of the tornado paths in comparison to what would have been encountered in an urban area with subdivisions and houses placed closer together. The lower human injury due to this attribute was the one outlier response during discussions related to rural versus urban hospitals.

Measuring Success: Hindsight Analysis

Each participant was asked to discuss how success is measured by their hospital after an emergency event. Responses were consistent in nature. All participants perform a hindsight analysis of what occurred. The mechanics of this process did vary a little in nature, from documentation packets being prepared, to team meetings, to formal after-

action events with re-testing and training. However, all noted that a thorough review of lessons learned, what could be done better and what went well are reviewed to determine if any changes needed to occur to the current process. While discussing how changes are made after an emergency event, Participant H.13 described the process step-by-step. "We sit down as an emergency management committee and we look at what didn't go well and what are the solutions to fix it and whose area or roles and responsibilities include that and how do they fix it. And then we set an action list and you and I are going to do this, this and this." Participant H.9 expressed concern about the time it takes to make a change after an event, stating, "this place doesn't turn on a dime", but also stated in his tenure in the organization, they have never had to make a change as a result of a deficiency during an actual event.

In terms of the patient care aspect during an emergency event, lack of loss of life and limb was a response used by several participants. Additionally, Participant H.9 discussed the scoring from the standpoint of adverse events that occur to the patient during an emergency event. "Usually we break that stuff down to if it led to a longer hospital stay, length of stay, or if more tests had to be performed or more medications had to be given as a result of that. And if there was loss of tissue, life or limb."

Threats: Communication and Complacency

Complacency was an emerging response in relation to threats to the success of EPPM. Discussion surrounding complacency related to both the general public as well as the emergency providers. For the general public, complacency related to EPPM was

perceived to be when the public does not prepare themselves to handle a possible event and rely on someone else to help take care of things. Participant H.8 stated:

> The worst thing you can do is not to understand what's really out there and what is going on. If you aren't prepared, you can't help anyone. If your house is on fire and my house is on fire, you need to put out your own fire first so that you can help me. We all have to take care of each other. Self-reliance is the biggest factor. You can't think that FEMA's going to come save us.

In terms of emergency providers, additional consideration related to communication and reassurance to the public to minimize unnecessary hospital visits might need to be factored into emergency plans. Participant H.9 gave an example where even if an event is not currently happening in the local region, as people hear about it, hospitals may become flooded with the 'worried well' that want reassurance that they or their family have not been exposed to an illness, such as Ebola, swine flu or Zika virus. This recurring phenomena can cause unintended consequences such as delays in patient care for ailing patients.

> …in that case the worried well kept us from getting to those two or three kids who actually had swine flu or something…that could have otherwise killed them. So literally sifting through the worried well to find the one kid needle in the haystack that was about to die.

Communication was also perceived as a threat to EPPM by other participants. Participant H.21 noted having good communication throughout the event as the largest threat. Additionally, Participant H.23 stated, "…communication can be detrimental if it's

not done correctly. The same email can be read and interpreted in many different ways. So making sure that communication chain is thorough". Participant H.13 also noted communication during an event is a threat to EPPM:

> The biggest threat is communication. There's always some type of communication failure or communication breakdown and it makes it hard for incident command to make effective decisions as to where to allocate resources and to where and to what. Who needs it, where do they need it, things like that.

Outside of these two perceived threats, turnover and training were noted as threats to EPPM. Turnover in staff can create an environment where they may not have had time to adequately train for the particular event, should it occur within a short time frame from when turnover has occurred. This can lead to confusion during an event, and also ties in to concerns with communication as noted above. Dependent upon who is providing the communication and how, it can be interpreted differently from one person to the next.

In addition to communication within each own team, there is also the concern related to communication between each organization. Participant H.21 shared, "working with other agencies. Getting others to come to the table and…understand that we are not going to be able to work in the silos that we all are used to…". Some of the perceived silos included a lack of standardization in reaction to an event, how and where communication occurs as well as multiple mobile command units all trying to coordinate with each. Participant H.21 continued to say that there had been some recent improvements on this front: "one of the biggest struggles during a disaster is

communication, because we are all on different radio channels, we all talk different languages, so the request for plain talk has been a big help with that area". However, Participant H.8 noted a large concern in terms of standardization:

> We don't have a standard. You know, when someone is performing CPR in Kentucky or here, we know that they are performing it the same way. There is not one standard for emergency management or disaster planning and decontamination. No entity wants to step up to the plate to handle it.

Also, in terms of standardization, it was noted that codes and trauma tags are not standardized from one organization to the next. In the event of a large scale emergency event in this region, this could lead to confusion. Participant H.23 noted:

> …they have their own criteria for Hazmat, severe weather, all those different things…I'll give you an example, codes. You know, code blue, code black, everybody's different…And we've looked at trying to uniform those, but yeah, we get pushback because everyone is like, my codes are the best, or like, why do I need to change my codes to conform…

Additional Information

At the end of the interview, each participant was asked if there was anything that they would like to add that might not have been covered in earlier questions throughout the interview. Two applicants responded that they had nothing to add that was not already previously mentioned. The remaining four participants had positive comments related to emergency preparedness within their region and the overall state of Tennessee. H.21 commented that, "I think Tennessee as a state does fairly well – there's always

room to improve things. In the last several years, with the new committees formed have helped." H.23 closed the interview by saying the following:

> I would say that emergency preparedness is vital and it's very important to see the engagement, and we have a great group of people who are committed, and they like what they do. They want to teach, they want to share and they want to take care. They want to help those in need. We are real fortunate to be where we are at – in a booming city, and that we have such a great talent of people that are committed to this. And I think that private citizens should take comfort in knowing that this is going on. We are planning, we are considering things, to take better care of not just you, but also of their family. It's good stuff.

Summary

Section 5210 of the ACA was not perceived to be an impact to the TN Highland Rim Region, or considered at all with the exception of one outlier response. This region has a similar medical reserve corps that is available at the local level without need a federal declaration to activate in times of emergency. While ACA and Section 5210 in general appears to have no impact on this region, there were several obstacles and challenges noted to EPPM in general. All of the participants felt that turnover is one of the greatest challenges to EPPM, and that education and communication were vital in every part of EPPM from training to the actual event. Most participants felt that hands-on training approaches were the most effective measure in terms of preparing for a real event. Standardization amongst all agencies and even hospitals appears to be a challenge

with the potential for unintended consequences such as delay in patient care during a real event.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

In Chapter 5, I discuss conclusions and recommendations related to the study. The purpose of the study was to understand the effects that Section 5210 of the ACA on healthcare systems, specifically in relation to EPPM. This study sought to answer this research question: What are the perceptions of hospital emergency coordinators as to the obstacles that have occurred at the local level in relation to emergency preparedness including those as a result of Section 5210 of the ACA?

In the first section of this chapter, I provide an interpretation of the findings of the study, including any limitations related to trustworthiness as they were identified during the execution of the data collection and analysis. Next, I offer recommendations for future research. Lastly, I discuss the implications of the study, discussing the potential impacts for social change at varying levels, and then conclude with the summary.

The key findings of the study included that each participant perceived that Section 5210 of the ACA did not have any effect on the Tennessee Highland Rim Region. The participant shared that this was their perception because of a similar local initiative called the MRC. The MRC is composed of local volunteers who activate during large scale emergencies and to lend their expertise as needed during an emergency event. This corps is made up of current and former healthcare workers and practitioners, as well as trained volunteer responders.

Focusing on EPPM, recurrent themes related to challenges included time, financial constraints, turnover, communication, and education. Time, turnover, and

financial constraints are related because EPPM is prioritized as being a lower level concern than day to day duties of caring for patients in the hospital environment. Taking time out to train individuals on EPPM means that they are being paid out of their normal department's budget, but is also putting leadership in a need to bring in additional resources to cover the normal work tasks.

Interpretation of the Findings

As discussed in Chapter 4, responses, coded in relation to characteristics of RCT, CAS, and IAD, confirmed that the conceptual and theoretical framework was appropriate and accurate for this study. The findings of this study extend knowledge to the discipline in several ways. One of the primary reasons that this study will extend knowledge to the discipline is because there has not been a study such as this in the TN Highland Rim Region since the inception of the HCCs in 2010. This study will provide HCC leadership and THA with information from their local hospitals as it relates to EPPM. By understanding concerns, challenges, and obstacles, these leaders can further evaluate any current training, processes or policies for any gaps in current EPPM processes that they would like to address. Primary concerns noted by the participants in this region included turnover, communication, budget constraints, and a lack of standardization of processes during an emergency event. The participants also noted that current events drive the prioritization of the actions that they take in terms of EPPM. Recent examples shared by the participants included creating active shooter training and response kits, as well as education surrounding Zika virus.

The findings also confirmed that healthcare is a CAS, with many inter-related and independent parts that combine together into one comprehensive system with the express outcome of caring for a patient. Complexities of the system include internal coordination amongst patient care teams, support departments, and outside organizations. During an emergency event, coordination and collaboration are a priority among many different organizations to ensure the safety and care of mass numbers of patients. Based on responses given during the interviews, RCT is utilized by hospitals during emergency events, particularly when faced with making a decision in the absence of written policy or procedures that cover the issue. Both of these theories do appear to fit within the larger IAD framework in terms of EPPM. IAD characteristics were evident in terms of EPPM for this region. Inputs were received from various avenues, such as staff, leadership, training and actual events. These action situations reflect the decisions made, and in turn can affect outcomes during EPPM. Evaluation and feedback that healthcare staff identify from training, risk analysis and after action reviews formulate future actions for each individual organization as well as the overall region.

Limitations of the Study

Limitations of this study included the sample population being at 25%. While all participants responded to interview questions in a similar fashion—confirming that saturation was adequately reached with this sample—it would be beneficial to have an equal balance of both rural and urban facility responses. A limitation included the number of participants in a rural hospital setting. I attempted to balance this by submitting a change in IRB protocol and to receive approval to add the additional subset

of questions related to rural and urban hospitals. However, while this substitution shed light on possible challenges and obstacles, its inclusion did not necessarily illustrate the perceptions of emergency coordinators at these rural hospitals.

The protocol for this study included multiple attempts to provide opportunities for volunteers to participate. First, the healthcare coalition sent a copy of the presentation ahead of the day that I physically presented to the group. That email contained my contact information if anyone was interested in participating in the study. The second opportunity was when I presented at the healthcare coalition meeting; at that time, my contact information was handed out to each person who attended, as well as via telephone for those who dialed in to the presentation. A follow up email was sent by the HCC regional coordinators a week after I presented to the group at the coalition meeting. These three attempts to contact possible participants resulted in a total of six volunteers for the study. Additionally, I remained open to accepting additional participants should they reach out to me after the deadline to volunteer, but no additional applicants reached out to me after the documented deadline. Per protocol, I interviewed every qualified volunteer who offered to participate in the study.

An additional limitation of the study was that it focused on one geographical area. The study was open to thirteen counties, all located in the Tennessee Highland Rim Region. Of the possible thirteen counties, three were represented in the sample of volunteers for the study. As previously stated, a large concentration of the 22 possible hospitals was situated in one county. More than a third of the possible hospitals are located in one county out of the thirteen counties in the region. Four of the six volunteers

were from the same county. Between the timing of the approval of the proposal and the approval of the IRB protocol, this region had several recent events, as noted in Chapter Four, that necessitated a need for EPPM. These recent events included confirmed Zika virus patients and a mass shooting. All participants noted recent current events as a driving factor in how they focus and what they focus on for EPPM training.

Recommendations

There are many ways that future research can expand on this study. At a local level, future research may include additional entities within the TN Highland Rim Region, in hopes of achieving a larger representation of both rural and urban hospitals in the sample population. The scope of the research could be expanded to include additional organizations such as nursing homes, fire stations, rescue stations, and police stations. The inclusion of additional entities may describe a larger portion of the coordination, needs, and processes of EPPM as they relate to one area. Hospital data only represent one portion of the larger picture in regard to emergency response.

On a regional scale, this study can be replicated for the remaining regions within the Tennessee HCC to provide additional assessment of strategies related to EPPM. By obtaining additional information related to hospital operations, individual regions can gain a better understanding of any potential obstacles or gaps related to EPPM. These data can also lead to data sharing between regions, allowing the regional emergency coordinators to open communication and secure their own EPPM support network.

On an even larger scale, the results of each region can be combined and reported out at the state level. By extending this research, state policy makers can review EPPM

data at a large level to assess if any changes are necessary in education, training, communication, or planning. Within the HCC itself, regions can work together to provide standardized EPPM training and education when it is feasible to assist with any concerns of turnover in critical positions. The HCC could work with other state-run organizations such as TEMA and the TDOH to increase education, training, and awareness.

This study can be replicated and utilized in any geographical area that requires some form of coordination in relation to EPPM. Within the U.S. alone, there are a significant number of geographical areas that can potentially benefit from performing a similar study of their local operations. Tennessee state-run organizations, such as the HCC, TDOH, and TEMA can coordinate and expand the study to larger, national data through working with national organizations, such as CDC, FEMA, and the National HCC.

Implications

This study could create positive social change on several levels. At a state level, continuation of this research could lead to enhanced information for policy makers regarding EPPM. Within the HCC, the information could be used at both the regional level and intraregional level to create a more comprehensive study. At the hospital level, information from this study could be reviewed to determine additional strategies or education that could be created (or emulated based on other hospital programs) in order to build on existing training for staff and emergency coordinators. Lastly, at a more granular level, all of these changes have the ability to ultimately impact down to the

individual level. Through continuing to refine EPPM at a regional and local hospital level, a more positive patient experience could be created when an emergency strikes.

This research adds credibility to RCT, CAS, and IAD framework as a solid foundation for EPPM. The participants who were interviewed demonstrated that the characteristics represented in these theories are all visible and apply to the complex world of both healthcare and EPPM. This was evident through discussion surrounding the decision making process, the complexity of healthcare and EPPM, and the steps that are taken within each process when executing EPPM. The presence of these characteristics help to validate that RCT is used in certain instances during EPPM, and that CAS applies to both healthcare and EPPM; additionally, both RCT and CAS interweave at varying times and roll up into the larger IAD framework during planning, preparation, and during actual emergency events.

Conclusion

While Section 5210 of the ACA is a recent option for additional support in times of emergency, EPPM have been present in the U.S. for many decades. The data collected in this research illustrate that there are challenges and obstacles at the local level related to EPPM and that current events play a large role in determining prioritization of documentation, education, and training. Communication, education, and turnover are all inter-related in terms of working to ensure that there is a strong ability to react to an event, as well as possible complacency in the public, relying on others to help in an emergency situation. There appears to be a trend to move from a hospital-focused environment in relation to EPPM and to take a more holistic approach that includes all

affected entities and populations. By working to create stronger standardization amongst hospitals, counties, regions, and across the national landscape, it is possible to facilitate a smoother approach to education and response to events.

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Appendix A: Hospitals in the Tennessee Highland Rim Region

Hospital Name	County
TriStar Ashland City Medical Center	Cheatham
Kindred Hospital – Nashville	Davidson
Metro Nashville General Hospital	Davidson
Middle Tennessee Mental Health Institute	Davidson
Saint Thomas Hospital for Spinal Surgery	Davidson
Saint Thomas Midtown	Davidson
Saint Thomas West Hospital	Davidson
Select Specialty Hospital – Nashville	Davidson
TriStar Centennial Medical Center	Davidson
TriStar Skyline Madison Campus	Davidson
TriStar Skyline Medical Center	Davidson
TriStar Southern Hills Medical Center	Davidson
TriStar Summit Medical Center	Davidson
Vanderbilt Stallworth Rehabilitation Hospital	Davidson
Vanderbilt University Hospitals	Davidson
TriStar Horizon Medical Center	Dickson

Hospital Name	County
Houston County Community Hospital	Houston
Three Rivers Hospital	Humphreys
Behavioral Healthcare Center at Clarksville	Montgomery
Gateway Medical Center	Montgomery
Northcrest Medical Center	Robertson
Saint Thomas Rutherford Hospital	Rutherford
TriStar Stonecrest Medical Center	Rutherford
Trustpoint Hospital	Rutherford
Portland Medical Center	Sumner
Sumner Regional Medical Center	Sumner
TriStar Hendersonville Medical Center	Sumner
Trousdale Medical Center	Trousdale
Rolling Hills Hospital	Williamson
Williamson Medical Center	Williamson
McFarland Hospital	Wilson
University Medical Center	Wilson

Appendix B: Potential Hospital Profiles Split by General Information and Emergency Related Information

General Hospital Information

Hospital #	Hospital Type (General Medical and Surgical = GMS, Off Site ER or Critical Access Hospital = CAH)	Part of a Health System	Total Annual Revenue	Licensed Beds	Avg # Daily Patients
1	GMS	Yes	$ 12,215,916	12	4
2	GMS	No	$ 99,221,593	150	51
3	GMS	Yes	$ 410,326,879	683	293
4	GMS	Yes	$ 455,132,363	541	282
5	GMS	Yes	$ 606,669,854	657	453
6	GMS	Yes	$ 205,037,885	223	164
7	GMS	Yes	$ 100,497,618	126	60
8	GMS	Yes	$ 199,930,218	196	123
9	GMS	No	$ 2,021,820,107	1,025	847
10	GMS	Yes	$ 69,256,281	157	52
11	GMS	No	$ 4,007,923	25	7
12	GMS	No	$ 8,143,742	25	5
13	GMS	Yes	$ 129,421,345	270	98
14	GMS	No	$ 79,767,326	109	35
15	GMS	Yes	$ 247,476,643	286	196
16	GMS	Yes	$ 110,580,889	109	58
17	Off Site ER	Yes	$ 6,797,632	38	0
18	GMS	Yes	$ 138,943,594	155	101
19	GMS	Yes	$ 105,605,775	110	55
20	CAH	Yes	$ 12,509,263	25	6
21	GMS	No	$ 178,111,648	185	105
22	GMS	Yes	$ 84,267,266	170	59

Emergency Related Information

Hospital #	ER Staffed 24 Hours?	Radio Comm w/ 911 Dispatch, Ambulances, Other Hospitals	Heliport?	Trauma Center?	Burn Center?	Total Annual # Patients Treated in ER	Own/ Operate Ambulance Service?
1	Yes	ALL	No	No	No	10,934	No
2	Yes	ALL	Yes	No	No	36,605	No
3	Yes	All but other hospitals	Yes	No	No	49,173	No
4	Yes	All but other hospitals	Yes	No	No	33,345	No
5	Yes	All but other hospitals	Yes	No	No	57,533	No
6	Yes	ALL	Yes	Yes	No	60,944	No
7	Yes	All but other hospitals	No	No	No	44,124	No
8	Yes	All but other hospitals	Yes	No	No	55,154	No
9	Yes	ALL	Yes	Yes	Yes	126,714	Yes
10	Yes	All but Dispatch	Yes	No	No	36,939	No
11	Yes	ALL	Yes	No	No	5,067	No
12	Yes	ALL	Yes	No	No	6,667	No
13	Yes	ALL	Yes	No	No	63,693	No
14	Yes	All but other hospitals	Yes	No	No	0	No
15	Yes	All but other hospitals	Yes	No	No	86,071	No
16	Yes	ALL	No	No	No	49,656	No
17	Yes	All but other hospitals	Yes	No	No	10,980	No
18	Yes	All but other hospitals	Yes	No	No	37,353	No
19	Yes	All but other hospitals	Yes	No	No	32,554	No
20	Yes	All but other hospitals	No	No	No	5,168	No
21	Yes	All but other hospitals	Yes	No	No	34,923	Yes
22	Yes	ALL	No	No	No	28,282	No

Appendix C: Invitation Email for Possible Participants

Good Afternoon:

My name is Tanya Scherr and I recently presented an upcoming research study geared towards hospital emergency coordinators in the TN Highland Rim Region at a Healthcare Coalition meeting. As discussed, this study will occur in the form of interviews facilitated by me; confidentiality will be protected during the collection of data and the reporting of results.

This email is meant to serve as a request for participants for this voluntary study related to emergency preparedness and planning in the TN Highland Rim Region. If you are interested in participating in the study, please email me directly and I will provide the necessary paperwork for informed consent for your review and completion. Please do not copy the Healthcare Coalition on your response back to me to ensure your confidentiality in terms of participation.

If additional information is needed prior to making a decision as to whether or not to participate, please feel free to contact me at the email address noted below.
As a reminder, participation is voluntary and confidential.

Thank you for your time and consideration and please feel free to contact me with any questions.

Most Sincerely,

Tanya M. Scherr

Appendix D: Follow Up Reminder Email for Possible Participants

Good Afternoon:

This email is meant to serve as a reminder that there is one week remaining to communicate interest in participating in the voluntary study related to emergency preparedness in the TN Highland Rim Region. If you have already responded, please disregard this email.

This study was presented by me in a previous Healthcare Coalition meeting; if additional information is needed prior to making a decision as to whether or not to participate, please feel free to contact me at the email address noted below.

In the event in which I do not receive a response within the next week, it will be understood that you are not interested in participating. This email will be the last communication that is sent to individuals who are not interested in participating in this study.

As a reminder, participation is voluntary and confidential.

Thank you for your time and consideration and please feel free to contact me with any questions.

Most Sincerely,

Tanya M. Scherr

Appendix E: Interview Protocol

Date:
Time:
Hospital #:
Interview Candidate #:

Research Question:
What are the perceptions of hospital emergency coordinators as to the obstacles that have occurred at the local level in relation to emergency preparedness including those as a result of Section 5210 of the ACA?

Opening Comments:
Thank you again for agreeing to meet with me today. Our discussion should last approximately 90 minutes. Our discussion topic is emergency preparedness, planning and management in relation to execution at the local level. I will begin by asking a series of questions about the execution of this topic as it relates to your hospital. As a reminder, you do not have to answer any question that you choose not to and you can also ask to return to a question later during the interview if needed. Additionally, THA and/or the Healthcare Coalition will not have any knowledge of who agreed to participate in this process. As a reminder, we will be digitally recording the audio portion of the interview. Do you have any questions before we begin?

I would like to start with a few opener questions to gain a background of your overall experience and specific information related to your hospital.

Opening Questions:

- How long have you been employed in the healthcare industry?
- How long have you been in your current position?
- What are the primary responsibilities in your position?
- Does this hospital have an off-site emergency room (satellite office, etc.)?
    - How far away is it located?
- Are there any unique circumstances related to this hospital that I need to take into consideration for our talk today?

Interview Questions:

1. In your opinion what are the most important objectives in emergency management?
2. What are the main considerations you take into account in relation to emergency planning / preparedness for your hospital?
3. Other than the insurance exchange, how has the Affordable Care Act impacted emergency preparedness / planning at your hospital?

   a. Section 5210 of the ACA created a Regular and Ready Reserve Corps to assist in times of emergency. How has the creation of the RRRC affected your hospital in terms of emergency planning?
   b. In your opinion, what have been the challenges associated with the implementation of Section 5210 at the local level?
4. What have been the greatest challenges you face in emergency planning/preparedness?
   a. What are the potential obstacles that pertain to your hospital in terms of emergency planning / preparedness?
   b. What relationships would you consider vital or necessary to the success of emergency preparedness or planning for your hospital?
   c. What types of documentation do you rely on or have you created for your hospital to assist with emergency management?
5. How does turnover in staff affect emergency preparedness for your hospital?
6. How does turnover in EMS staff affect emergency preparedness for your hospital (trauma / emergency room)?
7. How does patient experience / satisfaction play into emergency planning / preparedness?
8. What in your opinion, are the largest threats to the success of emergency planning / preparedness?
9. What local resources are made available for you in terms of emergency preparedness or planning for your hospital?
10. How would your hospital ask for additional resources if needed?
    a. If Rural: What resources or services do you feel are needed in a rural area to help meet the needs of the population?
    b. If Urban: What resources or services would you like to see in the rural areas to help meet the needs of the population without having to rely on urban hospitals to provide for the rural areas?
11. During an emergency / disaster, how are immediate decisions made in the absence of documentation?
12. How is success measured at your hospital after an emergency event occurs?
13. How does your hospital make the decision to change any future processes after emergency events occur?
14. Do you have anything else that you would like to share before we close the interview?

<u>Closing Comments:</u>

This concludes our interview today. Thank you for participation in this research. Within one week from today, I will provide you with a copy of the transcribed interview questions and responses via email for your review. Please review the transcription and let

me know if there is anything that needs to be revised, edited, or clarified from today's interview.

Appendix F: Preliminary Coding

Research Question: What are the perceptions of hospital emergency coordinators as to the obstacles that have occurred at the local level in relation to emergency preparedness including those as a result of Section 5210 of the ACA?

Primary Coding - Topic:

Topic	Codes	Possible Interview Question
Emergency Preparedness, Planning and Management	EPPM	1,2,4,4a,4b,4c,5,6,7,8,9,10,11,12,13
Affordable Care Act	ACA	3,3a,3b

Secondary Coding - Theoretical Framework:

Topic	Codes	Possible Interview Question
Rational Choice Theory	RCT	2,4a,8,9,10,11
Beliefs	RCTB	
Desires	RCTD	2
Information	RCTI	
Action	RCTA	4a,8,9,10,11
Complex Adaptive Systems	CAS	1,2,3,3a,3b,4,4a,4b,4c,5,6,7,8,9,10,11,12,13
Phase Transitions	CASPT	4a,5,6,7,8
Path Dependence	CASPD	4,4a,7
Scale Free Networks	CASSFN	5,6,7
Feedback Loop	CASFL	1,2,3,3a,3b,4c,12,13
Emergent Behavior	CASEB	4a,4b,8,9,10,11
Institutional Analysis and Development	IAD	1,2,3,3a,3b,4,4a,4b,4c,5,6,7,8,9,10,11,12,13
Inputs	IADI	2
Action Situations	IADAS	4a,8,9,10,11
Outcomes	IADO	4,4b,5,6,7,12
Evaluation and Feedback	IADEF	3,3a,3b,4c,13

Tertiary Coding - Recurrent Themes:

Topic	Codes	Possible Interview Questions
Ask	ASK	10
Challenges	CHA	3b, 4
Considerations	CON	2
Decisions	DEC	11, 13
Documentation	DOC	4c
Impact	IMP	3
Objectives	OBJ	1
Obstacles	OBS	4a
Patient Experience / Satisfaction	PTEX	7
Regular and Ready Reserve Corps	RRC	3a
Relationships	RELA	4b
Resources	RES	9
Success	SUC	12
Threats	THR	8
Turnover - EMS	TEMS	5
Turnover - Staff	TURS	6

Appendix G: Letter of Cooperation

May 19, 2016

Dear Tanya Scherr,

Based on my review of your research proposal, the Healthcare Coalition would like to act in the capacity of a community partner for you to conduct the study entitled, The Perceived Effects of the Affordable Care Act on Emergency Preparedness in a Southeastern American County within the Tennessee Highland Rim Region.

In order to help facilitate your study, the Healthcare Coalition will provide a platform in which you can connect with hospital administrators and emergency coordinators within the TN Highland Rim Region. This will occur through providing an invitation for you to present information related to your study at one of our coalition meetings. We understand that until the Walden University IRB process has occurred, you will not be asking for participants in the study. Individuals' participation will be strictly voluntary and at their own discretion. We reserve the right to withdraw this invitation at any time prior to your presentation if our circumstances change.

.

You will be solely responsible for working with each hospital to meet any requirements that they deem necessary in order for their participation to occur, without the assistance or interaction from the Healthcare Coalition. We realize that in the spirit of a confidential study, the Healthcare Coalition will not be made privy to who volunteered to participate.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,

Jeffrey D. Mangrum

Co-Chair, Highland Rim Healthcare Coalition

Appendix H: Codes and Frequency of Usage

Primary Coding - Topic:

Topic	Codes	Code Frequency
Emergency Preparedness, Planning and Management	EPPM	545
Affordable Care Act	ACA	39

Secondary Coding - Theoretical Framework:

Topic	Codes	Code Frequency
Rational Choice Theory	RCT	173
Complex Adaptive Systems	CAS	584
Institutional Analysis and Development	IAD	584

Tertiary Coding - Recurrent Themes:

Topic	Codes	Code Frequency
Ask	ASK	6
Challenges	CHA	107
Considerations	CON	27
Current Events	CREV	29
Decisions	DEC	31
Documentation	DOC	48
Impact	IMP	24
Objectives	OBJ	19
Obstacles	OBS	19
Patient Experience / Satisfaction	PTEX	20
Regular and Ready Reserve Corps	RRC	15
Relationships	RELA	47
Resources / Ask	RES	63
Size	SIZE	14
Success	SUC	28
Threats	THR	27
Turnover - EMS	TEMS	11
Training	TRAIN	33
Turnover - Staff	TURS	16