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Emergency Managers' Perceptions of All-Hazards Pandemic Planning Effectiveness in North Texas

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Abstract

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Timothy Goss

MPA, Troy State University, 2001

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy

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Abstract

All-hazards pandemic planning is the foundation of current emergency management planning doctrine, yet there is limited information and limited studies related to its effectiveness in mitigating pandemics. The North Texas emergency management community handles incidents of West Nile Virus, H1N1 influenza, and a recent Ebola incident. Despite efforts to mitigate these threats, reported cases and deaths are still occurring from both influenza and West Nile virus. The purpose of this case study was to assess the risk perceptions of emergency planners in a small emergency operation center in North Texas using the cultural theory of risk perception as the theoretical framework. The raw data for this study originated from qualitative semi structured interviews with five emergency managers. By way of qualitative hand coding and thematic extraction, four primary themes emerged from the data: (a) political/organizational climate, (b) emergency response, (c) training and experience, and (d) communication. Additionally, all themes yielded relevant subthemes. The all-hazards approach to pandemic planning was effective as long as planners swiftly adjusted or adapted their plan for individual emergency events. The emergency management community still struggles with ineffective communication, negative political influences, poor coordination, and training shortfalls. Lack of trust in the levels of government emerged as a potential underlying cause to many of the issues. These findings may promote positive social change by assisting emergency management planners in assessing communications, coordination, training, appropriate use of personnel, and to identify areas where lack of trust between community partners may be affecting the overall response effort.

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Dedication

I dedicate my dissertation to not only my Lord and savior Jesus, but also the four most important women in my life. First, to my wife, Heather Goss, your unending love, support, devotion, and encouragement kept me rational, focused, and on task. Without the love and understanding of both you and our daughter, Jessica Jane Goss this endeavor would not have been possible. To my mother, Julie Goss, you are my pillar of strength and were an inspiration to me throughout my life. You taught me never to give up, no matter what life threw at you. I offer a very special thanks to you for always being there for me, especially in the hard times. To my Aunt, Dr. Diana Cochran, you were my inspiration for seeking a Ph.D. Finally, to the Horner family, I am truly appreciative for all of your prayers, friendship and support. Thanks to all of you!

Acknowledgments

I would like to express my gratitude to my committee chair, Dr. David Milen, and my committee members, the late Dr. Lilburn Hoehn, and Dr. Daphne Halkias, as well as my university research reviewer, Dr. Settles. Additionally, I would like to acknowledge everyone else from the Walden team who provided support and guidance throughout the course of my dissertation. I am thankful for your inspiring guidance, invaluable constructive criticism, and friendly advice during this research project. The dissertation process is long and arduous, but anything worth having requires hard work and discipline. My advice to fellow students is never give up on your dream of completing your doctorate degree. Follow the Walden plan. Build your dissertation piece by piece, and eventually you will find yourself walking across the stage.

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Chapter 1: Introduction to the Study

Throughout history, pandemics have caused countless deaths and suffering. North Texas has one of the largest populations in the Southern United States with over 6 million residents, and covers more than 9,000 square miles (U.S. Census Bureau, 2011). North Texas has a major international airport with a global reach, which is why it is important to study the area's capability to deal with pandemics. Health officials are concerned that a pandemic is inevitable (Kenney, Osterholm & Olshaker, 2017; Osterholm, Ballring & Kelly, 2013). This concern stems from the resurgence of human transmissible viruses like Ebola in West Africa, avian flu in Asia, the proliferation of West Nile virus in Texas, and cases of MERS-COV in the United States (Hunter, 2007; Khan et al., 2013). These concerns, in conjunction with attempts by foreign scientists to hybridize the avian influenza, present a clear problem preparing for potential pandemics and are a very real threat to the national security of the United States. The potential impact of a pandemic might include damage to the U.S. economy (Kelley, & Osterholm, 2008), in addition to the overall health and morale of the population. Therefore, emergency planners must continually assess their pandemic preparedness. Preparedness related to a potential pandemic threat requires further examination to identify potential gaps in the pandemic planning for North Texas.

This qualitative study focused on a small emergency operation center. The goal was to the determine North Texas Emergency managers' risk perceptions regarding the effectiveness of the all-hazards approach to pandemic planning. Cultural theory of risk

perception was the primary theoretical framework for the study, with a strong constructivist underpinning. Cultural theory of risk perception assumes that variables such as collective consciousness and cultural construct or reality influences public or organizational risk perception (King, 2012; Scherer & Cho, 2003; Wehbe, 2014). Similar studies in North Texas indicated shortfalls in preparedness response plans through the assessment of perceptions of preparedness (Rahm & Reddick, 2011).

The North Texas emergency management community handles high numbers of West Nile Virus cases, H1N1 influenza cases, and natural disasters like tornados and floods. Reported cases and deaths from the both West Nile virus and H1N1 influenza are still occurring with slight increases in 2013 and 2014 (Chung et al., 2013). In addition to the above issues with West Nile and H1N1, the Ebola outbreak in Dallas indicated problems with hospital preparedness planning. Nurses in the affected hospitals cited problems with protocol, preparedness, and the inability to deal with potential Ebola cases (Hennessy-Fiske & Susman, 2014). Assessing how individual organizations prepare to deal with pandemic events may provide valuable insight in determining whether the North Texas area is prepared for similar events and may reveal the perceived level of preparedness.

Researchers have used perception as a method for assessing various real-life situations including emergency management preparedness. The governing paradigm for this study was cultural theory of risk perception and understanding how emergency planners perceive the effectiveness of all-hazards pandemic preparedness. The all-hazards

approach to emergency management is a methodology for providing simpler emergency management plans to cover a broader range of possible threats, as opposed to using event-specific planning. When determining risk, emergency management planners must take into consideration the context of the threat or risk that has many internal and external variables such as complex interdependencies, uncertainties, organizational circumstances, political and individual experiences, and personnel educational levels (Seetoh, Liverani, & Coker, 2012).

Within current emergency management practices, the all-hazards approach to emergency preparedness provides the foundation for most emergency management planning. Other terms include *multi-hazards theory*. Disasters, pandemics and terror attacks are extremely unpredictable. Issues like time constraints, the manager's performance while under cognitive stress, and available information limit the ability of emergency managers to act or respond in the most effective way (Moore, Griffin, & Tapia, 2013). The general premise behind the all-hazards approach is that by having generic plans, an emergency planner can apply those plans to a broad range of situations. This provides planners with a less cumbersome plan that provides a broad-spectrum approach to emergencies (W. Waugh Jr., personal communication, June 2, 2015).

Cultural theory of risk perception theorist asserts that variables such as collective consciousness and cultural construct or reality influence risk perception (King, 2012; Scherer & Cho, 2003; Wehbe, 2014). Social constructivism provides a further understanding of risk perception. Constructivism has its roots in interpretivism with

further influence from sociology and postmodern qualitative research (Andrews, 2012). I wanted to explore each participant's perspective, so a qualitative case study was an appropriate research design to accomplish this task (see Denzin & Lincoln, 2005; Guthrie, 2012). Although Maxwell (2013) is not the originator of social constructivism, I used his interpretation of constructivism with the cultural theory of risk for exploring perceptions of the effectiveness of all-hazards pandemic planning. Based on the constructivist view of reality, humans construct the world around them by creating their ideal view of reality drawing from events acting upon them from internal and external sources (Maxwell, 2013). Assessing perceptions of professionals dealing with pandemic preparedness may identify strengths, weaknesses, and pitfalls in all-hazards pandemic plans.

According to Maxwell (2013), "none can claim absolute truth" (p. 43). If an emergency preparedness planner perceives that he or she is not prepared to respond to a pandemic, then there may be gaps in the overall preparedness plan. A key tenant of emergency management planning is the use of the all-hazards approach to plan for potential emergencies. In 2006, the U.S. Government enacted the Pandemic and All-Hazards Preparedness Act. This act provided a broad-spectrum approach to hazard mitigations (U.S. Congress, 2006). Data and studies related to assessing the viability of using the all-hazards approach for pandemic planning are scarce and present a significant gap in the understanding of pandemic planning in North Texas.

Finally, there are two reasons that justify studying the Red River Emergency Operation Center (EOC)'s pandemic preparedness. First, the Ebola outbreak in the Dallas area highlighted potential issues with local pandemic preparedness planning. Second, understanding the perspective of professional emergency planners may assist in identifying areas where the organizational pandemic preparedness plan needs improvement. This chapter contains the purpose, background, problem statement, research questions, definitions, scope, theoretical framework, and significance of this study.

Background of the Study

In this study, I examined a single federal regional emergency operations center in the North Texas emergency response community. The organization's pseudonym was "Red River EOC." This is not an actual identifier or designation for this operations center. The North Texas emergency management community comprises federal, state, and local governments; nonprofit organizations; medical support entities and civilian aid; and other support organizations. Observing how the emergency managers and planners prepare for potential pandemic events may provide insight or identify gaps in overall pandemic preparedness levels for a community. Because a pandemic could become a globally catastrophic event, it is important to understand the mind-set of community emergency planners to identify potential issues in preparedness planning.

There are many occasions when emergency preparedness planners have failed to follow guidelines or underestimated the potential impact of emergency events. One

example is a small North Texas city that received federal funds to establish a federally mandated emergency planning committee (Shipp, 2013) yet failed to do so. This surfaced after the area experienced a major fertilizer plant explosion, which destroyed a school, apartment complex, and several homes and drew the attention of federal and state emergency preparedness agencies (Shipp, 2013). This complacency may have resulted from underestimating the perceived risk posed by various emergency events. In the emergency preparedness planning, community life-ending or altering events are often underestimated (Cirkovic, Sandberg, & Bolstrom 2010), as was also evident with the 2014 Ebola outbreak in North Texas.

When preparedness plans fail, inadequate training and poor communications usually surface as significant factors in the failure. The Federal Emergency Management Agency (FEMA) has attempted to mitigate this by providing training opportunities and establishing a framework for dealing with emergency management events. Federal agencies with emergency management missions can complete specified training offered by FEMA to standardize federal, state, local, and tribal emergency management and continuity planning proficiency. The Federal Emergency Management Agency has training available online for not only federal planners, but also state, tribal and local planners. This training is available via online and classroom training, (FEMA, 2014).

With the ubiquitous threat for potential global pandemics like swine and avian flu viruses (H1N1 and H5N1), it is important to ensure that the North Texas area emergency management community is prepared to respond appropriately. The threat of a pandemic

is a serious concern, and the concern is elevated with recent revelations that the foreign scientists had hybridized an influenza mix of H1N1 and H5N1. The hybridization came under scrutiny when Chinese scientists from the Harbin Veterinary Research Institute announced they had mixed H5N1 bird-flu and H1N1 Swine flu (Miller, 2013). Swine flu is easily transmittable to humans, but bird flu is not. Mixing the two makes an especially virulent strain of influenza (Miller, 2013). If the hybrid were accidently released, it could result in as many as one million deaths worldwide (Miller, 2013).

Finally, this study may assist the emergency management community in closing the information gap regarding the effectiveness of all-hazards pandemic planning because there are scarce assessments of this approach to pandemic preparedness. Despite attempts to improve the emergency preparedness and response capabilities, problems continue to arise (Chung, et al., 2013). If studying risk perception can identify weaknesses or strengths in a pandemic response plan, it could ultimately facilitate a more efficient response effort.

Problem Statement

There is a problem in the North Texas pandemic preparedness community handling high numbers of West Nile Virus and H1N1 influenza cases. Despite efforts to mitigate these threats, reported cases and deaths from the both West Nile virus and H1N1 influenza are still occurring in North Texas (Chung et al., 2013). Pandemic planning is extremely important in minimizing or at least managing the impact and spread of a pandemic outbreak. Understanding how emergency management planners perceive the

risk of a pandemic and their level of preparedness supporting pandemics using the all-hazards approach is a priority because it can potentially identify problems with a pandemic plan (Turabelidze, 2011).

The West Nile Virus and the H1N1 influenza have negatively affected the North Texas population over the past decade with an influenza pandemic occurring in 2009. A possible cause of this problem is emergency preparedness planners underestimating the potential risk, impact, or likelihood of a pandemic (Chung et al., 2013; (Goolsby & Mothershead, 2013). Investigating how the Red River EOC perceives risk using the all-hazards approach in pandemic preparedness may assist in identifying strengths and weaknesses in the local pandemic preparedness plan.

Purpose of the Study

The purpose of this study was to assess the effectiveness of the all-hazards approach to pandemic planning through the eyes of the participants affiliated with the Red River EOC located in North Texas. Pandemic outbreaks can have global implications. This global reach became apparent with the 2014 Ebola outbreak, which started in North Texas after an infected person from West Africa flew into Dallas. This outbreak highlighted the importance of continually evaluating capabilities to manage and respond to potential pandemics. This was a study of how affiliated members of this small federal regional emergency operations center in North Texas perceive the effectiveness of all-hazards pandemic planning. The objective was to determine whether Red River EOC members perceive that they are prepared to handle a pandemic and if not why.

Assessing how individuals within the emergency community perceive all-hazards pandemic planning might provide valuable insight into overall area preparedness. If local communities do not prepare properly for emergencies like pandemics, the public could panic and exacerbate the situation (Moore, 2011). Understanding the perspectives of emergency preparedness professionals concerning all-hazards effectiveness to pandemic preparedness can reveal their perceived level of preparedness for the local area and may identify strengths and weaknesses with their preparedness plan. If emergency planners underestimate the impact of an emergency event, it could lead to an overall ineffective response effort (Rahm & Reddick, 2011) and increased casualties or deaths.

Research Question

What are the perceived risk perceptions of North Texas emergency management stakeholders regarding all-hazards pandemic planning effectiveness?

Theoretical Framework

I conducted an exploratory case study using a social constructivist lens and the cultural theory of risk perception to examine organizational individuals' perceptions of the effectiveness of the all-hazards approach to pandemic preparedness planning. The all-hazards approach to emergency management planning is the primary driving principle within emergency management planning doctrine (Canton, 2013). Although Maxwell (2013) is not the originator of social constructivism, I leveraged his interpretation of constructivism as the underlying foundation for assessing effectiveness of the all-hazards approach to pandemic preparedness. The primary theoretical framework for the study was

cultural theory of risk perception. Cultural theory of risk perception is the assumption that public or organizational perception of risk can receive influence from variables such as collective consciousness and cultural construct or reality (King, 2012; Scherer & Cho, 2003; Wehbe, 2014).

Cultural theory of risk perception is similar to the constructivist's view that perception is reality and derived from the lived experience. This framework can assist in determining how each individual within a shared community perceives risk. A researcher can assume that individuals and organizations within professional communities will share similar perceptions of risk depending on the shared variables (King, 2012, Scherer & Cho, 2003).

Social constructivists argue that the nature of reality is both objective and subjective (Maxwell, 2013), and constructivist researchers want to study participants within the context of their natural work environment (Creswell, 2013). According to Maxwell (2013), "perception is reality" (p. 43), so understanding how participants perceive the effectiveness of the all-hazards approach to pandemic preparedness can provide a look inside the overall perception of preparedness of this small federal regional emergency operation center. From Maxwell's interpretation of the social constructivist lens, emergency preparedness planners have a constructed reality (Maxwell, 2013) that they use as a frame of reference for dealing both internally within the emergency operations center and externally with other members of the pandemic response community. Understanding these perceptions may provide insight into members of the

Red River EOC's mind-set and may identify strengths and weaknesses in the emergency preparedness plan.

This case study addressed the risk perceptions of affiliated members of this federal regional emergency operation center regarding the effectiveness of the all-hazards approach to pandemic preparedness. This case study leveraged a social constructivism perspective and cultural theory of risk perception to assess effectiveness of the all-hazards approach to pandemic preparedness. Previous researchers used risk perception assessment to identify training shortfalls and gaps in preparedness planning (Rahm & Reddick, 2011). I conducted interviews with participants regarding their risk perceptions concerning the effectiveness of all-hazards pandemic planning. I delved into their perceptions regarding the community's ability to manage a pandemic. The interview questions elicited participants' feelings regarding area preparedness based on their lived experiences and shared cultural experiences in the emergency management field.

Nature of the Study

I used a qualitative case study to examine the risk perceptions of members affiliated with a small regional emergency operation center regarding the effectiveness of all-hazards pandemic planning. The objective was to understand how these employees construct their reality or risk perception of emergency preparedness related to the effectiveness of all-hazards pandemic planning. In this study, I used multiple sources of information including interviews, reflective memos, and existing literature. I chose the case study design for this study because a case study approach is appropriate if the

researcher wants to study a problem in its natural setting and wishes to use multiple sources of data for the study (Yin, 2010).

Definitions

All-hazards approach to emergency planning: The application of generic plans by an emergency planner to a broad range of situations (FEMA, 2014).

Antigenic shift: When a virus's ability to cause an immune response dramatically shifts as the result of recombination of two strains of influenza *A* virus, the result is an antigenic shift. The fallout from this shift usually sets the stage for a pandemic, or at least sporadic epidemics throughout the world, and makes transmission between humans and animals easier (Medicine Net, 2014).

Continuity of government: Activities that ensure essential functions are preserved following a catastrophic event or national emergency (FEMA, 2014).

Continuity of operations: Activities of individual departments and agencies and their subcompartments to ensure command, control, and communications as well as providing at least minimum support to stakeholders (FEMA, 2014).

Cultural theory of risk: The theory that individuals and organizations within professional communities will share similar perceptions of risk depending on the shared variables (King, 2012; Scherer & Cho, 2003).

Devolution: Transferring statutory authority and responsibility for essential functions from primary staff and facilities to backup personnel to sustain operations during an emergency period (FEMA, 2014).

Emergency manager: The individual responsible for planning for emergency events and executing a response plan in the event of an emergency occurs (FEMA, 2014).

Organizational risk perception: A perception shaped from variables such as collective consciousness and cultural construct or reality (King, 2012; Scherer & Cho, 2003; Wehbe, 2014).

Pandemic: An outbreak of a biological threat such as influenza, viruses, or diseases that has the potential for affecting a large geographic area and for causing mass casualties (FEMA, 2014).

Preparedness: See readiness.

Readiness: The ability of a community to respond to an emergency event such as a natural disaster, natural disaster, terrorism, or pandemic (FEMA, 2014).

Red River EOC: The pseudonym for a small federal emergency operations center in North Texas.

Reconstitution: The process of resuming normal operations from the continuity site to original facility (FEMA, 2014).

Social constructivist theory: A theory that asserts the nature of reality is both objective and subjective (Maxwell, 2013).

Assumptions

This study revolved around one basic assumption that risk perception would serve as an effective method for assessing perceived effectiveness of pandemic preparedness in the study site. Although there may be inconsistencies between perceptions versus

documentation like organizational inspections, I assumed that identified perceptions were valid because there is no absolute truth (see Maxwell, 2013). I examined perceptions of the effectiveness of the all-hazards approach to pandemic planning using cultural theory of risk, so I assumed that if a participant perceives a problem then there is a valid reason for this perception. Because there has been much media attention regarding shortfalls in hospital preparedness during the 2014 Ebola outbreak, I also assumed that participants might internalize the belief that the area is ill prepared to manage a pandemic. Finally, I acknowledged that I as the researcher brought my own bias to the study and was constantly aware of potential impacts of these biases.

During this study, I interacted with participants while gathering raw data based on participants' experiences related to pandemic preparedness. I was cognizant of potential bias when collecting my data and attempted to avoid trying to lead or guide participants to a particular response. I asked open-ended questions and clarifying questions only if the response was not clear to me.

Scope and Delimitations

Scope

I examined risk perception of participants regarding pandemic preparedness as a method for assessing the effectiveness of all-hazards pandemic planning for a single federal emergency operation center consisting of 10 full-time local personnel and four geographically dispersed personnel. The goal was to identify strengths and weaknesses within the organization's pandemic plan. I selected participants affiliated with the Red

River EOC who had a background in emergency preparedness. For the primary study, I interviewed local members of the organization regarding their perceptions of the effectiveness of the all-hazards approach to pandemic preparedness. I also reviewed existing literature.

Delimitations

I focused solely on local members affiliated with a single federal regional emergency operation center located in North Texas. The focus of this study was to identify the perception of North Texas preparedness for emergency operation center affiliated members responsible for supporting pandemic response. I studied the emergency operations center under a pseudonym to preserve organization confidentiality. I did not evaluate employees on performance, and although I had a seat in the organization, I was not a member of the organization and had no supervisory or subordinate relationship with the participants. The study focused on participants' perceptions of the all-hazards approach in pandemic planning to determine North Texas preparedness levels for a pandemic. The study was limited to perceptions of individuals who have education and experience in emergency management planning. This study was also limited to participants affiliated with the Red River EOC and focused on the North Texas all-hazards approach to pandemic preparedness. The small size and uniqueness of the organization may limit the generalizability of findings. Finally, I did not evaluate the performance of participants.

Limitations

The study was qualitative in nature. The single unit of analysis was the Red River EOC, which I studied in a natural setting. Due to the uniqueness of the individual organization, results may not be generalizable to the larger emergency management community. Another limitation was potential researcher bias because I am a member of the Red River EOC community. The researcher is an extension of the data collection instrument because the researcher is providing an environment conducive to freedom of expression (Chenail, 2011). The researcher is an instrumental aspect of the data collection process and sets the tone for the interviews (Chenail, 2011). For this study, I did not use a preestablished interview instrument, but rather created a set of open-ended questions designed to allow participants to provide insight into their perceptions.

To assist in identifying my potential bias, I used analytic memos to capture my thoughts and perceptions during the research process. Once the interviews were complete, I gave participants an opportunity to review the transcript to ensure I captured participant's thoughts accurately. I provided them an opportunity to correct or clarify the content if necessary to reflect accurately their perceptions. I have about six years of experience in the field of emergency management related to pandemic preparedness and hold a continuity practitioner’s certification. I also have 20 years experience dealing with terrorism and intelligence-related threats to personnel, programs, and infrastructure. I work closely with the organization, but serve primarily as an Insider Threat Program Coordinator. Personal perceptions or constructed realities are not always consistent with

the physical environment depending on internal and external factors, so triangulation of the data assisted in enhancing validity (see Creswell, 2009). For this study, I triangulated the data from multiple sources to cross verify the data.

Significance of the Study

The significance of this study was that exploring risk perceptions related to all-hazards pandemic planning effectiveness may identify potential strengths and weaknesses in the organization's preparedness plan and better prepare the community for pandemic response. This study is important for emergency preparedness personnel in the organization being studied and may provide insight into alternative tools for assessing pandemic preparedness. Additionally, findings may provide other pandemic preparedness practitioners with a tool for assessing their pandemic plan strengths and weaknesses. If the area is not fully prepared to manage a pandemic, lives could be at risk, as was the case with the Ebola outbreak that occurred in the fall of 2014. Finally, the overall goal for examining pandemic preparedness of North Texas was to save lives and prevent suffering during a pandemic. Even one death due to poor planning is unacceptable.

Significance to Policy

This study was my attempt to identify alternative methods for identifying shortcomings within pandemic preparedness plans. I sought to develop strategies to improve public policy related to emergency management planning. The all-hazards approach to planning is the foundation of current emergency management planning. Even with the prevalence of this underlying approach to emergency management planning,

there are significant gaps in understanding the effectiveness of the all-hazards approach for pandemics. There have been limited studies and assessments in North Texas related to risk perceptions of the effectiveness of this approach. The assertion within the emergency management community is that developing generic all-hazard plans may provide a better response to a wider variety of situations, as opposed to planning for each individual emergency or disaster that might occur (Comfort, Waugh, & Cigler, 2012). In this study, I explored potential alternative assessment tools that might enable emergency planners to think creatively when assessing their readiness for pandemics. Existing research demonstrated that studies in perception can be useful in identifying strengths and shortcomings in emergency planning (see Rahm & Reddick, 2011).

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Significance to Social Change

People perceive risk differently. Constructivist and cultural risk perception theorist assert that people construct their personal view of reality. They base their risk perception of reality on a collective subconsciousness, shared cultural experiences, and stressors from their surroundings (Maxwell, 2013; King, 2012; Wehbe, 2014). Understanding how professionals within the pandemic preparedness community perceive the effectiveness of the all-hazards approach to pandemic planning may assist in improving the effectiveness of existing pandemic plans. Additionally, any disconnect between the perceptions of emergency planners regarding local area readiness and documented preparedness levels may identify issues or shortfalls in the all-hazards

approach to emergency pandemic planning for the organization. If not mitigated, unaddressed issues could put employees and millions of people at risk if a pandemic occurs.

Summary

Preparedness and the effectiveness of the all-hazards approach to pandemic planning related to a potential pandemic threat warranted further examination to identify potential gaps in the pandemic planning for North Texas and to close the gap in knowledge related to the effectiveness of this approach. The North Texas emergency management community handles numerous incidents of West Nile virus and H1N1 influenza, in addition to natural disasters like tornados and earthquakes. Researchers have used risk perception as a tool for assessing various real-life situations including emergency management preparedness (Rahm & Reddick, 2011). Understanding the risk perceptions of emergency management practitioners concerning pandemic preparedness may reveal the perceived level of preparedness for the organization and the perceived effectiveness of the all-hazards approach to pandemic planning (Wehbe, 2014). There were two issues that justified studying the Red River EOC's pandemic preparedness. First, because a pandemic could potentially become a globally catastrophic event, it is important to understand the mind-set of community emergency planners to identify potential issues in the preparedness plan. Second, failure in the pandemic plan could put thousands if not millions of lives at risk of illness or death.

This case study addressed the perceptions of all-hazards planning effectiveness from the employee's perspective. These perspectives included perceived preparedness for the North Texas emergency management community. The findings may improve upon existing preparedness planning for the area. Chapter 2 includes current literature regarding emergency preparedness, perception, pandemic response, historical data related to emergency management, and national policy related to pandemic preparedness.

Chapter 2: Literature Review

I focused the literature review for this study on emergency preparedness using cultural theory of risk perception as a method for assessing the effectiveness of the all-hazards approach to preparedness for pandemics. There is a problem dealing with high incidents of West Nile virus and H1N1 in North Texas. The purpose of this study was to explore how affiliated members of a small federal regional emergency operations center in North Texas perceive the effectiveness of the all-hazards approach to preparedness for pandemics. The results of this study may assist researchers in closing the knowledge gap on the effectiveness of the all-hazards approach to pandemic planning.

This chapter highlights researchers' use of assessments of risk perception to identify strengths and weaknesses within their emergency management planning. In this review, there is a brief history of pandemics, pandemic policy, the Red River Emergency Operation Center, National Pandemic Strategy, local perceptions, emergency management planning, and manipulation during a crisis. Finally, this section closes with ideas on how emergency management planners might think outside of the box of traditional emergency management thinking when developing their pandemic preparedness plans.

Literature Search Strategy

I identified supporting peer-reviewed literature through searches of multiple databases in the Walden University library, as well as Google Scholar and some public

information open source searches. Some of the databases were Sage, Proquest, and Thoreau. Key words included *pandemic*, *emergency preparedness*, *emergency management*, *perception*, *reality*, *supply chain collapse*, and *risk perception.* Key words were searched in varying combinations to yield 86 articles for this literature review. I examine literature regarding the nature of reality regarding pandemic preparedness in North Texas using a social constructivist point of view, which asserts that perception is subjective and constructed differently by each person based on internal and external forces. I accomplished this by identifying perception development of emergency management planners with roles and responsibilities within the pandemic preparedness community at large and in North Texas.

This was a study of perceptions regarding pandemic preparedness in North Texas for a single emergency operation center using a case study approach. One objective was to identify key themes and patterns within the perceived experiences of members from the Red River EOC regarding preparedness. I used these key themes to assess existing pandemic planning. Because of the specialized nature of pandemic preparedness, the literature review includes historical data related to general emergency management and national policy related to pandemic preparedness.

Theoretical Framework

I employed a qualitative case study approach using a social constructivist lens and cultural theory of risk perception to examine organizational perceptions of preparedness and determine the perceived effectiveness of the all-hazards approach to pandemic

planning. Constructivist theory originates from interpretivism with further influence from sociology and postmodern qualitative research (Andrews, 2012). Although Maxwell (2013) is not the originator of social constructivism, his interpretation of constructivism provided the foundation for my assessing preparedness for this organization. Social constructivists argue that the nature of reality is both objective and subjective (Maxwell, 2013), and constructivist researchers want to study participants within the context of their work environment (Creswell, 2013).

According to Maxwell (2013), "perception is reality" (p. 43), so exploring how participants perceive risk within pandemic preparedness may provide an understanding of the overall perception of preparedness of this small federal regional emergency operation center. Emergency preparedness planners have a collective consciousness (Wehbe, 2014) and constructed reality (Maxwell, 2013) that they use as a frame of reference for dealing both internally within the emergency operations center and externally with other members of the pandemic response community. Understanding these risk perceptions may provide insight into members of the Red River EOC's risk perceptions and may identify strengths and weaknesses in the emergency preparedness plan.

Cultural theory of risk perception is the assumption that variables such as collective consciousness and culturally constructed reality shape public or organizational perception of risk (Wehbe, 2014). This is similar to the constructivist's view that perception is reality. Understanding these theories can assist in determining how each individual within a shared community perceives risk. A researcher can assume that

individuals and organizations within professional communities will share similar perceptions of risk levels depending on the shared variables (King, 2012; Scherer & Cho, 2003).

The case study approach aligned with the research questions in this study. The underlying conceptual basis for this study was Maxwell's interpretation of social constructivism, which asserts that perception is reality. There were limited studies addressing perception as a method for assessing emergency preparedness in North Texas and even fewer studies addressing the effectiveness of the all-hazards approach to pandemic panning.

The results of this study may contribute to an understanding of the overall effectiveness of the all-hazards approach to pandemic panning in North Texas from an organizational perspective. Previous research in North Texas included the concept of risk perception assessment to identify training shortfalls and gaps in preparedness planning (Rahm & Reddick, 2011). Research and supporting interview questions facilitated an open and honest assessment of local preparedness from the perspective of the participants. Semi structured interviews with each participant helped me assess the community's ability to manage a pandemic. I also reviewed and analyzed peer-reviewed articles and research studies pertinent to this case to determine whether they supported participants' perceptions regarding North Texas and organizational preparedness.

Literature Review

Reality, Perception, and All Hazards Pandemic Planning

Pandemics have occurred periodically throughout history and have left many deaths in their wake. Emergency management planners have attempted to mitigate the impact of pandemics on society. There is concern that the next big pandemic is overdue and could strike at any time (Health and Human Services [HHS], 2014). Some well-known pandemics in world history are the Spanish influenza, Bubonic plague, and swine flu, with influenza being the number one killer throughout history (Walters, 2014). Pandemics like the Spanish influenza of 1918 quickly became a global problem as the illness spread swiftly around the globe due to ship travel and the ease of human-to-human transmission. Preparing to mitigate pandemics is extremely important because even without reaching pandemic levels influenza manages to kill 12,000 to 56,000 people worldwide annually. Many of these deaths are preventable with vaccines (CDC, 2017).

There are many emerging pandemic threats to the United States. In 2014, the HHS determined that the Middle East respiratory syndrome (MERS-COV) posed a significant threat to U.S. citizens when they traveled abroad for Hajj and Ramadan. With the reporting of at least two confirmed MERS-COV cases within the United States in May 2014, there was potential for an emerging pandemic within the United States. This threat drives home the assertion that assessing pandemic preparedness plans is important to ensure emergency management planners are prepared to manage the threat.

The emergency management field is consistently evolving as new and emerging natural and natural threats arise. As soon as emergency management planners think they have every possible threat covered, new ones emerge catching planners by surprise. Threats are evolving faster than emergency management planners can keep up with them (Koelher, et. al 2014; Fosher, 2005). This has forced emergency management planners to consider creative means for assessing evolving and emerging threats. Because threats are continually evolving (Koelher, et. al 2014; Fosher, 2005), it is important to highlight the need for looking at emergency and pandemic planning from a fresh perspective.

Researchers used perception to assess previous emergency management planning programs, with good results. Reality is subjective and based on internal and external influences (Maxwell, 2013), so studying risk perception has the potential to assist in assessing the soundness of a pandemic plan. Understanding the nature of reality from Maxwell's perspective using a constructivist lens as it pertains to emergency management planning might help identify the role perceptions plays in pandemic response planning and preparedness of the Red River EOC. Identifying perceptions may also identify potential gaps in pandemic planning. Understanding pandemic history, pandemic policy, a description of the Red River Emergency Operation Center, National Pandemic Strategy, local perceptions, emergency management planning, perception manipulation during a crisis and the utility of outside-the-box thinking may shed light on the overall risk perception of preparedness in North Texas from the Red River EOC members' perspectives.

Humans construct reality and draw from influences both internally and externally (Maxwell, 2013). Identifying how participants construct reality based on these internal and external forces may provide insight into the perceived reality of Red River EOC emergency management planners. There may not be multiple realities, but individuals may make different interpretations, assessments, or observations of the same reality (Cheu-jey, 2010). It is possible within the Red River EOC that each member observing or assessing the same pandemic preparedness reality will have differing opinions or interpretations of that reality. Humans may see the same event from differing perspectives, and each member of the Red River EOC may observe the reality of pandemic preparedness differently based on life experience, education, emergency management experience, and factors acting both internally and externally on the organization (Cheu-jey, 2010). From a cultural theory of risk viewpoint, because the participants share a common cultural construct, their perceptions should mostly be congruent.

The following is an examination of literature related to the history of pandemics and emergency preparedness using a constructivist lens. Research studies related to how humans construct reality from internal and external triggers. Within the framework of case study analysis, I assess the perceptions of participants as a tool to evaluate pandemic preparedness for the Red River EOC from the perspective of affiliated members. I reviewed the following literature in order to develop an understanding of how humans shape perceptions from internal and external triggers. I used this understanding to

identify perceptions within this emergency operation center and attempted to identify those triggers. These internal and external triggers act on all humans and assist in perception development. Once collected, the data was used to evaluate the perceptions of all-hazards effectiveness for pandemics. By understanding how affiliated members of the same federal regional emergency operation center perceive preparedness for pandemic influenza and their perceptions regarding overall effectiveness of all-hazards planning, it should be possible to identify potential gaps, shortfalls, strengths or weaknesses within the local area pandemic preparedness plan. The overall goal of this study was to identify perceived effectiveness of all-hazards pandemic planning in North Texas. This results of this study identified alternative methods for assessing pandemic preparedness and assessing strengths and weaknesses of existing pandemic plans.

Throughout history, pandemics have caused countless deaths and suffering. North Texas has one of the largest populations in the South with over 6 million residents, and covers more than 9,000-square-mile (U.S Census Bureau, 2011). It has a major international airport with a global reach. Therefore, it is extremely important that local planners continue to assess area's capability to deal with pandemics.

Health officials are concerned that a pandemic is inevitable. This concern stems from the resurgence of human transmissible viruses like the Ebola in West Africa, Avian Flu in Asia, the proliferation of West Nile virus in Texas and recent cases of MERS-COV in the United States (Khan, Sears, Wei Hu, Brownstein, et. al., 2013; Hunter, 2007). These concerns in conjunction with attempts by the foreign scientist to hybridize the

avian influenza present a clear problem for preparedness for potential pandemics and are a very real threat to the national security of the United States. The potential impact a pandemic might have on not only the U.S. economy (Kelley, & Osterholm, 2008), but also overall health and moral of the population is extremely serious. Therefore, it is extremely important to seek new tools for assessing preparedness.

Preparedness related to a potential pandemic threat merits further examination in order to identify potential gaps in the pandemic planning for North Texas. The North Texas emergency management community handles high incidents of West Nile Virus, and H1N1 influenza, in addition to natural disasters like tornados. Reported cases and deaths from the both West Nile virus and H1N1 influenza are still occurring with slight increases in 2013 and 2014 (Chung, et al., 2013). In addition to the above issues with West Nile and H1N1, the recent Ebola outbreak in Dallas identified problems with hospitals preparedness planning. Nurses cited problems with protocol, preparedness, and that there was no system in place to deal with potential Ebola cases (Hennessy-Fiske and Susman, 2014).

Assessing how individual organizations prepare to deal with pandemic events using all-hazards approach might provide valuable insight in determining whether the North Texas area is prepared for similar events and might uncover their level of preparedness. Researchers have used perception as a tool for assessing various real life situations including emergency management preparedness (Rahm & Reddick, 2011). Since humans construct the world around them by creating their ideal view of reality

drawing from events acting upon them from internal and external sources (Maxwell, 2013) assessing risk perception of professionals dealing with pandemic preparedness may identify pitfalls in existing pandemic plans. According to Maxwell (2013) “none can claim absolute truth” (pg 43) and if an emergency preparedness planner perceives that they are not prepared to respond to a pandemic, then there may be gaps in the overall preparedness plan.

Perceptions provide a look into the perceived effectiveness of all-hazards planning and preparedness of an organization. It might be possible to identify strengths and weaknesses of existing preparedness plans. According to Maxwell (2013) and constructivist theory, “Perception is reality” (p. 43), so understanding how participants perceive pandemic preparedness can provide a look inside the overall perception of local preparedness of this small federal regional emergency operation center’s members. Constructivists believe that there are multiple realities and there are variables acting upon these realities (Maxwell, 2013). So, because there can be multiple perspectives or perceived realities, pandemic planners can benefit from studying their own perceptions related to pandemic preparedness.

Perceptions can vary from individual to individual based on internal and external forces. Based on the theory of constructivism there is a propensity for individuals to make alternate interpretations, assessments or observations of the same reality (Cheu-jey, 2010). This variance is due to forces acting differently on each individual. It is possible within the Red River EOC that each member observing or assessing the same pandemic

preparedness reality for North Texas will have differing opinions, assessments or interpretations of that preparedness reality. By analyzing these variations together, it may be possible to develop better understanding of local area pandemic preparedness. The influence of these variations on perception may make it possible to identify common themes and identify potential strengths or weaknesses for a pandemic plan. Therefore, an examination of pandemic preparedness assessing perception can be a valid method for assessing area pandemic preparedness.

Humans see the same event differently and may see the same event from differing perspectives (Cheu-jey, 2010). It is feasible that each member of the Red River EOC may observe the reality of pandemic preparedness for North Texas differently based on variables such as life experience, education, emergency management experience, and events acting both internally and externally of the organization (Cheu-jey, 2010). Emergency planners should consider these variables, when analyzing perceptions of pandemic preparedness and perceived preparedness of the Red River EOC. Once analyzed, these variables can assist in developing key themes.

Qualitative research can contribute to an understanding of a phenomenon studied in a natural setting by identifying key themes, patterns and categories. As qualitative researchers analyze data they anticipant that themes, patterns, and categories will be identified and might provide a better understanding of the data (Bendassolli, 2013). Identifying key themes can contribute to an overall understanding (Bendassolli, 2013) of pandemic preparedness. In this qualitative study, I developed key themes of and

attempted to identify strengths, weaknesses and potential gaps in the organization's pandemic preparedness plan.

Participants have a constructed view of all-hazards pandemic preparedness. From the constructivist lens, emergency preparedness planners, and humans in general, have a constructed reality that they use as a frame of reference, (Maxwell, 2013). Emergency management planners develop this constructed reality from both internal influences within the emergency operations center, and externally with other members of the pandemic response community. This response community may include higher headquarters, state government agencies, local emergency management offices, nonprofit support agency officials and other entities. Understanding the interactions between these entities can provide a better understanding of preparedness for the area.

Insight into preparedness is subjective and influenced by internal and external variables (Maxwell, 2013), so understanding the perceptions of emergency management planners regarding local area preparedness might provide insight into the Red River EOC's perception related of pandemic preparedness for North Texas. The assessment of these potential strengths, weaknesses, and potential gaps in the organizational pandemic response plan can better prepare the organization to respond to a pandemic. If I identify any issues with perceived preparedness in the analytical process, I can show that analysis of perception is useful as an analytical tool for assessing preparedness (see Rahm & Reddick, 2011).

Studies of perception identified issues within the emergency management planning process, for example; researchers have used perception to identify training shortfalls and lack of confidence in organizational emergency planning abilities (Rahm & Reddick, 2011). If planners had not identified these training shortfalls not been identified, there could be a serious impact on the response to a pandemic or emergency event. Assessing an emergency management planner's perceptions of an emergency threat situation has also assisted researchers with identifying differences in how city managers perceive risks to their city (Rahm & Reddick, 2011). Perception is not factual, but rather constructed from the city manager's view of reality and understanding how the city managers perceived this risk provided valuable insight into preparedness of their organization and city (Rahm & Reddick, 2011).

Using risk perception as an assessment tool might provide valuable insight into the overall preparedness of an organization (Rahm & Reddick, 2011). One can then measure perceptions against conventional methods like after action reviews, exercises, written plans, and self-inspection reports, to aid in identifying strengths, weaknesses and potential gaps or shortcomings (Rahm & Reddick, 2011). For example, are planners overestimating or underestimating risk? Using risk perception as a method to assess preparedness might also assist in determining if the public will adhere to the recommendations of the emergency planning and response community (Rahm & Reddick, 2011). Emergency management planner's risk perception of threat and preparedness suggests that perception of risk is a driving force behind whether the public

will take appropriate precautions during a pandemic, or ignore official recommendations (Prati, Pietrantoni, & Zani1, 2011).

Risk perception is moldable (Rahm & Reddick, 2011). Because humans construct their view of reality based on internal and external influences, it is possible to modify or manipulate their view of emergency events. Emergency preparedness planners must quickly inform the public concerning mitigation techniques, during the early stages of a possible pandemic. Manipulating the public's perception, so that they perceive a risk of an ongoing pandemic as extremely serious can drive preventive or mitigating behavior (Prati, et al., 2011). This perception manipulation directly influences public implementation of hygienic safety measures like social distancing, hand washing, covering mouth and nose when coughing, and even wearing surgical masks to protect oneself (Prati, et al., 2011).

Perception Manipulation During a Crisis

There are many elements affecting perception and it is possible to mold perceptions. Another factor that could affect Red River EOC member's perceptions of local preparedness is the use of perception manipulation of the public and emergency management planning organizations. Keeping the public informed during an emergency can mean the difference between life and death for people in an affected area. One important focus of crisis communications is to mold the public's perception of an emergency or disaster, in order to maintain order and provide the public with strategies to reduce, prevent, avoid or mitigate potential hazards and threats within the area affected

by such emergencies (Palttala, Boano, Lund, & Vos, 2011). It is likely during an emergency event that multiple agencies and organizations responding to a crisis are working their own agenda while attempting to mold or influence the public's perception and other responder's perceptions. For example, these organizations might conduct damage control or attempt to preserve their reputation (Palttala, et al., 2011).

The research studies related to perceptions indicate that people construct their view of the world based on multiple influences acting both internally and externally to them. These studies of perception in emergency management preparedness like those conducted by Nowland (2012), Spranger, Villegas, Kazda, Harris, Mathew, & Migala (2007) indicate that individuals construct their perception of the world around them. They draw from internal and external influences (Maxwell, 2013), like training, education, and experience related to emergency planning, in order to develop a worldview or perceptions of preparedness. There are indications that some organizations appear to take advantage of this in order to manipulate the public and emergency management planning community's perception of an emergency or disaster (Palttala, et al., 2011).

Perception manipulation is not necessarily bad, if it drives preventive behavior. Studies on the perceptions of emergency management planners concerning preparedness indicate some organizations may take advantage of this propensity to construct reality and use this knowledge to manipulate the perception of a crisis and preparedness (Palttala, et al., 2011). This manipulation of perception may affect emergency

management planner's perceived levels of readiness and potentially affect the quality of a pandemic response plan (Palttala, et al., 2011).

Studying how emergency management planners perceive preparedness for their local area and their own organizations makes it possible to improve upon, or identify issues or gaps with existing pandemic response plans. There is also potential to identify points of perception manipulations within the response community (Palttala, et al., 2011) which may or may not affect the overall assessment of pandemic risk.

National Pandemic Strategy Overview

Although the policy is a somewhat outdated, it is important to have a general understanding of the driving strategy behind the federal pandemic response mission. This strategy is an external trigger that may influence member perception of readiness for the Red River EOC. Very few disasters can strike fear into the global population like that of a pandemic. We have not experienced a significant pandemic in modern times and subject matter experts feel that the threat of a global catastrophic pandemic is inevitable (Osterholm, et al., 2013).

President Bush and the federal government recognized this threat and acknowledged the difficulties that pandemics could bring to the emergency management community and the American population. While local governments are usually able to handle localized emergencies like tornados, floods, and other natural disasters, pandemics pose a different problem since they have the ability to proliferate quickly. Because of the

potential for pandemics quickly becoming a global issue, the federal government felt a need to intervene and establish ground rules for pandemic response (Bush, 2005).

Because President George Bush recognized that the United States needed a national strategy to address the potential threat of global pandemic, he signed the National Pandemic Strategy in 2005. The strategy lists the following three pillars: (1) Preparedness and Communication, (2) Surveillance and Detection, and (3) Response and Containment (Bush, 2005). The plan provides strategic directions and to involve every level of government, civilian support agency, private entities and the public in the preparation for pandemics (Bush, 2005).

Pillar one addresses preparedness and communication, which include preparedness implementation plans, developing medical surge capabilities. It also addresses working with other countries and health organizations, educating the population and developing exercise programs meant to test the preparedness levels (Bush, 2005). This research study evaluates the effectiveness of the Red River EOC's preparedness plan in accordance with guidelines of this pillar.

Pillar 2, Surveillance and Detection, involves ensuring that emergency management professionals report any potential outbreaks to the appropriate medical authority. It also outlines the need to use surveillance mechanisms for limiting or preventing further spread of the pandemic (Bush, 2005). The Red River EOC does not plan for surveillance and detection, so I did not evaluate this pillar.

Pillar three deals with disease and biological hazards containment. Containment is

one of the most important methods for preventing the spread of a pandemic. Response and containment is one of the most important pillars of the National Strategy because it deals with leveraging foreign countries and domestic entities to limit the spread of a pandemic. This is accomplished by activating appropriate response mechanisms, implementing surge plans, in addition to sustaining essential goods, services and infrastructure, (Bush, 2005). The Red River EOC responds to these hazards and has a supply and personnel surge capability, so this pillar is applicative to assessing preparedness for this organization.

National Strategy: Pandemic Planning Assumptions

Within the National strategy for pandemics planning, there are several assumptions that should drive planning for a pandemic. Planners can expect that the infection will be universal, meaning that it will be affecting the entire populations without discrimination (Federal Emergency Management Agency, 2014). It is easy to spread these infections through human-to-human contact and planners can expect that every person who becomes infected will infect at least an additional two people (FEMA, 2014). There will be approximately 30 percent or more of the population infected, with the numbers reaching over 40% for school-aged children (FEMA, 2014). It is difficult to determine the severity in the early stages and one can expect that an outbreak will last six to eight weeks on average, (FEMA, 2014).

Pandemics can be very terrifying to the public. In the some pandemic cases, mortality could reach the millions for the world population (CDC, 2017) and quickly

overwhelm the health care system, mortuaries, and cemeteries. There could also be a major drop in productivity due to absenteeism. These problems could severely affect the distribution of goods and reduce service capabilities. Emergency management planners can expect that they will also fall prey to the illness and absenteeism could hinder their pandemic mission. Planners should consider these extenuating factors, when developing the pandemic plan for the Red River EOC. Planners must identify safety measures that can aid in continuity of operations even if the Red River EOC is operating at a reduced capacity.

Local Area Perceptions of Preparedness

Assessing the preparedness of the North Texas area by delving into the perception of professionals serving in a wide variety of emergency management planning and preparedness support organizations illustrates the value of using assessments of perception as a method for evaluating the all-hazards approach to pandemic preparedness (Nowland, 2012). After an exhaustive search of multiple scholarly databases and open source data, I identified a significant gap in emergency manager's understanding of the effectiveness of the all-hazards approach to pandemic planning. There are very limited assessments of the effectiveness of the all-hazards approach to pandemic planning. The results from this study may open a dialogue regarding the approach's effectiveness and close some of the gaps in knowledge. Researchers used assessments of perception as a method for assessing different aspects of preparedness from training to communications. I us the cultural theory of risk perception to assess the effectiveness of all-hazards

approach in pandemic planning. Using risk perception assessments, researchers identified weaknesses in organizational emergency preparedness plans (Rahm & Reddick, 2011). Using this knowledge, they mitigated readiness plans to better prepare the organization for an emergency (Nowland, 2012 & McKinnell, 2012).

In 2013, analysis of the Fort Worth, Texas police department emergency preparedness webpage showed that police officers perceived that there was a lack of coordination between law enforcement agencies (Fort Worth Police Department, 2013) and emergency preparedness agencies across Texas and the US, when responding to emergency events. The officers perceived they were conducting emergency response and management training usually alone, without vertical or lateral coordination between federal, state, local, and sister organizations. From officer perspective, this lack of coordination was inconsistent with national objectives under the national response framework (Fort Worth Police Department, 2013).

North Texas area physicians perceived that they had a poor understanding or knowledge of the emergency management planning and response processes, and wanted more training opportunities, while nurses' willingness to assume responsibilities during a pandemic correlated with their perception of preparedness (Baack, 2011). Preparedness issues were evident with the 2014 Ebola outbreak, which identified issues in the preparedness plan of a local hospital. After the incident was resolved, a nurse who contracted Ebola after treating patient zero, accused the hospital system of failing to properly train and prepare employees for a pandemic emergency event (Emily, 2015). At

the time of this incident, at least one healthcare worker associated with the incident perceived that there was a breakdown in the planning process or response protocol.

Emergency preparedness community's perceptions of preparedness varied based on training that organizational staff members perceived they needed a successful emergency response (Nowland, 2012). Several elements were identified which had a direct impact on perception of preparedness. Researchers identified practice and training as having a direct correlation with perception of preparedness (Nowland, 2012). By increasing the level of hands on practice and training in conjunction with refining emergency planning skills, participant's perception of preparedness increased (Nowland, 2012). As training and practice were increased, the perception of preparedness increased dramatically for emergency management planners who had not experienced or dealt with emergencies on a regular basis Assessing the perception of organizational staff members helped identify a potential training gap and provided emergency preparedness planners an opportunity to mitigate a weakness in their preparedness plan. This training gap might have caused coordination or communications issues during an actual emergency, if it not properly addressed or mitigated (Nowland, 2012).

Researchers have successfully used perception as a method to identify issues with preparedness plans. (Rahm & Reddick, 2011). Earlier researchers studied perceptions to identify gaps in training, lack of confidence in emergency management planning abilities, and issues with vertical and lateral communications (Nowland, 2012). If not mitigated,

these issues could cause problems during an actual pandemic event and increase the probability of death.

Pandemics: Past and Present

It is also important when dealing with pandemic response and planning, to have a firm understanding of the past. By studying the past, we can make adjustments and correct shortfalls and weaknesses in our previous preparedness plans. The following section contains a brief historical background of pandemics and is an important element in fully understanding the importance of preparing for a pandemic. Understanding what pandemics are and why are we concerned about them in this modern age can assist in improving preparedness and ultimately save countless lives.

Pandemics can start when a new virus enters into the human population. When these new viruses or pathogens infect the population, there are no current vaccines available and the population has not developed immunities to the virus, (Walters, 2014). It takes time to develop vaccines. In some cases, thousands of people die before a vaccine is developed. If there is an antigenic shift causing an animal virus to mutate and become easily transmissible between humans and animals, it increases the burden (Walters, 2014). The health and emergency management planning community think the next big pandemic is inevitable and it is completely feasible that a super-pandemic could easily kill off half the world population (Walters, 2014).

In North Texas, some individuals responsible for varied roles within emergency management planning tend to feel undereducated or unprepared to deal with emergency

management planning or actual emergency events (Azarcon, 2013; Fosher, 2005, Spranger, et al., 2007) and this perception of unpreparedness might identify issues in the overall pandemic plan.

Pandemic planning poses a special predicament for the individuals responsible for emergency management planning, if they perceive that they are not adequately prepared to deal with emergency management or preparedness issues. Pandemics are extremely unpredictable, with varying strengths and duration. Due to long periods between outbreaks, there is a tendency for emergency management planners to feel a false sense of security or outright complacency and apathy (Cwaik, 2009). This situation is magnified depending on the type of pathogen, virulence, or preparedness level, along with complicating factors like the political climate, poor communication, lack of training and other issues (Azarcon, 2013; Fosher, 2005).

Pandemic planning is difficult at best and threats are always evolving as pathogens mutate. An example of a complication, which arises, is that despite efforts in North Texas to mitigate West Nile and H1N1 viruses, which have the potential to become pandemics, reported cases of West Nile virus and H1N1 influenza are on the rise in North Texas (Chung, et al, 2013). Due to these proliferating viruses, it is extremely important to routinely examine the preparedness levels for the local area and identify any potential issues or gaps in the pandemic response plan.

The potential for a global pandemic is more probable today, than in 1918. The greatest difference between 1918 and present is the ability of an infected individual to

travel the globe in an extremely short period of time (Azarcon, 2013). With the ease with which a person can fly throughout the world, an infected person could spread a pathogen in a matter of hours versus weeks or months. Even if a virus has a short incubation time, an infected person can still traverse the globe before showing any symptoms of a virus. This was evident with the 2014 Ebola outbreak in Dallas, where an infected individual made it through established safeguards and brought Ebola to Dallas. To make things worse, countries like China are conducting hybridization studies of viruses like the avian influenza forcing an antigenic shift, which could pose a risk to millions worldwide (Miller, 2013).

Mutating viruses are keeping vaccine developers on their toes. As of December 2014, the CDC warned that the influenza vaccine for the most current strain is only partially effective, due to a mutation (CDC, 2014) and highlights the problems faced when developing vaccines. Another problem with pandemics in general is that each individual pathogen has the ability to regularly mutate and adapt, so it extremely difficult to eradicate or fully mitigate the threat (Azarcon, 2013). This creates another potential planning issue, due to the possibility of underestimating a new strain of an old virus because of partial familiarity. It is certainly plausible for example that a weak strain of bird flu could mutate, becoming a super virulent strain and wreak havoc. If the avian flu or swine Flu mutated to a more virulent strain, it could catch emergency management planners off guard quite quickly, if they do not plan for that situation (Azarcon, 2013).

The threat of virus mutations is ubiquitous. If a super virus were to strike, there is an uncertainty of the ability of pharmaceutical companies to develop and distribute interventional drugs in a timely manner (Azarcon, 2013). Even if scientist developed interventional drugs in a timely manner, disruptions in important sectors like production, availability, transportation and distribution of interventional drugs and other supplies may occur. This is dependent upon the impact of the pandemic. Therefore, the pandemic pathogen itself may not pose the greatest risk to social order, but disruptions in supplies, food, medicine, utilities, and other critical sectors may pose a greater threat due to a cascading effect. Because the Red River EOC plays a very large national role in the transportation of critical resources to areas affected by disasters and other emergencies, leaders must plan for potential cascading effects.

In the early stages of a pandemic, the public could be apathetic to the threats that the pandemic might pose to the community. Apathy could be an outgrowth of the public's lack of understanding regarding the potential for pathogens to cause a pandemic like the Spanish Influenza and the public's difficulty in perceiving risk associated with disasters (Wilson, Temple, Milliron, &Rudy, 2008). Additionally, the public's perception of risk related to pandemics coupled with a virus's ability to mutate could become a major health threat (Hilyard, et al., 2010).

Along with public apathy, there is fear within pandemic planning community circles that although the H1N1 swine influenza pandemics of recent years like the 2009 outbreak have not been as severe as pandemics of the past, influenzas could mutate into

much more virulent and dangerous strains. H1N1 caused a significant number of hospitalizations and deaths during the 2009 pandemic outbreak, (Hilyard, et al., 2010). Additionally, there seems to be no indication of H1N1 subsiding as deaths in North Texas are increasing every year, (Chung, et al., 2013). In 2012, Texas reported 1,868 cases of West Nile virus (Chung, et al., 2013). Because North Texas is under threat from H1N1 and West Nile, it is extremely important to ensure preparedness plans are prepared to deal with a pandemic. Therefore, having an understanding of past pandemics can aid in planning.

Spanish Influenza

Emergency preparedness planners should have an understanding of the history of pandemics and past emergencies and disasters in order to refine existing preparedness plans. Spanish Influenza of 1918 is likely one of the most widely known pandemic to modern emergency management planners. There are some estimates placing the death toll from the Spanish Influenza in the 20-40 and even 80 million ranges, (Walters, 2014). What made this pandemic so dangerous was that it simultaneously broke out in multiple locations around the world. According to one estimate if an outbreak similar to the Spanish Influenza were to occur today, the death toll could exceed 81 million individuals (Walters, 2014).

Some viruses have the ability to spread quickly. The Spanish influenza was no exception, as it spread quickly across the entire earth (Hutton, 2013) without the access to air travel. During the 2009 H1N1 pandemic, 60 million people were infected with over

12,000 deaths reported (Hutton, 2013). One of the problems with influenza in general is its ability to spread quite rapidly, once it has made the antigenic shift. The global spread of the Spanish influenza was no exception and spread quickly throughout the world. Scientists believed that influenza spread via boat travel and seemed to breakout in different parts of the world simultaneously. An outbreak today might spread globally due to air travel (CDC, 2017).

About every three or four decades, a pandemic outbreak occurs. According to contemporary researchers, although many early cases were back to World War I soldiers returning to the U. S., there is speculation that the Spanish influenza did not necessarily originate in Spain. There is speculation that the first cases spring out in Kansas around 1918 (Weaver & Bergen, 2014). An outbreak in Minnesota helped pave the way to some early emergency management planning successes. Coordination improved between federal, state and local governments. Emergency management planners improved their ability to communicate updates for the pandemic, and the emergency management planning community was able to utilize the pandemic lessons learned to improve key components like mass care, vaccines, and hospitals' ability to deal with mass care situations (Weaver & Bergen, 2014; Ott, et al., 2007).

Emergency planners can take lessons learned from previous pandemics and use these lessons in their planning. The Spanish influenza identified several issues with preparedness. During the outbreak of Spanish influenza in Minnesota, issues arose due to many hospitals' inabilities to deal with mass care situations and many of the medically

trained personnel were still in Europe dealing with the European outbreak and post war relief efforts (Weaver & Bergen, 2014; Ott, et al., 2007). Emergency management planners sought methods for mitigating the severity of the influenza pandemic and used drastic means, for example issuing an order to prevent large gatherings of citizens at theaters, sporting events, etc. There was also a mask order given that encouraged the wearing of surgical masks (Weaver & Bergen, 2014; Ott, et al., 2007). The problem with the order was that many establishments and individuals ignored the orders (Weaver & Bergen, 2014; Ott, et al., 2007). Emergency management planners also utilized some creative methods for communicating with the public by using mail carriers and the boy scouts to pass along important information related to the medical threat (Weaver & Bergen; Ott, et al., 2007). With average incubation periods of 48 to 72 hours, it is feasible that an infected individual could spread an illness to multiple countries prior to even noticing symptoms. Up to three quarters of people infected with influenza do not immediately exhibit symptoms (Tang, U., Tambyah, P., Lai, F., Lee, H., Lee, C., … Koay, E. 2010).). If an especially virulent strain of influenza were to strike and follow this pattern of incubation, people could think they are not sick and virtually infect hundreds or even thousands of other people with the virus before experiencing symptoms.

Once a pandemic starts, it is difficult to stop. According to planning assumptions in the national strategy for pandemic response, once the spread is started, it is virtually impossible to halt the progress until the wave runs its course, because each infected

individual is passing along the illness to at least two other people (FEMA, 2014). For example, if a flu virus has a 72 hour incubation time, it is quite feasible that a traveler could be infected and without knowledge travel to any point of the globe before noticing any symptoms (Osterholm, 2013). Therefore, it is important to understand the potential for fast spread of an illness and continually review preparedness plans.

Swine Flu (H1N1)

Swine flu still posed a significant threat to North Texas and the world, during this study. The origin of swine flu can be traced back to the Spanish influenza where millions of humans died and herds of pigs were hit with similar symptoms (Walters, 2014; Burk and Zimmer, 2009). It was from this realization that health officials looked into the possibility that the Spanish influenza originated from pigs and these same health officials sought to determine if and how it was passed between species (Walters, 2014; Burk & Zimmer , 2009). Ultimately, health officials discovered that the human version of influenza and swine version were similar, but separate strains (Walters, 2014; Burk & Zimmer, 2009). Scientists believed both strains were the result of mutations caused by multiple cross species transmission that originated from birds. The birds were able to pass the virus to both humans and pigs (Walters, 2014; Burk & Zimmer, 2009).

Even when scientist thinks they eradicated a strain of influenza, occasionally human error leads to a reemergence. In the 1950s scientist thought Swine flu was extinct, but it reemerged in the late 1970s. The scientific community believed the reemergence was due to an accidental release of a combined laboratory sample that could pose a

serious pandemic risk (Walters, 2014; Burk & Zimmer, 2009). The reemergence of a variation of the H1N1 in Fort Dix, New Jersey led to implementation of a program for mass influenza vaccines (Walters, 2014; Burk & Zimmer, 2009). Now, North Texas is experiencing regular swine flu outbreaks that have lasted several years and show no sign of subsiding.

Emergency management planners in North Texas are concerned with the swine flu (H1N1), because it has become an increasing problem in north Texas and many other parts of the country. Despite efforts to mitigate these threats from swine flu in North Texas, reported cases are increasing and deaths from H1N1 influenza are still occurring (Chung, et al., 2013). As virulent as the swine Flu is, it may pose an even greater threat in the future as foreign scientist continue to create hybrids between the swine flu and the avian flu. Chinese have successfully hybridized an influenza mix of H1N1 and H5N1and this hybridization came under international scrutiny when Chinese scientist from the Harbin Veterinary Research Institute announced they had mixed H5N1 bird-flu and H1N1 swine flu (Miller, 2013).

Swine flu is easily transmittable to humans, while bird flu is not. While it is difficult for avian flu to pass easily through human-to-human contact, mixing the H1N1 and H5N1 could make an especially virulent strain of influenza that is easily transmittable between humans. If the hybrid were accidently released like the 1976 release of a combined H1N1 or intentionally released for nefarious reasons, it could result in as many as one million deaths worldwide in a very short period of time (Miller, 2013).

Combining different strains of influenza could cause a pandemic like the Spanish influenza and quickly overwhelm the global supply chain due to potential cascading effects (Miller, 2013).

West Nile Virus

Another persistent threat facing North Texas is the West Nile virus. The West Nile Virus has its origins in the Nile delta, but the first confirmed cases in the United States emerged in New York and New Jersey in the late 1990s (Rossi, Ross, and Evans, 2010). There were periodic outbreaks of encephalitis like illnesses, that in retrospect might have been West Nile as early as 1989, but scientists never confirmed it.

As of 2013, North Texas was also plagued with the highest incidents of West Nile Virus within the United States and has the highest death toll, as a result (Chung, et al., 2013). Although not at pandemic stages yet, West Nile virus continues to mutate and could pose a threat in the future. North Texas emergency management planning officials have attempted to mitigate the spread of West Nile Virus with creative means by using mosquito fish to control vector-borne diseases. I discuss using mosquito fish to control vector-borne diseases like West Nile virus, later in this chapter.

MERS-COV

After confirming three cases of MERS-COV in the United States in May 2014, emergency management planners suddenly found themselves considering the possibility of a potential pandemic. The MERS-COV originated in Saudi Arabia and could potential infect millions, as religious pilgrims make the annual trips to Hajj and Ramadan (Khan,

Sears, Wei Hu, Brownstein, et. al.,2013). There were more than 16 million air travelers who flew in and out of Saudi Arabia during the annual Ramadan and Hajj pilgrimages. These travelers flew to every part of the world in a very short period of time, (Khan, et al., 2013). Based on the above studies, combined with the recent cases of infected Saudi travelers arriving in the United States with the infection, it is quite feasible that this virus poses a potential global threat should the virus mutate and become easily transmittable between humans (Khan, et al., 2013).

MERS-COV is currently not easily transmittable to humans. Recent microbiological research focused on the potential transmissibility of the MERS-COV between humans and animals to identify potential transmissible methods for the virus (Briesea, Mishraa, Jaina, Zalmoutb, & Jabadoc, 2014). Although we need more research and analysis, there are preliminary indications that although human-to-human transmission for the virus is not easily accomplished, dromedary camels can easily pass the virus to humans by acting as a source or pool for the infection to proliferate (Briesea, et.al 2014).

Saudi Arabian Variety of MERS-C0V is especially virulent. The Saudi Arabian Variety of MERS-C0V has an approximated death rate of 41 percent with 212 cases and 88 deaths (Briesea, et.al 2014). Based on the above studies, combined with the recent cases of infected Saudi travelers arriving in the United States with the infection, it is quite feasible that this virus poses a potential global threat should the virus mutate and become easily transmittable between humans. If this virus does mutate so that it could pass more

easily between humans, it could pose a severe worldwide pandemic threat (Kuo, 2014). The infection could proliferate in a very short period due to the ease of world air travel. Analysis of 2012 travel statistics determined that potentially 16 million travelers encountered MERS-COV virus (Briesea, et.al 2014). At this pace, the virus could easily eclipse the death toll inflicted by the Spanish influenza, if it were to become easily transmittable between humans. As the history of pandemics demonstrates, there is a real threat for global pandemic outbreaks and international travel compounds the problem. Therefore, there are many opportunities for the emergence of a global pandemic from a number of sources and there is potential for disruptions to occur in the global supply chain. In order to better prepare for a pandemic, it is necessary that planners have a firm understanding of historical outbreaks. This historical information assists with improving existing plans and may prevent making similar mistakes.

Planning for Supply Chain Issues during a Pandemic

A global pandemic will pose a serious threat to the global supply chain depending on the virulence of the pathogen. This is largely due to the lack of a sufficient capability to surge products and medical personnel during any disruption of the normal process (Kelley, & Osterholm, 2008). If a severe pandemic strikes, the cascading effects of mortality, absenteeism and general fear within the emergency planning and response communities and the public at large could lead to supply chain shortages, delays, disruptions, and even complete failures of the distribution system. Countries could establish embargoes and travel restrictions. The mortality of workers and absenteeism of

critical employees due to fear of contracting the infection could directly cause a potential supply chain collapse (Kelley, & Osterholm, 2008). For these reasons, it is extremely important to plan to avoid supply chain disruptions.

If a pandemic like the Spanish influenza were to strike with mortalities in the millions, the fear generated could cause significant absenteeism of health care employees and employees from critical industries like utilities, transportation, distribution and production) (Kelley, & Osterholm, 2008). As absenteeism, sickness, and mortality increase during the pandemic, availability of supplies would start to slow and create shortages of critical medical supplies, food, water, and electricity will be at risk posing another significant problem. The average pandemic can last for three or four months (Kelley, & Osterholm, 2008). If a pandemic lasts for more than three months, the results could lead to potential social collapse (Kelley, & Osterholm, 2008). For these reasons, emergency management planners should consider the impact of mortality rates; absenteeism and general fear in order to determine what affects it will have one the emergency response effort. It is a common held understanding in the emergency management community that they must consider every aspect of pandemic planning when developing a pandemic response plan. The plan will not be much good if you cannot execute it due to externalities like transportation and supply chain collapse or worker mortality.

Past Emergency Response Issues

Often, emergencies, disasters, terror attacks and pandemics catch emergency management professionals off guard (McKinnell, 2012). This is especially true for large and complex disasters like hurricane Katrina. With the complexity of some emergencies: "it is no surprise that problems are identified repeatedly in the areas of command, communications, planning, resource management, and public relations" (Donahue & Tuohy, 2006). With this awareness, it would be irresponsible for emergency management planners not to utilize every tool available for assessing area preparedness. This is more important when you realize that many mistakes in the response process can be attributable to human error (Brindley, P., Tse, A., 2016)

Even after continually modifying training and federal emergency management planning requirements, there is still a problem with planners underestimating risk, failing to grasp the impact of emergency events or being caught off guard (Nowland, 2012). During the Oklahoma City bombing, the Integrated Emergency Management System and Incident Command Systems broke down due the rapid response from multiple jurisdictions and establishment of individual command posts, which were not coordinating with each other (Donahue & Tuohy, 2006).

After the 2003 Severe Acute Respiratory Syndrome outbreaks, researchers again identified a breakdown or weakness in leadership, planning, operations, logistics, public relations and resource management related to the response effort (Donahue & Tuohy, 2006). In addition to underestimating the impact of an emergency event, communications

failures and poor coordination seems to be a recurring theme during large scale and complex disaster response efforts, (Donahue & Tuohy, 2006). Even after planners identify these issues from multiple instances over the course of many years, in professional articles, training programs and planning literature these failures still occur (Comfort, Waugh, Cigler, 2012).

Is it possible to mitigate issues with communications? With the advances in communication systems and other technology, one would think it is now possible to correct the issue of communications with innovative methods, equipment or techniques. These new technologies may help emergency management planners address the perpetual communications failures, which often plague complex emergencies (Comfort, et al., 2012). However, communications technology is not always the underlying issue. It is difficult to get multiple jurisdictions to agree on a standardized communications system. This can be due to political or resource problems, depending on the size of the organization or jurisdiction (Nowland, 2012; Donahue & Tuohy, 2006).

When organizations are preparing for an emergency event, they often develop a plan of action or mission statement. However, just because an organization has developed and published a plan of action, does not mean the organization is prepared to respond to an emergency event (Nowland, 2012). It is extremely important to continually test, evaluate, and exercise the response plan in an attempt to identify shortfalls and gaps (Nowland, 2012). Perceptions vary based on training that organizational staff feels is necessary for a successful response (Nowland, 2012). It is also important for staff

members to practice and continue their training in order to elevate their perception of preparedness, especially if they have not experienced or do not deal with emergencies on a regular basis. Planners should incorporate realism into the exercise process, and exercises must encourage identify issues or gaps in planning as opposed to being a punitive evaluation tool (FEMA, 2013; Donahue & Tuohy, 2006).

The field of emergency management planning is constantly evolving, yet planners continue to miss the mark. Planners experienced issues like poor communications, or gaps in their emergency management preparedness plan (FEMA, 2013). Another problem facing emergency management planners is that in recent years, information and data used to develop these pandemic plans has become so massive and involves so many variables, that analyzing them requires inordinate amounts of time that usually is not available (Koeller, Kress, & Miller, 2014). This can certainly be attributed to the sheer enormity of variables that emergency management planners must sort through in order to develop effective emergency plans that are flexible enough to respond to every potential terrorist attack, emergency event, disaster, or pandemic (Koelher, et. al 2014; Fosher, 2005). These threats are constantly evolving, as fast as the emergency management planners try to mitigate them. This could explain why emergency management planners are caught off guard, especially if constrained by conventional schools of thought, political agendas, perpetual operations, perception manipulation and lack of appropriate budgets (Koelher, et. al 2014; Fosher, 2005).

Many emergency management plans are fraught with issues and gaps that are impossible to solve because of a myriad of conflicts like the political climate, inability to obtain sufficient resources to execute or properly develop a pandemic plan, as well as complexities due to all-hazards approaches to planning (Koelher, et. al 2014; Fosher, 2005). Additionally, poor communication is a prime example of an issue that is not easily resolved and seems to break down during an emergency (Koehler, et. al 2014; Fosher, 2005).

Because emergency management planners can often be overwhelmed with the magnitude of planning variables, they may unintentionally overlook serious issues or gaps within their emergency plans. Issues with coordination, vague language, and unclear lines of responsibility or authority exacerbate the emergency management planning process. Since there are so many variables to consider, emergency management planners should strive to continually assess, refine, and test their pandemic plans to ensure they identify as many variables as possible. It is extremely important to continually test and evaluate the pandemic response plans, because it can assist in identifying shortfalls before a disaster or emergency activation (Nowland, 2012). Finally, because threats are coming from every possible source, continuous improvements of how emergency managers prepare, develop and assess pandemic response plans is necessary to meet the demands of emergency management (Urby, 2010).

Innovative Thinking

Emergency management planning is constantly evolving. The field of emergency management is not so much a profession, but more of an evolution of legislation and political action meant to address or react to a surprise disaster or terror event (Cwaik, 2009). If there is a lull in disasters or emergency events, the field remains largely apathetic. Planners are often caught off guard, or just going through the motion of response planning (Cwaik, 2009). Often, emergency management planners share this apathy is shared with politicians and the public at large (Cwaik, 2009). As time distances the public and planners from a threat, there is a tendency to let their guard down. Apathy often catches planners off guard, during a disaster, pandemic, or terrorist attack.

FEMA has taken measures to prepare planners better for emergency events. Although there was a push by FEMA to take an all-hazards approach to emergency planning, there are still situations where emergency management planners are surprised. Prior to the push for all-hazards planning, hurricane Katrina was an example of poor planning for cascading threats as the New Orleans emergency management planners failed to grasp how poverty could cause a force multiplier to the ongoing disaster. More than 100,000 citizens were unable to leave the city, or chose not to depart because of economic disparities (Fussell, Sastry, and VanLandingham, 2010). The poor planning identified from Hurricane Katrina was characterized as cascading consequences, or nonlinear threats, meaning that the threat is made worse by unforeseen events attributed to the ongoing emergency event (Fussell, et. al, 2010). In this case, a major cascading

effect was the population's inability to relocate due to economic disparities. Therefore, it is important to continually assess preparedness plans in order to prevent some of the pitfalls caused by complacency.

The September 11, 2001 terror attacks were a pivotal point in the evolution of emergency management history. This tragedy identified a need for out-side of the box thinking (Joint Commission on Accreditation of Healthcare Organizations, 2005), as city emergency management planners were caught totally off guard and never considered that a terror organization would strike in the heart of a large city. The Oklahoma City Federal building bombing was an earlier example of emergency management planners underestimating the threat and started a new line of thought especially for terrorism prevention planning. Prior to this, many emergency management planners felt that Oklahoma was extremely safe from terrorism and did not consider that terror could strike at any time in any location.

A more recent example of innovative thinking for mitigating emergency preparedness issues is the U.S. Food and Drug Administration's approval of the use of cell-based vaccine technology for use in developing vaccines for seasonal influenza. Biomedical Advanced Research and Development Authority (BARTA) gained approval for this innovative technology through a partnerships within the private and public sectors. According to BARTA, the use of this innovative technique enables the manufacturing company to produce "200 million doses of pandemic influenza vaccine within six months," (Health and Human Services, 2014).

For the past several decades, the emergency management profession has gone under multiple transitions and transformations, mostly resulting from the evolving magnitude of disasters and national emergencies (Comfort, 2012). There were considerable politics driving the creation of organizations like the Federal Emergency Management Agency. Many emergency management professionals felt that FEMA was ineffective due to their subordination under the Department of Homeland Security. Therefore, many potential emergency management practitioners steered clear of the profession (Comfort, 2012).The ineffectiveness of FEMA culminated during the Hurricane Katrina fiasco and led to congress passing S.3721 - Post-Katrina Emergency Management Reform Act of 2006 (Comfort, Waugh, Cigler, 2012). The Post-Katrina Emergency Management Reform Act of 2006 gave more authority and flexibility back to the Federal Emergency Management Agency to deal with national disasters and local areas disasters.

Innovative thinking might help pandemic planners to identify overlooked problems. Some consider it an innovative thinking or *outside of the box* thinking is a creative way of thinking. It is often used in the sales and marketing arenas, as the goal of this line of reasoning is to develop innovative, novel or creative methods for breaking out of conventional (Notar and Padgett, 2010).

Emergency preparedness is extremely complex and taking an unconventional or creative approach to evaluating preparedness might help identify potential issues and pitfalls. Planners can address the issues in the planning process and thus improve the

overall plan (Pines, Pilkington, and Seabury, 2014). Taking an alternative approach to assessing preparedness, such as assessing the perceptions of the emergency management planners themselves, might identify strengths, weaknesses, gaps, and shortcomings in an emergency response plan. Identifying perceptions could provide an opportunity to identify and adjust or address an overlooked shortcoming or missed variable. Although emergency management planners attempt to cover every angle of a disaster or pandemic, the situation is extremely fluid and often changes outside of the context of the plan (O'Sullivan, Kuziemsky, Toal-Sullivan, Corneil, 2013). Because of this fluidity, emergency plans must have some element of flexibility in order to meet changing situations within a response effort.

Planning for emergencies is complex due to the unknown nature of potential threats. There is some fear in the emergency management community that as emergency management planners try to deal with complex issues, the plans might become too inflexible and unable to address the needs or demands of a particular disaster or pandemic (O'Sullivan, et al.,2013). Preparedness plans provide a good starting point and assist in developing scenarios for potential threats or problems that may arise within a response effort. However, these plans must remain flexible to meet the challenges of evolving or fluid situations (O'Sullivan, et al., 2013). There is a need to be creative in one's approach to emergency planning, because there may be emergency events that might change an organization's entire view or way of thinking regarding response and preparedness (O'Sullivan, et al.,2013). In this study, I hope to encourage planner's to consider entering

the planning process with an open mind and seek flexibility within the pandemic preparedness planning process because, no matter how diligent an emergency management planner may be, it is impossible to account for every possible threat variable they may encounter (O'Sullivan, et al.,2013).

Emergency management planners should be familiar with local area creative methods for mitigating threats. One North Texas example of outside of the box thinking is that some of the local areas in North Texas introduced the mosquito fish to control vector-borne diseases like West Nile virus. There are substantial environmental impacts associated with introduction of an invasive species into an aquatic environment and the mosquito fish is no exception. However, this example does not discuss the potential impacts of introducing invasive species into an aquatic ecosystem. It merely demonstrates creative thinking in dealing with a potential pandemic. Mosquito fish like the Gambusia are a remarkable mitigation technique throughout Asia to control malaria-causing mosquitoes (Chandra, Bhattacharjee, Chatterjee, Ghosh, 2008). The idea is that officials place the fish in habitats with high concentrations of mosquitoes and the fish eat the larvae, pupae, and adults of the pathogen carrying mosquitoes (Chandra, et al., 2008), thus reducing the overall population. Starting back in 2008, various cities and municipalities in North Texas have undertaken this method as a potential means to reduce the level of West Nile carrying mosquitoes and are hopeful that the mosquito fish can help reduce the number of deaths and illnesses in North Texas due to West Nile Encephalitis over time (Chandra, et al., 2008).

Summary and Conclusions

Pandemics have a long and notorious past that strikes fear into many modern emergency management planners. Even with advances in modern medicine, there is a threat to the entire world population by the proposition of a global pandemic. The ability for infected individuals to travel quickly throughout the world prior to feeling any symptoms exacerbates the situation. The threat of global proliferation of influenza is very real. A virus could quickly infect millions in an extremely short period. This is a threat to the entire population. Pandemics occur periodically throughout history and threaten the entire global family, but there are long enough gaps between outbreaks that the population and emergency planning community becomes apathetic to the threat.

Reality is extremely fluid and shaped by the perceptions of those experiencing it. Based on Maxwell's interpretation of constructivist theories of perception and cultural theory of risk, humans draw data from internal and external forces, which they use to construct their personal and professional views of reality, as it relates to the environment and pandemic response planning. Disasters, pandemics and emergencies are complex and extremely fluid. It is often difficult to address every potential threat that a region might face or experience. Threats are continually evolving and in many cases, the emergency management planning community cannot keep up with this evolution of threats. This inability to keep up with emerging threats makes it imperative that pandemic response plans be flexible. Emergency planners must have the ability to mold and modify plans to meet specific threats while thinking outside the box of conventional wisdom.

Sometimes, emergency management planners miss the mark during emergencies. Therefore, they must continually seek new methods for assessing preparedness. Using perceptions as an assessment method has assisted planners in identifying potential pitfalls in their emergency response plan. Using creative or innovative thinking strategies can assist in seeking alternative approaches to pandemic response planning. Creative thinking is another method that might assist emergency management planners to seek alternative methods for assessing pandemic plans and preparedness. The studying of perception is also just another tool at the disposal of emergency management planners, which might assist them in assessing their pandemic response plan. These planners possess a high level of training and experience in pandemic preparedness response planning. Their perspectives and perceptions might identify potential pitfalls, gaps or strengths in a pandemic response plan. This chapter covered the supporting literature review for this study and provided a historical perspective, innovative ideas for assessing emergency management programs, and the theoretical framework for this study. In chapter 3, I discuss the rationale and design of this study including methodology, role of the researcher, participant selection logic, and instrumentation, and pilot study, procedures for recruitment, Participation, and data collection.

Chapter 3: Research Method

In this study, I explored how affiliated members of a small federal regional emergency operations center in North Texas perceived the effectiveness of all-hazards pandemic planning. The objective was to determine whether Red River EOC members perceive that they are prepared to handle a pandemic using the all-hazards approach and if not why. If local communities do not properly prepare themselves for emergencies like pandemics, the public could panic and exacerbate the situation (Moore, 2011). Understanding the perspectives of emergency preparedness professionals concerning the effectiveness of the all-hazards approach in pandemic preparedness may reveal their perceived level of preparedness for the local area. Findings may also indicate strengths and weaknesses with the organization's preparedness plan, as well as the effectiveness of all-hazards pandemic planning. If emergency planners underestimate the impact of an emergency event, it could lead to an overall ineffective response effort (Rahm & Reddick, 2011), and perhaps increased casualties or deaths. In Chapter 3, I discuss the rationale and design of this study including methodology, role of the researcher, participant selection logic, instrumentation, pilot study, and procedures for recruitment, participation, and data collection.

Research Design and Rationale

This qualitative case study examined how affiliated members of a small federal regional emergency operations center in North Texas. I used the pseudonym Red River EOC to ensure anonymity of the organization. The objective of this study was to

determine whether Red River EOC members perceived that they were prepared to handle a pandemic and whether the all-hazards approach to pandemic planning is effective. The study data helped me address the following research questions: What are the perceived risk perceptions of North Texas emergency management stakeholders regarding all-hazards pandemic planning effectiveness?

The purpose was to analyze risk perceptions to identify potential strengths, weaknesses and effectiveness of the all-hazards approach to pandemic preparedness planning. I explored how members of the Red River EOC perceived pandemic preparedness risk and North Texas preparedness for a pandemic. When conducting qualitative studies, the questions of validity often arise among researchers (Yin, 2010). A researcher can alleviate concerns regarding internal validity by ensuring his or her study includes a sound theoretical framework. Additionally, the researcher must ground the study in the literature (Yin, 2010). Because construct validity deals with how a researcher analyzes the data, triangulation was used as a method for analyzing data collected from multiple sources like interviews, literature review, and analytic memos to enhance credibility of the findings (Yin, 2010).

When conducting qualitative research, researchers also must pay close attention to external validity of the study. I addressed external validity by describing in detail how the case study approach was appropriate (Yin 2010). I chose the qualitative case study approach because it was the best method for dealing with multiple forms of evidence and sources of data (Yin, 2010).

Role of the Researcher

The researcher is an extension of the data collection instrument because the researcher is providing an environment conducive to freedom of expression (Chenail, 2011). The researcher is an instrumental aspect of the data collection process and sets the tone for the interviews (Chenail, 2011). For this study, I developed open-ended interview questions based on my experience in Emergency management and my knowledge gained in literature review. The interview questions consisted of a set of open-ended questions. Participants were free to discuss their perceptions openly. The interviews took approximately 20 minutes. To assist in identifying potential researcher bias, I wrote reflective analytic memos to capture my thoughts and perceptions during the research process. Participants had an opportunity to review the typed transcripts of the face-to-face interviews to ensure accuracy.

I have five years of experience in the field of emergency management related to pandemic preparedness and hold a professional continuity practitioner's certification. I also have 20 years of experience dealing with terrorism and intelligence related threats to personnel, programs, and infrastructure. I work closely with the organization studied, but I serve primarily as an insider threat and intelligence analyst with a secondary affiliation with the emergency management planners by virtue of colocation.

Methodology

Although there were several frameworks considered for this study, I chose a qualitative case study to analyze multiple sources of data. I gathered data from several

sources including semi-structured interviews, multiple interviews, reflective analytic memos and an exhaustive literature review. I analyzed the data to determine the overall risk perceptions of the organization's members regarding the effectiveness of the all-hazards approach to pandemic preparedness. The case study approach was determined to be most appropriate because it was the best method for dealing with multiple forms of evidence and sources of data (see Yin, 2009). I considered grounded theory early in the design and development process, but rejected it. It soon became apparent that due to the extremely small size of the target organization, there were not enough Red River EOC participants available to meet requirements for approximately 30 participants or more for grounded theory studies.

This study was exploratory in nature and was a single descriptive qualitative case study. I used a qualitative case study design to identify how affiliated members of this federal regional emergency operation center perceived the risk of a pandemic and North Texas preparedness. A descriptive case study provides researchers the ability to study real-life phenomena in a natural setting (Yin, 2009). Semi-structured interviews provided data related to each participant's perception of the community's ability to handle pandemics and the effectiveness of the all-hazards approach.

Case studies are appropriate when seeking to analyze multiple sources of data like interviews, analytic memos, and literature reviews. The interviews provided the data to identify codes, patterns, and key themes. During the analysis stage, I compared interview

data to identify points of agreement and areas of divergence (see Guion, Diehl, & McDonald, 2011).

Participant Selection Logic

Participant selection was purposeful based on experience in emergency management and affiliation with Red River EOC. Participants supported the Red River EOC's pandemic all-hazards planning mission in some emergency management planning, response, or support capacity. These roles included leasing real property during an emergency, physical security, continuity, logistics, dispensing medications, and other emergency management support roles. Organizational members consisted of local and geographically dispersed employees. Only affiliated members participated in the study. During the interview process, I collected data to identify each member's perception of the effectiveness of the all-hazards approach to pandemic planning. I exercised care to ensure that participation was voluntary, and I protected any data that could identify the participants.

Studies of saturation have indicated that as few as four or five interviews can achieve saturation (Mason, 2010). Due to the small size of this organization, it was possible to achieve saturation in four to seven interviews. There were approximately 10 affiliated employees at the beginning of the study, but this number dropped to seven after the resignation of political appointees associated with the outgoing political party. I interviewed five of the seven of the remaining participants. Saturation was possible with fewer participants due to participant experience level. I analyzed the data concurrently

during the data collection process. All participants were experienced emergency preparedness planners and came from a variety of disciplines. Due to the expertise of participants, I achieved saturation with fewer interviews.

Instrumentation

I used interview questions to assist in determining how North Texas planners perceive all-hazards effectiveness for pandemics. Interview questions received approval by the Walden University institutional review board. These open-ended questions leveraged my experience in the emergency management field and local area knowledge:

1. What are your feelings regarding the effectiveness of the all-hazards approach to pandemic planning?

2. What is your assessment of the North Texas emergency management community's ability to manage a pandemic using the all-hazards approach?

3. How does your knowledge of risk related to pandemic preparedness assist you in improving your pandemic plan?

Pilot Study

I conducted a small pilot study to test the interview questions and assess the feasibility of the study approach. The pilot study consisted of one participant who was not a participant in the larger study. Results were not included in the larger study and there were no modifications of the previously approved method (see Leona, Davis, & Kraemer, 2010). I administered the questionnaire to the pilot participant in exactly the same way as in the main study. I asked the participant for feedback to identify

ambiguities. There were no unnecessary, difficult, or ambiguous questions identified. The pilot study addressed whether each question provided an adequate rich response (see Collins, 2010). The pilot study did not indicate issues or necessitate modifications to the main study. This study and pilot study and main study received concurrent approval by the IRB with approval #08-12-16-0300164.

Procedures for Recruitment, Participation, and Data Collection

The organization was extremely small and consisted of only seven full-time local and two dispersed employees at the time of the study. All participants were emergency preparedness planners from a variety of disciplines. Due to this expertise, researchers can achieve saturation faster and reduce the number of participants to as little as four, (Mason, 2010.) Participants were affiliates of the Red River EOC and I expected to interview a minimum of five participants and a maximum of 10 participants. This goal was dependent on participant availability and saturation of the data. I based the above numbers on total number of fulltime local employees affiliated with the organization at the time of proposal development. However, due to the national election results several potential participants resigned their political appointments, due to their party losing the election. This significantly reduced the participant pool. Recruitment consisted of a purposeful, direct approach. Participants received the invitation to participant after IRB approved this study. Interviews took place in the place of the participant's choosing and via email. I asked each individual where was most convenient to them, and provided the required disclosures and consent form.

The members all had an emergency management background and practical real world experience related to emergency response planning. The members affiliated with the Red River EOC were a diverse group of professionals. The members represented male and female genders, as well as multi-cultural backgrounds. They all had varying degrees of emergency management education and experience.

Data Analysis Plan

Using data from multiple sources can provide additional credibility to the research data, (Yin, 2009). In order to enhance the credibility of this research study, I gathered data from multiple sources ranging from interviews to existing literature. Once collected, I used a variety of analytical methods to conduct analysis and attempt to develop key themes and pattern matching within the data.

I used qualitative content analysis and inductively identified words and phrases in the textual data. This analysis provided insight into the perceptions of participants regarding the effectiveness of all-hazards pandemic preparedness. I used qualitative coding to symbolically capture and organize the textual data in order to capture the essence of the data, (Saldana, 2013). Because this study included data from multiple sources including interviews, existing literature, and other sources, analysis occurred concurrently in order to provide the essence of the data captured through coding. The objective was to develop an understanding of the entire case as it pertains to these multiple data sources, (Creswell, 2009). Analysis occurred concurrently and triangulation enhanced the validity of the study. Triangulation is one method that can help a qualitative

researcher minimize the potential for bias in the data analysis and increase validity, (Guion, Diehl, and McDonald, 2011). I triangulated data from interviews, literature reviews and reflective analytic memos to ensure that the data was rich and comprehensive. This study adhered to the IRB approved case study protocol.

Issues of Trustworthiness

Issues of trust are another cause for concern in qualitative studies. By describing methods I used to ensure credibility, transferability, dependability, and confirmability, I attempted to increase the trustworthiness of the study. Below is a detailed description of these topics, which provide a better understanding of how the study maintained trustworthiness. A qualitative researcher can ensure credibility of their study by showing how members of a shared community recognize the same experience put forward in the study (Cope, D., 2014). The participants all had shared views of the effectiveness of the all-hazards approach. It is probable that other members of the North Texas community may share the view that the all-hazards approach to pandemic planning is effective as long as the plan is flexible.

Credibility

I collected data from other sources like literature review, and reflective analytic memos. Analysis occurred concurrently and used triangulation to enhance validity. Triangulation can help a qualitative researcher minimize the potential for bias in the data analysis and increase validity (Guion, Diehl, and McDonald, 2011). I utilized member

checking to ensure that I accurately reflected the participant's point of view and I looked for similarities between participant responses across study participants.

Transferability

When considering transferability, it is important to understand your audience. I speculated if the profession would find this study relevant. Emergency management planners must perceived this study as relevant in order to deem it important, (Burchett, Umoquit, & Dobrow, 2011). When determining the transferability of this study I had to determine who might find this study important or at least useful. For this case study, the target audience was emergency management planners located in North Texas, who are responsible for pandemic preparedness planning. This study should be relevant to members of the Red River EOC due to their mission. The study might or might not be relevant to organizations outside of the Red River EOC, depending on perceived relevance of pandemic preparedness to that organization's mission, (Burchett, Umoquit, & Dobrow, 2011). Since shared communities might share similar views (Cope, 2014) this study might be generalizable to the greater North Texas emergency management community.

Dependability

The specific purpose of the study was to determine if North Texas planners perceived that North Texas was prepared from a pandemic using the all-hazards approach. The participants were purposefully selected for the study specifically due to their being emergency management planners with the Red River EOC. Data from

multiple sources including participant interviews and literature review provided the raw data for this study. Data was analyzed concurrently using triangulation and identifying key themes using qualitative content analysis and hand coding. In order to establish dependability participants had an opportunity to review the researcher's analysis of their responses to ensure the transcribed data accurately reflect the participant's perspective. Dependability can be accomplished by maintaining a solid chain of custody for all data collected, including interviews, field notes, etc, (Creswell, 2013; Yin, 2010). The researcher can maintain a database of all data, documents, interview transcripts, etc, and provide a protocol report of how the entire case study was conducted (Creswell, 2013). With this in mind, a database house all study data.

Assessing how individuals within the emergency community perceive the potential for a pandemic event might provide valuable insight into overall preparedness. If local communities do not properly prepare themselves for emergencies like pandemics for instance, the public could panic and exacerbate the situation (Moore, 2011). Understanding the perspectives of emergency preparedness professionals concerning readiness can reveal their perceived level of preparedness for the local area and may identify strengths and weaknesses with their preparedness plan. If emergency planners underestimate the impact of an emergency event, it could lead to an overall ineffective response effort (Rahm & Reddick, 2011), and even increased casualties or death. Humans create or construct their perception of the world around them creating their ideal view of reality based on internal and external stressors. Therefore, it is feasible that if a

professional in the field of emergency management perceives that they are not prepared for a pandemic then there may be a shortfall in the preparedness plan. After identifying the participant's risk perceptions, I used them to assess preparedness against existing literature and pandemic plans.

Confirmability

I strove to remain reflective throughout the research process and was aware of how my preconceived views might affect the results. After each interview, I used analytic memos to capture my personal feelings, biases, and insights related to that interview. I was more of a passive partner during the interviews by only asking clarifying questions if a response was unclear to me.

Ethical Procedures

In order to ensure that participants were voluntarily participating in this research study, each participant signed an informed consent document, which disclosed any potential risk resulting from participation in this study, and described method for safeguarding personally identifiable information. The consent forms had a provision that participants could withdraw from the study at any time. The consent form communicated the purpose and intent of the study, which was to conduct doctoral research and report the findings.

In order to protect the participant's rights to confidentiality and privacy, I collected only limited identifying information for each individual. This information was be safeguarded in a protected file. The personally identifiable information was not

included in the study. It remained in a protected file, which was/is available for IRB audit. I assigned each participant a number. This results of this study aided in identifying what I deemed valuable insight into the preparedness of the organization and local area. Emergency managers may use the results to improve their overall pandemic response mission of the Red River EOC. It is my intention to provide a sanitized version to the findings to the participants and write a journal article. The sanitized version will be void of all potentially identifying data, for example educational data and references to the Red River EOC. Finally, I received IRB approval before participants were recruited, selected and interviews were performed.

Summary

This qualitative descriptive case study determined if North Texas perceived that they could manage a pandemic. Assessing the risk perception regarding the effectiveness of the all-hazards approach to pandemic planning assisted in answering this research question. All of the participants were all highly trained and experienced emergency management planners. Understanding the risk perceptions of the Red River EOC participants provided insight into their perception of the overall field of emergency management planning and pandemic preparedness for North Texas.

I utilized data derived from multiple sources related to this organization, as well as perceptions of members from the Red River EOC, with the goal of understanding the effectiveness of the all-hazards approach to pandemic planning and the role risk perception plays within local pandemic preparedness. Because of the qualitative nature of

this study, triangulation was a means of pulling all the data together and providing a method for lending credibility to the validity of the data. Once the study received approval, I sought IRB approval to conduct my research and started recruiting participants for the study after I received approval to start my research. In chapter 4, I discuss results of the study.

Chapter 4: Results

This chapter includes the results of data obtained from qualitative interviews conducted with participants from the Red River Emergency Operation Center. I describe the pilot study, setting, demographics, data collection, and results of the data analysis. I also describe how I collected, coded, and analyzed the data using qualitative content analysis and hand coding to identify themes. The study was designed around the following research question: What are the perceived risk perceptions of North Texas emergency management stakeholders regarding all-hazards pandemic planning effectiveness? The interview questions were as follows:

1. What are your feelings regarding the effectiveness of the all-hazards approach to pandemic planning?

2. What is your assessment of the North Texas emergency management community's ability to manage a pandemic using the all-hazards approach?

3. How does your knowledge of risk related to pandemic preparedness assist you in improving your pandemic plan?

Pilot Study

I conducted a pilot study to test the research protocol and ensure that the questions were clearly stated and the participant understood the questions. The pilot study indicated whether questions would elicit comprehensive rich data related to the research question. Data collected using open-ended interview questions helped me determine how

emergency managers supporting a small North Texas Emergency Operations Center perceived all-hazards pandemic planning and its effectiveness in dealing with emergency pandemic events.

Recruitment of the pilot participant involved IRB approval for e-mail correspondence. I advised the potential participant that I was conducting interviews as part of a research study to increase my understanding of how emergency managers perceive the effectiveness of the all-hazards approach to pandemic planning. I advised the potential participant that he or she was in an ideal position to give valuable information from his or her perspective. I explained that the interview would takes around 20 minutes and I was trying to capture his or her perspectives of the effectiveness of using the all-hazards approach to pandemic planning. The participant agreed to participate and signed the IRB-approved consent form.

The pilot interview occurred completely via e-mail. The pilot participant was a dispersed employee. I decided to use dispersed employees for the pilot study and local employees for the main study. The pilot participant's responses to the interview questions provided insight into the effectiveness of the all-hazards approach. For example, the participant responded "all-hazards is a broad brush, but focused attention is still required on a particular area like pandemic planning, an element of the all-hazards method." The pilot study did not identify any protocol problems and there were no changes made to the IRB-approved version of the interview questions or study protocol. Data obtained from the pilot study were not part of the main study.

Setting

The presidential election directly affected the number of available participants for this organization. Due to the party in power losing the presidential election, several potential participants had to resign their politically appointed positions. This reduced the available participant pool from 11 to seven. The interviews took place in the location of the participant's choosing. Interview settings included the participant's office, e-mail, or my office. The initial discussion of the study for participation purposes took place in participants' offices.

Demographics

All participants worked in an emergency management capacity and held FEMA certifications ranging from Professional Continuity Practitioners Level I, to Master Continuity Practitioner Level II. The emergency management planners worked closely with federal, state, and local emergency management and response personnel and had extensive experience in the emergency management profession.

Data Collection

The IRB approval number for the pilot and main study was 8-12-16-0300162. I received a letter of cooperation from a research partner dated September 21, 2016 and signed by the senior official from the organization to conduct research related to this study. As a convenience and due to the proximity of the organization and my office, recruitment occurred face-to-face for every participant. I provided copies of the consent forms in person and departed to give participants time to decide whether they wished to

participate. Because the presidential transition had taken place, several additional participants resigned from their politically appointed positions, so this development negatively affected the number of available participants.

I went into this study anticipating that I would interview most of the available participants. Five of Seven (seventy one percent) of the available participants remaining after the political appointee resignations agreed to participant in the study. Data collection took place via e-mail and face-to-face. When briefed on the study, participants had the opportunity to participate in the interviews face-to-face, via telephone, or via e-mail. All participants received the protocol for the study face-to-face and indicated their choice of face-to-face, telephonic, or e-mail interviews.

All potential participants received an explanation of the research. They received an invitation to take part in a dissertation study addressing the effectiveness of the all-hazards approach in pandemic planning. I invited emergency management professionals who support emergency management functions and had experience writing preparedness plans to be in the study. I presented the consent form in writing and advised that the form is part of a process called informed consent to allow participants to understand the study before deciding whether to take part. The consent formed covered the following topics: background information, procedures, sample questions, voluntary nature of the study, privacy, contacts and questions, and obtaining consent. Once participants agreed to participate and signed consent forms, I set up appointments and interviewed them via e-mail, or face-to-face depending on their preferences. However, all initial contact was

face-to-face. The e-mail method is a means for gathering qualitative data and allows for more flexible, thoughtful, and reflective responses to the interview questions (Bowden & Galindo-Gonzalez, 2015). Once the interview was completed, the participant had the opportunity to review the transcript for accuracy.

This study consisted of eight interviews, which included two face-to-face interviews, three email interviews, two follow-up face-to-face and one email follow-up clarification interview. The interviews took 20 minutes for the face-to-face portion. Because none of the participants opted for audio recording, the data were hand transcribed for the face-to-face interviews as participants responded. I input the notes into a MS word file, stored it and numbered it to protect the identity of the participants. For email responses, I verified the data via member checking and used responses verbatim as written by participants. Once all interviews were completed, I provided the participants an opportunity to ensure I accurately reflected their perceptions in the transcripts. There were no variations from the IRB-approved data collection plan presented in Chapter 3.

During this study, I interacted with participants both face-to-face and via e-mail while gathering raw data based on participants experience related to pandemic preparedness. I was constantly cognizant of potential bias collecting data due to my understanding of pandemic preparedness and was very careful not to lead or guide participants to a particular response. I wrote several reflective analytic memos to capture my thoughts as the researcher, during the data-gathering phase.

Data Analysis

The data included responses to open-ended interview questions used to identify risk perception by determining how emergency managers supporting a small North Texas Emergency Operations Center perceived all-hazards pandemic planning and its effectiveness in dealing with pandemics. In accordance with IRB-approved data collection plan presented in Chapter 3, I used face-to-face communication to establish rapport, discuss the protocol for the research project, and ensure that the data correctly reflected the participant's views. The interviews took place face-to-face (two participants) and via email (three participants), while follow-on interviews were face-to-face (two) and e-mail interview responses (one) for others, depending on their personal preferences. Follow-up interviews ensured accuracy in the transcription process. The face-to-face portion synchronized the data with visual and social cues to avoid ambiguity and misinterpretations of the data (see Bowden & Galindo-Gonzalez, (2015).

Evidence of Trustworthiness

Credibility

I conducted qualitative open-ended interviews and collected data from other sources like literature review. I wrote analytic memos to collect my thoughts as I conducted my research. I analyzed data concurrently and used triangulation to enhance validity of this study. Triangulation is one method that can help a qualitative researcher minimize the potential for bias in the data analysis (Guion et al., 2011). Once I completed hand transcribing the face-to-face responses to interview questions, I met with the

participants again to provide them an opportunity to ensure that I accurately reflected their point of view.

Transferability

When considering transferability, it is important to understand the audience (Burchett et al., 2011). When I started attempting to determine the transferability of this study, I ensured the target participants were experienced emergency management professionals located in North Texas. The all had experience in, or were responsible for pandemic preparedness planning at the federal level. The all worked with federal, state, and local emergency management professionals. All participants were federal emergency management planners who played varying roles within that profession. Due to the small size of the organization, I asked every employee to participate. The findings were relevant to members of the Red River EOC and may be relevant to organizations outside of the Red River EOC, especially sister agencies associated with this organization depending on perceived relevance of pandemic preparedness to that organization's mission (see Burchett et al., 2011). Participants were active members of the federal, state, and local emergency management communities, so I expected that results might be generalizable to other organizations.

Dependability

The specific purpose of the study was to determine the effectiveness of all - hazards approach to emergency pandemic planning. With this in mind, I selected the participants purposefully for the study, specifically due to their experience as emergency

management planners with the Red River EOC. I collected data from multiple sources including participant interviews, literature review, and analytic memos. As I collected the data, I analyzed it concurrently using qualitative content analysis, triangulation and development of key themes using qualitative hand coding.

In order to establish dependability participants had the opportunity to review the researcher's transcription of their responses to ensure they accurately reflect the participant's perspective. Reliability can be accomplished by maintaining a solid chain of custody for all data collected, including interviews, field notes, etc (Creswell, 2013; Yin, 2010). The researcher can maintain a database of all data, documents, interview transcripts, etc, and provide a protocol report of how the entire case study was conducted (Creswell, 2013). For this study, all pertinent files, interviews, coding drafts, were stored in a database developed to house all study data.

Assessing how individuals within the emergency community perceive the potential for a pandemic event might provide valuable insight into overall preparedness. If local communities do not properly prepare themselves for emergencies like pandemics for instance, the public could panic and exacerbate the situation, (Moore, 2011). Understanding the perspectives of emergency preparedness professionals concerning readiness can reveal their perceived risk perception and level of preparedness for the local area. It may also identify strengths and weaknesses with their preparedness plan. If emergency planners underestimate the impact of an emergency event, it could lead to an

overall ineffective response effort (Rahm & Reddick, 2011), and even increased casualties or death.

Humans create or construct their perception of the world around them creating their ideal view of reality based on internal and external stressors, so it is feasible that if a professional in the field of emergency management perceives that they are not prepared for a pandemic then there may be a shortfall in the preparedness plan. After identifying the participant's risk perceptions, I used them to assess preparedness planning for North Texas.

Confirmability

As mentioned previously in Chapter 3, I strove to remain reflective throughout the research process and was aware of how my preconceived views might affect the results. After each interview, I used analytic memos to capture my personal feelings, biases, and insights related to that interview. I was more of a passive partner during the interviews by only asking clarifying questions if a response was unclear to me. I conducted three follow up interviews to clarify unclear responses and ensured that I accurately reflected the participant's perspective.

What struck me during all interviews was the level of passion for the emergency management business and each participant seemed to take their responsibilities very seriously, as many professionals do. They seemed to show a genuine care for the community they support. One participant went further and seemed to take each loss of life during a disaster personally and felt that the emergency management process was

responsible for unnecessary casualties. For example, the participant commented, “I believe that (lack of communication) is a large factor in what happened that night. It was an emotional event. Nine people died that night and those operators had to listen to it happen”. Participant seemed very agitated and passionate when discussing perceptions related to communications between the different levels of government. I must note that in one of my field notes, it was my perception that the participant did not totally agree with the all hazard approach to planning and I identified some hot button issues related to coordination or communication between the levels of government. I noted in a reflective analytic memo that the participant seemed seriously traumatized by deaths that occurred during an emergency event. The participant seemed to carry the guilt of those deaths and felt that poor communications between agencies was a direct cause of these deaths. The participant provided a laundry list of why the response effort failed ranging from poor communications, poor training, overworked and underpaid staff, and heightened emotions clouding judgment. One statement summed this point up when the participant stated, “The 911 dispatchers were in a state of chaos and poor communication. They were unable to dispatch EMS, police and fire to the locations in need of services. It was an emotional event. Nine people died that night and those operators had to listen to it happen”

Results

First cycle analysis consisted of descriptive coding. This coding identified topics from the raw interview content. Word clouds were used to visualize the keyword

frequency for each question and adjustments were made to remove expected frequent words like Pandemic and emergency management. The key words and phrases emerging from the word clouds were as follows:

Interview Question 1: Communications, jurisdictional matters, underlying success, reality, casualties, believe, etc,

Figure 1. Word cloud obtained from Interview Question 1 using Wordle analysis.

Interview Question 2: Believe, training, confusion, communications, fair response, issues, emotions, emotional plans, underlying, etc.

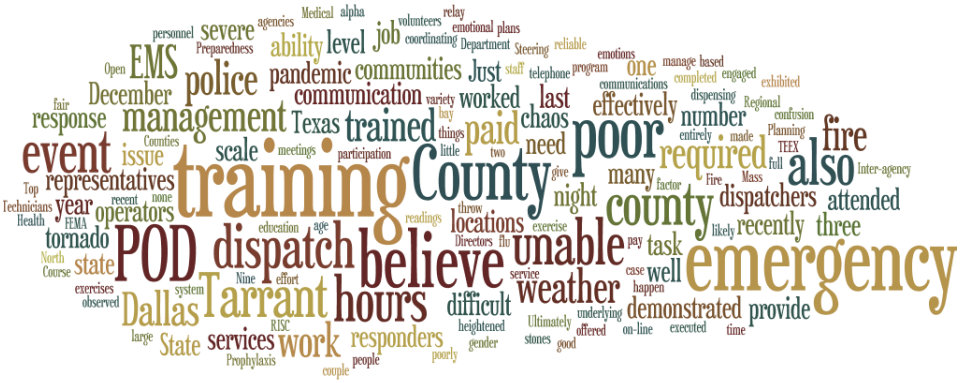

Figure 2. Word cloud obtained from Interview Question 2 using Wordle analysis.

Interview question 3: Knowledge, leadership, experience, problem, educating, improving, etc.

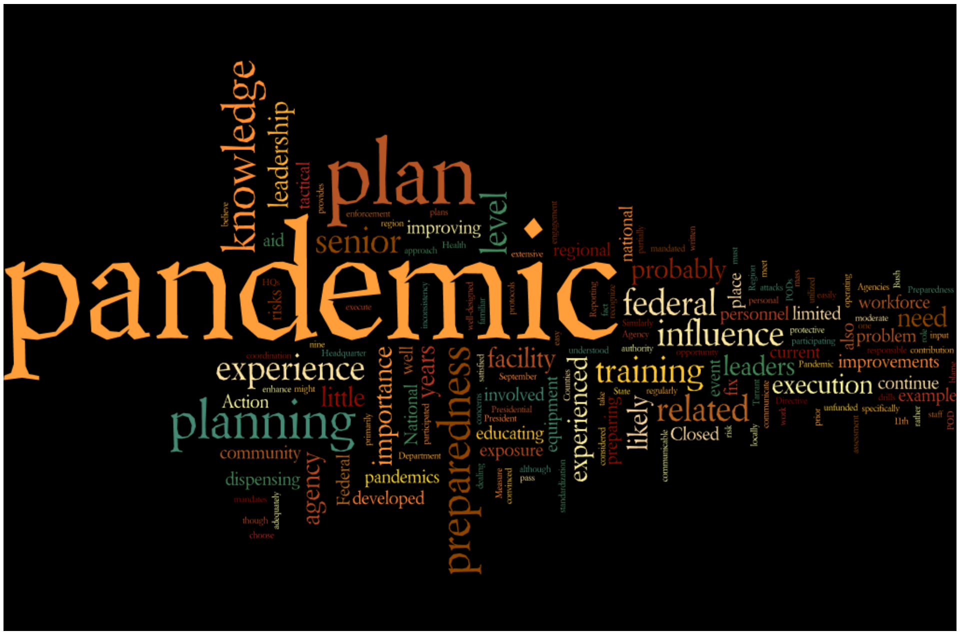

Figure 3. Word cloud obtained from Interview Question 3 using Wordle analysis.

From the word clouds, I derived themes and sub-themes from the data. Four themes and seven subthemes were identified and discussed in detail via first had account by participants.

Themes

By way of coding and thematic extraction, four primary themes derived from the interviews: (a) Political/Organizational Climate, (b) Emergency Response, (c) Training and Experience, and (d) Communication. Additionally, all four themes yielded relevant subthemes. I organized themes and subthemes by frequency of response by participant.

Primary Theme 1: Political/Organizational Climate

Reference to Political and Organizational Climate was prevalent throughout the interviews. Participant B mused that integration of policy throughout the governmental levels played a significant role in positive risk assessment outcomes by identifying threats or hazards and opportunities for hazard prevention, deterrence, and risk mitigation prior and during emergencies. Participant B commented that:

> HHS, FEMA and the States and Counties, themselves, have a very robust plan in place. The fact that the plan is integrated through the all-hazards planning approach at the Fed, State & Local levels is a key contributing factor to the chance of success.

Participant A further commented on the political/organizational climate:

> Tarrant, Denton and Dallas Counties have exhibited a keen ability to manage a pandemic. They demonstrated proficiency through their Open Point of Disbursement (POD) plans and the training that they conduct in preparing their communities. A recent flu outbreaks and the Ebola case in Dallas also demonstrated this keen ability.

Participant A also felt that northern Dallas counties were adept at managing emergencies via 100% coverage of the population during episodic events and rigorous training of personnel.

Subtheme: Consistency and Coordination

The participants referenced organizational consistency, or lack thereof, several times in this study. For example, Participant B reported that federal managers were reluctant to dispense meds during emergencies despite the need. Emergency medication centers (also known as points of dispensing sites or PODS) are theoretically set up where people can pick up emergency medications or receive vaccinations. Medication centers are typically located in large public buildings such as schools, arenas, or churches in several geographic areas to minimize travel time. Federal managers make these medications available to the community. However, several participants opined that there was a lack of consistency with facility level engagement by federal managers. Many federal leaders responsible for facility security appear reluctant to assume perceived risk in handing out meds or in involving their staff in operating points of distribution." The data revealed that some agencies "were inconsistent about personnel utilization" during emergencies. Some agencies were organized and focused while others experienced states of chaos that yielded loss of life. The senior leaders were inconsistent in preparing for a pandemic, due to one participant's observation that some leaders were task oriented and aggressively prepared while others took a more laissez-faire approach to the problems at hand.

One of the participant has had a more reassuring perspective by asserting that the "State of Texas has one of the most reliable emergency management system in the US." Other participants were also in accord with this assessment by relaying that "the North

Texas Community is well organized, work well together, coordinated, knowledgeable, professional, and experienced."

Subtheme: Presidential Mandate

A subtheme that emerged from the data was about the presidential mandate that signed into law as of 2007 and amended by Obama in 2011. According to the Department of Homeland Security (2011), the directive states that the National Preparedness—HSPD-8 directed:

> Establish policies strengthening U.S. preparedness to prevent and respond to domestic terrorist attacks, major disasters, and other emergencies. The directive required the Secretary of Homeland Security to develop a national domestic all-hazards preparedness goal that included measurable readiness priorities and targets and readiness metrics and elements. The directive also required federal agencies to provide financial and technical support to states, develop first responder equipment standards, and establish training programs to meet national preparedness goals. (p 1)

During the interview process, Participant C stated that the mandate had "very little influence on our national pandemic planning." Participant C also felt that the influence that did exist was "via tactical improvements during plan execution and contribution." Participant A felt that the mandate was essentially "unfunded" a lacked the teeth needed to make it a viable plan. Participant C reported that the "Presidential

directive did not fix engagement issues" and that "Federal engagement lacks consistency."

Participant A commented that the federal government should focus on supporting lower levels of government.

Primary Theme 2: Emergency Response

The theme of *Emergency Response* derived from participant's responses to the interview questions. Participants were generally satisfied with the overall ability of state agencies to respond to any type of emergency using an all-hazards approach. They also felt that the medical system linked to the emergency management system was capable of responding effectively to medically related emergency. One participant offered that you could enhance pandemic preparedness by way of local federal leaders planning and operating Closed Federal PODs. The inference here is that the closed PODs may be inefficient at distribution of needed supplies during emergencies due to the local customs and cultural differences. An example of this came from Participant C:

> I think HHS, FEMA, DOD, and CDC have established a robust medical system to respond to any hazard. Texas Divisions of Emergency Management, Homeland Security, Department of Public Safety and Department of State Health Services makes up the State of Texas robust reliable emergency management system. The Texas State 24 hour/7 days Operations Center manages all incidents and is capable of responding to any manmade or natural situation.

Participant A said:

> I am satisfied that the Counties have a well-designed plan that should adequately meet the need in the event of a Pandemic event. I am also convinced that federal leaders at the individual facility level could enhance pandemic preparedness through their engagement in planning for and operating Closed Federal PODs.

Subtheme: Planning and Preparing

A sub-theme *Planning and Preparing*, derived from participant responses suggested that some significant problems might exist when responding to emergencies. One of the more notable responses by Participant A graphically describes actual conditions during an emergency. Participant A said:

> Just as recently as last year during a severe weather event (December 26, 2015 tornado) the three emergency responders (fire, police, EMS) were unable to dispatch effectively. The 911 dispatchers were in a state of chaos and poor communication. They were unable to dispatch EMS, police and fire to the locations in need of services in a timely manner.

For context, in the early evening hours of December 26, 2015, a dangerous weather system moved over north Texas to produce one of the most devastating and deadly winter tornado outbreaks in Texas history. Several super-cell thunderstorms produced 12 confirmed tornadoes across north Texas, with the most significant damage affecting high-population areas of Dallas, Rockwall, Collin, and Ellis Counties. 911-call volume that night was so high that the recorder could not keep up. Call volume exceeded dispatch capability. Thirteen people perished that night while 193 were injured.

Evidently, preparing infrastructure and planning for staffing saturation were not a condition of concern prior to the disaster.

Regarding planning and preparing, Participant D said, “I understand modifications need to be made based on the circumstances or agent, and that could take some time, which could mean losing lives, but I think this is better than trying to have a specific plan for each possible circumstance.” In an analytic memo, I reflectively noted that this comment that struck me while interviewing, “I understand modifications would need to be made based on the circumstances or agent, and that could take some time, which could mean losing lives, but I think this is better than trying to have a specific plan for each possible circumstance.” Is losing lives acceptable during the modification period? How might planners mitigate the potential for loss of life during the plan modification period?

Participant B reported that senior leaders were inconsistent when preparing for a pandemic. Although Participant B did not discuss the details of the inconsistencies, they noted that leaders did not utilize available personnel effectively.

Primary Theme 3: Training and Experience

Several participants expressed their approval of the training programs used in the counties, while one participant was quite critical of it. For example, Participant C said, “our county (Tarrant) program training and management ability is second to none.” In addition, Participant C also said, “the all-hazards approach was the best way to train

responders." Participant C reported, "Texas receives a lot of grant money and trains extensively, so this makes them very proficient with managing emergency events."

Participant A, on the other hand felt that "training does not take place regularly and support personnel were "undertrained and under paid for their task. Additionally, their training does not provide for that level of emergency." This means that that training takes place but it does not account for the surge of response personnel or emotional turmoil that affects their ability to be effective. The colloquial phrase used for this is *helmet fire* where individuals are so overwhelmed with emotions; they are unable to complete basic cognitive tasks.

Subtheme: Hours Worked

One participant felt that the lengthy hours employees worked, diminished their ability respond to emergencies effectively. Specifically, Participant A mused, "the number of hours they are required to work is also an issue." He explicitly noted that emergency response operators were dreadfully overworked and poorly paid for the responsibility required task organizing. He ruminated that it was not the employees fault for lack of ability or desire to do the work, but management's inability to provide realistic training. Participant A said: "I believe the underlying problems causing a poor response effort during an emergency event [include] very poorly trained, paid very little, and work entirely too many hours for a highly stressful job."

Subtheme: Age and Education

Participant A also posited that age and education might play a role in managing emergencies effectively. Typically, backup employees are deployed strategically to provide extra support during emergencies. These employees may not have the appropriate training as full time employees. They may not have any training to the level that would enhance and facilitate operational efficiencies. Part of the training deficit may be due to lack of requisite education and age. During the Christmas 2015 tornado event, stress may have overcome employee's ability to process information logically. Participant A said:

> I believe that is a large factor in what happened that night. It was an emotional event. Nine people died that night and those operators had to listen to it happen. I also believe the weather and likely airborne projectiles could have made it difficult for them to give good directions based on any equipment readings and relay them to police, fire or EMS. Ultimately, I believe it is a totality of poor training, demographics of the employee (age, and education), pay scale, too many hours worked and heightened emotions in the telephone bay that caused confusion and poor response time.

Finally, some of the participants reported that they felt "limited" and not fully "prepared" when dealing with episodic emergencies even with the requisite training provided.

Subtheme: Solutions

Participant A offered several solutions to the problem, which included "A remodel of the operations room, roving supervisor(s), isolation of "hot" calls (although

under these conditions it would have been difficult), “life/death” training, are maybe a few things that may help.” Participant C stated, “on the job training is key component to successful response.” Participant C also felt that simulated exercises “were another key to success.” Participant B felt that simulated exercises provided real-world experience and noted that leaders needed to be more educated and prepared for these climatic events.

Primary Theme 4: Communication

Communication was one of the main themes derived from participant responses. Participants mentioned it in some context across the three interview questions more than a dozen times. Participants generally felt that communications is a vital component of emergency response. For example, one participant reflected, “I believe that during any emergency event that communication is the foundation for successful lifesaving delivery of services, no matter what type of services those may be, fire, police, medical or all of the above.

Effective communications is fundamental to an effective response effort and more often than not, issues arose with information sharing, for example Participant A said

> all parties must communicate with each other effectively and timely or there will be casualties. There will be casualties of both civilian and emergency services. Currently, there is a perception that the community does not have an all-encompassing communications system whereby all parties willingly share information to prepare for an emergency event.

> Participant C reported a more positive outlook at the state of communication in the county. Participant C effectively affirmed that the integration of new technology mitigated the communication deficiency: There used to be a gap between the state and county, but with Texas Division of Emergency Management Emergency Alert System (EAS) (county name redacted) by way of the Nixle system, the gap of informing and notification was filled. The Nixle system at the resident level is a notification system that keeps residents current with relevant public safety and school information, as well as other important community matters. At the government agency level, there are many additional tools available from event management, everbridge services, access to IPAWS, which is FEMA's Integrated Public Alert and Warning System and other messaging and communications tools. North Texas has attempted to fill the interoperability in communications gap with this system.

Participant B supported Participant C's positive viewpoint when noting that three North Texas counties communicated efficiently and effectively: "The Public Health Directors are informed, engaged with their health service communities and have effective communications."

Subtheme: Communication Deficiencies

Participant C felt that there were no issues in Tarrant County, "but west Texas counties had a lot of gaps and do not have the robust equipment or have money issues. They experience more issues with communications because of their lack of equipment."

Participant A opined that the communication problem was a complex issue, meaning that state officials blamed the problem on a lack of monetary resources, while internal inter-agency bickering fostered mistrust and a reluctance to communicate with other agencies:

> What I believe to be the underlying problem causing the poor communication issue that relates to an all-hazards approach is multifaceted. Usually, planners cite lack of funding as the reason for deficiencies. That is the politically correct answer. However, the politics are what drives the reality of the issue. The many agencies of law enforcement do not trust each other. Law enforcement does not trust fire. Neither trusts medical. No one trusts each other to communicate with each other. There is no communication with policies, radio frequencies, localized and/or cross-jurisdictional drills do not take place on a regular basis.

Participant B seemed to reiterate this problem by stating that: "Department and Agency HQs must communicate down to their senior managers the priority and importance in engaging at the facility level. A Presidential Preparedness Directive did little to fix this problem." The Presidential directive refers to HSPD-5: Management of Domestic Incidents and HSPD-8/PPD-8: National Preparedness which outline the actions taken to plan, organize, equip, train, and exercise to build and sustain the capabilities necessary to prevent, protect against, mitigate the effects of, respond to, and recover from those threats that pose the greatest risk to the security of the Nation.

Summary

This chapter covered the protocol used to conduct this research study, and discussed demographics, setting, data analysis; evidence of trustworthiness, results, and theme development, the research data identified four key themes (Figure 4): Political/organizational climate, emergency response, training and experience, and communications. Further sub-themes of: consistency, presidential mandate, planning and preparing, hours worked, age and education, solutions, and deficiencies developed from the data. This chapter also discussed results from the qualitative interview data obtained from respondents from the Red River Emergency Operation Center. The qualitative content analysis analyzed (3) interview question intended to answer the research question: R1: What are the perceived risk perceptions of North Texas emergency management stakeholders regarding all-hazards pandemic planning effectiveness?

In summary, the four themes and seven subthemes emerged from analyzing the data using word cloud content analysis and qualitative hand coding. As depicted by the thematic graph in Figure 4. Political/Organizational Climate, Emergency Response, Training and Experience, and Communications emerged as salient themes from the interviews.

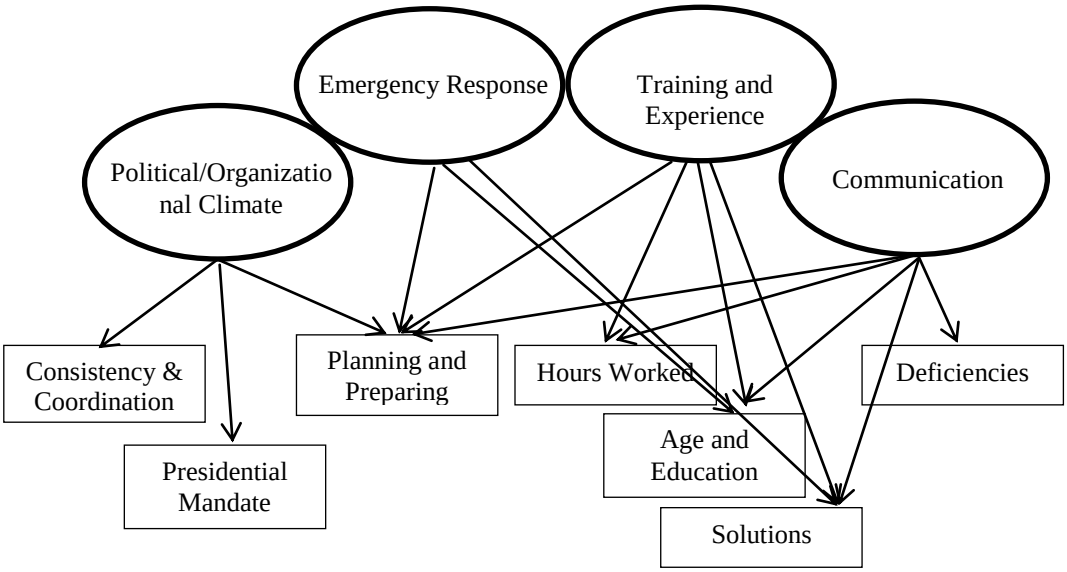

Figure 4. Thematic graph of salient themes and subthemes extracted from face-to-face interviews.

Chapter 5 reviews the research that supported the research question. In addition, it will cover data analysis, Interpretation of the Findings, implications of findings, recommendations, limitations, Positive Social Change and the conclusion of this study.

Chapter 5: Discussion, Conclusions, and Recommendations

This qualitative study centered on a small emergency operations center and employees' perceptions related to the effectiveness of all-hazards pandemic preparedness. The goal of the study was to assess North Texas emergency managers' risk perceptions regarding the effectiveness of the all-hazards approach to pandemic planning. Cultural theory of risk perception was the primary theoretical framework for the study with a strong constructivist underpinning. The unit of analysis for this case study focused on the perceptions of Red River EOC members, and analysis of the data resulted in four primary themes and corresponding subthemes. The data collected for this study included face-to-face interviews, e-mail interviews, reflective analytic memos, and a review of pertinent peer-reviewed literature. Similar studies in North Texas indicated shortfalls in preparedness response plans through assessment of perceptions of emergency planners (Rahm, & Reddick, 2011).

The purpose of this study was to assess the effectiveness of the all-hazards approach to pandemic planning through the eyes of the participants affiliated with the Red River EOC. This organization is located in North Texas. By way of qualitative hand coding and thematic extraction, four primary themes emerged from the data: (a) political/organizational climate, (b) emergency response, (c) training and experience, and (d) communication. Additionally, all four themes yielded relevant subthemes. I ordered themes and subthemes by frequency of response by participant. This chapter includes the interpretation of findings, limitations, recommendations, implications, and a conclusion.

Interpretation of the Findings

I used this qualitative descriptive case study to delve into North Texas pandemic preparedness by analyzing the risk perception of Red River EOC participants regarding the effectiveness of the all-hazards approach to pandemic planning. The cultural theory of risk framework was the foundational theory for this study. This theory enables a researcher to examine risk perceptions and determine how each individual within a shared community perceives risk (Cope, 2014). From this perspective, a researcher can assume that individuals and organizations within professional communities will share similar perceptions of risk depending on the shared variables (King, 2012; Scherer & Cho, 2003). Participants in the current study had training and experience in emergency management principles and were experienced emergency management planners. Due to their connections to the emergency management community at large, understanding their risk perceptions may provide insight into the overall field of emergency management planning and pandemic preparedness for North Texas.

Similar studies in North Texas indicated shortfalls in preparedness response plans through assessment of perceptions of preparedness. From a cultural theory of risk perspective, members of the same community should have similar views of readiness and preparedness with other members of the emergency management community. The following research question guided this study: What are the perceived risk perceptions of North Texas emergency management stakeholders regarding all-hazards pandemic planning effectiveness?

Themes identified in the data analysis indicated that the emergency management community struggles with persistent issues of communication, political influence, coordination, and training shortfalls. These issues aligned with findings discussed earlier in chapter two of this study (Donahue & Tuohy, 2006; Hennessy-Fiske & Susman, 2014; Baack, 2011) and there were significant efforts by federal policymakers to mitigate the issues. From a federal level, emergency operation center perspective, professional emergency management planners perceive that they are experiencing problems with training, communications, politics, and coordination.

Primary Theme 1: Political/Organizational Climate

Previous studies in North Texas revealed that weak leadership, planning, operations, and logistics issues plagued many emergency response efforts. After continual modification of training and federal emergency management planning requirements, there are still problems with planners underestimating risk, failing to grasp the impact of emergency events, or events catching the planners off guard (Nowland, 2012). During the Oklahoma City bombing, the Integrated Emergency Management System and Incident Command Systems broke down due to the rapid response from multiple jurisdictions and establishment of individual command posts that were not coordinating with each other (Donahue & Tuohy, 2006). The federal government enacted substantial measures to correct these issues and included standardization of the incident command process and development of several emergency management training courses.

The courses developed by FEMA provide a standardized manner and common lexicon for operational language. The training is open to all levels of government.

After the 2003 severe acute respiratory syndrome worldwide outbreaks, researchers again identified a breakdown or weakness in leadership, planning, operations, logistics, public relations, and resource management related to the response effort (Donahue & Tuohy, 2006). Analysis of data obtained from the current study indicated that policy integration was extremely important to ensure positive risk outcomes during an emergency event. Participants reported that the overall pandemic plan for North Texas is robust and sound. A key contributing factor to the chance of success integration of the all-hazards planning approach in federal, state, and local level plans. According to participants' perspectives, Tarrant, Denton, and Dallas counties could manage pandemic outbreaks very well.

The organization conducted live exercises for Point of Distribution (POD) plans, training, preparing the communities for distribution of meds, and actual pandemic response events. The 2009 flu outbreaks and 2014 Ebola outbreak in the Dallas metropolitan area provided additional insight into the North Texas Community's ability to manage a pandemic. However, there were protocol issues identified during the Ebola outbreak that might have far-reaching implications. Nurses in the affected hospital cited problems with protocol, preparedness training, and lack of a system to deal with potential Ebola cases (Hennessy-Fiske & Susman, 2014).

Subthemes: Consistency and Coordination

Organizational lack of consistency was as a subtheme in the data. Senior leaders were inconsistent in preparing for a pandemic. Some leaders were task oriented and aggressively prepared while others took a more laissez-faire approach to the pandemic planning problems. This likely occurred due to internalized lowered risk perceptions because there is a long time between pandemic events. This difference in risk perceptions and leadership styles potentially led to inconsistencies in implementation of pandemic plans. In 2013, the Fort Worth, Texas police department (Fort Worth Police Department, 2013) determined that officers with the Tarrant County police department perceived that there was a lack of coordination between law enforcement agencies and emergency preparedness agencies across Texas and the United States when responding to emergency events. The officers perceived they were often conducting emergency response and management training alone without vertical or lateral coordination between federal, state, local, and sister organizations. From the officer perspectives, this lack of coordination was inconsistent with national objectives under the national response framework (Fort Worth Police Department, 2013).

A common subtheme emerged from the data related to coordination. Lack of coordination permeated the data and indicated insistencies throughout the coordination process. Participants perceived that many federal leaders responsible for facility security appeared reluctant to assume perceived risk or did not view the risk the same way as participants. The study data also revealed inconsistencies with personnel utilization

during emergency events. Some agencies were organized and focused while others experienced chaos that resulted in loss of life.

Overall, the consensus was that Texas, specifically the North Texas counties of Dallas, Denton, and Tarrant, had one of the most reliable emergency management and pandemic response plans and capabilities in the United States. The general perception was that the North Texas emergency management community possessed the traits of an efficient and effective emergency management entity. In addition to the themes and subthemes, a common set of traits for effective emergency managers emerged from the data. They are (a) well organized, (b) work well together, (c) coordinate (both vertically and laterally), (d) knowledgeable, (e) professional, and (f) experienced. There was one partially dissenting perception. A participant who played a dual role within the community was more critical of the local area response effectiveness at the local level. This participant supported the federal level mission and at one time played a role at the local incident command level. Due to this dual role, the participant was more critical of the response from local personnel for an event.

Subtheme Presidential Mandate

A subtheme emerged from the data regarding the presidential mandate signed into law as of 2007 and amended by President Obama in 2011. The presidential mandate did not achieve the desired effect and the prevailing perception was that this was due to it being an unfunded mandate. The presidential mandate did not improve issues with

consistency, coordination, or engagement. There was also a perception of a general lack of support from the federal government for lower levels of government.

Primary Theme 2: Emergency Response

Participants were generally satisfied with the overall ability of state agencies to respond to any type of emergency using an all-hazards approach. Participants also perceived that the medical system linked to the emergency management system was capable of responding effectively to medically related emergencies. The perception was that North Texas counties have a well-designed plan that should adequately meet people's needs in a pandemic event. Participants perceived that some areas had room for improvement. For example, federal leaders at the individual facility level could enhance pandemic preparedness through their engagement in planning for and operating live exercises. Additionally, real-world experience or simulated training could enhance the community's ability to respond to a pandemic.

Subtheme: Planning and Preparing

The subtheme planning and preparing derived from participant responses that some significant problems persist when responding to emergencies. One of the more notable responses addressed a severe weather event in December 2015 involving a tornado outbreak in which three emergency responders (fire, police, EMS) had difficulty dispatching effectively. The 911 dispatchers were in a state of chaos, and poor communication magnified the chaos. Emergency managers were unable to dispatch EMS, police, and fire personnel to the locations in need of services in a timely manner and were

directly responsible for several deaths. An additional issue derived from the data related to senior leaders being inconsistent when preparing for emergencies and not using available personnel effectively. Participants perceived that many of the responders were undertrained or untrained. Many had no practical experience, which had a major impact on the response effort.

Theme 3: Training and Experience

When preparedness plans fail, inadequate training and poor communication play a significant role in the failure. FEMA has attempted to mitigate this by providing training opportunities and establishing a framework for dealing with emergency management events. Federal agencies with emergency management missions can complete specified training offered by FEMA. This training provides an opportunity for planners to be more proficient in emergency management and continuity operations and planning. FEMA has training available online for federal, state, tribal and local area planners. This training is available via online and classroom training (FEMA, 2014).

However, analysis of the data identified potential pitfalls with established training opportunities. While FEMA provides a wealth of online training material and courses, there is little opportunity for real world or simulated local exercises. By increasing the level of hands on practice and training in conjunction with refining emergency planning skills, participant's perception of preparedness might increase. As training and practice were increased, the perception of preparedness increased dramatically for emergency management planners who had not experienced or dealt with emergencies on a regular

basis (Nowland, 2012). Participants from this study echoed this view throughout the research data. Participants perceived that hands-on or real world training was necessary for a successful response effort. When an issue arose during an emergency, it thought to be due to inexperience. Personnel lacked real world or live simulated training necessary to respond appropriately.

In previous studies, assessing the perception of organizational staff members helped identify a potential training gap and provided emergency preparedness planners an opportunity to mitigate a weakness in their preparedness plan. North Texas area physicians perceived that they had a poor understanding or knowledge of the emergency management planning and response processes, and wanted more training opportunities, while nurse willingness to assume responsibilities correlated directly to their perception of preparedness (Baack, 2011). In that same vein, analysis of the data identified training pitfalls still persist and might be due to lack of real world experience or simulated live exercises. These exercises could help planners experience an event, instead of just taking a training course.

My data analysis identified a lack of hands on, real world or simulated training. This perception inferred that lack of hands-on, real world or simulated training and exercises directly correlates to increased casualties during an emergency event. Due to long periods between outbreaks, there is a tendency for emergency management planners to feel a false sense of security or outright complacency and apathy (Cwaik, 2009). The situation is compounded, depending on the type of pathogen, virulence, or preparedness

level, along with complicating factors like the political climate, poor communication, lack of training and other issues (Azarcon, 2013; Fosher, 2005). Additionally, issues like managing grief when dealing with mass casualty situations or feeling overwhelmed by events can contribute to an environment of chaos. It can lead to an overall ineffective response effort.

Primary Theme 4: Communication

Earlier studies in emergency planning revealed that communications failures and poor vertical and lateral coordination were recurring themes during large scale and complex disaster response efforts (Donahue & Tuohy, 2006). These failures occurred even after the community identified the issues during multiple instances. These issues were reported over the course of many years, in professional articles, training programs and planning literature, (Comfort, Waugh, Cigler, 2012).Due to the complexity of some emergencies, command, communications, planning, resource management, and public relations have persistent issues (Donahue & Tuohy, 2006). It is possible to mitigate some issues with communications. With the advances in communication systems and other technology, it is now possible to correct some of the issues with communications by using innovative methods, equipment or techniques. These new technologies may help emergency management planners address the perpetual communications failures, which often plague complex emergencies (Comfort, et al., 2012).

North Texas has attempted to fill the interoperability in communications gap with the Nixle system. The Nixle system at the resident level is a notification system that

keeps residents current with relevant public safety and school information, as well as other important community matters. At the government agency level, there are many additional tools available from event management, everbridge services, access to IPAWS, which is FEMA's Integrated Public Alert and Warning System and other messaging and communications tools. Therefore, North Texas has attempted to fill the interoperability in communications gap with this system.

However, communications technology is not always the underlying issue. A perception developed during this study was that some planners hide behind resource issues for various reasons. It is difficult to get multiple jurisdictions to agree on a standardized communications system and they often cite money issues. This can be due to political or resource problems, depending on the size of the organization or jurisdiction (Nowland, 2012; Donahue & Tuohy, 2006). Participants perceived poor communication as an underlying problem, but they thought politics drove the reality of the issue. Many agencies do not trust each other. Communication policies, radio frequencies, localized and/or cross-jurisdictional drills were not coordinated.

Lack of communication was determined to be a factor in what happened during the previously mentioned localized tornado emergency event in North Texas. Analysis of the data revealed a perceived list of why the North Texas response effort failed ranging from poor communications, poor training, overworked and underpaid staff, mass casualty shock and heightened emotions clouding judgment.

While the prevailing perception within the North Texas community was that Tarrant County did not currently have communications issues, participants perceived that West Texas suffered from equipment or money issues. The communication problem was a complex issue, meaning that state officials blamed the problem on a lack of monetary resources, while internal inter-agency bickering fostered mistrust and a reluctance to communicate with other agencies. Finally, participants perceived that Presidential Preparedness Directives did little to fix communications problems.

Limitations of the Study

The study was qualitative in nature and examined the organization as a single unit of analysis in its natural setting. This organization is unique and the sample size was small; therefore, it is difficult to determine if the findings apply to the larger emergency management community. Another limitation is objectivity of the researcher because he is a member of the Red River EOC community. The researcher is an extension of the data collection instrument, because the researcher is providing an environment contributing to freedom of expression (Chenail, 2011). The researcher is an instrumental aspect of the data collection process and sets the tone for the interviews (Chenail, 2011). For this study, I did not use a pre-established interview instrument, but rather created a set of open-ended questions. These questions provided an opportunity for freedom of expression into participant perceptions. Once the URR approved the study protocol, it was adhered in order to ensure consistency during the data collection phase.

In order to assist in identifying potential bias, I used reflective analytic memos to record my thoughts and perceptions during the research process. Once the interviews were complete, I gave participants an opportunity to review the transcript to ensure their thoughts were accurately reflected and provided them an opportunity to add to the content.

Recommendations

This study identified some consistent issues that continually distress the emergency management community. I identified issues like poor communications, training, coordination, and consistency of response efforts in this study. These findings were consistent with studies identified in the literature review portion of this study. Participants provided several solutions during the study, which included grief training for emergency management personnel faced with a mass casualty event, standardization and coordination of communications, emergency planning policies, effective personnel utilization, and trust between the levels of government.

While the general FEMA training is sufficient to provide a baseline understanding of how to respond to an emergency event, on the job training, simulated exercises, or real world pandemic events are key components to a successful response efforts. The consensus was that hands on simulated exercises and real world efforts provided the real-world experience that leaders needed to be more educated and prepared. It also provided experience for effectively utilizing personnel during catastrophic events. Finally, more

research is required to determine the underlying effect that lack of trust plays within these issues.

Implications

My intent with this study was to contribute to closing the information gap for North Texas emergency management planning, specifically related to pandemic planning using the all-hazards approach. While there were studies available regarding various issues in the North Texas emergency management community, there were no studies assessing the effectiveness of the all-hazards approach to pandemic planning for the area. There were limited studies available that identified various issues in the North Texas community, but they were several years old. During the dissertation process, several incidents occurred in the local area that highlighted some of the issues identified in this study. This study identified that issues still exist and some of the issues have been ongoing problems that persisted even after attempts to mitigate them. This study may help focus the North Texas community on areas that still need attention or mitigation.

From a theoretical framework perspective if perception is reality, the all-hazards approach to pandemic planning is effective for initial response efforts. However, swift customization is required for each individual event, to ensure an appropriate response. Studying the perceptions of professionals within a particular culture can provide a wealth of data related to that culture and can identify potential issues that might need mitigation. The findings in this study assisted me in identifying several issues that are persistent, in spite of measures to mitigate or correct the issues.

Positive Social Change

This study helped me confirm that using perceptions as an assessment tool can provide valuable insight into an emergency management planner's mindset. The revelation that several of the identified issues are ongoing problems in the community although a surprise to me, may assist emergency management planners to better assess not only how they communicate, coordinate, train and utilize personnel, but to identify areas where lack of trust with or between community partners may be affecting the overall response effort. Several issues identified in this study were consistent with previous studies in the North Texas community that used perception as an assessment tool (Donahue & Tuohy, 2006; Hennessy-Fiske & Susman, 2014; Baack, 2011).

The participants in this study were all part of the general North Texas emergency management community. From a Cultural Theory of Risk perspective, one would expect that identified perceptions would be similar to other emergency management planner perceptions, because of their similar professional culture and proximity. The issues identified in this study were consistent with the identified issues for the emergency management community at large and highlighted problems with mitigation of longstanding issues. Overall, participants perceived the all-hazards approach to pandemic planning as a sound and effective approach, as long as planners swiftly made adjustments for individual emergency events. One interesting perception that developed during the study regarded trust. The perception regarding lack of trust between levels of government

could be a driving factor for some of these issues. However, we need more research to determine the extent that trust plays in these issues.

Conclusion

Researchers have successfully used perception to identify issues with preparedness plans (Rahm & Reddick, 2011). This study assessed North Texas emergency manager risk perceptions regarding the effectiveness of the all-hazards approach to pandemic planning. While this study was limited in scope, the data captured was consistent with similar North Texas studies.

The results of the data analysis aligned with the research question and provided rich data related to participant's perceptions regarding all-hazards pandemic planning effectiveness. During data analysis, a pattern emerged regarding the effectiveness of the all-hazards approach to pandemic planning. From the perspective of North Texas Emergency planners affiliated with the studied organization, the all-hazards approach to pandemic planning was an effective approach, as long as planners quickly adjust or adapt plans and response efforts for individual emergency events. The analysis of participant perceptions revealed data consistent with other North Texas studies using similar methodology and identified several issues that continue to impinge on the emergency management planning community. Issues are Persistent for example: poor communications, training shortfalls, personnel utilization and lack of trust were some of the common issues identified during this study (see Donahue & Tuohy, 2006).

The participants were experienced emergency management planners and had a shared professional culture. This shared culture, or lived experience influences their perceptions of the reality of the all-hazards approach to pandemic planning and we as researchers must acknowledged that their perceptions have merit. Therefore, the Red River EOC perceives that the North Texas emergency management community can effectively respond to local pandemic events, as long as pandemic plans maintain a level of flexibility. If the plans are flexible, planners can modify them based on the variables of the specific emergency event.

Finally, the results of this study might be utilized to assist other emergency management planners at every level of government in the identification of potential issues, or at least open up a dialogue between the levels of government.

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Appendix A: Letter of Cooperation

Letter of Cooperation from a Research Partner

XXXX Address Redacted XXXX.

Date:

Dear Timothy Goss

Based on my review of your research proposal and research questions, I give permission for you to conduct the study entitled North Texas Emergency Manager's risk perceptions of all-hazards pandemic planning effectiveness, with Emergency management Operation Center affiliated personnel. As part of this study, I authorize you to Interview participants regarding their perceptions of all-hazards planning: Interviews may be conducted in person, over the telephone, or via email. Individual's participation will be voluntary and at their own discretion. Participants will choose their method of interview and location.

We understand that our organization's responsibilities include use of the common break room, if the participants choose. We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

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,
XXXXX Name Redacted XXX

Walden University policy on electronic signatures: An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically. Electronic signatures are regulated by the Uniform Electronic Transactions Act. Electronic signatures are only valid when the signer is either (a) the sender of the email, or (b) copied on the email containing the signed document. Legally an "electronic signature" can be the person's typed name, their email address, or any other identifying marker. Walden University staff verifies any.

Appendix B: Invitation to Participate

Invitation to participate in the research project titled: "Qualitative Case Study of North Texas Emergency Manager's risk perceptions of all-hazards pandemic planning effectiveness"

Dear (Emergency Manager), I am conducting interviews as part of a research study to increase my understanding of how emergency managers perceive the effectiveness of the all-hazards approach to pandemic planning. As an emergency manager, you are in an ideal position to give valuable firsthand information from your own perspective.

The interview takes around 30 minutes. I am simply trying to capture your thoughts and perspectives of the effectiveness of using the all-hazards approach to pandemic planning for my dissertation research. Your responses to the questions will be kept confidential. Each interview will be assigned a number code to help ensure that personal identifiers are not revealed during the analysis and write up of findings. There is no compensation for participating in this study. However, your participation will be a valuable addition to emergency management research and findings could lead to greater public understanding of pandemic planning. If you have any questions please do not hesitate to ask. Thanks!

Appendix C: Curriculum Vitae

2702 River Legacy Dr.

Arlington, TX

gosst@aol.com

Education

Walden University

Ph. D in Public Policy 2011-2017

Dissertation: North Texas Emergency Manager's risk perceptions of all-hazards pandemic planning effectiveness.

Honors: Pi Alpha Alpha for superior academic achievement with a GPA of 3.875.

Troy University

M.P.A Public Administration 2002

B.S. Science 1995

Sociology

Teaching Experience

U.S. Army Service School Instructor: taught occupational specialty 1992-1995

Japanese NTT Corporate Trainer 1998-2002

Experience

Intelligence and Insider Threat Program Coordinator	Jan 2011 to present
Financial Adviser	Aug 2007 to Dec 2010
Liaison Officer	Feb 2006 to Mar 2007

Counterintelligence Special Agent/Case Officer	Feb 2002 to Feb 2006
Counterintelligence Operations	Jan 2001 to Jan 2002
Acting Special Agent in Charge	May 2000 to Jan 2001
Assistant Special Agent in Charge	Jan 2000 to May 2000
Senior Agent	Dec 1998 to Jan 2000
Training, Operations, Plans and Reserve Affairs	Jan 1995 to Dec 1998
Special Agent Team Leader	Jan 1993 to Jan 1995
Instructor/Writer	Jan 1990 to Dec 1992

Languages

English- Native

Japanese- Read/Write (Defense Language Institute trained Linguist)