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# STRUCTURES, ROLES AND RELATIONSHIPS WITHIN PUBLIC HEALTH'S RESPONSE TO THE 2009-2010 H1N1 OUTBREAK: THE TIES THAT BIND PUBLIC INFORMATION OFFICERS AND EMERGENCY RISK COMMUNICATION EFFORTS

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ABSTRACT OF DISSERTATION

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The Graduate School

University of Kentucky

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A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Communications and Information Studies
at the University of Kentucky

By
Kathleen G. Vidoloff

Lexington, Kentucky

Co-Directors: Dr. Timothy L. Sellnow, Professor of Communication
and Dr. Derek R. Lane, Professor of Communication

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Little is known about the role of public health public information officers (PIOs) during public health emergencies. This study uses interpretative methods to learn about the organizational structures that facilitate and constrain emergency risk communication efforts during public health emergencies. Interpretive thematic comparative analysis of PIOs experiences and reflections about their involvement in the 2009-2010 H1N1 response will be used to illustrate how social interactions between and among PIOs, public health staff, and representatives from other agencies create implicit and explicit structures that facilitate and constrain emergency risk communication. The application of three specific concepts from structuration theory, namely, agent, duality of structure and institutionalized processes will be key in the exploration of the role of the PIO within the context of emergency planning and response.

Participants in this study were individuals from Kentucky, North Dakota, New Jersey and California who served as a PIO during the 2009-2010 H1N1 pandemic influenza response. The study's findings suggest that social interactions between organizational members, in addition to the organization of public health systems in each state, contribute to the similarities and differences in the enactment of the PIO role. Further, this study also suggests that the permeability of emergency response plans, another type of organizational structure, facilitate and constrain PIOs' emergency risk communication efforts. Finally, this study also suggests that the involvement of PIOs in emergency planning and exercises impacts the types of relationships that are created and maintained before and during emergency responses.

KEYWORDS: Public Information Officers, Emergency Communication, Risk Communication, Public Health

Kathleen G. Vidoloff

May 5, 2011

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Dedication

To my parents, John C. and Mary M. Vidoloff
& in loving memory of Robert L. and Mary M. Michiels

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There are several individuals who are responsible for making this dissertation project possible. First, I would like to extend a grateful thank you to the public health workers who took time from their busy schedules to participate in this study. Without them, this project would not have been possible. I extend a special thanks to Crissy, Monique, Robin, Michael, and Theresa for participating in the study and providing feedback on the interview guide and preliminary analysis. Your insights and perspectives truly validate the findings and applicability of this study to communication practitioners in the field of public health. Next, I would like to give considerable thanks to my co-chairs Dr. Tim Sellnow and Dr. Derek Lane for their support and guidance throughout the entire dissertation project. Their mentorship was invaluable. I would like to thank Dr. Elisia Cohen for her support of this project from the first draft I wrote during her health communication class. I would like to thank Dr. Kevin Real for sharing his expertise on structuration theory. I would like to thank Dr. Richard Crosby for challenging me go beyond analyzing only one state and encouraging me to think about the practical application of this work. Additionally, I would like to thank my colleagues at the Centers for Disease Control and Prevention for their encouragement during the final stages of the dissertation process. And finally, to my dearest friends, my family and my husband: there truly aren't words to express my sincerest appreciation and gratitude for supporting me throughout my doctoral program. I couldn't have done it without your unconditional support. In closing, if I have learned only one thing in the past three years, it is this: "You can't kill 'The Rooster.'"

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## Glossary of Acronyms

CDC: Centers for Disease Control and Prevention

CERC: Crisis Emergency Risk Communication

DHHS: Department of Health and Human Services

EOC: Emergency Operations Center

DEOC: Department Emergency Operations Center

GAO: Government Accountability Office

HERC: Health Educator Risk Communicator

ICS: Incident Command Structure

JIC: Joint Information Center

JIS: Joint Information System

LINCS: Local Information Network and Communication System

LPHDs: Local Public Health Departments

NIMS: National Incident Management System

NPHIC: National Public Health Information Coalition

PIOs: Public Information Officers

PIN: Public Information Network

SNAPS: Snapshots of State Population Data

SOPs: Standard Operating Procedure

## Chapter One: Introduction

For most of the 21st century, society has faced several man-made and natural disasters that have required federal, state and local government agencies to engage in emergency risk communication practices. Each instance, whether it was a terrorist attack or a natural disaster, required the responding agency to demonstrate specific communication competencies such as informing various publics about what happened, what was being done to minimize harm and how individuals could protect themselves from injury. These specific communication competencies fall under the category of emergency risk communication, which is defined as providing "information to allow an individual, stakeholder, or an entire community to make the best possible decisions about their well-being within nearly impossible time constraints and help people ultimately to accept the imperfect nature of choices during the crisis" (Centers for Disease Control and Prevention [CDC], 2002, p. 6). Unfortunately, some federal government agencies have not established a strong track record for demonstrating such emergency risk communication competence. Further, even less is known about the emergency risk communication competencies of state and local government agencies—in particular public health agencies and public information officers (PIOs). The label *PIO* comes from enacting the Incident Command System (ICS) and the National Incident Management Systems (NIMS) during an emergency response; further, the federal government defines a PIO as an individual who supports the Incident Commander and disseminates accurate information to various stakeholders in a timely fashion (CDC, 2006; DHS, 2007; DHS, 2008). Depending on the breadth of the emergency, multiple PIOs from various government levels and entities may be expected to join together in crafting multiple

responses (CDC, 2006). To ensure information sharing and message fidelity among other response agencies, PIOs are encouraged to use the Joint Information System (JIS), which is a system for developing and delivering coordinated interagency messages; executing public information plans and strategies; and advising the Incident Commander and controlling rumors and inaccurate information (DHS, 2007, p. 7).

While there are experts in emergency planning and emergency management, the primary role of coordinating internal communication and disseminating emergency risk messages during emergencies often rests with the government communicator or PIO, and unfortunately, little is known about PIOs and their role in emergency planning and subsequent emergency response activities. This dissertation study explores the role of a public health PIO in an emergency context by investigating the enactment of the PIO role, internal communication activities, and relationships with both public health staff and external agencies. Further, since public health departments are required by federal preparedness funds to use the ICS and the National Incident Management NIMS—a new condition set in place by then-President George W. Bush—these organizational structures could constrain or enable PIOs emergency risk communication efforts.

There is documented evidence that the federal government has conducted numerous simulations and exercises to test and practice emergency response plans and procedures, but emergency risk communication continues to fall short. In fact, despite these numerous efforts to test emergency response plans and emergency risk communication procedures, the United States government failed to provide effective emergency risk communication during Hurricane Katrina. The United States House of Representatives released the report "A Failure of Initiative—Final Report of the Select

Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina" (General Printing Office [GPO], 2006) that reveal a lack of information sharing during the emergency response.

This lack of communication and information sharing across government agencies was also reported in several exercise evaluations in multiple government emergency response exercises and drills in 2000, 2003, and 2005 (DHS, 2003; DHS, 2006; George, 2007; Hoffman & Norton, 2000; McNally, 2007; Office of Inspector General, 2009; TOPOFF 1, n.d.; TOPOFF 2, n.d.; TOPOFF 3, n.d.). If government agencies are not sharing information across organizational boundaries, emergency risk communication efforts will be hampered. This negative impact on emergency risk communication efforts was also seen in the 2000 Top Officials (TOPOFF) national emergency exercise.

In May 2000, TOPOFF was conducted to test local, state and federal emergency response plans and procedures; the event was co-sponsored by the Department of Justine (DOJ) and the Federal Emergency Management Agency (George, 2007; Hoffman & Norton, 2000; NRT, 2001; DHS, 2003; McNally, 2007; Office of Inspections, 2005). From the exercise evaluation report, three recommendations were made regarding public information and risk communication efforts. First, the evaluation suggests agencies develop Joint Information Centers (JICs), which help coordinate information sharing between agencies involved during the response. Second, the evaluation suggests improving public information message coordination at the federal level. This recommendation is based on mock press release that was distributed during the exercise with incorrect information; disseminating inaccurate information does not demonstrate emergency risk communication competence. The third recommendation suggests specific

assessment of information flows from Joint Information Centers to the Joint Operations Center (NRT, 2001). Each of these recommendations directly impacts the role of a PIO and, unfortunately, this exercise revealed many deficiencies with public information efforts during an emergency response. These deficiencies are solely focused on internal communication activities, and highlight a lack of communication between the PIO and other emergency response personnel.

Three years later, government agencies would be given an opportunity to demonstrate what they had learned from the first exercise. TOPOFF 2, held in 2003, placed more emphasis on the role of public health agencies in a national emergency response (DHS, 2003; NRT, 2001; TOPOFF 1, n.d.). Unfortunately, TOPOFF 2 revealed two more concerns about public information and risk communication efforts. First, the exercise evaluation report highlighted the vital importance of developing and disseminating a consistent message from incident command, public health, and medical communities (DHS, 2003, p. 7). The evaluation report from the first TOPOFF exercise suggested that government agencies develop Joint Information Centers (JICs) to ensure that all PIOs were privy to information sharing and could develop consistent messages to disseminate; however, the TOPOFF 2 evaluation report suggests that internal communication efforts were not streamlined to establish a JIC and, therefore, resulted in yet another failure of emergency risk communication competence. “TOPOFF 2 showed that how people believe communications and coordination is supposed to work based on policy is often not how they work in reality” (TOPOFF 2, n.d., p. 9). To ensure that public health and emergency response staff share information, they need to have a better understanding of what structures and systems should be enacted during an emergency

response. In order to have a better understanding of what to do during an emergency response, there ought to be more testing of communication plans and procedures for communication staff; often exercises and drills fail to test and analyze public information efforts. The evaluation report also suggests that an emergency response team of public and professional communications ought to be included in emergency response procedures (Hoffman & Norton, 2000). Developing an emergency risk communication team, is essential for most emergency responses and is often established when ICS and NIMS is properly initiated by the lead response agency.

Two years later, government officials had yet another opportunity to demonstrate how emergency risk communication and public information efforts had improved since the previous exercise. TOPOFF 3 took placed in April 2005 with the scenario focused on biological and chemical weapon attacks in the Eastern United States (Office of Inspections, 2005; TOPOFF 3, n.d.). Public information was one of four critical areas assessed during the exercise and specifically focused on the coordination of emergency risk communication between three international governments: the U.S., the United Kingdom and Canada. While the evaluation report provided an overview of how emergency risk communication was used during the exercise, it did not provide any assessment of whether the emergency risk communication was effective or ineffective nor did it offer any recommendations for improvement. Since the report did not include any reference to Joint Information Centers or a direct assessment of communication efforts, it is impossible to know definitively what worked or what did not in the exercise. The lack of assessment of communication efforts in a national exercise provides further

evidence that a study on the role of PIOs is warranted, and it further highlights how little is actually known about the role of PIOs during emergency responses.

Again, two years later, government officials had another opportunity to improve emergency risk communication efforts. TOPOFF 4 held in October 2007 focused on mass decontamination activities and long-term recovery. Emergency risk communication efforts were focused on coordinating with international partners, testing new communication policies and procedures, and creating messages for vulnerable populations, including limited English proficiency individuals (McNally, 2007; Suburban Emergency Management Project, 2009). The exercise evaluation report highlighted three shortcomings with emergency risk communication. First, "PIOs at all levels of government had difficulty obtaining substantive information on response activities" (McNally, 2007, p. 8). This emergency risk communication failure highlights a lack of internal communication among public affairs staff and their emergency response coworkers. Internal communication and collaboration with key staff are essential to ensure effective emergency risk communication occurs.

The evaluation report suggested that PIOs and emergency planners should "review emergency plans to ensure they adequately address information sharing" between response and public affairs personnel (McNally, 2007, p. 9). This issue highlights the second major issue about the limited knowledge about the PIOs and their collaboration with emergency planning and response coworkers. As the evaluation reports suggests, this issue of collaboration exists at all levels of government: federal, state and local. This dissertation analyzes the relationships PIOs have with both internal public staff, but also external agencies. The exercise evaluation report reveals a third

issue with emergency risk communication: the messages did not provide adequate justification or reveal benefits as to why the public should engage in protective action recommendations (McNally, 2007). This third issue demonstrates how a lack of internal communication and collaboration among emergency response staff can impact the emergency risk communication messages that disseminated are to the public.

In an effort to improve emergency preparedness and response activities and, subsequently, internal communication and collaboration, the Pandemic and All-Hazards Preparedness Act (PAHPA) was signed into law by President George W. Bush in December 2006 (Hodge, Gostin & Vernick, 2007). "The objective of emergency preparedness is to improve the nation's ability to detect and respond to an array of public health emergencies included bioterrorism, emerging infectious diseases and natural disasters" (Hodge et. al, 2007, p. 1708). The PAHPA Act ensured that health departments across the United States would be trained to know specific emergency preparedness and response policies and procedures. However, little is known about any requirements related to emergency risk communication competencies for public health PIOs.

Since 2001 American taxpayers have been responsible for funding public health preparedness efforts, (CDC; 2002; GAO, 2008; GAO, 2009; Katz, Staiti, & McKenzie, 2006; Lister, 2007b) and, as such, public health agencies should be held accountable for their ability to engage in effective risk communication procedures during public health emergencies. Effective risk communication enhances decision-making processes by those bearing the risk (Palenchar & Heath, 2002), while ineffective risk communication fails to account for public concern or solicit feedback from the risk bearers (Sellnow, Ulmer,

Seeger & Littlefield, 2009). Further, emergency risk communication plays a vital role in an emergency response (Seeger, Sellnow & Ulmer, 2003).

Risk communication is often considered a process or dialogue of sharing available information and knowledge regarding threats to human health and safety (Heath, McKinney & Palenchar, 2005; Heath & O'Hair, 2009; Heath, 2010; National Research Council, 1989; Seeger, Sellnow & Ulmer, 2003). Risk communication is also focused on future events (Seeger et al., 2003) and is often operationalized in health communication campaigns (Reynolds & Seeger, 2005; Seeger & Reynolds, 2008; Veil, Reynolds, Sellnow & Seeger, 2008). In addition to risk and crisis communication, the CDC developed a new term: crisis and emergency risk communication. This new hybrid term continues to emphasize crisis demands and communication exigencies, but also incorporates precrisis stages of risk and risk development (Reynolds & Seeger, 2005; Seeger & Reynolds, 2008). Throughout the rest of this document, the broader language of emergency risk communication will be used for consistency in order to describe communication strategies enacted by emergency response and public affairs personnel during emergency preparedness and response activities.

As illustrated in each of the TOPOFF exercises, consistent emergency risk communication failures continue to occur despite continued testing of plans. Unfortunately, these errors—if not properly analyzed and corrected—will impact real life emergency responses. Hurricane Katrina certainly provides evidence to suggest massive emergency risk communication failures occurred; however, public health was not designated as the lead response agency for that emergency response. It would not be until 2009 that public health agencies and public health PIOs across the United States would

have to demonstrate emergency risk communication competence to respond to a worldwide pandemic. The 2009-2010 H1N1 outbreak provides risk communication scholars a rich scenario, which can be studied to better understand emergency risk communication. By June 2009, the World Health Organization classified the H1N1 outbreak as the first pandemic of the 21st century (Lynn, 2009). Since the last pandemic that affected the United States occurred in 1968, there have been major advances in medicine, mass media technology, and risk communication research. Specifically in the area of risk communication research, CDC has taken the lead in developing sophisticated emergency risk communication policies and procedures. After the anthrax attacks of 2001, CDC communication practitioners developed the Crisis and Emergency Risk Communication (CERC) training manual (CDC, 2002; Seeger & Reynolds, 2008; Reynolds & Seeger, 2005; Veil et al., 2008), and since 2008, over 100,000 public health professionals have been trained in CERC (Seeger & Reynolds, 2008). However, little evaluation research has been done on whether CERC positively or negatively impacts emergency risk communication. In 2005, the CDC sponsored regional CERC training seminars to inform public health officials about responding to a pandemic influenza using emergency risk communication strategies. In the event pharmaceuticals, such as vaccine and antivirals, were not available to mitigate the spread of the new influenza strain, non-pharmaceutical interventions, such as hand-washing, and emergency risk communication were be the main line of defense in combating an influenza pandemic (CDC, 2002).

The timing of the CDC training seminars was crucial: Dr. Julie Gerberding, then-CDC Director, testified before the United States House of Representatives Subcommittee Health Committee on Energy and Commerce about looming threat of a global pandemic.

She cited epidemiological evidence to alert government officials to a potentially dangerous avian influenza virus (H5N1). The H5N1 strain had two of the three criteria needed to cause a pandemic: there was no preexisting immunity in the human population and it caused illnesses in humans. Fortunately, sustained human-to-human transmission, the third factor for an influenza pandemic, had not yet emerged (Reynolds & Quinn, 2008).

Since 1997, public health officials had been engaged in active surveillance of avian influenza viruses that were responsible for killing millions of domestic fowl in Southeast Asia (Fauci, 2006; Lister, 2007a). The primary concern of epidemiologists was not the culling of the animals, but rather the human-to-human transmissions in several Asian and European counties (Fauci, 2006). Of the 250 individuals infected by the avian influenza virus 150 died, resulting in a 60% mortality rate (Lister, 2007a). Public health officials began raising concerns about potential threat of morbidity and mortality related to an influenza pandemic. Director of the National Institutes of Allergies and Infectious Diseases, Dr. Anthony Fauci, offered the following perspective: "We cannot be certain when the next influenza pandemic will emerge, or even whether it will be caused by H5N1 or an unrelated virus. However, we can be certain that an influenza pandemic eventually will occur" (2006, p. 1). Historically, pandemic influenzas have been linked to high numbers of illnesses and even death. Three major influenza pandemics erupted in the past century: the Spanish Flu pandemic of 1918 caused 50 million deaths worldwide; the 1957 Asian flu caused 1-2 million deaths worldwide; and the 1968 Hong Kong Flu caused 700,000 deaths worldwide (CDC, 2006; HHS, 2005).

The threat of a global pandemic lead the United States Congress, for FY2002 and subsequent years, to provide specific funding for pandemic influenza preparedness through both regular and emergency supplemental appropriations (CDC, 2002; GAO, 2008; GAO, 2009; Lister, 2007a; Lister, 2007b). The first round of funding focused on vaccine production, but then Congress required the Department of Health and Human Services (DHHS) to use the funding for state and local public health capacity, CDC capacity, CDC domestic and global surveillance, DHHS international activities, vaccine development and stockpiling of other antivirals (GAO, 2008; GAO, 2009; Katz et al., 2006; Lister, 2007a).

In an effort to build state and local pandemic preparedness capacity in the area of risk communication, CDC sponsored the regional two-day CERC training sessions. The training sessions provided attendees with an overview of risk communication, how to establish a JIC and various strategies for communicating during a public health emergency. Each training session also included a tabletop exercise, which focused on an influenza virus emerging from Mexico and quickly spreading across the United States. At that time, it was unknown that the 2009-2010 H1N1 influenza pandemic would even emerge—let alone that it would originate in Mexico or it be a quadruple-reassortant virus resulting from swine, avian, and human influenza viruses (Nuemann, Noda, & Kawaoka, 2009; "The 2009 H1N1," 2010).

During the H1N1 outbreak, from April 2009 through approximately June 2010, local public health departments used local resources and national stockpiles to respond to the global pandemic the U.S. had been preparing for since 2005. Drawing upon the CDC training seminars, previous experience, and emergency operation plans, public health

officials enacted emergency response procedures to combat the pandemic. Many of the emergency response procedures focused on mass vaccinations, distribution of antivirals, use of non-pharmaceutical methods, and risk communication (CDC, 2002). "Vaccination is considered the best preventative measure for influenza" (Lister, 2007a, p. 12). Despite CDC's announcement that vaccines would be available in October 2009, vaccine production was delayed.

As a result, health departments utilized the Strategic National Stockpile to obtain antivirals and disseminated information about non-pharmaceutical methods to protect individuals from illness (Trust for America's Health, 2009). Emergency risk communication was a vital component in educating the public about the virus, non-pharmaceutical methods, and vaccine production (CDC, 2002). "The HHS Pandemic Plan notes that effective risk communication during a pandemic, among other things, help set realistic public expectations of the healthcare system, and promptly address rumors, inaccuracies, and misperceptions" (Lister, 2007b, p. 17-18). However, little is known about how local public health PIOs enacted the functional role of a PIO in an emergency response and if internal organizational structures impacted these emergency responses. In the current study, structuration theory will be used to analyze how individuals enact the role of a PIO as they collaborate with public health staff and external agencies.

Interpretive thematic comparative analysis of PIOs richly textured experiences and reflections about those experiences will be used to illustrate how social interactions between and among PIOs, public health staff, and representatives from other agencies create social structures that facilitate and constrain emergency risk communication. Structuration theory has been applied in multiple organizational contexts analyzing

agency, ideology and group decision making (Banks & Riley, 1993; Bastein, McPhee & Bolton, 1995; Garner, 2006; McPhee & Seibold, 1985; Nicotera, 2008; Poole, McPhee & Seibold, 1982; Witmer, 1997), but it has yet to be used in the area of risk and crisis communication research. The application of three specific concepts from structuration theory, namely, agent, duality of structure and institutionalized processes will be key in the exploration of the role of the PIO within the context of emergency planning and response.

For example, the element of agent will be used to understand how the setting and expected modes of conduct impact how a PIO (as an organizational member) enacts particular roles. Similarly, duality of structure, a major tenet of structuration theory, will be used to highlight how the production and reproduction of structures create both the medium and the outcome of communication actions among PIOs. In particular, the current dissertation seeks to apply the concept of duality of structure to analyze how the creation of emergency response plans facilitated and constrained emergency risk communication efforts during the 2009-2010 H1N1 outbreak. Similarly, the concept of institutionalized processes will be used to provide insights about how working relationships form both within health departments as well as across external agencies. Finally, the concept of boundary spanning will be used to enhance the analysis of institutionalized processes by revealing how communication officers interact with external agencies and how such interaction impacts external communication efforts.

Health communication research on public information officers and H1N1 has primarily focused on how PIOs use press releases to frame messages (Avery & Kim, 2009; Avery, Lariscy & Sohn, 2009); however, little is known how the internal

communication and collaboration among public health staff impact how PIOs disseminate emergency risk communication messages to the public. Second, because of the limited research related to PIOs and their role in emergencies, this dissertation has the potential to be at the forefront of an emerging research area that has the potential to improve the risk communication competencies of PIOs and internal collaborations with public health staff during emergencies. As society continues to face man-made and natural disasters, government agencies and other emergency response organizations must be confident that the PIOs will competently engage the public through efficient emergency risk communication practices that will effectively reduce harm and injury to those affected by the emergency.

This chapter provided an overview of the dissertation and provided evidence to justify a study on public information officers in an emergency context. The next chapter highlights relevant literature on PIOs, boundary spanners, and organization structures. It provides an overview of structuration theory, the theoretical framework for this study. The literature review concludes with the dissertation research questions.

## Chapter Two: Literature Review

This chapter provides a comprehensive review of relevant risk communication literature pertinent to the current dissertation and is organized in three major sections. The first section defines the key terms in order to provide the reader with a clear conceptual understanding of the information referenced throughout this dissertation. For example, the terms "risk communication," "crisis communication" and "crisis and emergency risk communication" are defined because they are often used incorrectly, without appropriate distinctions among the concepts. The second section provides literature related to current studies of PIOs that provides a foundation for understanding the enactment of those roles in order to create emergency risk communication strategies and disseminate vital information to the public. Section three provides an overview of structuration theory as the primary framework for exploring the role of a public health PIO in an emergency context by examining the enactment of the PIO role, internal communication activities, and relationships with both public health staff and external agencies.

In particular, research is reviewed that explains how PIOs create and function within organizational structures (such as ICS and NIMS) and ultimately how these structures impact emergency risk communication efforts. In addition, research is reviewed to illustrate how the enactment of PIO roles may differ across multiple states, and to what extent social structures impact internal and external relationships. Relevant literature on boundary spanners is also included in an attempt to inform the analysis of PIO interaction with external stakeholders.

The literature review concludes with specific research questions that are used to frame the application of structuration theory and boundary spanning to explore the critical role of PIOs operating within an emergency context.

**Risk communication**

The field of risk communication is said to have developed in the early 1980's after the American public became fed up with the lack of information regarding certain risks including nuclear power (Sandman, 1993). The public called for policymakers and private industry to start a dialogue and share information about potential risks to society's health and safety. By engaging in a dialogue, those with fears about the risks "can become more knowledgeable and confident that sufficient control is imposed by the sources of risk and by government or external sources that are responsible for monitoring risk generators" (Palenchar, 2009, p. 35).

In addition to risks, crises are characterized by Heath and O'Hair (2009) in the following way: crises are risks manifested. In addition to risk communication, there is also crisis communication, which is defined as "the collection and processing of information for crisis team decision-making along with the creation and dissemination of crisis messages to people outside the team" (Coombs, 2010, p. 20). Crisis communication is often event-specific and message content is usually created quickly and based upon incomplete informational inputs (Seeger et al., 2003). A crisis is described as "a specific, unexpected and non-routine organizationally based-event or series of events which creates high levels of uncertainty and threat or perceived threat to an organization's high priority goals" (Seeger et al., 2003, p. 7).

In addition risk communication and crisis communication, CDC developed the hybrid term "crisis and emergency risk communication" (Reynolds and Seeger, 2005, p. 49). The hybrid term created a more refined conception of what it means to communicate during a public health emergency. "Crisis and emergency risk communication is the effort by experts to provide information to allow an individual, a stakeholder, or an entire community to make the best possible decisions about their well-being during a crisis" (CDC, 2002, p. 6). With a conceptual understanding of risk, crisis, and emergency communication, it is important to review the current state of research related to government public information officers.

**Public information officers**

This section explores what is known about public information officers (PIOs) and serves to highlight the inherent problems related to the lack of information available about PIOs during emergency preparedness and response activities. Although several federal exercises (DHS, 2003; DHS, 2006; George, 2007; Hoffman & Norton, 2000; McNally, 2007; Office of Inspector General, 2009; TOPOFF 1, n.d.; TOPOFF 2, n.d.; TOPOFF 3, n.d.) have analyzed the process of emergency risk communication, very little systematic research has been completed to evaluate how emergency risk communication principles are enacted by PIOs before and during an emergency. In fact, Wise's (2001) call for more research on public information officers (especially research that explores several topical areas including roles and models, effectiveness, relational research, crisis related case studies, issues management, and technology) has largely gone unanswered. Investigating health PIOs and their ability to enact emergency responses to a pandemic

influenza, provide an important first step in answering Wise's call to provide systematic research about the roles and models in health departments and crisis related case studies. Previous research has focused on the functions of PIOs (Avery & Kim, 2009; Avery et al., 2009; Andsager & Smiley, 1998; Stein, 2006; Dunwoody & Ryan, 1983; Telg & Raulerson, 1999).

Three studies highlighted the PIOs role in constructing key messages and framing information for different emergency contexts. Avery and Kim (2009) analyzed government press releases related to the threat of pandemic influenza. They discovered that PIOs induced uncertainty about a pandemic influenza by including certain types of information that was more likely to induce fear. In an effort to reduce uncertainty, Avery and Kim suggest communication practitioners strike a balance between creating uncertainty and reducing it when constructing key messages for press releases. Further, while government agency press releases included evidence of interorganizational communication, they frequently failed to provide additional information about who the public should contact for more information (Avery & Kim, 2009).

In a similar study conducted by Andsager and Smiley (1998), press releases from the Dow Corning silicone implant controversy also provided evidence as to how PIO's use particular frames to create messages. Taken together, these studies highlight how PIOs gather, coordinate and disseminate risk communication messages. Unfortunately, these studies do not provide meaningful information about the impact of organizational structures on communication practitioners. This study seeks to provide new and meaningful knowledge about the impact of organizational structures on public information officers producing emergency risk communication. In addition, because PIOs

serve as mediators between organizational members and the media, it is critical to understand how internal communication processes and collaboration among work colleagues. While two specific research studies revealed that fellow colleagues often undervalue PIOs, there was a disappointing lack of analysis about how organizational structures may have created this incongruent situation (Ankey & Curtin, 2002; Dunwoody & Ryan, 1985).

Despite their vital functions, limited research has focused on the role of PIOs during emergency responses. Instead, as previously highlighted, research on PIOs has focused on the public relations or the technical activities carried out by communication practitioners on a daily basis. PIOs who serve in an emergency must frequently assume additional substantive roles that extend beyond simple routine public relations activities. One case study highlighted the Thurston High School shootings and how PIOs evaluated their efficiency after the event (Stein, 2006). This study showcased how the lack of emergency preparation and coordination led to organic and emergent forms of an emergency response. For example, up to 13 PIOs from across the community appeared on scene to assist with the response and helped coordinate press conferences, handle media inquiries and facilitate communication between affected families and the media. Four lessons emerged from this crisis event. First, it is critical to designate an individual to monitor the media. Monitoring the media provides PIOs with situational awareness about the evolving crisis event. Additionally, if misinformation or rumors are being reported, the PIO will be able to provide accurate information and bolster the credibility of his/her organization. Second, organizational websites were important as conduits to disseminate information. Third, it is important to maintain personal health during the

response. Finally, it is vital to equip PIOs with the necessary information to meet the information needs of several different stakeholders. While these individuals learned from their experiences, CDC's CERC training materials (2002) were modified to include specific information for communication practitioners about monitoring the media, using multiple channels to disseminate messages, maintaining relationships with multiple stakeholders, and dealing with the stress of an emergency event. This study highlights the lack of emergency risk communication competence by those tasked with handling communication activities during emergencies.

Through observation of two emergency response exercises, researchers (Militello, Patterson, Bowman & Wears, 2006) revealed three major factors that contributed to the lack of coordination among emergency operations center (EOC) staff. First, lack of experience and familiarity with response tools and procedures can inhibit the flow of information among staff. Second, verbal utterances were often distorted leading to dissemination of misinformation. Third, an uneven workload and disrupted communication negatively impacted the information flow among staff. While the studies highlighted staff working on emergency response efforts and highlighted competence of emergency response tools and procedures, the researchers did not focus on the role of the PIO in the EOC. While this research provides important emergency preparedness and response information, it fails to provide any significant knowledge about how communication officers could or should be included in the EOC.

Despite federal regulations to train and comply with ICS and NIMS, which requires the PIO position to be filled during an emergency response, small government agencies do not have funding available to hire a full-time PIO. In a needs-assessment of

fire department PIOs in a small community in Florida, 12 of 26 had a PIO on staff; with 9 PIOs in full time positions (Westbrook, 1999). In the departments that did not have a PIO, individuals from other agencies often provided communication assistance as needed. Surette (2001) investigated the increase of civilian PIOs in criminal justice agencies expanding previous research (Surette, 1995) on the gatekeeping role of PIOs in crime news. Motschall and Cao (2002) reported that police PIOs perform traditional public relations functions, but allows law enforcement agencies to "engage in more frequent and effective communications with external audiences such as the media and the general community" (p. 177).

While many of aforementioned studies have focused on PIOs in fire departments or emergency management agencies, other studies included a brief mention of the role of public health PIOs, but did not explicitly analyze what PIOs did during the emergency response. Novak and Barrett (2008) examine the roles of spokespersons during the CDC's response to the 2001 anthrax attacks, but do not extend the investigation to include the role PIOs played in the response. Ulmer, Avery and Kordsmeier (2008) explore communication practices PIOs used in managing the West Nile virus, but again they did not analyze how organizational structures could impact those communication practices.

While the previous section focused on general and current research on PIOs, the next section provides an overview of structuration theory and how it can be used to explore the role of a public health PIO in an emergency context by examining the enactment of the PIO role, internal communication activities, and relationships with both public health staff and external agencies.

**Structuration theory**

Structuration theory is an especially useful framework for understanding the process of emergency risk communication because public health PIOs function within a highly developed and complex system of regulations and multiple government agencies. In particular, structuration theory illustrates how the production and reproduction of certain social structures can constrain and facilitate the communication process (Falkhemier, 2007). Put simply, structuration theory examines **"**rules and resources people draw on that simultaneously enable and constrain social interaction" (Bastien, McPhee & Bolton, 1995, p. 88). Rules take the form of official or learned guidelines that guide people's actions (Hoffman & Cowan, 2010). In the context of public health emergency preparedness activities, an official rule might be that federal grants require an emergency risk communication plan to be written, while a learned rule might be that creating a contact list of phone numbers will suffice as the emergency risk communication plan. Resources are material and nonmaterial elements available for use by the organizational member (Poole & McPhee, 2005). For public health PIOs, resources take the form of policies and procedures, expert knowledge of emergency risk communication, previous emergency experience, or networks outside the health department.

Organizational structures take the form of rules and resources for PIOs and then serve as both the medium and the outcome that can constrain or enable effective communication processes. When PIOs are involved in emergency preparedness and response activities, they draw on rules and resources to enact routine practices that (1) are both official and learned rules within the public health department and (2) alter how the

PIO interacts within the health department and also with other agencies. For example, a PIO may not attend a particular meeting because it is not common practice for communication experts to attend such meetings.

Communication literature applying the framework of structuration theory is varied and spans three decades (Banks & Riley, 1993; Bastein, McPhee & Bolton, 1995; Conrad, 1993; Garner, 2006; Howard & Geist, 1995; McPhee & Seibold, 1985; Nicotera, 2008; Poole, McPhee & Seibold, 1982; Witmer, 1997). Previous research has focused on several concepts that are especially relevant to the current dissertation study: agent, duality of structure and institutionalized processes.

Banks and Riley (1993) suggest communication scholars utilize Gidden's framework as "a set of ontological principles and entailments from which we can derive questions, base research questions, and ground the development of communication theory across the field's many subspecialties" (p. 168). Further, Banks and Riley (1993) apply structuration theory concepts to an organizational communication study investigating the contexts of organizational setting, practical and discursive conscious, re-embedding of social practices and power structures. The researchers learned that tensions arose in the company due to cultural misunderstanding and organizational structures. It is important to discover these tensions and offer practical implications that could change organizational structures to benefit both employees' well-being and organizational production. In the context of public health PIOs, the concept of agent will be explored by analyzing how the setting and expected modes of conduct impact the enactment of the PIO role (the agent) by an organizational member. For this study, setting is determined by the organizational structure of the health department. For example, because the PIO

always operates in a specific context (e.g., situated in a single county or multi-county health department) the organizational structure will impact the responsibilities of the PIO role. Expected modes of conduct focuses on the expectations of that enacted role based on social interactions of organizational members.

The concept of duality of structure is often analyzed by investigating how power functions in relationships. Nicotera (2008) explores "interpenetration of multiple structures" and structural divergence, or "negative spirals of communication interlocked with one another" that exacerbate the organizational issue (p. 10). Structural divergence accounts for a group of nurses' inability to coordinate with each other and their inability to develop professionally.

This immobilization stemmed from management styles and the position of nurses within the organizational structure of the hospital. By discovering a potential cause for the nurses' problems, management could alter their management styles to give nurses the ability to flourish within the organization. The structures within the hospital constrain the ability of nurses to function and demonstrate how the production and reproduction of social interactions within an organization can impede communication. The production and reproduction of organizational structures is often described as the duality of structure.

On a broader scale, Witmer (1997) suggests that structuration theory can be used to study "organizational culture as a manifestation of human collectivity and human communication" (p. 344). An analysis of a local Alcoholics Anonymous (AA) group revealed that members recreate themselves through enacting and reproducing structures of the national AA mission. Further, Witmer explains how actors institutionalize their actions by reconstructing themselves and reconstructing new group members. Witmer's

study reveals what Giddens (1984) describes as the duality of structure: "the structural properties of social systems are both the medium and the outcome of the practices they recursively organize" (p. 24). For the current study, the concept of the duality of structure provides a lens to analyze organizational emergency response structures facilitated and constrained during emergency risk communication efforts that occurred during the 2009-2010 H1N1 outbreak.

Organizational structures, like NIMS and ICS, are inherent in emergency responses. Structures used in routine emergencies provide the foundation for structures that are used to respond to larger emergencies, and second, these structures must be flexible to deal with the demands of the emergency (Lindell et al., 2007). The next subsection provides more detail about the types of organizational structures that are used in an emergency response and how these structures can be analyzed using the concept of duality of structure.

**Organizational structures.**

In the 1970's after repeated failures of lack of organization, poor on-scene and interagency communication, inadequate planning and resource management, and lack of timely intelligence, local firefighters led efforts to create a management system to coordinate emergency response efforts (Annelli, 2005; Irwin, 2000; Lindell, Perry & Prater, 2005). As a result, the Incident Command System (ICS) was created to ensure effectiveness, accountability and communication across emergency responders (Annelli, 2005; Irwin, 2000). While ICS is the core structure of the system, the National Incident Management System provided support to create multi-agency coordination systems, unified command, training, identification and management of resources, certification, and

reporting of incident information and resources (Annelli, 2005). Most incidents are local, but when responders are faced with the worst-case scenario, such as the terrorist incidents of September 11, 2001, all responding agencies must be able to interface and work together. The NIMS, an in particular, the ICS component, allow that to happen, but only if the foundation has been laid at the local level (Jemison, 2005, p. 5). Although some government agencies have been using NIMS and ICS since the 1970's, other agencies, including public health, are relatively new to adopting the system. This is a concern because compliance with NIMS and ICS is now required for health departments receiving federal preparedness funds.

In 2005, the 43rd President of the United States issued Homeland Security Presidential Directive (HSPD)-5, which required the Department of Homeland Security to develop a national command system (Annelli, 2005; Jemison, 2005; George, 2007). Prior to HSPD-5, local and state government agencies, such as public health, perceived ICS as a fire service system and did not use the system. As a result, HSPD-5 required compliance at all levels of government and "requires state and local adoption of NIMS as a condition for receiving federal preparedness funds" (Jemison, 2005, p. 2; Lindell et al., 2007). While the core of ICS and NIMS is to establish a mechanism in which emergency responders can coordinate and allocated resources, there is also an emergency risk communication component. ICS and NIMS focus on public information as either a system or a physical center.

As discussed in Chapter One, the Joint Information System is the mechanism to ensure information sharing and message fidelity among other response agencies, but the Joint Information Center (JIC) is the physical structure where the PIO and other

communication staff meet to facilitate information flow (DHS, 2008). PIOs should have standard operating procedures for JIC personnel (DHS, 2007) and crisis communication literature suggests creating these procedures during pre-crisis planning (Seeger et. al, 2003). NIMS establishes structures of the JIC with the following components: information gathering, information dissemination and operations support; all of these functions report directly to the PIO. While all of these systems and procedures are, in theory, helpful to create share and coordinate information, the TOPOFF exercises provide evidence that government agencies are not engaging in effective emergency risk communication principles.

NIMS and ICS provide emergency procedures structures in which PIOs are to operate during emergencies. These structures ultimately guide how the PIOs respond to the emergency and also determine the outcome for the PIO's action. For example, NIMS protocol establishes a JIC in order for multiple agencies to coordinate messaging. NIMS protocol guides the PIO to create a JIC and the outcome is that multiple agencies coordinate messages. The theoretical concept of duality of structure provides the appropriate lens for analysis in order to understand how these emergency response facilitate and constrain emergency risk communication.

The third and final theoretical concept of structuration theory being used to frame this study is institutionalized processes. Institutionalized processes are relevant to analyzing the types of relationships PIOs create within public health departments, but also across other agencies. Garner (2006) examined resource dependency and interorganizational power relationships at NASA. Relationships with multiple external stakeholders influence budgets, employee positions and other organizational decision-

making. Ultimately, NASA was not prepared to deal with these complexities and structuration theory provided a lens through which to examine the lack of change at NASA between the *Challenger* and *Columbia* disasters. NASA's resource dependency on multiple stakeholders constrained decision-makers and continued to reproduced resource dependency structures "the macro-level structures between organization influence more mirco-level encounters between engineers and managers" (p. Garner, 2006, p. 383). The structural elements of multiple relationships are also a factor for health PIOs who communicate with multiple internal and external stakeholders. The concept of institutionalized processes provides a framework for analyzing how working relationships form within health departments, but also across external agencies. Garner's study revealed the influence external relationships have over internal organizations processes; it may be possible that PIOs' external relationships with other agencies could facilitate and constrain the health departments' emergency risk communication efforts. In addition to structuration theory, boundary-spanning literature provides another perspective on how external and internal relationships impact communication efforts. The next subsection provides more detail on boundary spanning literature and it informs this study.

**Boundary spanners.**

Literature on communication practitioners as boundary spanners spans three major topical areas: 1). overall functions of boundary spanners, 2). comparisons of external and internal communication activities, and 3). the role of gatekeepers. Boundary spanning literature is relevant to this study as it provides a foundation for understanding how relationships form between PIOs, public health staff and external stakeholders.

The functions of boundary spanners include facilitating external communication with other organizations (Adams, 1979/1980; Burk, 1994; Coombs & Holladay, 2007; Keller & Holland, 1975; Tuite, 2006; Tushman, 1977), gathering and filtering external inputs (Adams, 1979/1980; Aldrich & Hercker, 1977; Jemison, 1984; Tuite, 2006), managing uncertainty related to organizational threats (Adams, 1979/1980; Conrad, 1990; Coombs & Holladay, 2007) and organizing internal communication activities (Adams, 1979/1980; Burk, 1994; Conrad, 1994; Conway, 1995; Jemison, 1984; Tushman, 1977). Business and communication scholars have analyzed boundary spanners roles related to external and internal communication activities. Specifically, researchers were interested the relationship between external communication and organizational performance (Dollinger, 1984; Johnson & Chang, 2000; Maneve & Stevenson, 2001; Tushman & Scanlan, 1981). Research findings suggest that entrepreneurs ought to engage in external communication activities to support strategic planning, but also to maintain current marketplace knowledge (Dollinger, 1984). Maneve and Stevenson (2001) found that boundary spanners in government agencies often communicate across organizational boundaries because of the nature of government workers' job responsibilities, which often required individuals to interact with people in different agencies.

Boundary spanners are often referred to as "communication stars" (Tushman & Scanlan, 1981, p. 290) indicating extensive external or internal communication responsibilities. In an effort to extend boundary spanner literature, Tushman and Scanlan (1981) investigated how work colleagues viewed boundary spanners' competence, power, and decision-making abilities. Their findings indicated that external

communication stars were competent and often valued for their ability to obtain new information; however, these individuals often did not have strong internal relationships and were often viewed as less powerful than internal communication stars. Internal communications stars were found to be more influential in the areas of administration and strategic decision-making. However, boundary spanners with both external and internal communication contacts are likely to be highly influential (Maneve & Stevenson, 2001). This provides some insight as to how PIOs enact internal communication and collaboration processes within their health departments; further, if a PIO has developed substantial relationships with other emergency response agencies such as fire, law enforcement, EMS or emergency management, it does not necessarily imply that a PIO has strong relationships within his or her own health department.

Johnson and Chang (2000) explain that "boundary spanners acquire relevant information from their extensive external contacts and filter and feed the information into the organization" (p. 243), but that communication stars can fulfill both internal and external communication roles. By analyzing an organizational undergoing three innovations, the authors analyzed self-report data related to the number of internal and external communication contacts made within a specified time period and found that, overall, communication practitioners engaged in more external communication than internal communication contacts. Again, while emergency preparedness literature and training manuals encourage the development of relationships with stakeholders prior to a crisis event (CDC, 2002; Seeger, 2006), even if the PIO has strong relationships with external contacts, it does not imply strong internal communication and collaboration activities. This study seeks to better understand how PIOs function within their health

departments and boundary spanner literature provides a theoretical construct to explain why, despite having strong ties to emergency management agencies, PIOs lack strong internal communication and collaboration with public heath staff.

The third area of boundary spanner research focuses on the role of gatekeepers. These roles are often focused on internal communication activities, and have been referred to as "internal boundary spanners" (Spence & Reddy, 2007, p. 279). Gatekeepers often mediate communication between departments or units and ensure that information shared is understood and not misperceived due to different language or coding schemes (Spence and Reddy, 2007; Tushman & Katz, 1980). The role of gatekeepers to decode department-specific language was also supported by Tushman's (1977) study on gatekeepers in a research and development unit of a company. He found two different types of gatekeepers—research and technical service. Research gatekeepers often focused information filtering in professional areas, while technical service gatekeepers focused on information related to operational areas. PIOs often enact the role of a gatekeeper during emergency responses as they gather and verify information about the crisis event.

While social science research is plentiful for describing the functions of communication practitioners as boundary spanners, comparisons of internal and external communication activities, and their roles as gatekeepers, there is very limited research on the boundary spanners as public information officers. Ankey and Curtin (2002) explicitly link the role of public information officers as a boundary spanning function. In their public relations and health communication study, they analyzed how public information officers serve in a boundary spanner function between medical experts and journalists. The study had two major findings related to hospital public information officers. First,

physicians credit hospital public information officers with developing and pitching medical stories to newspaper media, but cardiac surgeon do not perceive much value in public information officers. Second, public information officers can play a major role in facilitating media coverage of medical and health-related stories and events.

This chapter provided a review of relevant literature on public information officers, structuration theory, organizational structures for emergency response and boundary spanners. Structuration theory provides the primary framework for addressing how organizational structures impact emergency risk communication efforts, how the enactment of PIOs is similar or different across multiple states, and to what extent social structures impact internal and external relationships. The literature on organizational structures for emergency responses provides a brief overview of what types of structures are used for emergency responses and how those structures could facilitate or constrain emergency risk communication efforts. The literature review ends with a brief overview of boundary spanning literature. Boundary spanning literature informs this study providing a foundation to understand the types of relationships that PIOs develop within the health department and across agencies.

As previously mentioned, due to the limited research related to PIOs and their role in emergencies, this dissertation has the potential to be at the forefront of an emerging research area that has the potential to improve the risk communication competencies of PIOs during emergencies. As society continues to face man-made and natural disasters, government agencies and other emergency response organizations must be confident that the PIOs will competently engage the public through efficient emergency risk

communication practices that will effectively reduce harm and injury to those affected by the emergency. This dissertation seeks to addresses three broad research questions:

1) What are the implicit and explicit structures that constrain and facilitate emergency risk communication produced by public health PIOs during the 2009-2010 H1N1 outbreak?
2) How do implicit and explicit structures impact the enactment of the PIO role and are they different or similar depending upon the state in which the individual is located?
3) In what ways are institutionalized processes related to PIOs' internal and external partnerships?

The review of existing literature pertaining to public information officers established that little is known about the how organizational structures impact emergency risk communication efforts, how the enactment of PIOs is similar or different across multiple states, and to what extent social structures impact internal and external relationships. This dissertation seeks to improve understanding of PIOs by addressing each of the research questions identified above by using interpretive methods and semi-structured interviews. The next chapter provides an overview of the methods that will be used to answer the broad research questions posed in this dissertation.

## Chapter Three: Methods

In order to answer three broad research questions outlined in the proceeding chapter, this chapter provides information related to the study's research design, recruitment strategy and data analysis procedures. The primary goal of this dissertation is understand how organizational structures impact emergency risk communication efforts, how the enactment of PIOs is similar or different across multiple states and to what extent social structures impact internal and external relationships. This dissertation will use in-depth, semi-structured interviews as the primary method of gathering data. Approximately 90% of all social science investigations rely on interview data (Briggs, 1986).

### Research Design

An interpretive approach was used for this study. Using an interpretive method allowed the PIOs to provide personal insights by sharing their "stories, accounts and explanations" (Lindlof & Taylor, 2002, p. 173). The individual's personal experiences provides data that can be examined and analyzed to reveal any organizational structures enabling or impeding his or her communicative practices during the emergency response to the 2009-2010 H1N1 outbreak. By asking research participants to share their personal stories and examples, the data collected provides a holistic picture of what an emergency response looks like for public health departments, while also revealing specific activities of individuals in that context (Alam, 2005; Creswell, 2003; Patton, 2002).

**Participant Recruitment**

Convenience sampling was used to recruit participants for this study. Participants for this study were current public health PIOs or individuals who served in the role of PIO during the 2009-2010 H1N1 outbreak. The only additional exclusion criteria was based on geographical location. PIOs had to be based in the four states included in this study (i.e., Kentucky, North Dakota, New Jersey and California).

A total of 58 individuals participated in this study (43 females; 15 males). Thirty-seven were in based in Kentucky, five were based in North Dakota, six were based in New Jersey and eleven were based in California. The gender distribution of the sample is reflective of the population. According CDC personnel who regularly work with PIOs during public health emergencies, the field is overtly dominated by females (K. Lubell, personal communication, April 26, 2011).

The four states included in this study were chosen for three reasons: personal contacts, geographic location and advisement by the author's doctoral committee. First, the author had established contacts in North Dakota since she developed working as a PIO in a local public health department from 2006-2008; however, since there were only 8 PIOs in the entire state, the author included Kentucky to increase the number of participants and to get another state's local public health perspective on the emergency response to the 2009-2010 H1N1 outbreak.

Since the author was based at the University of Kentucky for her doctoral studies, it was appropriate to talk with PIOs located in the same state. In addition, Kentucky has a unique public health system with over 120 county based health departments serving the

state's needs. Unlike North Dakota in which there are only 8 PIOs, Kentucky has 65 individuals identified as emergency response PIOs. Participants for North Dakota were contacted through the author's professional contacts she obtained while working as a public health PIO in North Dakota from 2006 to 2008. Obtaining PIO contact information was more difficult in Kentucky. After cold calling health departments in Kentucky for PIOs' contact information, Alice, a PIO from a district health department, shared an email list-serv of all PIOs in the state with the author. Alice became a key informant for this study and later assisted with member checks.

In addition to Kentucky and North Dakota, PIOs from two additional states were included in the sample in order to minimize bias. Turnock (2009) has suggested that public health systems vary greatly from state to state due to public health governance laws. Due to the author's personal contacts through her work in previous local public health and her new position at the Centers for Disease Control and Prevention, New Jersey and California were added to the sample. As a result, this study's sample provides a unique perspective from individuals in four district geographic areas: the Midwest (North Dakota), the East Coast (New Jersey), the South (Kentucky), and the West Coast (California).

Although not generalizable, this sample provides a less biased perspective than if the study had included only PIOs working in the state of Kentucky. Detailed information about structural differences across each of the four states is provided below to highlight key demographic information about each state included in this study.

***Kentucky.***

According to the CDC's Snap Shots of State Population Data [SNAPS] compiled from the 2000 U.S. Census and 2003 CDC databases, Kentucky's total population is approximately 4 million with English, Spanish, German and French as the top four languages spoken at home (SNAPS, 2007). There are 120 counties within the state ("Kentucky Counties," n.d.) and 37 PIOs were interviewed for this study. The PIOs represented single county health department and multicounty, or as they are called in Kentucky, *district health departments*. There are 15 district health departments and 42 single county health departments. Of the 36 Kentucky participants (25 female and 11 male), 19 represented single county health departments, 16 represented district health departments, and one represented a city-county health department. Additionally, only six of the Kentucky participants work as a PIO or conduct communication activities on a daily basis. The remaining 36 individuals work in non-communication public health positions on a daily basis. The number of years the individual worked in public health varied across the different types of health departments. For example, 19 participants had served in the role for five years or less, 11 for 9-15 years, 5 for 16-20 years and 1 had served in their role for longer than 20 years. See Table 3.1 for more information about the demographics of the participants from Kentucky.

*Table 3.1. Demographics for Kentucky Participants*

| **Type of Dept** | **Years/Exp** | **Title** | **Sex** | |
|---|---|---|---|---|
| | | | Female | Male |
| Single county | 1-5 years | Public Information Officer | 1 | |
| | | Communications Officer/specialist | | 1 |
| | | Director of Nursing | 1 | |
| | | Director of Administrative Services | | 1 |
| | | Human Resources | 1 | |
| | | Health Director | 1 | 4 |
| | | Training Coordinator | | 1 |
| | | Preparedness Coordinator | 3 | |
| | 5-9 years | Epidemiologist | 1 | |
| | | Director of Development and Communications | 1 | |
| | | Director/Manager of Health Education | 1 | |
| | 10-15 years | Health Director | 1 | |
| | | Health Educator | 1 | |
| District health | 1-5 years | Public Information Officer | 1 | |
| | | Branch Manager for Health Information | 1 | |
| | | Health Director | 1 | |
| | | Health Educator | 1 | |
| | | Epidemiologist | 1 | |
| | 5-9 years | Public Health Services Coordinator | 1 | |
| | | Environmental Health Specialist | | 1 |
| | | Health Director | 2 | |
| | | Health Educator | 3 | |
| | | Preparedness Coordinator | 1 | |
| | 10-15 years | Health Director | | 1 |
| | | Health Educator | 1 | |
| | 16-20 years | Health Director | | 1 |
| City-county | 10-15 years | Public Information Officer | | 1 |
| **Total** | | | **25** | **11** |

***North Dakota.***

According to the CDC's Snap Shots of State Population Data [SNAPS] compiled from the 2000 U.S. Census and 2003 CDC databases, North Dakota's total population is 643,200 with English, German and Spanish as the top three languages spoken at home (SNAPS, 2007). For public health, there are eight emergency preparedness regions within the state; each region has a dedicated Public Information Officer (PIO) who serves more than one health department in their designated region (NDDoH, 2005). The author emailed all eight PIOs and five initially agreed to participate in the study. One PIO assisted with the creation of the interview guide.

Since 2007 when the author left her position with public health, considerable employee turnover occurred. Three of the eight PIOs she worked had left their respective health departments; one PIO position has yet to be replaced (personal communication, 2010). The communications director for the state public health emergency preparedness division moved to Washington, DC in January 2011 (personal communication, 2010). Of the five North Dakota participants (four female, one male), one represented the state health department, one represented a city-county health department and two represented multi-county health departments. Unlike Kentucky, these multi-county health departments are not formally as district health departments. All participants work as public information officers on daily basis and have worked in that role for less than five years. Please see Table 3.2 for more information about the demographics of the participants from North Dakota.

*Table 3.2. Demographics for North Dakota Participants*

| Type of Dept | Years/Exp | Title | Female | Male |
|---|---|---|---|---|
| State health | 1-5 years | PIO | 1 | |
| City-county | 1-5 years | PIO | 1 | 1 |
| Multi-county | 1-5 years | PIO | 2 | |
| **Total** | | | **4** | **1** |

***New Jersey.***

According to the CDC's Snap Shots of State Population Data [SNAPS] compiled from the 2000 U.S. Census and 2003 CDC databases, New Jersey's total population is 8,414,350 with English, Spanish and Italian as the top three languages, out of 36, spoken at home (SNAPS, 2007). The state has a diverse public health statewide structure with112 local health departments covering the State's 566 municipalities to include municipal health departments, regional health commissions and county health departments. Each of the state's 21 counties has authorization to establish county health departments.

As of 2008, 19 county health departments serve 20 of New Jersey's 21 counties and provide local public health services for a majority of the municipalities (NJDHHS, 2008). Many of the health departments report number of employed staff by each local health department ranges from 3 to 380. 26 health departments employ less than 10 people (NJHSS, 2008). Of the 112 local health departments there are 86 municipal health departments, 7 regional health commissions, and 19 county health departments (NJDHHS, 2008).

Of the 7 regional health commissions, 5 function as multi-municipality local health departments and 2 solely provide environmental health and emergency preparedness support to the local health departments in the counties (NJHHS, 2008). As outlined in the state's Emergency Health Powers Act (Public Law 2005, c. 222), NJHHS designated 22 local health departments (including the two regional health commissions) to create the Local Information Network and Communication System (LINCS) agencies to lead health emergency planning and response. The LINCS agencies would "also provide specialized public health expertise and capacities, as defined in the "Practice Standards," to the other local health departments in their county (NJHHS, 2008, p. 13-14). In addition to the creation of physical agencies, communication systems were also put into place to facilitate emergency communication within the state. NJ LINCS Health Alert Network is a system of public health professionals and electronic public health information that enhances the identification and containment of diseases and hazardous conditions that threaten the public's health (NJDHSS, 2010).

Of the six participants from New Jersey (five female, one male), one represented the state health department, three represented single county health departments, and two represented regional health commissions. New Jersey was the only state in this study to have health commissions integrated into the public health system. Four of the participants had served in their communication for at least five up to nine years and two had worked in their position for less than two years.

Like Kentucky, there was one individual who worked in a non-communication role, but the other five participants worked directly on communication activities on a daily basis. See Table 3.3 for more information on the demographics of these participants.

*Table 3.3 Demographics for New Jersey Participants*

| | | | **Sex** | |
|---|---|---|---|---|
| **Type of Dept** | **Years/Exp** | **Title** | Female | Male |
| Single county | 1-5 years | Public Information Officer | 1 | |
| | | Health Educator Risk Communicator | 1 | |
| | 5-9 years | Director/Manager of Health Education | 1 | |
| State health | 5-9 years | Risk Communication Manager | | 1 |
| Health commission | 5-9 years | Health Educator Risk Communicator | 2 | |
| **Total** | | | **5** | **1** |

***California.***

According to the CDC's Snap Shots of State Population Data [SNAPS] compiled from the 2000 U.S. Census and 2003 CDC databases, California's total population is 33.8 million with English, Spanish, and Tagalog as the top three languages, out of 58, spoken at home (SNAPS, 2007). There are local health departments in each of California's 58 counties and three that operate as city health departments in Berkeley, Long Beach and Pasadena ("Be Prepared California," n.d.).

Of the 11 California participants (nine female, two male), seven represented single county health departments, one represented a county health department and one represented an integrated health system. Four of the participants work in communication activities on a daily basis, the remaining seven work in other non-communication based public health staff roles. Four participants had worked in their public staff role for less than five years, one had worked in the role for at least five years, three had worked in that role at least ten years, and one worked in the role for over 16 years.

*Table 3.4. Demographics for California Participants*

| | | | **Sex** | |
|---|---|---|---|---|
| **Type of Dept** | **Years/Exp** | **Title** | Female | Male |
| Single county | 1-5 years | Communications Officer/specialist | | 2 |
| | | Preparedness Coordinator | 1 | |
| | 5-9 years | Director/Manager of Health Education | 1 | |
| | 10-15 years | Public Information Officer | 2 | |
| | | Hospital Preparedness Coordinator | 1 | |
| | 16-20 years | Health Program Manager | 1 | |
| | | Director/Manager of Health Education | 1 | |
| City-county | 10-15 years | Public Information Officer | 1 | |
| Health system | 1-5 years | Communications Officer/specialist | 1 | |
| **Total** | | | **9** | **2** |

**Data collection.**

Phone interviews were conducted during an eight-month period beginning in February 2010 and ending in December 2010. When beginning the phone interviews, the author restated the purpose of the study, obtained permission for audio recording, and assured participants of confidentiality (wa Nugla & Miller, 2010). Informed consent was obtained orally. After informed consent was granted, the author began recording the interview. After small talk to build rapport with the participant, questions related to pandemic planning were asked. The participants were asked to share examples and stories of their experiences during the 2009-2010 H1N1 outbreak. They were then lead through a series of six main questions addressing the types of emergency plans that were place prior to the outbreak, their involvement in creating the plans, their work relationships with other public health colleagues, their work relationships with other first responders external to the health department, and their experiences during the 2009-2010 H1N1 outbreak. The author identified a series of probing questions to elicit more information from participants based on the six main questions. "Quite simply, a probe is a follow-up question used to go deeper into the interviewee's responses. As such, probes should be conversational, offered in natural style and voice, and used to follow up on initial responses" (Patton, 2002, p. 372).

The interview questions were created using the lens of structuration theory and, specifically, the concepts of agent, duality of structure, and institutionalized processes. These theoretical concepts guided the development of the interview guide in order to elicit answers related to organizational structures, enactment of the PIO and types of

relationships the PIO developed and maintained during the 2009-2010 H1N1 outbreak. For example, the first question ("As a public information officer, describe your involvement in pandemic influenza planning.") focuses on how the individual enacts her or his role in the planning process. Probing questions for this first interview question ("If you are not involved now, is this type of planning something that you would be interested in being more involved with in the future?" "Would you feel comfortable asking to be involved? Why or why not?") seeks to better understand the reasons why the individual was or was not involved in the planning process (See Appendix A for the entire interview guide). Understanding why the individual was or was not involved starts to reveal the similarities and differences in how the PIO role is enacted differently across the four states included in this study.

An interview guide was used to ensure all interviewees heard the same questions (Lindlof & Taylor, 2002), but the questions were not necessarily asked in the order they were given. The first research question ("As a public information officer, describe your involvement in pandemic influenza planning") was always asked first, but if the individual was not involved in pandemic planning, the author was able to move to another question that seemed relevant to the conversation at-hand without violating the established interview protocol.

For example, if an individual was not involved in the planning process, the author would then move to the third question ("Describe your involvement in writing a crisis communication plan"). This question too revealed information about the enactment of the PIO role, but it also focused on organizational structures that were in place during the

2009-2010 H1N1 outbreak. Since questions were not necessarily asked in the same order as what is written in the interview guide (See Appendix A), questions were asked based on the interviewees' responses in order to avoid imposing the logic of an a priori framework (Alam, 2005; Jackson et al., 2007). Semi-structured interviews also provided an opportunity for follow-up questions on an issue or problem that the researcher may not have originally considered. In accordance with advice from a seasoned qualitative researcher, demographic questions were asked at the end of the interview: "background and demographic questions are basically boring; they epitomize what people hate about interviews. I advise never beginning an interview with a long list of routine demographic questions" (Patton, 2002, p. 352).

The interviews were semi-structured and ranged from 15 to 55 minutes in length. Despite the variation in the length of the interviews, the author transcribed all of the interview data. After transcribing, the author first read through the two 15-minute interviews (from Kentucky PIOs) to see if there was any useful data to glean from the small amount of data provided. The author found the only useful data that was the demographic information that was obtained at the end of the interview. As a result, these transcriptions were not included in the analysis since they did not produce any viable information for this study. Additionally, the variation in length was also due to the involvement of the PIO in planning and response activities. As the analysis reveals in Chapter Four, some PIOs were actively involved in planning and response, while others were only involved in the H1N1 emergency response. As a result, some were able to provide more information than others thus resulting in longer interviews.

Two PIOs (Janet and Charles) did not want to participate in a phone interview and submitted their answers via an email questionnaire. When sending the questionnaire, the author requested the ability to follow up via phone or email if she had any questions; both participants agreed. The author did not have any follow-up questions based on the information provided by the two email respondents.

The author, given time constraints, did her best to contact PIOs in each state until theoretical saturation occurred. Unfortunately, due to the convenience of the Kentucky PIOs, there is a greater representation of PIO data from this state than in the other three states included in this study. Glaser and Strauss (1967) explain that saturation occurs when no new data are found from the participation of research participants. Additionally, saturation ensures replication of data related to the theoretical constructs guiding the study; in turn, replication ensures and verifies comprehension and completeness of data collection related to a specific phenomenon (Morse, Barrett, Mayan, Olson & Spiers, 2002).

For this study, saturation occurred when PIOs provided similar stories and examples when answering questions about their involvement in pandemic planning and response activities. For North Dakota, saturation occurred after five interviews were completed. North Dakota only has eight PIOs in the state. The three not included in this study had moved out of the state or taken new jobs and were unavailable to participate. For Kentucky, over thirty PIOs were included in the study. Saturation occurred in New Jersey after six interviews; the individuals in the study provided very similar answers and the author deemed saturation occurred. Saturation did not occur in California, but given

time constraints and the inability to locate PIOs to participate in the study, the author stopped data collection at the end of December 2010. Participants were first contacted via email inviting them to participate in the study (See Appendix B for recruitment emails). If participants did not reply to the first email, a second follow-up email was sent two weeks after the first initial contact. The interviewees were informed that the phone interview was being recorded before the interview began, and the researcher obtained verbal consent before officially beginning the interview. Since the interviews were not conducted fact to face, the researcher obtained verbal consent from the participants consistent with approval from the University of Kentucky Office of Research Integrity (ORI) and Institutional Review Board (IRB).

The semi-structured, in-depth interviews were recorded with a digital recorder and then later transcribed by the researcher. The digital interview files and transcribed materials were kept on the researcher's password protected computer. The researcher obtained approval from the University of Kentucky Office of Research Integrity in February 2010. In accordance with the University of Kentucky Office of Research Integrity IRB approval form, pseudonyms are used throughout this document to protect participant confidentiality. Any references to county names or other individuals have been changed; the only identifying information is the state in which the PIO's health department is located. The author transcribed the interviews and began analysis in December 2010. A thematic comparative analysis was conducted. Initially the author analyzed the data looking for key themes in the data from each state.

In January 2011, preliminary analyses of each state were sent to key informants to conduct member checks to ensure the validity of the initial interpretations of the data (Jackson et. al, 2007). To conduct a member check, the researcher emailed a preliminary analysis of categorized by state to respective key informants. More information on conducting member checks ins included in the following section on data analysis.

**Data Analysis**

After the data collection was completed, an analytical inductive analysis was conducted (Patton, 2002). This type of analysis used structuration concepts to initially make sense of the raw data generated by the participants in the states included in this study, but this type of analysis also gives the researcher the ability to search for patterns that cut across the findings (Lincoln & Guba, 1986; Patton, 2002). The following paragraphs provided step-by-step information of how the author analyzed the data.

First, after all data were collected and all interviews were transcribed, the researcher analyzed the interview transcripts using three specific structuration themes. This type of analysis is described as analytic induction since the

> qualitative analysis is first deductive or quasi-deductive and then inductive as when, for example, the analyst begins by examining the data in terms of theory-derived sensitizing concepts or applying a theoretical framework developed by someone else. After or alongside this deductive phase of the analysis, the researcher strives to look at the data afresh for undiscovered patterns and emergent understanding (inductive analysis) (Patton, 2002, p. 454).

Based upon on Patton's guidance, the author used the theoretical concepts of duality of structure, agent, and institutionalized processes as "sensitizing concepts" thus giving the author a specific lens in which to view the raw interview data. Upon completion of transcription, the author read and reviewed each interview transcript, taking notes to

describe examples of each of the structuration themes. These examples were also highlighted and marked so the author could include them as examples to support her claims made in Chapter Four. Again, the author used the sensitizing concepts of duality of structure, agent, and institutionalized processes in examining the interview data and to understand if and how these concepts were manifested by individuals serving as PIOs during the 2009-2010 H1N1 outbreak.

Second, the author's notes and relevant examples that were developed and identified using the sensitizing concepts (duality of structure, agent, and institutionalized processes) were compared across all interview transcripts and thus across each of the four states. The author then drafted preliminary analyses of the findings categorized by state. For example, the author wrote findings for Kentucky based upon each of the three sensitizing concepts and provided relevant examples of each concept. A brief summary of the findings was also included at the end of these preliminary analyses. This same style and format was replicated for each subsequent state.

Third, upon the completion of the preliminary analysis, the author emailed those documents to pre-indentified key informants in each state. The author asked each key informant to perform a member check or member validation (Lindlof, 2002). "Member validation means taking findings back to the field and determining whether the participants recognize them as true or accurate" (Lindlof, 2002, p. 242). Within the email sent to the key informants, the author asked them to consider the following questions as they read the document: "Does this document make sense? Does did accurately represent PIOs in your state?" These questions were adapted from questions used by other

qualitative researchers (Lindlof, 2002). None of the key informants had any substantial changes to the preliminary analyses. Most of the comments were focused on typos found in the document. The New Jersey key informant asked the author to update information about the LINCS agencies in the state. This was the only feedback that required the author to make a factual change in the analysis.

Fourth, after the preliminary analyses had been checked by the key informants, the author began to compare the findings across each state looking for patterns and relationships among the sensitizing concepts. Using analytical induction data analysis, along with the methods detailed in this chapter, the author used three theoretical constructs (duality of structure, agent, and institutionalized processes) as sensitizing concepts that provide specific lens through which the raw interview data will be analyzed. By organizing the raw data using the sensitizing concepts, the author could use the vast amount of data generated by the interviews to answer each of the three research questions using both a general macro approach as well as micro within-state analyses.

For example, the first research question asks, "What are the implicit and explicit structures that constrain and facilitate emergency risk communication produced by public health PIOs during the 2009-2010 H1N1 outbreak?" The results and analysis for the first research question are related to duality of structure (e.g., explicit structures within emergency planning and response activities) and focus interview responses related to the on policies and procedures that were created prior to and during the 2009-2010 H1N1 outbreak. Based upon the data generated in the interviews and using the sensitizing concept of duality of structure, the author looked for how the concept of duality of

structure manifested in the PIOs interview transcripts. The second research question asks, "How do implicit and explicit structures impact the enactment of the PIO role and are they different or similar depending upon the state in which the individual is located?" The results and analysis of the second research question are related to agent (e.g., implicit and explicit structures of the PIO role) and focus on interview responses related PIOs' job responsibilities, other job expectations created for them by their work colleagues and organizational structures of each state's health departments. Based on the data generated in the interviews and using the sensitizing concept of agent, the author looked for how the concept of agent manifested in the PIOs' interview transcripts.

The third research question asks, "In what ways are institutionalized processes related to PIOs' internal and external partnerships?" The results and analysis for the third research question are related to institutionalized processes (e.g., working partnerships of emergency preparedness and response) and focus interview responses related to PIOs' collaborations with public health staff, community organizations and national organizations. Based on the data generated in the interviews and using the sensitizing concept of institutionalized processes, the author looked for how the concept of institutionalized processes is manifested in the PIOs' interview transcripts. Within Chapter Four, each research question is restated. Then results and analysis are provided along with representative examples from a range of interviewees that support and verify each of the three theoretical concepts (duality of structure, agent, and institutionalized processes) related to structuration theory.

In conclusion, this chapter provided an overview of the study design, participant recruitment procedures, methods, and step-by-step data analysis procedures that were used to answer the three research questions outlined in Chapter Two. The next chapter will explicitly answer the study's research questions using data generated from the participant interviews.

## Chapter Four: Results and Analysis

The major findings for each research question are presented in this chapter. Using analytical induction data analysis, along with the methods detailed in previous chapter, the author used three theoretical constructs (duality of structure, agent, and institutionalized processes) as sensitizing concepts that provide specific lens through which the raw interview data will be analyzed. By organizing the raw data using the sensitizing concepts, the author could use the vast amount of data generated by the interviews to answer each of the three research questions using both a general macro approach as well as micro within-state analyses.

The first research question asks, "What are the implicit and explicit structures that constrain and facilitate emergency risk communication produced by public health PIOs during the 2009-2010 H1N1 outbreak?" The results and analysis for the first research question are related to duality of structure (e.g., explicit structures within emergency planning and response activities) and focus interview responses related to the on policies and procedures that were created prior to and during the 2009-2010 H1N1 outbreak. Based upon the data generated in the interviews and using the sensitizing concept of duality of structure, the author looked for how the concept of duality of structure manifested in the PIOs interview transcripts.

For example, many PIOs revealed how their emergency response plans were key in helping them to respond during the 2009-2010 H1N1 outbreak. Further, the interviews revealed how some types of emergency response plans were clearly more helpful than others. As a result, the author began to classify emergency response plans as an

organizational structure. Additionally, based on the interview data, the author characterized emergency response plans as explicit structures because they were written down and considered an organizational policy. Again, these classifications were based upon the theoretical concept of duality of structure. For public health PIOs, emergency plans contained policies and procedures that outlined emergency risk communication efforts. The plans were created to guide PIOs to take a specific action.

The second research question asks, "How do implicit and explicit structures impact the enactment of the PIO role and are they different or similar depending upon the state in which the individual is located?" The results and analysis of the second research question are related to agent (e.g., implicit and explicit structures of the PIO role) and focus on interview responses related PIOs' job responsibilities, other job expectations created for them by their work colleagues and organizational structures of each state's health departments. Based on the data generated in the interviews and using the sensitizing concept of agent, the author looked for how the concept of agent manifested in the PIOs' interview transcripts. For example, the author classified PIOs' additional job expectations—those that were not included in the PIOs' job description—as implicit structures because those additional expectations were upheld as an *unwritten* rule within the health department. As a result, PIOs were expected to conduct certain functions based upon implied structures created by their colleagues. Additionally, the organization of the public health systems in each state contributed to how PIOs enacted their roles in the areas of emergency planning and response. The organization of health systems are explicit structures since they are written and used as local government policy.

The third research question asks, "In what ways are institutionalized processes related to PIOs' internal and external partnerships?" The results and analysis for the third research question are related to institutionalized processes (e.g., working partnerships of emergency preparedness and response) and focus interview responses related to PIOs' collaborations with public health staff, community organizations and national organizations. Based on the data generated in the interviews and using the sensitizing concept of institutionalized processes, the author looked for how the concept of institutionalized processes manifested in the PIOs' interview transcripts. For example, during their interviews PIOs described how NIMS and ICS often dictated the relationships health departments established with other government agencies, non-governmental organizations (NGOs) and the private sector during emergencies at the local and state level. Based upon their descriptions of their relationships, the author developed a descriptive classification system of the PIOs partnerships. The author created three classes: internal partnerships, locally-based external partnerships, and nationally-based external partnerships. First, internal partnerships were those found within the PIO's health department. Second, locally-based partnerships were those partnerships that were developed external to the health department. Third, externally-based partnerships were those that were external to the health department and the state where the PIO was situated.

This chapter will be organized in the following way. Each research question will be stated, followed by a general macro description and analysis of the study's findings using relevant examples from the data. Each section concludes with a section summary which includes a micro within-state analysis. The following section answers the first research question by discussing the study's findings related to explicit organizational structures.

**Research Question One: What are the explicit structures that constrain and facilitate emergency risk communication produced by public health PIOs during the 2009-2010 H1N1 outbreak?**

The results and analysis for the first research question are related to duality of structure (e.g., explicit structures within emergency planning and response activities) and focus on interview responses related to the policies and procedures that were created prior to and during the 2009-2010 H1N1 outbreak. Most health departments included in this study created some type of emergency response plan, policy and procedure prior to the 2009-2010 H1N1 outbreak. Based on the data generated in the interviews and using the sensitizing concept of duality of structure, the author looked for how the concept of duality of structure is manifested in the PIOs' interview transcripts.

Using the duality of structure to guide the analysis of data is relevant as it reveals how—as explicit structures—emergency response plans, policies and procedures can both facilitate and constrain emergency risk communication. Emergency response plans, policies and procedures are classified as explicit structures because they are written documents and are used as organizational policy. A key factor in how explicit

organizational structures facilitate and constrain emergency risk communication is dependent upon the permeability, or looseness, of the plans, policies and procedures (Giddens, 1984). Permeability provides organizations with the ability to adapt the explicit structures (e.g., emergency plans, policies and procedures) to the emergency context. For example, emergency response plans that are more flexible allow PIOs to adapt the plan for the emergency response as needed. Those involved in emergency response know that responding to different types of emergencies creates different types of environmental constraints and communication exigencies.

*Basic plans* imply that standard-operating procedures (SOPs) for emergency risk communication were in place prior to the 2009-2010 H1N1 outbreak. Basic plans were also more flexible and allowed PIOs to adapt the emergency risk communication plan as needed. These types of plans are explicit organizational structures that facilitate emergency risk communication. *No plans* indicate there was no written plan prior to the 2009-2010 H1N1 outbreak. *Worst-case scenario plans* indicate a rigid plan intended for a 1918-like pandemic. No plans and worst-case scenario plans are explicit organizational structures that constrain emergency risk communication.

In order to answer the first research question, a general macro description and analysis of explicit organizational structures that facilitate emergency risk communication will be provided. Then a general macro description and analysis of explicit organizational structures that constrain emergency risk communication will be provided. Finally, a micro within-state analysis is provided in the section summary.

The following section provides a macro description and analysis of explicit organizational structures that facilitate emergency risk communication is provided.

**Explicit structures that facilitated emergency risk communication**

Based upon interview data from PIOs involved in the 2009-2010 H1N1 response, participants often described emergency response plans as basic plans, implying that standard-operating procedures (SOPs) for emergency risk communication were in place prior to the 2009-2010 H1N1 outbreak. As a result, these emergency plans took the form of explicit structures that facilitated emergency risk communication.

Basic plans afforded PIOs a flexibility that no plans or worst-case scenario plans did not because the emergency response plan could be adapted to the fit the evolving outbreak. Here basic plans had a level of permeability that the other plans did not. The key factor in how these basic plans facilitated emergency risk communication rests upon the permeability or flexibility of the plan to be adapted the emergency context as needed. In order to develop basic and flexible emergency risk communication plans with permeability, PIOs and public health staff look to guidance from reputable sources including their own state health department and CDC. The following paragraphs provide a general macro approach of description and analysis of relevant examples New Jersey, Kentucky and California PIOs. North Dakota PIOs only reported developing worst-case scenario plans.

At the state level in New Jersey, David, who was one of the communication officers during the 2001 anthrax attacks, was very actively involved in writing and developing emergency risk communication plans:

> I had a great to deal to do with putting the preparedness plan together starting back in the mid 2000's—2003—2004 putting together incorporating our overall risk communication plan with our pandemic plan and making sure that had synergy. I have refined it several times, trained our staff and our locals as well as other state agencies that would be involved agriculture, education, transportation, and our governor's office.

Here David explains the development the communication plan and his interactions with other staff. As his comments reveal he had direct control over the materials included in the an emergency risk communication plan, and he had the ability to refine the plan and change it as needed. David's comments reveal the permeability of the plan as he describes incorporating with overall pandemic influenza plan. After he developed the emergency risk communication plan, David went on to train others about the policies and procedures of the plan. Through sharing the plan with local health departments, David was able to give others a pre-developed plan which could be adapted to fit the needs of a given community. Since the basic plan is permeable, other PIOs would be able to change the plan as needed.

For example, Melissa, a HERC from a single county health department in New Jersey, described the state guidance's on creating policies and procedures related to emergency risk communication. She mentions the state provided templates, but then the HERCs inserted local information where needed:

> The state had us create a risk communication toolkit. So we have contact lists, basic rules and principles of risk communication, our call down list, our activation lists. We have our public information communication plan in here and our SNS communication plan, steps to take when the media calls, I mean it's pretty extensive. Fact sheets and FAQ's and we have pandemic and avian flu message maps.

Again, Melissa, a county HERC, was able to use the plan that David, a state PIO, created. Here the pre-developed emergency response plans was adapted by the local public health departments and adapted to fit the community's need. The adaptability of the emergency response plans reflects the permeability of the organizational structures. Using pre-developed templates and other state's emergency response plans as examples guide PIOs as they develop emergency risk communication procedures.

The flexibility of emergency plans and protocols was also reported by PIOs in Kentucky. Clara, an emergency preparedness coordinator at a single county health department, defines her emergency plan as a 'working document' that can be adapted as needed:

> We do have a plan that was it's a working document that we started to develop way before H1N1 and its contents were how we were reach the public, the ways we were going to do that and targeting them with where we would do their points of dispensing and where they would get their information and we included a lot of community partners including physicians' offices, churches, factories, other agencies in town in order to have places in town where the public to get their information.

Clara's comments reveal the level of specificity in what they would do and who they we would work with, but she highlights that plan is not complete. Intuitively, an incomplete plan may cause alarm, but in reality the working plan allows PIOs to adapt the contents (such as pre-developed communication messages) as needed. The recognition of working plans or plans with permeability was also reported in California.

Mary, who works for the integrated health system in California, had a similar perspective. The "all-hazards" plan she helped developed does not represent rigid procedures and policies: "It's a living document that we update it whenever we need to."

Mary and her team of communicators have direct access to the plan and can update the emergency risk communication plan as needed. In rare occasions they need leadership approval for changes. Additionally, Richard, a single county PIO in California, explains that plans ought to be adaptable for the situation:

> This really was a communication plan for what we would do in the event of pandemic flu, and I think in reality, you know, what happened is that in any emergency you've got plans and you make changes as you need to respond properly to the situation.

Richard's comments here echo the same sentiment of the other PIOs and highlight the importance of flexibility within emergency response structures. Although the plans were in place prior the 2009-2010 H1N1 outbreak, some of these pre-developed social structures were not appropriate for the evolving influenza pandemic. As a result, as the plans changed and guided PIOs to take different actions, the outcome of those plans changed as well. As the plans were adapted based on the new information, the production and reproduction of social structures occurred.

Since LPHDs had been planning for a pandemic influenza since 2002, most communication materials, such as educational materials, brochures, pre-developed talking points, message maps and sample messages, focused on the H5N1 pandemic influenza. H5N1, avian influenza or bird flu, was considered to be the strain to cause a pandemic; however, it was H1N1, or swine flu, that initiated the 2009-2010 pandemic influenza. As a result, PIOs either updated pre-developed materials or created new materials.

California PIOs reported challenges and successes with emergency message development. Mary and Richard were able to update and "tweak" their premade communication materials to fit the 2009-2010 H1N1 response. Sharon, who primarily works as a hospital preparedness coordinator in California, remembered working directly with her public health colleagues to adapt pre-developed messages because "we found that most of our prescripted messages were not appropriate for H1N1 they were phrased in terms of a very severe bird flu and they were too specific the virus and that situation." The revision of premade communication materials is similar to how PIOs dealt with the emergency response plans that were not appropriate for this type of influenza pandemic.

As a result, the PIOs once again able to adapt the premade materials as needed. While many PIOs across the states were involved in some form of pandemic planning, Charles, who serves as a Communication Specialist for a single county health department in California, was not on staff as the PIO at his health department when most of the pandemic influenza planning occurred.

As a result, he was responsible for using a plan that he did not develop, but he explains that the flexibility and adaptability of the plan was crucial during the H1N1 emergency response:

> It influenced it to an extent, but since this was a novel virus at the time, you had to be able to adapt and change what worked and what didn't. I would say our use of pandemic planning was fluid – we used the basic outline, but then adapted it to the situation and the new challenges.

The flexibility of the plans allowed response structure and emergency risk communication messages to be adapted to the 2009-2010 H1N1 outbreak or any emergency as needed.

Charles reveals how the flexibility of the plans allowed his health department to adapt as needed to the evolving situation; the emphasis of adaptability rather than rigidity within his organization provided an environment in which social structures could be adapted as needed.

This section provided description and analysis of how PIOs used *basic plans* during the 2009-2010 H1N1 outbreak. PIOs in New Jersey, Kentucky and California reported having basic plans that afforded them to the ability to adapt pre-developed materials as needed. In addition to develop basic plans, PIOs either had *no plans* or *worst-case scenario* plans. These types of plans lacked the permeability of basic plans and did not support the PIOs emergency response efforts during the 2009-2010 H1N1 outbreak. PIOs usually disregarded the plan altogether and did they best they could with having a pre-established plan, policy or procedure. These types of plans are considered explicit structures that constrain emergency risk communication. The following section provides a general macro description and analysis of explicit organizational structures that constrained emergency risk communication efforts.

**Explicit structures that constrained emergency risk communication efforts**

In contrast to having basic plans, some health departments had either no plans or created worst-case scenario plans. These categories of emergency response plans lack permeability, or looseness, meaning that PIOs were unable to adapt the plan to the evolving 2009-2010 H1N1 outbreak. The following sections provide a macro description and analysis of the data related to explicit structures that constrain emergency risk communication efforts.

***No plans that constrained emergency risk communication.***

Based on participants' stories and examples generated during the interviews, in some cases, health departments didn't have an emergency risk communication plan. Most notably, PIOs in Kentucky reported having no plans in place prior to the 2009-2010 H1N1 outbreak. As a result, some PIOs developed procedures during the H1N1 outbreak. Ron, a training coordinator in Kentucky, explained:

> I would have to say that beyond naming me as a PIO, we don't have much of a plan as far as public information goes. We don't have a written risk communication or public information plan other than just a very basic amount of information. The public information officer can develop messages, public health director approves those messages, and if anyone is approached by the media, they need to run that through me and then the director before they release anything. That's pretty much our plan. And that's about all of it. I think it needs to be much more involved.

Ron reveals that his health department developed processes of releasing information. However, the processes were not written down and as a result, Ron was producing his own emergency response plan and policies during the emergency response. He did not produce the plan based upon guidance from the state or CDC. Instead of being able to adapt previously constructed emergency response structures to the evolving situation, PIOs without any guidance began developing emergency procedures based upon the external environmental inputs. For example, a flood of media calls or public inquiries can prompt emergency response agency to develop crisis communication plans to deal with the heightened information demands. Unlike the PIOs in other states mentioned in the previous section on basic emergency response plans, Ron did not have any pre-developed materials or templates available to information his emergency risk communication efforts.

Joe, who primarily serves as a health director in Kentucky, explained that his department didn't have an established communications plan prior to H1N1. When asked if he would develop a communication plan after going through H1N1:

> In light of what happened with H1N1, I don't think it would be useful, no. Other than developing a plan to identify the people that would need to be contacted, which is basically part of the pandemic planning, having the phone numbers ready for the local newspaper, the email addresses, and for the TV and the EMS which we do as part of our pandemic planning. I don't think we could have planned on how we were going to communicate this out not knowing what the status of the pandemic was, when we were going to get vaccine.

As described in the previous section on basic plans, contact lists and SOPs are components of an emergency risk communication, but some information should be tailored to fit the needs of the community. However, not developing an emergency risk communication plans even after participating in the 2009-2010 H1N1 response reveals a lack of basic understanding about emergency risk communication and emergency response activities. Joe's comments also reveal a lack of understanding about basic risk communication principles. While information about the emergency event will change, CDC's CERC recommends developing templates for inclusion in the emergency risk communication plan. While having a template pre-developed, event specific information can be added in during the emergency.

Bill, who primarily serves as the Health Director in Kentucky, also has misgivings about developing a formal emergency risk communication plan:

> We're a rural small town health department and really wouldn't have much of a need for that [a communication plan] as we have two media outlets for our county where our people would turn to, so a formal plan would be taking a sledgehammer to a fly.

Bill has a negative perception of emergency risk communication plans, but his perception could be based on two reasons. First, Bill could have a lack of understanding about emergency risk communication principles and not understand the importance of developing such policies and protocols prior to an emergency.

Second, Bill could have a lack of understanding about the scalability of emergency response structures. The systems of ICS and NIMS allow for emergency response structures to be scaled up and down for large and small events. Like with basic emergency response plans, pre-developed materials can be adapted to fit the evolving emergency as needed. Having no materials limits ability of the PIO to facilitate emergency risk communication efforts. Instead of simply adapting pre-developed materials, the PIO spends his or her time developing new materials during the onset of the emergency. The first twenty hours of an emergency are critical for disseminating emergency risk communication (CERC, 2002), so having pre-developed materials alleviated undue on the PIO to produce information in the heat of the moment.

Overall, the lack of emergency plans was most notably found in Kentucky. The PIOs in the other three states reported having either basic response plans or worst-case scenario plans. Based on the examples provided above, some PIOs still lack understanding of basic emergency risk communication principles and are unsure how to create an emergency communication plan. As a result, they forgo creating any plan and develop something during the onset of an emergency. Additionally, not having any pre-developed materials requires the PIO to spend time developing information rather than simply adapting information to the emergency context. In addition either having a basic

no or no plan, some PIOs had developed worst-case scenario emergency response plans, which contained no permeability. Often times, PIOs would completely disregard these types of plans and develop new plans during the response. The next section provides a general macro description and analysis of worst-case scenario plans as explicit structures that constrain emergency risk communication efforts.

***Worst-case scenario plans that constrained emergency risk communication.***

Based on participants' stories and examples generated during the interviews, some PIOs developed what they described as worst-case scenario plans. PIOs in North Dakota and Kentucky reported creating worst-case scenario plans. These plans were created based upon emergency planning assumptions derived from a severe 1918-like pandemic. As a result, these specific emergency planning assumptions dictated how PIOs created their emergency response plans. By adhering to emergency planning assumptions based upon a severe 1919-like pandemic, the PIOs inadvertently created plans that lacked permeability and, unfortunately, the plans could not be adapted for use during the 2009-2010 H1N1 outbreak. Often the plan was not used at all. This section describes health departments that had worst-case scenario plans in place prior to the 2009-2010 H1N1 outbreak.

Deb, who primarily serves as an emergency preparedness coordinator in Kentucky, reveals how her preconceived notions impacted how her department began responding: "I think that the pandemic flu planning that we had done had sort of prepared us for the worst case scenario so obviously when this hit we just jumped into it with a worst case scenario idea."

Here Deb's preconceived notions about what could happened ultimately guided how her health department would response. Despite the reality of the situation not being as severe as health experts had anticipated, emergency response structures developed for a severe pandemic influenza were used to response to the 2009-2010 H1N1 outbreak. Deb's worst case scenario plan was not permeability and was difficult for her to adapt to the 2009-2010 H1N1 outbreak.

Brenda, another PIO based in Kentucky, had a similar perspective:

> Our response happened completely different than what we planned for. We planned for worst case scenario; people are dying in the streets, the hospitals overflowing, and it's just mass chaos.

She added,

> When all of our past planning has been based on we will get you and your immediate family any prophylaxis. We were planning for antibiotics and things like that—there's been an attack. Everyone's at risk but where we had to snip it back and do priority groups—everything we told everyone just fell apart at the last minute and we changed the game plan so everyone was upset.

The ability to adapt during an emergency response is critical. Not only had Brenda developed a worst-case scenario plan, she also assumed her health department would have a ready supply of vaccine. Relying upon preconceived notions or making assumptions about what could happen will impact how PIOs enact emergency response procedures. This strict adherence to emergency planning assumptions ultimately impacted how her health department handled the response because those planning assumptions did not hold true during the actual emergency.

As Brenda reveals in her comments, "everything we told everyone just fell apart at the last minute" and "we changed the game plan, so everyone was upset." Although

Brenda and her health department had exercised and planned for a ready supply of vaccine, the worst-case scenario plan constrained emergency risk communication efforts. Here Brenda's attempts to adapt the worst-case scenario plan did not work. As she stated everything "just fell apart." Brenda's comments offer evidence to suggest that the lack of permeability in the worst-case scenario plans constrained emergency risk communication efforts.

Joe, a health department director in Kentucky offered this perspective, explicitly states how his department's worst case scenario plan did not help their response.

> I don't think our pandemic plan helped during this response. It was worst-case scenario. Our pandemic plan assumed a ready supply that we were going to get our vaccine we were going to have it and it assumed a mass vaccination clinic where we would have a drive through where people would come and neither of those happened.

Here again the lack of permeability in emergency response structures hindered how PIOs facilitated emergency risk communication efforts. Again, like Brenda, Joe assumed for a ready supply of vaccine, which was not available during the 2009-2010 H1N1 response. The worst case scenario plans were not beneficial to PIOs because too many assumptions were made prior to the outbreak occurring.

The lack of permeability in the plans constrained emergency risk communication efforts because PIOs were unable to adapted pre-developed materials to the evolving emergency. In addition to emergency plans, public health departments also have policies and procedures that also constrain emergency risk communication efforts.

Within some emergency plans, PIOs created policies and procedures for implementing the emergency response structures of NIMS and ICS. Although these structures were developed to facilitate information flow during an emergency, this study has evidence on how NIMS and ICS constrained emergency risk communication efforts.

***NIMS and ICS structures that constrained emergency risk communication.***

As the previous section described, participant interviews revealed three different categories of emergency response plans: basic plans, no plans and worst-case scenario plans. The permeability, or looseness, of these plans often impacted how PIOs implemented the plans during the 2009-2010 H1N1 outbreak. This section provides a general macro analysis and description of how the emergency response structures of NIMS and ICS constrained emergency risk communication efforts. Permeability is also a factor in implementing these emergency response structures.

Based upon participants' stories and examples generated during the interview process, most in all four states PIOs recall establishing the Incident Command Structure (ICS). For example, Larry and Gracie, PIOs based in Kentucky, recalled using NIMS and ICS to establish the following emergency response roles: the Incident Commander, Medical Liaison, Planning Chief, Financial Officer, and Logistics Officer. In addition to establishing command and control functions, NIMS and ICS are established the Joint Information Center (JIC) and the Joint Information System (JIS), which are structures and systems designed to organize public information efforts by coordinating messages across multiple response agencies. During the 2009-2010 H1N1 outbreak, some PIOs implemented the structures the best they could for their local response agencies.

For example, Mary, a California PIO based at an integrated health system, explained that her health system fully understands NIMS, but they did not activate their Department's Emergency Operations Center (DEOC). Mary explained that the severity of the outbreak did not warrant opening the DEOC. As a result, there was no formal process of sharing information across multiple agencies. Since the JIC and JIS are explicit structures designed to coordinate information sharing, this lack of implementation of these systems constrained emergency risk communication for Mary's health system. In contrast to the lack of implementation, of JIC a New Jersey PIO had a different problem with NIMS and ICS.

David, a PIO based at the state health department in New Jersey, remembers enacting specific procedures around the Incident Command System during the H1N1 outbreak:

> [In] the first three weeks, when we actually stood up the response and we went into a straight ICS response, I was the lead PIO and reported directly to the Incident Commander who was our Deputy Commissioner. We wanted our commissioner free to set up and deal with the things and talk to the governor's office and what not. The Director of the Communications, which is interesting because, I'm not—I don't really report to her as a dotted line, but now I'm in charge of the communications so it was a little interesting. But we worked it all out. Every morning her and I met and we said alright, you know, I had the director just be in charge of message triage or media triage rather. I ended up writing most of the messages and we had other people monitoring the media.

David's example highlights the complexities of the role of communication officers in New Jersey. As previously described, many of the New Jersey PIOs and HERCs often engage in day-to-day responsibilities that are different than emergency responsibilities.

However, when LPHD enact emergency response structures such as the Incident Command Structure, then day-to-day actions are impacted and are often changed to accommodate the emergency response. David's comments reveal that he becomes a supervisor to one his supervisors during an emergency response.

Public health staff working in non-emergency response positions on a daily basis ought to receive briefings prior to enacting emergency response structures in order to best understand how to perform their emergency roles. Here ICS and NIMS constrains the emergency risk communication process because it is implementing a new structure that is different from the health department daily reporting mechanism. In some organizations to subjugate a superior would cause internal struggles hence constraining the emergency risk communication process.

NIMS and ICS outline command and control functions, but also suggest response agencies establish a center to coordination information, or a JIC. Sharon, who has worked in public health for two years for California, explained that setting up the Joint Information Center (JIC) for the 2009-2010 H1N1 outbreak "did not blend into our county for a public health emergency, it was foreign." Despite the structure unfamiliarity, Sharon acknowledged that having a formal system, albeit unknown and unfamiliar, did help organize and ensure that "certain players that were going to be involved in the response were at the table." In this regard, NIMS and ICS held organizational members accountable for their emergency risk communication activities. While Sharon's comments provide some evidence that NIMS and ICS facilitated emergency risk communication by holding some "players" accountable for their participation in the

response, the unfamiliarity of the response constrained emergency risk communication efforts. Additionally, if the JIC and JIS are not exercised prior to an actual incident, setting up and functioning in these emergency response structures can be difficult.

Other PIOs considered establishing a JIC, but then decided against it. Karen, a PIO based in Kentucky, remembers,

> We talked about it a couple of times because we were afraid that our call volume from the public was getting too high. So we were on the verge of activating the JIC so we could use those phone banks. We did bring together communications representatives from the public school systems in the county, and the county PIO, and someone from city government to do a press conference related to H1N1 fairly early on.

In an effort to coordinate communication efforts, Karen invited other organizations to participate in a press conference the health department was sponsoring. While the press conference was a one-time event, activating a JIC for an emergency response is usually a long-term strategy pending a long emergency response period.

Besides challenges with setting up and using a JIC, there were other issues with implementing ICS and NIMS. Pamela, a California PIO based at a county health department, explained how public health staff had trouble reporting to a new supervisor based on the ICS procedures. Staff would continue to report to their day-to-day supervisor instead of their supervisor as outlined by the ICS functions. The unfamiliarity of the emergency response structures hindered how organizational members interacted with each other. Barbara, who is also based in California, had a similar experience to Pamela. Her staff had trouble adapting to their emergency response roles:

> It's very difficult to step out of our daily roles and into our ICS roles quickly. You know we tend to go back to our default, which is what we show up to do at work every day. There was one other communication challenge that we faced. We

> learned about midway through the incident that we were not doing a good job of our internal staff communications. So the staff that were not directly involved in the response didn't necessarily weren't necessarily regularly updated on what was happening.

Barbara mentions two issues related to the emergency communication and emergency response structures. First, public health staff were unsure of their ICS roles, and second, non-emergency response staff did not receive updates on the emergency response. Emergency response drills and exercises often help public health staff become more familiar with their emergency roles. Real life incidents are another way for staff to enact ICS roles. The second issue related to internal communication is a common problem during emergencies. As public external information becomes the main focus on the response, emergency response personnel take for granted that all staff members are aware of response updates. Providing situational awareness reports and brief daily reports to all staff would rectify this issue.

**Summary**

Analysis of the first research question is provided using a micro-level within-state analysis. Emergency response plans, policies and procedures took the form of explicit structures that both constrained and facilitated emergency risk communication. This study reveals that emergency response plans in all four states included in this study had varying degrees of permeability. The study's key finding for the first research question rests on the permeability of the emergency response plans generated prior to the onset of an emergency.

The concept of permeability thus reveals how emergency response plans can facilitated emergency risk communication, as with basic plans, or constrain emergency

risk communication, as demonstrated by no plans and worst-case scenario plans. The more permeability in the plan, the more ability the PIO had to adapt the plan to the evolving emergency. Emergency plans took three distinct forms in North Dakota, Kentucky, New Jersey and California: basic plans, no plans, or worst-case scenario plans.

Basic emergency response plans facilitate emergency risk communication because the permeability of basic plans allowed PIOs to adapt the emergency response structures as needed. PIOs in Kentucky, California, and New Jersey reported having basic response plans. Basic plans were developed based on guidance provided by state health departments and the CDC. As a result, PIOs that developed basic plans included pre-developed message templates, SOPs for creating and releasing emergency information, contact lists, and fact sheets. Although it is not possible to pre-develop specific communication materials for each potential emergency, including templates in an emergency response plan gives PIOs the ability to quickly develop emergency risk communication messages as needed. PIOs dubbed basic emergency response plans "living documents" indicating that the document can grow, change, and adapt to the external conditions as needed. This nomenclature reveals how emergency response plans change as needed. In contrast, no plans and worst-case scenario plans lacked permeability thus constraining the PIOs' emergency risk communication efforts. For example, many PIOs who developed worst-case scenario plans assumed a ready supply of vaccine. As the 2009-2010 H1N1 outbreak revealed, that planning assumption did not hold true.

PIOs in North Dakota, New Jersey and California reported creating worst-case scenario plans and ended up not using the plans during the 2009-2010 H1N1 outbreak,

because the plans were created for a severe pandemic. In contrast to the other three states having some form of a plan, many Kentucky PIOs did not have any pre-established or formally written emergency risk communication plans. As a result, during the 2009-2010 H1N1 outbreak, Kentucky PIOs developed emergency response plans that focused on how to release emergency information. As a result, those plans focused more on the *how* of public information, the process of releasing information, rather than the *what*, the emergency risk communication messages. Even post-H1N1, some Kentucky PIOs reported they would not create emergency risk communication plans. This unwillingness to create basic response plans is likely due to a lack of basic risk communication knowledge. Best practice research in risk communication advocates for the continually updating and evaluating of emergency plans (Seeger, 2005). Previous risk and crisis research revealed that creating emergency plans in advance are beneficial to emergency response agencies, and as this study reveals, the key for PIOs is to develop emergency plans with permeability to allow them to adapt the plans to evolving emergency.

In addition to the explicit structure of emergency response plans, NIMS and ICS are the second form of explicit structures that constrain emergency risk communication efforts. NIMS and ICS are explicit structures because they are written and are regarded as policy with the health department. Although designed to be scalable for large and small events, PIOs in all four states reported how NIMS and ICS constrained emergency risk communication efforts. Like the emergency response plans, these structures need permeability in order for PIOs to adapt them to emergency conditions.

NIMS and ICS outline how a PIO should implement the JIC and the JIS. Both structures were designed to support emergency risk communication efforts between and among several first responder organizations. For example, when a LPHD implements a JIC, representatives from organizations and agencies involved in the response send a communication officer to physically represent their organization or agency. In turn, that communication officer assists the lead responding agency with communication messaging, short and long-term communication strategy, and consistent messaging to multiple audiences. Unfortunately, first responder organizations and agencies might not have their own communication officer. As a result, the JIC may not have enough staff to warrant its existence.

New Jersey and California PIOs reported implementing JICs during the 2009-2010 H1N1 outbreak. PIOs found the JIC and JIS structures to constrain emergency risk communication efforts because their public health staff was not familiar with NIMS and ICS. PIOs in California reported that public health staff did not understand how enacting NIMS and ICS changed their normal day-to-day functions. For example, during an emergency public health staff enact specific emergency response roles, which require them to report to individuals who are not their daily supervisors. Since the new reporting structure was unfamiliar, staff would report to their normal supervisor.

In conclusion, several organizational structures have been identified that facilitate and constrain emergency risk communication. The study's key finding for the first research question rests on the permeability of the emergency response plans generated prior to the onset of an emergency.

Basic plans were explicit organizations that facilitated emergency risk communication. No plans, worst-case scenario plans and emergency response structures NIMS and ICS constrained emergency risk communication efforts. The first research question focused on organizational structures that facilitate and constrain emergency risk communication. The second research question focused on the role of the PIO. The next section provides the an analysis of interview data related to the second research question.

**Research Question Two: How do implicit and explicit structures impact the enactment of the PIO role and are they different or similar depending upon the state in which the individual is located?**

The results and analysis of the second research question are related to agent (e.g., implicit and explicit structures of the PIO role) and focus on interview responses related PIOs' job responsibilities, other job expectations created for them by their work colleagues and organizational structures of each state's health departments. Based upon the data generated in the interviews and using the sensitizing concept of agent, including the subconcepts of expected modes of conduct and setting, the author looked for how the concept of agent manifested in the PIOs' interview transcripts. For example, the author classified PIOs' additional job expectations—those that were not included in the PIOs' job description—as implicit structures because those additional expectations were upheld as an *unwritten* rule within the health department and represent expected modes of conduct for that individual. As a result, PIOs were expected to conduct certain functions based upon implied structures created by their colleagues. Additionally, the organization of the public health systems, or the setting, in each state contributed to how PIOs enacted

their roles in the areas of emergency planning and response. The organization of health systems provide explicit structures since they are written and used as local government policy. In order to answer the second research question, a general macro description and analysis of implicit structures of the PIO role will be provided. Then a general macro description and analysis of explicit structures of the PIO role will be provided. Finally, a micro within-state analysis is provided in the section summary. The following section provides a macro description and analysis of implicit structures of the PIO role.

**Implicit structures of the PIO role.**

As public health staff interact with each other in emergency planning activities or other daily activities, those social interactions often determine the tasks and responsibilities the PIO role should conduct. Those social interactions form implicit structures which often dictate how PIOs enact their emergency planning activities. The theoretical concept of agent and expected modes of conduct reveal how implicit structures form. This study reveals how two expected modes of conduct for local public health PIOs: 1). balancing multiple roles and 2). conducting media relations. Expected modes of conduct are formulated through social interactions between organizational members and often create organizational expectations for how the PIO role is enacted within the health department.

Across all four states, PIOs serving in multiple roles faced challenges of prioritizing work responsibilities, completing tasks as needed, managing the uncertainty of the outbreak, and working with limited staff resources. In addition to balancing multiple roles, PIOs conducted media relations activities. Across all four states PIOs

explained that media relations activities included coordinating messaging with local stakeholders, disseminating information to multiple publics, and following guidance provided by non-local entities such as the state health department and CDC. The following paragraphs provide examples of the similarities of implicit structures of the PIO role.

***Similarities of implicit structures of the PIO role.***

There are two similarities of the implicit structure of the PIO role. The first similarity is the expectation of the PIO to balance multiple roles during an emergency response. The second similarity is to conduct media relations activities during an emergency. This section will provide more detail on how these implicit structures of the PIO role were similar across the four states included in this study.

The first similarity of the implicit structures of the PIO role is the expectation to balance multiple roles during an emergency. Alice primarily serves as the Branch Manager for Health Information for a county health department in Kentucky and has worked in her position at a district health department for less than five years. She explains that enacting the role of a PIO during emergencies is difficult as many do not understand the role:

> I think this is the problem for everybody. Public information unfortunately is one hat of the multiple hats that people wear in their organization and a lot of times they don't even know what a public information officer is— like what they're supposed to be doing. And it's kind of the same here. I mean when I started I was told I was the public information officer and I'm like 'What is that?' So I had to research it and I've been trained and now I feel comfortable with that and it is a part of my daily routine because my branch handles all public relations for our agency.

Alice reveals that initially she was uncertain about how to enact the role of a PIO. She was not clear about the expected modes of conduct she would be called upon to perform. It is not uncommon for public health staff to misunderstand the role of a PIO. Here the absence of social interaction required Alice to look outside her health department to better understand the role of the PIO. She did her own research about the role and received training. The individual designated to serve in an emergency role ought to have the proper training to carry out such a critical role. One of the many functional responsibilities of a PIO is to disseminate accurate information to a variety of audiences who can then make informed decisions about protecting themselves from harm. For example, during the 2011 Japan nuclear power plant disaster, the Japanese government and US Embassy in Japan advised people to shelter-in-place to protect themselves.

While Alice was proactive and conducted her own basic background research about the functions of PIOs, health directors and emergency preparedness staff should work to ensure the designated PIO has the training and knowledge to enact emergency risk communication principles when needed. Further, health directors and emergency preparedness staff should also be trained in emergency risk communication since there social interactions with PIOs result in implicit structures that dictate the PIO's job duties.

For example, participating in the CDC's Pandemic Influenza CERC training would have provided Alice (and her colleagues) with specific skills to enact emergency risk communication. Alice's comments reveal how the interactions between organizational members revealed a lack of understanding of the PIO role. As a result, there were not clear expected modes of conduct for her to enact the role. In contrast,

social interactions between public health staff in a different health department in Kentucky played a major role in the enactment of the PIO role. Often times due to small staffs and decreasing budgets, PIOs often work in one or two additional positions without additional compensation. For example, Ron, who serves primarily as the training coordinator in Kentucky, said,

> And if I was a dedicated PIO I mean if that's all that I had to do it would have been easy enough but it was just a small part of what I had to do during this. I didn't have time to do all that is what it boiled down to.

Here Ron reveals that time was a major factor for him as he enacted the role of PIO. Like many other non-communication staff serving as the PIO during an emergency, his expected mode of conduct was to complete two fulltime positions. As a result, he was not able to perform PIO duties to the fullest extent because he had other job responsibilities to conduct. Karen, who works primarily as the administrative services manager in Kentucky, recalls struggling to balance her day-to-day administrative duties with her emergency PIO responsibility:

> So when we organized into ICS, I was supposed to be PIO and that was it. I would get so uptight about having to relinquish all control of the planning and scheduling for clerical support. Once we really kind of really got into it and started the school located vaccination clinics, I was needed as a someone to provide clerical support…. So carrying those two assignments I think that was when the germs started in the public health director's mind that if he could do it, he might need to be moving me to a full time communications assignment which is has in fact just happened.

Karen's example demonstrates the frustration of balancing two completely different roles and reveals competing expected modes of conduct. While organizational emergency policies mandate that Karen serve only as the PIO, her personal expected modes of conduct regarding her day-to-day job caused her to take on more job responsibilities than

she could handle. Fortunately, post-H1N1, she moved into a full-time communications position and no longer has to balance multiple roles. To capitalize on their community relationships, some Kentucky health departments designate health educators as emergency response PIOs. During non-emergency times, health educators focus their efforts on a variety of health promotion programs such as physical fitness, tobacco cessation, and safer sexual practices.

As health educators, these individuals often work in the community educating the public about health issues and establish a number of community relationships. During an emergency, the expected mode of conduct for health educators serving as PIOs is to disseminate information to community stakeholders. Marie works primarily as a health educator at a single county health department and worked in this role for more than ten years. She wishes she had more time to be involved with emergency preparedness activities, but her regular day-to-day responsibilities as a health educator make it increasingly difficult:

> We're a small health dept and I do anything that has to do with community education. That's my job. Whether its teaching nutrition to kids, tobacco, diabetes, you name it that's my responsibility and I want to be kept up to date, but I don't want to have to attend meetings that don't really have to do with me. Does that make sense? Because I really don't have time.

Like many others mentioned above, Marie too signals with the lack of time available to complete normal day-to-day duties as a health educator and participate in emergency planning activities. Although she is absence from planning activities, she is expected to provide emergency response support. Emergency response support activities for PIOs include information gathering, verifying and disseminating information. In

addition to emergency response, PIOs also have functional responsibilities during non-emergency times including developing media campaigns related to emergency preparedness and testing new emergency protocols. Susan serves primarily as a health educator for a district health department in Kentucky and has served in this role for more than ten years. She explained the role of a health educator as the PIO during an emergency is important because of the relationships she already has established in the community, and during an emergency "we just have to jump in and do the PIO part." Pam, yet another health educator, explained that during H1N1, she was responsible for disseminating the information to local businesses, day care centers, physicians' offices, and other local stakeholders. Again, both of these health educators are able to use the relationships they developed during their daily work responsibilities to dissemination emergency risk communication.

Rosie, who serves primarily as the public health director, but previously as the Director of Health Education, offers a unique insight into a new expected mode of interaction for those serving as health educators during non-emergency times. Health educators play an important role in educating the public on a day-to-day basis and often have well-established relationships with many different community partners:

> I think the role of health educator and PIO kind of go hand in hand, because your health educator focuses on promoting health and educating people. And when H1N1 came along, or any kind of outbreak, or any kind that requires emergency response, or information dissemination, I think it's your health educator who helps you with flyers, who helps you with, you know, delivering that information at a level that, you know, you're entire community could understand and relate to.

Local public health departments (LPHDs) in Kentucky capitalized on those relationships by placing health educators in the emergency PIO role. Unfortunately, other public health

staff will continue to deal with the pressures of conducting two full-time positions during emergencies. Despite being tasked with multiple roles, two California PIOs revealed how the expected modes of conduct for public health motivated them to complete their tasks. Pamela, who primarily serves as the Director of Health Education for a single county health department in California, explained:

> We look at it like more of the challenge—as kind of fun rather than ohmigod (laughter). We don't tolerate whiners in our unit (laughter). I mean because otherwise I mean that's kind of what public health is--because you're always going to have issues going on and you've gotta be able to have the capacity and the interest in trying to make that impact that somehow. Otherwise, all you're going to do is sit there and be a pencil pusher at your desk, which generally isn't going to help anybody.

Here Pamela's comments reveal the realities of working in a public health organization, and also the expectations of public health staff. Within her health department, the expected modes of conduct center around "capacity" and "interest" to make an impact within the community. Another county health department PIO in California, Diane also commented, "We did the very best we could and went above and beyond for what it is we had to do, because we felt like there was no choice you rise to the occasion to protect the public."

Pamela and Diane's experiences and their reactions are not uncommon. Their personal and professional resiliency is testament to the types of individuals who serve in emergency response professions, but also representative of a public health professional. For Pamela and Diane enacting the PIO role focused on completing the task in order to protect the public during an emergency. The second similarity of the implicit structures that impact the PIO role is the expectation to conduct media relations. In addition to

serving in multiple roles, conducting media relations is the second expected mode of conduct for PIOs. This study reveals there is an overlap between balancing multiple roles and conducting media relations activities. The following examples show how the two expected modes of conduct are not mutually exclusive. Ken, who serves primarily as the public health director for a district health department, explained that most often he enacted the role of a PIO:

> Because we're somewhat smaller agency I sort of wear two hats. One is the public health director and as the public information officer so most of the time I take that role. Occasionally the nursing director will also be stepping up into that role. Sometimes it depends on the nature of the inquiry. If it takes more of an approach towards clinical questions, the disease itself, or those kinds of things, because I'm not a clinician we would direct those things to her. If it's more of a policy question or just kind of strategic how we're handling the overall operation, that kind of thing that's where I would step into the role.

Here the expected mode of conduct impacts how Ken functions in the role of PIO. Ken's explanation of the PIO role is actually the description for a subject matter expert and a spokesperson. Often organizational members assume there is no difference between a PIO and spokesperson, but there are distinct differences. PIOs engage in information gathering, media relations and message dissemination; spokespersons are often subject matter experts or designated officials who publicly represent the agency. The spokesperson role often requires the individual to spend a significant amount of time interacting with the media, often on television.

When asked how she balanced the roles of PIO, emergency response coordinator, and interim public health director during the 2009-2010 H1N1 outbreak, Sandra, a North Dakota PIO based on a rural health department, replied, "I was busy. [laughter] I took responsibility. I took all of the media and all of the press stuff, you know, the written

work. I would put my designee in front of the camera." Sandra's comments reveal that she did not personally conduct media interviews, but rather she had a "designee" to assist. Within this context, the expected mode of conduct for the PIO role was coordinate media relations activities. Unlike PIOs in Kentucky, Sandra's enactment of the PIO role is one of coordinating media activities, not serving as the department's spokesperson.

Jim, who primarily serves as the health director for a single county health department in Kentucky, describes the expected mode of conduct for the PIO role as working with the media:

> Everybody had their expertise area, and I had a lot of contact with the media. Nobody else wanted to talk to the media. So that was my job to make the information was disseminated and talk to and do interviews and to talk to reporters.

Jim's comments reveal that no other organizational member wanted to talk to the media, so it was expected of him to conduct media relations activities. Additionally, based upon social interactions with other organizational members Jim learned that other staff had predetermined expertise areas. Almost by default Jim is designated the emergency PIO. Some health directors feel strongly that they should be the ones in front of the cameras and serving as the face of the health department.

This section described how public health staff enacted the role of a PIO during the 2009-2010 H1N1 outbreak based on expected modes of contact created through social interactions between organizational members. This section revealed two similarities of implicit structures that impact the PIO role.

The two similarities are balancing multiple roles and conducting media activities. The following section describes how explicit structures of the setting, or type of health department, impacted the enactment of the PIO role. This section highlights the differences across the four states included in this study.

**Explicit structures of the PIO role.**

The type of health department, or setting, takes the form of an explicit structure and dictates the involvement of the PIO in emergency planning and response activities. PIOs in New Jersey, North Dakota and California had the most relevant examples of evidence revealing how the organizational setting of a health department impacts the enactment of the PIO role. Most notably, New Jersey's health system and organization of LINCS agencies dictates emergency risk communication efforts. Although Kentucky's public health system is divided into single county health department or district health departments, the study did not generate data that revealed how the setting of the health departments in the state related to the enactment of the PIO role. Descriptive examples of how the explicit structures of the setting, or type of health department, is related to the enactment of the PIO role will be provided in the following paragraphs. These explicit structures highlight the differences in the explicit structures of the PIO role across the four states included in this study.

***Differences in the explicit structures of the PIO role.***

The difference in the public health setting was most noticeable in New Jersey, which has 112 local health departments and 22 of those local public health departments (LPHDs) are designated as LINCS agencies. The LINCS agencies often have a

communication officer to assist with emergency preparedness activities. This individual—titled the *health educator risk communicator* or HERC—focuses on public health education efforts in their respective communities. The HERC role is distinct from the PIO, which is commonly found in the other three states included in this study. The HERC is often not designated as emergency response PIO for the health department like in Kentucky, North Dakota and California. Instead, the PIO, who handles communication activities for the entire health department and is also often located in a different building than the HERC, is the lead emergency response PIO

Melissa, who work has worked a HERC for fewer than five years for a county health department in New Jersey, explained the differences between PIOs and HERCs: "I'm more outreach, community outreach and presentations, that's what I do more of than the PIO. The PIO strictly writes the press releases—information out to the public; I'm more you know I'm out in the community."

Here the structures of the New Jersey health system formally dictate who conducts emergency preparedness activities. As Melissa state, the HERC works on emergency preparedness community outreach and the PIO works on press releases. California and North Dakota PIOs also work emergency preparedness activities with their colleagues, but Kentucky PIOs serve as the PIO in a response capacity only. HERCs often do not serve in the emergency response PIO role either. In some cases, New Jersey health departments do not staff the PIO position, so the HERC will work with the PIO affiliated with the county government.

Although Susan, another HERC from New Jersey, fields media inquiries and reporters' phone calls, she is still required to send her press materials to the county PIO before sending them to the media:

> I'll write the press release but I have to send it to them to be "countified" … and if I get a call directly from a reporter, technically, I can't talk to that reporter until I've cleared it with them.

Susan reveals how she does not have the authority to disseminate press releases on behalf of the health department without first being reviewed by the county PIO. Her comments describe how the county PIO serves as mediator between the media and the health department. Having the county PIO "filter" media inquiries and review emergency risk communication messages creates an added organizational structure that has potential to constrain the emergency risk communication process. Again, the New Jersey public health system dictates that HERCs work with the county PIO, who has final authority regarding the department's media activities. Unlike Melissa, Susan is more involved with the media relations activities since her health department does not staff a PIO.

These examples from New Jersey reveal how most HERCs dictated to only serve as emergency preparedness community outreach. In one case, a HERC conducts more media relations activities, but did not specify if she worked on emergency response activities.

In North Dakota, health departments in urban and rural areas impacted the enactment of the PIO role. There are only 8 PIOs in the state that cover 53 counties, many of which are in rural areas. The following paragraphs highlight relevant examples from North Dakota PIOs.

In a rural county of the state, Sandra, who has served as a PIO for about two years, revealed two important characteristics about her role as an emergency communicator: there aren't many PIOs in her region and those PIOs often do not have emergency communication expertise. Sandra notes other community partners who often seek her assistance during emergencies know her expertise in emergency risk communication:

> The only other facility that actually has a PIO is one of our hospitals here. Yeah nobody else has a PIO and in fact our county emergency manager—if we had something that was going on countywide and he needed PIO assistance, he's going to call here for my help. So we kind of have a very small community and none of them have that ability. Except for our hospital does have one and when it comes to writing the plan we collaborate some, but her background is more marketing, and so when it comes to emergency response, it really kind of goes the other way. If they need advice or they need help, she calls me.

Here the setting of a rural health department impacts how she enacts the role of a PIO. Sandra's comments provide insight about how outside agencies value her position as an emergency communicator and acknowledge her expertise in that area. Since she is the only PIO in her community with this expertise, she has been able to cultivate working relationships with the hospital communications officer and the emergency manager. Despite the rural location, small staff, and lack of additional PIOs in the region, she is able to fulfill her responsibilities as PIO and two other public health staff positions, provide communication assistance to other community partners, and serve as a emergency communication expert.

In addition to rural and urban setting, the setting of local health department versus the state health department also impacts the PIO role in North Dakota. During the 2009-2010 H1N1 outbreak, local health departments were tasked disseminating messages, not

the creating them. Mark, a North Dakota PIO who has worked in the health department for four years, highlighted the state's activities during the 2009-2010 H1N1 outbreak. Mark revealed the state health department created a specific health communication campaign about the priority groups:

> The state put together a campaign of a few television ads. And the state did [a campaign] where it just talked about the importance of getting the vaccine, what the priority groups were, why they were developed. One of them was a woman who was pregnant talking about why she was getting the H1N1 vaccine. Pregnant women were very high on the priority list. The state did that.

Mark's comments highlight that the expected mode of conduct for local public health PIOs in North Dakota was primarily focused on getting information and vaccine out to the public. The role of the state health department was to create messages and health communication campaigns educating the public. Ann, the PIO at the North Dakota state health department, mentioned developing education materials that were disseminated to LPHDs, who in turn distributed the materials to various local community partners.

Being at the state health department, Ann had a different expected mode of conduct that her counterparts at the local level. Ann had the opportunity to provide vital input for communication strategy and message creation. It is unknown if the local level PIOs were able to provide any input to the state about the creation of emergency risk communication messages. Further, because Ann was located at the state health department, her setting was vastly different from the PIOs at the local level. Due to the organization of the public health system in the United States, state health departments often have more overall power than local health departments. In North Dakota, the state health department often mandated what types of emergency risk communication

messages were created and disseminated across the state. Again, being situated at the state health department impacted the enactment of the PIO role. New Jersey and North Dakota reveal how the settings of health departments in those states were related to the enactment of the PIO role. For one PIO in California, being situated within an integrated health system and not an actual health department played a role in how she enacted her role as a PIO.

Mary, who has served as the Communication Officer last two years in California, explains that being situated in an integrated health system in California resulted in more collaboration with other units. The communications unit worked closely with other departments on pandemic influenza planning specifically related to emergency communication:

> The communications unit and the PIO were very, very involved in this kind of planning. We have a crisis and emergency risk communication plan and our whole health system is really committed to working proactively with the media and we recognize that communications internally and externally was really vital to any type of planning for pandemic for a pandemic response so we were involved from the very beginning.

Mary reveals that within the health system in which she is employed, the system valued the input of the communications unit in pandemic influenza planning. As a result, the communications unit was heavily involved in the planning process. Since the PIO and the communications unit was situated in large integrated health system, there were ample in-house resources available to create emergency risk communication materials. In fact, the integrated health system received funding as an advanced practice center from the federal government. Advanced practice centers often developed communication materials that became resources for other health departments.

In Kentucky, PIOs were situated in either single county health departments or district health departments. District health departments serve multiple counties within the state. PIOs in both single county and district health departments did not provide any information that suggested the differences in the type of health department impacted the enactment of the PIO role.

Analysis of interview data related to research question two revealed profound differences in the setting or the type of health department across the four states included in this study. The setting or type of health department provides the primary explicit structures that impact the enactment of the PIO role. Most notably, the setting of the New Jersey health system creates the HERC role which is not found in the other three states included in the study.

There were differences in the PIO role for those located in rural health departments or at the state level. Although single county and district health departments exist in Kentucky, this study did not yield findings that revealed how those settings impact the PIO role. One California PIO revealed how being an integrated health system rather than a county health department impacted her role as a PIO.

**Summary**

This summary answers the second research question by summarizing key findings and providing a micro within-state analysis. There are three key findings for the second research question. First, there are two similarities in how the PIO role is enacted in the four states included in this study.

First, all emergency response PIOs are expected to conduct media relations activities; second, a majority of PIOs are expected to serve in multiple roles during an emergency response. The third key finding for the second research question focuses on the differences found in the organization of each state's health system. The following paragraphs will provide more detail related to these key findings.

Regarding the PIOs' similarities, all four states reported challenges of serving in multiple roles during an emergency response. This was most apparent in Kentucky and California where individuals serving in non-communication staff positions were designated as the emergency PIO. Based expectations created by public health staff and even community agencies, PIOs were expected to competed normal day-to-day responsibilities in addition to emergency response activities, including enacting the role of PIO. Many of the individuals serving in the emergency PIO function did not receiving additional compensation for the additional work, but health department leadership expected their organizational members to assist as needed for an emergency response. As a result, the PIO role is designated to already overtaxed individuals who may have communication background, such as health educators or health education managers, or it is designated to someone in emergency preparedness and response who does not have any communication training.

While some PIOs cited benefits to serving multiple roles, including subject matter expertise and pre-established professional networks, many struggled to prioritize work responsibilities, complete designated tasks, and manage the uncertainty of the event while working with limited staff resources. Overtaxed individuals and individuals with no

communication training are limited in their ability to enact the PIO role to its fullest potential. The second similarity across the four states focused on emergency response activities for the PIO. All four states report the enactment of the PIO role to include some form of media relations. Media relations activities included writing press releases, coordinating information from federal partners, organizing press conferences, conducting media interviews, and prepping spokespeople. The enactment of emergency response activities was also dependent upon the type of emergency response plans that were created and the involvement of the PIO in emergency planning activities.

As Chapter Four revealed, the basic emergency plans in place prior to the 2009-2010 had permeability allowing the PIOs to adapt the plan to emerging situation. PIOs were able to use pre-developed templates, talking points and other communication materials as they facilitated media relations activities. However, the enactment of the PIO was often dependent on the emergency plans to guide their actions; so if the plans were more in depth, the PIO had a more in depth guide. If there was no plan, then PIOs had foundation to support their emergency response activities. If PIOs had a worst-case scenario plan, they often discarded that plan and developed new materials.

In addition to these three similarities, there is one major difference in how the PIO role is enacted across the four states included in this study. This major difference is based upon the setting or the type of health department where the PIO is located. The explicit organizational structures of the public health systems across the states dictate the enactment of the PIO role. Each state included in this study has a different organizational setting for their public health system. For example, in New Jersey the role that

coordinates emergency risk communication efforts is dubbed the Health Educator Risk Communicator (HERC). The HERC position focuses on education and coordination of emergency preparedness and response activities. HERCs interviewed for this study do not formally serve as the emergency PIO; instead they assist the health department PIO or county PIO as needed. There were differences in the PIO role for those located in rural health departments or at the state level, but there were only a few PIOs that mentioned those differences. Additionally, although there are single county and district health departments in Kentucky, this study did not yield findings that revealed how those settings impact the PIO role. One California PIO revealed how being an integrated health system rather than a county health department impacted her role as a PIO. Overall, while it is likely that the organization of the PIO's health department impacts the role of the PIO, this study only found strong evidence of this occurring in New Jersey. Whereas the second research question focused on the role of the PIO, the third research question focuses on the relationships the developed by the PIO before and during the 2009-2010 H1N1 outbreak. The next section provides the answers the third research question.

**Research Question Three: In what ways are institutionalized processes related to PIOs' internal and external partnerships?**

The results and analysis for the third research question are related to institutionalized processes (e.g., working partnerships of emergency preparedness and response) and focus interview responses related to PIOs' collaborations with public health staff, community organizations and national organizations. Based on the data generated in the interviews

and using the sensitizing concept of institutionalized processes, the author looked for how the concept of institutionalized processes manifested in the PIOs' interview transcripts. For example, during their interviews PIOs described how NIMS and ICS often dictated the relationships health departments established with other government agencies, non-governmental organizations (NGOs) and the private sector during emergencies at the local and state level. Based upon their descriptions of their relationships, the author developed a descriptive classification system of the PIOs partnerships. The author created three classes: internal partnerships, locally-based external partnerships, and nationally-based external partnerships. First, internal partnerships were those found within the PIO's health department. Second, locally-based partnerships were those partnerships that were developed external to the health department. Third, externally-based partnerships were those that were external to the health department and the state where the PIO was situated.

In order to answer the third research question, a general macro description and analysis of institutionalized processes for local internal partnerships will be provided. Next a general macro description and analysis of institutionalized processes for local external partnerships will be provided. Then a general macro description and analysis of institutionalized processes for external national partnerships will be provided. Finally, a micro within-state analysis is provided in the section summary. The next section provides a macro description and analysis of institutionalized processes for local internship partnerships.

***Institutionalized processes for local internal partnerships.***

Previous research using structuration theory (Garner, 2006; Nicotera, 2008; Witmer, 1997) examines how internal and external relationships are produced and reproduced through various social interactions of individuals and groups within organizations. This is relevant to the formation of working relationships between PIOs and public health staff. As the first section revealed, often times PIOs had limited involvement in pandemic planning activities. Additionally, Poole and Dobosh (2010) explain that structures can be generated by the organization, but more often they are appropriate from existing institutions. Organizational structures already in place within a health department are likely to dictate the involvement of PIO with other public health. For example, if a PIO was not previously involved in emergency planning activities prior to the 2009-2010 H1N1 outbreak, then it is likely the PIO would not be involved for future emergency planning activities.

Based upon participants' stories and examples generated through interview data, PIOs reported working with a variety of public health staff including emergency preparedness staff, epidemiologists, public health directors, health officers, immunization coordinators, communicable disease control specialists, medical directors, clinical supervisors, nursing staff, environmental health, home health, bioterrorism and training coordinators. This study found there was no consistency in which divisions or individuals PIOs worked with for pandemic planning; often, the emergency preparedness division and, specifically the preparedness planner, would write all of the emergency response plans. Depending on the personal working relationship the PIO had with the planner or

planning division, the more or less involved he or she was in pandemic planning; however, more often than not, the PIO is solely responsible for any emergency communication planning. The relationship between the PIO and other staff who are involved in emergency preparedness is often an organizational constraint developed by institutionalized processes of that particular organization. For health departments that responded to many previous emergencies and incidents there was a greater emphasis on including PIOs in emergency preparedness and response activities. For those local public health departments (LPHDs) that had less experience, often times public information was distinctly separate from planning and response activities. Depending upon the institutional memory of each health department, institutionalized process regarding local internal working relationships differed.

PIOs included in this study reported varying degrees of working partnerships with other public health staff. For example, Some PIOs are often directly engaged with their emergency preparedness division and plan writing. Al, a health director for a single county health department in Kentucky, provided an example of his interactions with the emergency preparedness division:

> I have been planning activities in all aspects of it from setting PODs with putting together the information we would be getting out to the public as well as setting together for the roles of our nurses as well as the other roles within our organization.

Al's interaction with the emergency preparedness division focused on both the logistics of vaccine distribution, but also public information efforts. They worked together to ensure all public health staff was aware of their role in an emergency response. While Al

directly interacted with his emergency preparedness division, Marie, who has served as a health educator for ten years in Kentucky, was less engaged:

> My role is to educate the public and to try to prevent any panic and everything like that. So I don't know other than maybe if there are changes in the plan to be more up to date on it because I'm not the emergency planner. [The emergency planner] goes to all these emergency planning meetings and everything like that and they're making changes that they know are necessary, but I might not always be aware of those changes.

Marie was much less engaged with her planning division because her daily responsibility is not emergency preparedness, and her department hired "risk planner" whose responsibility is plan writing. However, Marie did express concerns that in her absence changes could be made and she would not be notified. In contrast to Marie's situation, Helen, who primarily serves as the director of nursing for a single county health department in Kentucky, is very familiar with emergency preparedness activities:

> I've been a public information officer for many years before we had preparedness planners. I did all of that and now we do let her take the lead on things like this now lots of times if people are coming in and wanting to know the medical aspect of it or what symptoms are people experiencing I do that but lots of times in the preparedness and the community preparedness she takes the lead as far as what can you do to prevent the influenza from you know affecting your family, affecting your worksite, you know she will do that. I handle more the medical part of it when people are wanting to know symptoms and those type of things.

Here Helen reveals that her department's preparedness planner developed relationships with other hospitals, and as a result, Helen used the planner's relationships during H1N1, but she did not mention developing those relationships herself.

The relationship between the PIO and emergency preparedness division is crucial because if PIOs are to rely upon emergency response plans written by a specific planner, the PIO ought to have knowledge of what is in those plans and how the emergency

response procedures are to be enacted. Mark, who primarily serves as an environmental health specialist for a single county health department in Kentucky, explained his involvement in planning:

> Well I'm involved with a lesser extent because I'm communications but we have the disaster plan and our disaster coordinator runs that. And that's their main job they work with that all the time. And then when it comes to down to communication they just call me and talk to me about what would be necessary would they need to do what would we need to do to update it but I don't through and update it every two years or something like that.

Again, the relationship between the PIO and the emergency planner is critical. If communication is included in the emergency response plan, the PIO ought to be included to share his/her expertise about emergency risk communication. Further, if the PIO is not included in the planning process and if any changes are made to the plan, the emergency planner ought to notify the PIO of the changes.

While Kentucky PIOs reported varying degrees of working partnerships within their health departments, some California PIOs were more involved with their public health staff. Mary, a PIO based in California, explains how her communications unit assisted with the pandemic influenza planning:

> Our health and emergency response unit which is responsible for the pandemic flu planning got to be in the same office as us so we worked very very closely with them. We know them really well they rely on us for a lot of the risk communication. A lot of back and forth just kind of assisting we helped them a lot with the plan.

Mary's team was physically located next to the emergency response unit, and as a result, the two teams worked closely together on planning and response activities. As the two teams continue to work together, their social interactions are likely to lead to future

collaborative activities. The more collaboration the two teams have, the more likely their interactions will lead to new institutionalized processes for that organization.

Joan, another California PIO based at a county health department, mentioned working directly with her communicable disease unit; her interactions with them resulted in developing messages:

> I got involved with helping them come up with how do we get the information out to the public so the public knows who is who we're going to be, who's qualified to get shots, who were the target markets for immunizing and so on. We drafted, you know, the guidelines, you know, we did the press releases, we set up interviews with all the media, we kept all of the people that we work with involved.

Joan directly worked with the communicable disease unit to develop emergency risk communication messages. The communicable disease unit at her health department was in charge of responding to the 2009-2010 H1N1 outbreak, so they participated in conference calls with the CDC to receive the most accurate information available. As a result, the communicable disease unit acted as subject matter experts (SMEs) and provided Joan with the content she needed to develop emergency risk communication messages.

For Kentucky and California PIOs, institutionalized processes related to communication officers working with emergency preparedness units often impacted the level of involvement the acting PIO had with other public health divisions. The comments from Kentucky PIOs reveals a disconnect between emergency risk communication activities and overall activities. In comparison, California PIOs report working with other internal divisions as needed.

In addition to using local internal working partnerships for emergency risk communication efforts, external working relationships were also established between public health PIOs and other agencies. This section highlighted the institutionalized processes that impact working relationships PIOs formed with other public health staff. This study found—across the four states included in this study—there was no consistency in which divisions or individuals PIOs worked with for pandemic planning; often, the emergency preparedness division and, specifically the preparedness planner, would write all of the emergency response plans. The relationship between the PIO and other staff who are involved in emergency preparedness is often an organizational constraint developed by institutionalized processes of that particular organization. For health departments that responded to many previous emergencies and incidents there was a greater emphasis on including PIOs in emergency preparedness and response activities; for those local public health departments (LPHDs) that had less experience, often times public information was distinctly separate from planning and response activities.

The following section describes and analyzes the institutionalized processes of partnerships with locally-based first responders. Additionally, this section highlights the partnerships PIO formed with other communication officers within those first responder organizations.

***Institutionalized processes for local external partnerships.***

NIMS and ICS strongly encourage first responder organizations to collaborate with other government agencies, non-governmental organizations (NGOs) and the private sector during emergencies at the local, state and federal level. Here NIMS and ICS take

the form of institutionalized processes that mandate what types of organizations a health department should collaborate with during a public health emergency. Often community-wide emergency response exercises, drills, and table-top discussions require PIOs to attend and participate. During such events, PIOs are able to meet with and interact with other communication officers. These social interactions, if continued over time, lead to institutionalized processes that impact how such external partnerships will be used during an emergency response.

Based on participants' stories and examples generated by interview data, PIOs in all four states reportedly worked with other health departments, hospitals, long term care facilities, first responders, private providers, media outlets, EMS, emergency management, law enforcement, educational institutions, the mayor's office, the media, and county government. Educational institutions, hospitals and private providers were the reported most frequently as a working partner during the 2009-2010 H1N1 outbreak. Some of these working partnerships were already written into the health departments' emergency response plans. For example, in many of the emergency risk communication plans, specific protocols were listed about contacting media outlets.

Locally-based external partnerships with other traditional and non-traditional first responder organizations were often formed based on the recommendations outlined by NIMS and ICS. As a result, NIMS and ICS were the institutionalized processes that lead PIOs to work with these types of organizations. Barbara, a county-based PIO in California, explained that the "partnership that we have with our schools, with tribal partners, healthcare providers really benefited our ability to spread communication

messages through those entities." While working with these local partners, PIOs could tailor messages for different audiences based upon their needs. For example, Carol, another California-based PIO, described how different partners had different information needs. She developed specific communication materials for clinical and non-clinical audiences in the "health world." And upon request, the health department would develop non-medical flyers that physicians could then hand out to her/his patients.

PIOs reported the benefits of working with local external agencies for two main reasons. First, local external partners helped with disseminating up-to-date information about the evolving outbreak and availability of vaccines. Second, public health was able to control the consistency and accuracy of the information provided to the public.

Previous risk and crisis communication studies have focused on organizations that assist during emergency and crisis responses, but they have failed to analyze the relationship between the communication officers involved in the response. This study reveals that often times PIOs develop their own working partnerships to assist with emergency risk communication efforts. Many of these relationships are established due to NIMS and ICS requirements, but other times the relationships emerge during the response. The following section will describe the relationships public health PIOs created with other PIOs and how these relationships were or were not the function of institutionalized processes of the health department.

***Institutionalized processes when working with other PIOs.***

While NIMS and ICS often dictated what organizations PIOs should work with during public health emergency planning and response activities, some PIOs formed

working partnerships directly with other communication officers. Often times these relationships were initially informal social interactions that over time created institutionalized processes. These institutionalized processes lead PIOs to develop coalitions or networks to assist with public information efforts during an emergency. This section will describe the institutionalized processes used when worked with other PIOs and communication officers.

Many PIOs who participated in this study highlighted the importance of working PIOs from other agencies. Often PIO-specific working groups are established based to working relationships developed during emergency trainings and exercises. Additionally, as first section's findings revealed, PIOs often balance multiple roles during emergency responses. Networking with other PIOs ensure, at least, informal and unpaid assistance from another trained emergency communicator.

Mary, a California PIO, explained:

> I participate in a countywide PIO group with all the different agencies. The PIOs from those groups get together and they know each other and we drill together. So we already know each other and we know PIOs you know at city agencies you know at the hospitals in the area and just knowing the and having those relationships makes it easier for us to disseminate our messages and they're able to use our message as well that we're all of the same page when we're talking about a particular health issue like with H1N1. That was really important.

Mary's comments reveal that due to previous emergency exercises, relationships had already been established. Social interactions based upon previous engagements created processes that became institutionalized over time. As a result, during the 2009-2010 H1N1 outbreak, those pre-developed relationships then created an institutionalized process for PIOs to work together. Mary explains the benefits of working with other

PIOs, because those communication officers and their agencies ultimately extend the reach of messages, but also ensure consistency of messages. Reaching multiple audiences with consistent messages are basic tenets of emergency risk communication.

Barbara, another California county PIO, also commented on the importance of working with fellow PIOs:

> We're a smaller community to its easier for me to know them by name, and I work with them regularly on other communications efforts. For instance, we have a mass media campaign we've been doing for the last 5 or 6 years on healthy eating increasing physical activity to families. Because I had those relationships established it was easy to connect pretty quickly and coordinate messages.

Barbara's comments reveal that the working partnerships during non-emergency times provide opportunities for PIOs to get to know each other and develop relationships. As a result, during emergencies, the other PIOs are ready to assist if needed. Again, these previously established relationships are the foundation for institutionalized processes that are enacted during an emergency response.

Diane, who also works as the Director of Heath Education for a health department in California, also worked with an established PIO group, dubbed the Public Information Network (PIN):

> We had this relationship with the PIN and I had a strong relationship with a lot of other PIOs so that when I pushed things out to the group, they in turn pushed it out to their employees—like we talked about and it really helped extend our reach in a really meaningful way.

For Diane, the PIN group was created out of her drive to bring together communication officers to train with and support each other. After she formed the group she also served as President. Although no longer serving in a leadership role, she is still very active with

the PIN group. As Diane's comments reveal, the external partners were able to extend the reach of the messages, and by using the same materials developed by public health, the messages stayed consistent within the county. Although most California PIOs describe the benefits of working with other communication officers, Joan, a California PIO who works in an urban area, did not work with other public health PIOs:

"You know I was so swamped. I would not have had time to do conference calls. I was way too busy trying to take care of things here." Joan has worked in her position for over a decade and feels confident in her ability to perform her PIO duties without being directly connected with other PIOs.

In Kentucky, Alice, who works for a district health department in Kentucky, and Anna, who works for a single county health department, both have established regional PIO groups. Alice explained:

> We have a regional public information officer group that is made up of hospital PIOs, health department PIOS, police, fire, EMS, emergency management, schools—the whole spectrum. For the most part it is people that fall under the public health infrastructure.

PIOs often find that established communication coalitions are extremely beneficial during emergencies, because they can offer additional resources as needed. Alice's comments reveal that most of the agencies involved in the PIO group are from the public health infrastructure. As a result, this group's structure is mainly based upon institutionalized processes of the public health system. As a result, there may be some agencies that are not currently a part of the group, but should be due to their potential involvement in an emergency response. Anna, a PIO for a single county health department, was the former chair of her regional PIO group and, while in a leadership

position, worked to ensure a strong representation of public health agencies. Anna explained that the coalition was developed as part of a regional grant project focused on pandemic influenza. In addition to drills, the PIO group was actively involved in responding to a large windstorm in September 2008. Again, interactions from previous emergency response provides a foundation for these relationships to become institutionalized processes over time. There were many PIOs did not have a coalition developed prior to the 2009-2010 H1N1 outbreak, and some Kentucky PIOs are in the process of building them now. Rosie, who primarily has served as the health director for the past five years in Kentucky, explained why she wanted to build a coalition of PIOs:

> All of us together who could potentially be in the same group where, you know, we each have our role in public information. But if we each have our role in public information—if we only show up at the table in the event of an emergency, I think there could be that lack of trust or understanding of each other's position. So I guess my goal would be some sort of coordination effort to have quarterly meetings like they do in other emergency preparedness groups to bring together just public information officers. So that would be my mission to maintain and build relationships prior to an event happening.

Rosie acknowledges that building relationships prior to an emergency helps build trust between individuals, but building trust takes time. The development of any working partnership needs time to develop. As the California PIOs revealed, many of their established PIO coalitions were based upon relationships generated by working together during previous emergency exercises. As a result, those social interactions became institutionalized processes over time. As Kentucky PIOs begin to formulate PIO coalitions, the process of time and continued social interactions will help institutionalized those working partnerships as a part of their emergency response plan.

Ron, who primarily serves as the training coordinator for a health department in Kentucky is also interesting in building a PIO coalition. He offered this perspective:

> What I would like to do is I would like for public information officers within our four counties, alright, and I'm talking about hospital healthcare spokespersons, school spokespersons, EM. And I would like to bring that group together and actually develop a joint information system, you know, to develop a plan for how our jurisdiction, our multicounty jurisdiction so that there is communication so it functions like a joint information system is suppose to function.

Here Ron cites ICS and NIMS structures specifically and wants to adhere to already established emergency protocols to ensure a proper mechanism is in place for the next major event. While other studies have highlighted organizations assisting with emergency responses, this study reveals how public health PIOs used institutionalized processes to establish PIO coalitions. For those PIOs who did not have pre-established working relationships during the 2009-2010 H1N1 outbreak, some are looking for ways to create new institutionalized processes with other PIOs to ensure working partnerships during an emergency.

This section revealed institutionalized processes PIOs used when working with other PIOs. Across all four states, PIOs reported the benefits of working with other communication officers during the emergency. If PIOs had not established networks with other communication officers prior to the 2009-2010 H1N1 outbreak, they reported wanting to establish networks before the next emergency occurs. The following section describes institutionalized processes that were formed as PIOs worked with nationally-based external partners.

***Institutionalized processes when working with national external partners.***

Based on participants' stories and examples generated from interview data, PIOs consistently cited their respective state health department, CDC and the National Public Health Coalition (NPHIC) as constant sources of information during the outbreak. PIOs' partnerships with their state health department, CDC and NPHIC are all based on social interactions that occurred over time. While the state provided guidance to LPHD, CDC and NPHIC provided PIOs with other kinds of information: internal, or non-public, information about how the federal government and other states were responding to the outbreak. PIOs appreciated hearing what CDC and other states were doing to respond to H1N1. This section reveals the institutionalized processes that were used as PIOs worked with nationally-based external partners. Janet, a California based PIO, explains that CDC was also a great resource: "The CDC had established a great website early on, with basic information, updates, fact sheets, etc. This was invaluable. We regularly linked to this page from our website."

PIOs not only cited the CDC with providing information and emergency risk communication messages, but NPHIC was also a reliable resource. NPHIC is membership based organization for PIOs, but often health departments require PIOs to be a member due to grant funding. As a result, being a member of NPHIC is an institutionalized process for PIOs whose health department dictates their membership. Richard, a California PIO, explained the role of NPHIC in providing information to PIOs during the 2009-2010 H1N1 outbreak.

> So NPHIC was key and, obviously, as part of that the Centers for Disease Control that's really where the information was coming from, but NPHIC was really a

> rapid fire distribution mechanism for coordinating conference calls and keeping us on top of all the developments just as soon as the information was known.

Richard highlights how these external national partnerships provided PIOs with up-to-date information about the evolving outbreak. Many of the interviewees from NJ also credited NPHIC and CDC with providing local health departments with information about the outbreak. Angela, who has worked for a regional health commission in New Jersey for the past six years, mentioned how she was able to capitalize on the working relationships with CDC and other federal agencies when disseminating information to others:

> We utilized things that the state and the CDC and the Feds had available like panflu.gov. We definitely disseminated those through our local health departments and hospitals as best that we could. Our role here at Marietta Regional is always to be a resource and rather than reinvent the wheel if somebody's got something there already we'll just help get it out there.

Angela comment's reveal that she trusts CDC as a source of credible information and works to make sure that information is then shared with her local community stakeholders. Her dependence on CDC is institutionalized process because CDC, as a federal agency, is the lead agency for the emergency response. She relies upon the federal government to provide her with accurate and up-to-date information on the evolving situation before her local media learns about it. Angela is also a NPHIC member and has a direct link to CDC because of that membership.

Overall, PIOs reported positive experiences in working with both internal and external partners, but there were a few challenges. Janet, who primarily works as a health

program manager for a single county health department in California, wrote the following in email communication to the author (respondent emphasis):

> One of the BIGGEST challenges, in my opinion, was that the CDC (particularly early on) was so dire in their communication to the public. While this did get people's attention, and motivated people to take precautions, it did create a bit of a panic among some people in the community, and I do believe that there is now somewhat of a backlash and skepticism among the public and media because things never got that bad.

Here Janet focuses on CDC's emergency risk communication messages and how, as the lead agency was responding on a national level, those national messages impacted how LPHD responded to local inquiries about the ongoing outbreak. Janet mentioned another issue with national partners; they wouldn't give LPHDs notice about messages or information CDC was going to be releasing:

> If the CDC had given us more notice, we could have been better prepared. During the H1N1 response, particularly during the first month or so, there were many telephone conference calls with the state and CDC, and a flurry of emails from these and other organizations. In fact, in my opinion, there were TOO many different teleconference calls and emails.

Janet's comments reveal the overload of information was CDC became detrimental to her ability to conduct emergency risk communication efforts. She felt she that participating in conference calls with the CDC would impact her local efforts, and she chose not to participate. Here Joan reveals that although an institutionalized process was in place, she chose not to enact that social structure.

PIOs came to trust that CDC would provide them with insider or non-public information. However, PIOs cited some inconsistencies in CDC's insider messages to LPHD. Sandra, a PIO from a rural health department in North Dakota, also remembered feeling frustrated with CDC's mechanism for providing internal information to PIOs:

> You know I would say my one frustration and as a public information officer that I found frustrating was the lack of information coming from CDC to the public information officers on the local level about what they were going to be putting out to the public. I know I belong to NPHIC and we got an email one day saying 'Nope, the CDC's not going to release this until Monday,' and I don't even remember what it was…. The next day and I went home and read my MSN and they had released it. It had local impact and I had local media calling me at home and if I hadn't have went home and read that on MSN I wouldn't have know why they were calling me. We didn't get anything from the CDC about public information until the public was getting it.

PIOs assumed they would be among the first to know if CDC was doing something that would impact their local response to H1N1; however, here Sandra reveals that CDC was inconsistent with provide that internal information. While sharing information during the early stages of an emergency is vital, the information ought to be helpful for PIOs when creating localized messages.

Since CDC is often designated as the lead response agency for public health emergencies for federal government, the agency deals with the complexities of handling dual roles. CDC must first act as a responding agency and gather situational awareness about the event and that share that information key stakeholders. However, CDC provides guidance to state and local health departments. As a result, CDC's response functions, such as dissemination information on a national platform, impacted the response of LPHD. In conclusion, this section highlighted PIO working partnerships with both internal and external entities. The partnerships proved helpful for PIOs disseminating information to the public about the 2009-2010 H1N1 outbreak; however, there were some challenges with the external, national partners.

**Summary**

Key findings associated with research question three are amplified by a micro-level within-state analysis. Prior to and during the 2009-2010 H1N1 outbreak, PIOs and LPHDs developed working relationships with public health staff, locally-based first responder organizations, and nationally-based organizations. These working relationships form the following three categories respectively: local internal partnerships, local external partnerships, and national external partnerships. This summary will compares and contrasts the key finding across the four state included in this study.

PIOs local internal relationships with public health staff were inconsistent across the four states. The creation of these partnerships prior to or during the outbreak was often linked to institutionalized practices of that LPHD. For example, health departments that responded to many previous emergencies and incidents there was a greater emphasis on including PIOs in emergency preparedness and response activities.

For those LPHDs that had less experience, often times public information was distinctly separate from planning and response activities. This study suggests this lack of PIO involvement in planning activities could have occurred for a few different reasons. First, the emergency plan writer could simply be focused on completing the assigned task. The task-oriented nature of emergency preparedness and response activities sometimes unintentional silos individuals. Second, the emergency designated PIO may have no communication training or expertise in emergency risk communication and opted not to participate in emergency planning. Third, the relationship between the planner and the PIO may not exist because of a combination of the previous two reasons. If the PIO is

not involved in any planning activities, the notion of separating emergency preparedness from public information becomes an institutionalized practice. In turn, these institutionalized processes can—for better or worse—dictate the working partnerships between the PIO and other public health staff. Boundary spanning literature explains that organizational members with many internal working relationships are likely to be more influential in internal decision-making. If PIOs do not have many internal working relationships they are likely to be less influential within their own health department.

In addition to PIOs' relationships with public health staff, working partnerships with locally-based first responder organizations were often created through institutionalized processes of NIMS and ICS. Often locally-based external partnerships were formed based upon institutionalized processes generated by NIMS and ICS. For local external partners, PIOs consistently named the same working partners; they also cited K-12 educational institutions, hospitals and private providers most frequently.

Some Kentucky PIOs reported "turf issues" with educational institutions in their community, but this is likely due to a lack of emergency planning with them prior to the 2009-2010 H1N1 outbreak. In addition to working with traditional first responder organizations, many PIOs cited the benefits of working directly with communication officers from those organizations. The PIOs who were involved in PIO-specific coalitions reported many benefits associated with this particular partnership including the extended reach of the message and overall consistency in the messages. Even PIOs who reported informally worked with other PIOs, such as calling to inform them of new information or coordinating media efforts, also discussed the benefits of such a relationship.

The third and final category focused on nationally-based external relationships. PIOs in all four states were consistent in naming the CDC and NPHIC as nationally-based external partners. The relationships with the CDC and NPHIC were beneficial to PIOs in providing needed information during the outbreak. The institutionalized processes that lead to the formation of these relationships often depends on PIOs previous involvement with these organizations. For example, in North Dakota and New Jersey, all PIOs belong to NPHIC. This institutionalized process was formed because PIOs at both state health departments were actively involved with NPHIC and encouraged all PIOs to join the organization. However, for PIOs in Kentucky and California, their participation varied. Most notably, many Kentucky PIOs were not members of NPHIC and had never heard of the organization before the author mentioned it during the phone interview.

In conclusion, this chapter provided the results and analysis of interview data related to the three primary questions posed by this dissertation study. This chapter explicitly answered the three research questions using a general macro approach as well as specific micro-level within-state analyses. The next chapter will highlight the study's implications, limitations, future directions and overall conclusions.

## Chapter Five: Conclusions and Implications

The purpose of this study was to better understand structures, roles and relationships that were present during local public health's emergency response to the 2009-2010 H1N1 outbreak. More specifically, this study analyzed how organizational structures facilitated and constrained emergency risk communication, how the role of a PIO is enacted similarly or differently in the four states included in this study, and the types of relationships that PIOs developed and maintained during the 2009-2010 H1N1 outbreak. An interpretative analysis of interview data with individuals who served as the emergency response PIO during the 2009-2010 H1N1 in four states was conducted. Structuration theory and, specifically, the theoretical concepts of duality of structure, agent, and institutionalized processes were used to develop the interview guide and frame the subsequent analytical inductive data analysis process (Patton, 2002).

This study explores the 2009-2010 H1N1 outbreak retrospectively, analyzing the work of PIOs before and during a national public health emergency. Other communication studies focusing on PIOs have studied the structures surrounding the role of PIOs. Instead previous research focused on how PIOs frame messages and disseminate emergency information (Avery & Kim, 2009; Avery, Lariscy & Sohn, 2009).
This study sought to add knowledge to the risk and crisis communication literature by viewing PIOs from the perspective of organizational structures. This study also has findings relevant to previous risk communication best practices research (Seeger, 2005; Sellnow & Vidoloff, 2008; Vidoloff & Petrun, 2010).

The following sections provide implications of this study's research based on the study's findings outlined in Chapter Four. After the conclusions and implications are stated, limitations and future direction are discussed, followed the study's overall conclusion. The conclusions and implications are organized according to the three research questions pursued in this study.

**Research Question One: What are the implicit and explicit structures that constrain and facilitate emergency risk communication produced by public health PIOs during the 2009-2010 H1N1 outbreak?**

This study revealed that organizational structures can and do constrain emergency risk communication efforts. The structures that constrain how PIOs conduct emergency planning and response activities are often dictated by policies and procedures that are established without the input of the PIO. For this study, organizational structures that constrain emergency risk communication are emergency response plans and the emergency response structures of NIMS and ICS.

Previous best practices research in risk and crisis communication advocates that practitioners continuously update and evaluation emergency response plans, but it does not explicitly state who should write, update and maintain plans (Seeger, 2005). Further, best practice research fails to offer any specific recommendations related the construction of the emergency response plans. For example, current best practice research fails to explain what types of materials are most helpful to emergency responders and, specifically, PIOs during an emergency response. This study provides evidence that PIOs with plans that included SOPS, pre-developed materials and contact lists were able to

effectively apply those plans during the 2009-2010 H1N1 outbreak. Having the pre-developed materials provided PIOs the opportunity to update materials and quickly create emergency messages. This study also provides evidence suggesting that PIOs should serve as communication advisors during the emergency planning process. Specifying this role extends and clarifies current best practice research related to emergency plan development and evaluation. PIOs often have a vast wealth of knowledge about message creation, dissemination, audience segmentation and media relations. They should have the opportunity to share that knowledge with emergency planners as they create plans that PIOs must follow during an emergency response.

Although structuration theory has been used in a variety of settings, it had yet to be applied in an emergency context. Previous structuration theory research focused on organizational group decision making, the ontology of the theory, and relationship building (Banks & Riley, 1993; Bastein, McPhee & Bolton, 1995; Conrad, 1993; Garner, 2006; Howard & Geist, 1995; McPhee & Seibold, 1985; Nicotera, 2008; Poole, McPhee & Seibold, 1982; Witmer, 1997). Through the application of structuration theory to a crisis context, this study extends an understanding of the duality of structure and specifically, the notion of permeability. The following paragraphs explain how this study's findings have implications for Giddens work related to permeability.

As previously mentioned, emergency response plans took the form of an organizational structure that facilitated and constrained PIOs' emergency risk communication efforts. This study offers evidence to suggest that basic plans, which

include pre-developed templates and other communication materials, provide PIOs with baseline information that can be adapted to different types of emergencies as needed. The adaptability of these basic plans is what Giddens refers to as permeability or looseness of organizational structures. As stated above, due to permeability, basic plans facilitate emergency risk communication by providing PIOS with pre-developed plans, policies and procedures that can be adapted for the evolving emergency. The lack of permeability is exemplified in organizational structures that constrain emergency risk communication (e.g., worst-case scenario plans, no plans and emergency response structures of NIMS and ICS).

In contrast to basic plans, worst-case scenario plans do not provide PIOs with the ability to adapt pre-developed materials to an evolving emergency. Worst-case scenario plans lack permeability because they were created under strict emergency planning assumptions—many of which did not hold true during the 2009-2010 H1N1 outbreak. As a result, during the actual emergency response, PIOs were unable to use the pre-developed materials. In fact, they did not use the plan at all and focused on solely on conducting media relation activities to the best of their ability—which often varied considerably.

In addition to having basic plans or worst-case scenario plans, PIOs also reported having no plans in place prior to the onset of the 2009-2010 H1N1 outbreak. The study provides evidence to suggest that PIOs who did not have any form of emergency response plan in place prior to the outbreak lacked a basic understanding of emergency risk communication principles. Although CDC offers emergency risk communication

training, many individuals designated to work as a PIO during an emergency are not properly trained to handle that responsibility. Clearly those serving in the highly public and media driven role of a PIO should receive proper training and have a certain level of expertise in the area of media relations before being allowed to serve in that role during an actual emergency.

This study also provides evidence suggesting that the emergency response structures of NIMS and ICS—although designed to facilitate emergency risk communication—in fact did not. Previous emergency response research often showcases the benefits of using NIMS and ICS during emergencies to provide structures than enable response agencies to be more effective (Annelli, 2005; Irwin, 2000; Lindell et al, 2005; Lindell et al., 2007). However, there has been no communication research on how NIMS and ICS constrain or facilitate the emergency risk communication process. This study is the first of examine how the emergency response structures of NIMS and ICS constrain emergency risk communication efforts. As discussed in Chapter One, the Joint Information System is the mechanism to ensure information sharing and message fidelity among other response agencies and the Joint Information Center (JIC) is the physical structure where the PIO and other communication staff meet to facilitate information flow (DHS, 2008). Government guidance suggests that PIOs should have standard operating procedures for JIC personnel (DHS, 2007) and crisis communication literature suggests creating these procedures during pre-crisis planning (Seeger et. al, 2003), but there has been no evaluation of what happens once these structures are implemented. While designed to be scalable structures, this study provides evidence that limited staff

resources and a lack of familiarity with such emergency response structures constrained the implementation of NIMS and ICS during the 2009-2010 H1N1 outbreak for the PIOs surveyed. The findings for this study's first research question have direct implication for practitioners working in emergency response and public information. First, developing basic emergency risk communication plans prior to an emergency is ideal. PIOs should contact their state health, CDC, NPHIC or even a fellow PIO to obtain a copy of their emergency response materials. CDC has numerous materials available online, at no cost, that will benefit those who have not yet created a plan. For those who have already developed plans, it is critical that the emergency response plans have permeability, so they can be adapted to meet communication exigencies created by evolving emergencies. Outlining information sharing and message disseminating processes, clearance and cross-clearance processes prior to an emergency is also beneficial. Developing such processes during the height of an emergency will constrain the flow of information. Second, creating "living documents" ensures that pre-developed materials and response plans can be adapted to evolving conditions rather than being solely depending upon the planning assumptions that dictated its creation. It is not possible to develop all the materials that a PIO might use during a response, but having pre-developed fact sheets, press release templates, and other similar materials ensures that the PIO can begin to quickly develop emergency risk communication messages. In particular, PIOs and HERCs from New Jersey included these types of materials in their emergency plans and explained the benefits of adapting pre-developed materials. Third, PIOs and other emergency response staff should develop regular trainings to help non-emergency response staff become more

familiar with NIMS and ICS. HSPD-5 required compliance at all levels of government and "requires state and local adoption of NIMS as a condition for receiving federal preparedness funds" (Jemison, 2005, p. 2; Lindell et al., 2007). Since NIMS and ICS compliance is required in order to receive funding, emergency response staff should take the lead ensuring that all staff members understand their emergency response role. This study citing evidence stating that non-emergency staff's unfamiliarity was one of the main reasons why implementing a JIC and ICS was so difficult. Additionally, any individuals responsible for the emergency risk communication should receive proper training (e.g., CDC CERC training or the FEMA Advanced PIO course).

This section provided implications for research in the field of risk and crisis communication that focused on how organizational structures impact emergency risk communication. It explained how the study's conclusions extend current literature and provides practical implications for those working in the field of emergency response and public information. The following section provides implications related to PIO research in the area of risk and crisis communication.

**Research Two Question: How do implicit and explicit structures impact the enactment of the PIO role and are they different or similar depending upon the state in which the individual is located?**

Previous PIO research has not focused not how organizational structures relate to the enactment of the PIO role. Instead, much PIO research has focused on how these roles create and disseminate messages before and during emergency responses (Avery & Kim, 2009; Avery et al., 2009; Andsager & Smiley, 1998; Stein, 2006; Dunwoody &

Ryan, 1983; Telg & Raulerson, 1999). Additionally, as Chapter One revealed, federal agencies continue to cite limitations related to emergency risk communication efforts, specifically information coordinating and disseminating between and among response organizations, which are often job responsibilities delegated to a PIO (TOPOFF 1, n.d.; TOPOFF 2, n.d.; TOPOFF 3, n.d.). However, federal after action reports fail to provide systematic evaluation of the role of the PIO during an exercise. National level exercises continue to focus on *the process* of emergency risk communication, but they continue fail to evaluate how *the PIO role* impacts this process (DHS, 2003; DHS, 2006; TOPOFF 1, n.d.; TOPOFF 2, n.d.; TOPOFF 3, n.d.). While this previous research focused on federal government agencies, this study provides evidence about the role of the PIO in local public health departments.

The local government perspective (i.e., local public health departments) is something that has been missing from previous research on public health emergency risk communication (George, 2007; Hoffman & Norton, 2000; McNally, 2007; Office of Inspector General, 2009). This study provides a unique perspective on how structures, roles and relationships impact the PIO role in local public health departments. For example, public health laws outline the state's "police power" which gives local government the ability to carry out duties related to protecting and promoting health and ensuring the protection of individuals' rights in the processes (Turnock, 2009, p. 164). As a result, state health departments are able to develop public health systems most appropriate for that state. Hence, there are striking differences in public health systems, departments, laws, statues and ordinance across every state in the U.S. These differences

in the overall organization of state and local health systems create differences in how the PIO role is enacted across different states. This study provides evidence that the health setting in New Jersey is very different than the health systems in other states, but unfortunately, this study did not evaluate whether this differences in health systems positively or negatively impacted how the PIO conducted emergency planning and response activities, but rather identified what differences are present. Most notably, individuals serving as communication officers in New Jersey are designated as HERCs—Health Educator Risk Communicators. Since the New Jersey health system was organized by bioterrorism funding after the 2001 anthrax attacks, HERCs *only* work on emergency preparedness activities. Despite their intimate knowledge of the emergency planning process and well-established community contacts, they are not utilized as the emergency response PIO. In contrast, PIOs in California, New Jersey, and Kentucky, do not have the HERC position. Instead, those PIOs either worked on both emergency planning and response or only worked in emergency response.

In addition to the differences in how the explicit setting of health departments impacted whether a PIO was involved in emergency planning and response activities, social interactions, or implicit structures, with public health colleagues also impacted the emergency planning and response activities a PIO performed. This study provides evidence on how implicit structures such as social interactions between colleagues actually resulted in similarities in PIO activities across the four states included in this study. In accordance with previous research (Ankey and Curtin, 2002; Motschall & Cao, 2002; Stein, 2006; Surette, 1995; Ulmer, Avery & Kordsmeier, 2008), this study's

findings reveal that public health PIOs, regardless of geographic location, primarily performed media relations activities during an emergency response. Regardless of where the PIO was located (i.e., Kentucky, North Dakota, New Jersey or California), media relations continues to be a primary responsibility for individuals serving as the emergency response PIO. However, this research found new evidence that many PIOs serve in multiple roles during an emergency response. For example, an individual may primarily work in a non-communication role (e.g., as the health director, health educator, training coordinator), but then are also designated to serve as the emergency response PIO. Although this study did not evaluate the positive or negative impact of balancing multiples role on the emergency risk communication process, it does provide evidence as to the frustrations and challenges associated with the organizational expectation for one individual to work in two—sometimes distinctly—different roles with no additional compensation. The biggest challenge PIOs reported about serving in multiple roles was the inability to adequately perform both positions. As a result, most PIOs said their normal, day to day job suffered, but some did say they did not conduct emergency risk communication activities to their fullest potential

The implications for practitioners working in emergency response and public information is threefold. First, working in multiple roles is challenging and not likely to change. This study revealed that many individuals serving the emergency response PIO *only*, primarily serve in non-communication based roles on a daily basis. For example, most notably in Kentucky, emergency response PIOs primarily serve as health directors, emergency planners, health educators or training coordinators. Further, PIOs in the other

three states also balanced multiple job responsibilities during the H1N1 outbreak. Many faced the harsh realities of stopping work on their day to day responsibilities and focusing only on PIO duties. Often times the daily work would not be completed because there was no additional staff to assist with normal operations; this often cause the emergency PIO to become overwhelmed. Cross-training, surge staff and volunteers are critical to ensuring that those serving in the multidimensional PIO role have adequate assistance to complete the job duties as needed. Second, this study overwhelming supports communication training for those conducting emergency risk communication activities.

Additionally, since the PIO's job duties could be altered based upon expectations from other public health staff, department leadership and other emergency response personnel should also receive emergency risk communication training. This not only educates those individuals as to what the PIO role is and does, it also ensures cross-training in case the lead PIO is unable to carry out his/her duties. Finally, this study has limited findings related to how the setting of the health department impacts the PIO role. While there clearly are differences among health departments, there is little PIOs can do to change their health department's structure.

This section revealed the implications for risk and crisis communication research related to the PIO role. It explained how the study's conclusions extend current literature and provides practical implications for those working in the field of emergency response and public information. The following section provides implications for organizational communication and best practices in risk communication best practices.

**Research Question Three: In what ways are institutionalized processes related to PIOs' internal and external partnerships?**

Previous research on organizational relationships has focused on how structuration theory reveals how these relationships form and the influence such relationships have on organizational processes (Garner, 2006). Additionally, best practice research advocates for development of emergency response relationships prior to the onset of emergency (Seeger, 2005; Sellnow & Vidoloff, 2008; Vidoloff & Petrun, 2010). NIMS and ICS literature also offer recommendations on developing emergency response partnerships (Jemison, 2005, p. 2; Lindell et al., 2007). A substantial amount of organizational communication literature has examined how organizational members can have an impact of the types of relationships that are formed both internal and external to the organizational (Adams, 1979/1980; Aldrich & Hercker, 1977; Burk, 1994; Conrad, 1994; Conway, 1995; Coombs & Holladay, 2007; Jemison, 1984; Keller & Holland, 1975; Tuite, 2006; Tushman, 1977). This previous literature has yet to examine relationship building within the context of emergency planning and response activities.

This study provides findings on the types of relationships formed before and during an emergency response. This study provides evidence of three types of relationships that organizations can develop: internal relationships, external relationships with locally-based response agencies and other community organizations, and external relationships with professional associations and federal response agencies. Additionally, it provides specific evidence suggesting that external relationships form due to multiple previous interactions (e.g. during community-wide exercises and drills or tabletop

discussions) related to emergency planning and response. Previous research on internal relationships (Spence and Reddy, 2007; Tushman & Katz, 1980) reveals how organizational members enacting the role of gatekeepers communicate internally between different departments and divisions. This study supports that previous research, but also reveals inconsistencies on who PIOs work with regarding emergency planning and response activities. Some PIOs reported working with emergency preparedness staff, epidemiologists, public health directors, health officers, immunization coordinators, communicable disease control specialists, medical directors, clinical supervisors, nursing staff, environmental health, home health, bioterrorism and training coordinators, but again these relationships were not consistent across the four states included in this study. This study provides evidence to suggest that health departments that have previous emergency response experience included PIOs in emergency preparedness and response activities. For those local public health departments that had less experience, often times public information was distinctly separate from emergency planning and response activities.

This study also supports previous research that suggests organizations develop locally based external partnerships with other first responder and community-based organizations prior to an emergency (Jemison, 2005, p. 2; Lindell et al., 2007; CDC, 2002; Seeger, 2005; Sellnow & Vidoloff, 2008; Vidoloff & Petrun, 2010). This study also offers new evidence that PIOs should develop direct communication officer-to-communication officer relationships. Although health departments may develop relationships between health directors or emergency response planners, this study

suggests that direct relationships between communication officers can extend the reach and exposure of health department messages. Further, communication officers are well versed in media relations activities, they can provide additional communication-specific assistance to PIOs who may need help due to limited health department resources.

Finally, this study provides evidence suggesting that relationships between professional organizations and federal response partners and PIOs is beneficial during the response. This study supports previous research that organizational members can obtain external information, filter that information and then provide new inputs to the organization (Johnson and Chang, 2000; Maneve & Stevenson, 2001; Tushman & Scanlan, 1981). During the 2009-2010 H1N1 outbreak, CDC and NPHIC disseminated information to local PIOs. Albeit the flow of information from these organizations became overwhelming for some, most PIOs reported the benefit of receiving such information as the outbreak evolved over time. Unfortunately, those were not members of NPHIC often did not obtain this information nor did they directly receive information from CDC.

There are four implications for practitioners working in emergency response and public information. First, practitioners need to develop internal working relationships with their emergency response colleagues and any other internal departments that are likely to assist with an emergency response. Developing these relationships occurs over time, so multiple interactions such as regular staff meeting or specific emergency planning activities help establish these relationships. Additionally, as PIOs develop more internal contacts, the more influential that person will be within the organization. Second,

in addition to establishing internal contacts, practitioners need to establish contacts with other community organizations. NIMS provides guidance on the types of community organizations that should be considered in emergency planning and response. Again, these relationships also take time to form, so attending emergency planning activities organized by other government agencies or community organizations is recommended. Third, this study suggests that communication practitioners develop relationships with other communication officers. Not only will the relationships extend the reach and exposure of emergency messages, the additional networking is likely to yield trained communicators who could assist with emergency communication activities as needed. Fourth and finally, establishing relationships with federal response agencies and professional organizations is critical. These organizations can provide communicators with updated evolving emergency information before the media. They also provide communication materials, pre-developed templates and other items that practitioners can use to develop their basic emergency response plans.

The previous sections have outlined the theoretical implications for this research on the field of risk and crisis communication, organizational communication, best practices in risk and crisis communication. It also provides practical implications for those working in the field of emergency response and public information. The following sections provide limitations of the study's findings as well as directions for future research.

## Limitations

Using an interpretive design has inherent limitations related to the study's sample and findings. The generalizabilty of the study's findings, the sampling strategy, data collection efforts, and researcher presence are limitations of this study. These limitations are further explained in the following sections.

### *Generalizabilty of findings.*

The design of this study limits the generalizabilty of these findings beyond PIOs included in this study. Although this study offers implications to the field of risk and crisis communication and organizational communication, the findings are not generalizable to the entire population of public health PIOs in the U.S. Additionally, the study used only one source of data. Most qualitative researchers advocated for the use of additional data sources in an effort to triangulate the study's findings (Patton, 2002). Unfortunately, this study did not incorporate additional data sources and the study's findings are based upon the stories and examples from those PIOs included in this study. Again, this limits the generalizabilty of the findings beyond the population included in this study. In addition to using an interpretative study design, the context of the emergency does not yield generalizable results. Since emergencies vary on the type, the magnitude of the harm or destruction, political ramifications, geographical location, media attention findings from one emergency are not likely to be generalizable to other types of emergencies. Further, the findings of the 2009-2010 H1N1 pandemic may not hold true for future pandemic responses.

***Sampling strategy.***

The sampling strategy used for this study yielded uneven representation of the interviewees per state. For example, a majority of participants were from Kentucky, California, New Jersey and North Dakota respectively. The number of participants from each state varied greatly for the following reasons number of PIOs employed in the state, convenience to the PIOs, and professional contacts. Additionally, this study included more females than males. As a result, the study's findings could have gender bias. For example, women may interpret such actions or events different than their male counterparts. Future research could analyze to see if gender differences exist between male and female PIOs. As noted in Chapter Three, the field of public health and the role of communication officers is often represented by more females than males. Of the 11 men included in the study, the author knew and worked with two of them. The remaining nine, with the exception of one PIO in California, primarily served—not as the PIO—but as the health director, the emergency preparedness coordinator, or the training coordinator. Most of the men included in this study served only as the emergency response PIO.

***Data collection.***

Data collection efforts are another limitation of this study. First, the interviews took place over 10 months. This limits the study's findings since recall bias is a factor (Patton, 2002). PIOs' memories were impacted by the length of time passed and the information provided may not have been as in depth as it could have been. Second, the length of time needed to conduct the interviews was an issue. North Dakota and

Kentucky interviews were completed in early 2010 near the end of the 2009-2010 H1N1 outbreak. New Jersey and California interview data was not collected until the Fall 2010 after the author's doctoral committee suggested two additional states be added to the study's sample. Adding the two additional states complicated the data collection process in two ways.

First, by the time New Jersey and California were added to the study, the author was more familiar and more comfortable with using the interview guide. As a result, the first interviews collected at the beginning of the study are qualitatively different than those interviews collected at the end of the study. As the author learned about PIOs' experiences it the first two states, there was some overlap in the interviewees' responses in the remaining two states. As a result, the author felt more comfortable with probing questions than she did at the beginning of the study. Second, due to external constraints the author had a limited amount of time to collect data from PIOs in New Jersey and California. As a result, saturation did not occur in California. Again, the study's findings are largely based upon the robustness of Kentucky interviews. Future research is needed to conduct additional interviews in California.

***Researcher presence.***

Unlike quantitative studies, interpretative studies acknowledge the presence of the researcher on the data collection and analysis processes in the study. During participant recruitment, the author acknowledged that she worked as a PIO during the height of pandemic planning activities. As a result, this information likely influenced individuals to participate in the study. Additionally, in an effort to build rapport with the interviewees,

the author often remarked on her work in public health as a PIO. Again, this information likely influenced how the PIOs responded to the interview questions. Additionally, interpretative research is often dependent upon the skills of researcher and is often influenced by the researcher's biases. Although the author conducted or assisted with other qualitative projects, the author's skills and personal biases are likely to have influenced the study's findings.

This section has described the limitations of this study. The next section describes future directions for research in the area of risk and crisis communication specifically related to PIOs and emergency response.

**Future Directions**

Given the previous limitations, several avenues for future research exist such as evaluating NIMS and ICS structures, conducting additional interviews with PIOs in California and other states, recruiting more males to explore gender differences, and pursing four quantitative research studies in an effort to generalize findings beyond a small group of individuals. First, this study has been foundational in analyzing the structures, roles and relationships of PIOs in emergency planning and response. While this study provided an exploratory analysis of the emergency response structures of NIMS and ICS, additional evaluation research is needed. NIMS and ICS were originally designed during the 1970s for firefighters engaged in responding to wildfires. There has been limited research on the implementation and adaptability of these structures to a public health emergency response (George, 2007). While lack of familiarity of NIMS and ICS were often cited as the reason why these structures constrained emergency risk

communication efforts, it is unclear if the unfamiliarity is due to the foundation of the structures coming from a non-public health field or a lack of training within the health department. Future research is needed to evaluate the use of NIMS and ICS within the public health field.

A majority of the participants were based in Kentucky and many of the findings in the study are based upon more available data from those PIOs. Future research could conduct additional interviews in California, which serves millions of community members. Speaking with only 11 PIOs in the northern and middle portions of the state excludes the PIOs found in the southern part of the state. Due to the vast area the state covers, it is likely that PIOs in southern California experienced during the 2009-2010 H1N1 outbreak are very differently than PIOs' experiences in the middle and northern parts of the state—especially given the first two confirmed cases of H1N1 occurred in San Diego, CA. In addition to California, interviewing PIOs in other states and conducting multiple case studies would yield findings relevant to the field of risk and crisis communication. For example, some states in the U.S. reported greater numbers of cases than other states in the U.S. It is likely that states with higher confirmed cases had greater communication exigencies during the outbreak. As such, conducting a nested case study design could reveal interesting findings related to how PIOs in states hardest hit by the 2009-2010 H1N1 outbreak enacted emergency risk communication efforts.

In addition to conducting case study research, one additional qualitative study could focus on gender differences between male and female PIOs. For this study, the participants were overwhelmingly female. Although public health and health

communication officers are primarily populated by females, it is possible that gender differences exist. For example, emergency response is often male dominated, so males serving in an emergency response PIO role could have had vastly different experiences than female PIOs who serve in that role on a daily basis. This study did not consider gender differences, but future research could reveal some interesting findings on how gender impacts the enactment of the PIO role.

As previously stated, this dissertation was a foundational study focused on structures, roles and relationships related to how PIOs conduct emergency risk communication. Due to the study's interpretative nature, the generalizabilty of the study's findings are limited. The author suggests four quantitative studies related to role impact on emergency risk communication message outcome, PIO relationships on message outcome, and the impact of an individual's experience and education on the PIO role. The following paragraphs provide more detail on this future studies.

First, this study provides evidence of how organizational structures and the context of the emergency facilitated and constrained emergency risk communication efforts, but it did not analyze if the PIO serving in more than one emergency personnel role negatively or positively impacted emergency risk communication efforts. Future research could analyze to see if the message outcome (i.e., messages disseminated to the public) was impacted by an individual serving in two full time roles. This study revealed that PIOs reported they did not have enough time to fully carryout the role of a PIO, but being able to quantify that finding would provide additional evidence to suggest that PIOs serving in multiple roles during emergency response is detrimental to emergency

risk communication efforts. Another component of a study looking at relationships between role and message outcome could analyze how PIOs' involvement in emergency planning and response impacts message outcome. For example, a factorial design (e.g., analyzing Role X Involvement X Message Outcome) could analyze the impact these variables have on emergency risk communication efforts.

Second, in addition to quantifying the PIO role and message outcome, future research could also look at the working relationships developed by PIOs. This study revealed that many of the emergency response relationships were developed based on previous interactions during emergency exercises. A longitudinal study could analyze two emergency response agencies to better understand how emergency planning and response partnerships form over time. For example, does the frequency of interaction determine the strength of the relationship? Additionally, for agencies that are not often involved in emergency planning and response, like educational institutions and long-term care organizations, how does the absence of previous relationships impact the emergence of an emergency response relationship?

Third, this study revealed the benefits of direct communication officer-to-communication officer working relationships. In an effort to better understand how relationships between communication officers impacts emergency risk communication efforts, a network analysis of public health PIOs could be conducted. Network analysis allows researchers to visualize the networks between individuals and to assess the strength of those relationships. A network analysis could reveal new findings about how communication officer-to-communication officer relationships positively or negatively

impact overall emergency risk communication efforts. Fourth and finally, this study revealed similarities and differences of the enactment of the PIO role across four different states. Individuals that enacted the role of the PIO had varying degrees of professional experience, but this study did not specifically analyze how the amount of professional experience or educational background impacts the enactment of the PIO role. Future research studies examining educational status and professional experience could lead to the development of core competencies for communication officers serving in the PIO role.

This section outlined directions for future research related conducting additional interviews with PIOs in California and other states, recruiting more males to explore gender differences, and pursuing four quantitative research studies in an effort to generalize some findings beyond a small group of individuals. The following section offers the overall conclusions for this doctoral dissertation.

**Overall Conclusion**

Communication officers, at all levels of government, will continue to serve their community's and agency's needs during times of crisis. Structuration theory provided a theoretical framework to understand the implicit and explicit structures that facilitate and constrain emergency risk communication efforts. As organizational structures, both socially and physically constructed, guide emergency planning activities, they simultaneously determine the outcome of those activities. During the emergency planning process, organizations need to be mindful of the impact planning assumptions have on the construction of emergency response structures and develop plans with permeability to

ensure adaptability during the response. Social scientists, practitioners, subject matter experts, government officials, NGO's, and the private sector need to continue to develop and maintain working relationships prior to and during emergencies. No one agency can adequately respond to a emergency and coordinating emergency response efforts prior to an event occurring are likely to yield a more organized response than not. Emergency response agencies often develop working relationships through participation in community-based and statewide emergency exercises. These continued social interactions play a role in institutionalizing the partnerships over time.

While each agency involved in the response are likely to have competing interests and communication agendas, the foremost issue to be communicating emergency risk communication that can mitigate harm and ultimately protect human health and safety. As threats emerge and the severity of emergencies increase, government agencies, as designated leads for emergency response, need to be adequately prepared to respond while providing timely, accurate and consistent information to stakeholders.

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## Appendix A

### Analyzing the role of Public Information Officers during an Influenza Pandemic Phone Interview Guide

1. Main question: As a public information officer, describe your involvement in pandemic influenza planning.
    a. If you are not involved now, is this type of planning something that you would be interested in being more involved with in the future? Would you feel comfortable asking to be involved? Why or why not?

2. Main question: Can you describe your interactions with pandemic influenza planners, emergency preparedness planners, and others (health director, health officer, epidemiologist) involved in emergency response?
    a. Probing: Who do you speak with most often? Is this on a daily basis?
    b. Probing: Who do you speak with less frequently, but are important to the planning process? Can you tell me a story about a recent conversation?

3. Main question: Describe your involvement in writing a crisis communication plan.
    a. Probing: Is there a separate plan for communicating about pandemic influenza?
    b. Probing: Do you have involvement in writing the Emergency Operations Plan (EOP)?
    c. Probing: What is the involvement of other public information officers (from other agencies-fire/police/emergency management) in your communication planning to an influenza pandemic?

4. Main question: Can you describe the last time you were involved in the revision process of the crisis communication plan?
    a. Probing: What went well? What didn't? Were there any events/unplanned consequences related to its revision?
    b. Probing: How often is the plan tested and revised?
    c. Probing: How are changes approved (does someone, perhaps the Health Director need to approve changes?)

5. Main question: How have you prepared to provide crisis information regarding a pandemic influenza today? Do you feel adequately prepared? Why or why not?
    a. Probing: If yes, what things have you done (or organization has done) to help you be prepared?
    b. Probing: If not prepared, what would you like to see change to help you prepare?

6. Main question: Can you describe how your pandemic influenza planning influence how your department handled its H1N1 response? What role did you have in the process? What constrained the response? What worked/didn't?
    a. Probing: Can you imagine a conflict that occurred in the planning (or response) process? How was the conflict resolved? Who were the players?
    b. Probing: Were there ambiguities (unsure of your role in planning or response) you encountered in reacting to H1N1? How were they handled?

## Appendix B

Analyzing the role of Public Information Officers during an Influenza Pandemic: Participant Recruitment Materials

**Recruitment Information: Email**

Dear (insert name here),

I received your name from (XXXXXX). I am a doctoral student at the University of Kentucky studying the role of public health public information officers during a pandemic influenza. I am working under the direction of _____.

I would like to speak with the individuals who were involved in the disseminating public information during the pandemic. Speaking with these individuals will provide more information regarding the role of the PIO's during a pandemic.

Please let me know if you are interested in participating in this study, and when you are available during the first or second week of March for an interview.

Thank you,
Kathleen Vidoloff, M.A.
Doctoral Candidate, University of Kentucky

**Follow up email**

Dear (insert name here),

I have yet to hear back from you regarding my previous email sent on (insert date). I am following up to see are interested in participating in this study, and when you are available during the first or second week of (XXXXX) for an interview.

I received your name from the (XXXXXXX). I am a doctoral student at the University of Kentucky studying the role of public health public information officers during a pandemic influenza. I am working under the direction of _____.

I would like to speak with the individuals who were involved in the disseminating public information during the pandemic. Speaking with these individuals will provide more information regarding the role of the PIO's during a pandemic.

I look forward to hearing back from you,

Kathleen Vidoloff, M.A.
Doctoral Candidate, University of Kentucky

## VITA

**Name:** Kathleen G. Vidoloff
**Date of Birth:** April 7, 1981
**Birthplace:** Springfield, MO, USA

## EDUCATION

**Ph.D.** University of Kentucky. Lexington, KY, 40506-0042. *(In progress)*.
Major areas: Risk, crisis and health communication
Minor areas: Public health
Received Graduate Certificate in Health Communication, August 2010
Major professor: Timothy L. Sellnow

University of Minnesota, Minneapolis, MN, 55455. (June 2007).
Earned continuing education credits for coursework on risk communication related to vulnerable populations.

**M.A.** North Dakota State University, Fargo, ND, 58102. (January 2005 to May 2007).
Major area: Communication studies
Minor areas: Risk and crisis communication
Earned May 2007

**B.A.** Northern State University, Aberdeen, SD, 57401. (August 2000 to December 2002).
Major area: English
Minor area: Business
Earned December 2002

University of North Dakota, Grand Forks, ND. (August 1999 to May 2000).
Earned 30 credit hours of general education requirements.

## RESEARCH, TEACHING & PROFESSIONAL EXPERIENCE

**Health Communication Specialist**

- Centers for Disease Control and Prevention (CDC), McKing Consulting Corporation, Atlanta, GA
- December 2010 to August 2011

**Instructor**
- University of Kentucky, Lexington, KY
- August 2010 to December 2010

**Coordinator for Risk Communication Research**
- University of Kentucky, Lexington, KY
- June 2008 to October 2010

**Research Assistant**
- University of Kentucky, Lexington, KY
- Fall 2009-Spring 2010

**Public Information Officer**
- Fargo Cass Public Health, Fargo, ND
- December 2006 to May 2008

**Instructor**
- North Dakota State University, Fargo, ND
- January 2005 to May 2007

**Graduate Research Assistant**
- North Dakota State University, Fargo, ND
- June 2005 to May 2007

**Regional Field Organizer to Senator Tom Daschle**
- Aberdeen, SD
- May 2004 to November 2004

**Staff and Press Assistant to Senate Democratic Leader Tom Daschle**
- Washington, DC
- January 2003 to May 2004

## AWARDS

Nominee for Presidential Management Fellowship Program, Class of 2011

2010 Doctoral Seminar "Thinking Dangerously" participant, Wayne State University

2009 NCA Doctoral Honors Seminar participant, University of West Virginia

2008 R. Lewis Donohew Graduate Fellowship, University of Kentucky

## PUBLICATIONS

*Peer-Reviewed*

Vidoloff, K.G. & Petrun, E.L. (2010). Communication successes and constraints: Analysis of the 2008 *Salmonella* Saintpaul foodborne illness outbreak. *Journal of the Northwest Communication Association.*

Sellnow, T.L., Littlefield, R.S., Vidoloff, K.G., & Webb, E.M. (2009). The interacting arguments of risk communication in response to terrorist hoaxes *Argumentation and Advocacy*, 45*(3),* 135-149.

Littlefield, R., Rowan, K.E., Veil, S.R., Kisselburgh, L.G., Beauchamp, K., Vidoloff, K., Dick, M.L., Russell-Loretz, T., Kim, I., Ruvarac, A., Wang, Q., Cho, H., Hoang, T.S., Neff, B., Toles-Patkin, T., Troester, R.L., Hyder, S., Venette, S., & Sellnow, T. (2010). "We tell people. It's up to them to be prepared": Public relations practices of local emergency managers (pp. 449-451). In T. Coombs, & S. Holliday (Eds.), Handbook of crisis communication. Wiley-Blackwell: Hoboken, NJ.

*Invited publications*

Sellnow, T. L., & Vidoloff, K. G. (2009, September). Getting crisis communication right: Eleven best practices for effective risk communication can help an organization navigate the slippery path through a crisis situation. *Food Technology*, *63*(9), 40-45.

Vidoloff, K. G. (2009). *New Zealand Beef Industry: Risk Communication in Response to a Terrorist Hoax.* In T. Sellnow, R. Ulmer, M. Seeger, & R. Littlefield, *Effective risk communication: A message-centered approach.* (pp. 91-102). New York, NY: Springer.

Vidoloff, K.G. & Freitag, S. (2009). "A Rhetorical Analysis of *Desperate Housewives* through Roles and Images." In D. D. Sellnow, *The Rhetorical Power of Popular Culture*. Newbury Park, CA: Sage.

*Thesis work*

Vidoloff, K. G. (2007). *Where there is smoke, is there fire? Learning about hoax terrorist's threats from New Zealand's Operation Waiheke Response*. Unpublished master's thesis, North Dakota State University.

## CONFERENCE PRESENTATIONS

Vidoloff, K.G. & Sellnow, T.L. *Collaboration and competence within public health: Preliminary findings from the 2009 H1N1 emergency risk communication response.* National Communication Association, San Francisco, CA, November 14-17, 2010.

Waters, K. & Vidoloff, K.G. *Extension and risk communication: One size does not fit all.* EDEN Annual Meeting Committee, Lexington, KY, November 2-5, 2010.

Sellnow, T.L. & Vidoloff, K.G. *Eleven best practices in risk communication.* Institute for Food Technologists Annual Meeting, Chicago, IL, July 17-20, 2010.

Vidoloff, K.G. & Petrun, E.L. *Predictably unpredictable patterns of food borne illness outbreaks: Examining the 2008 Salmonella Saint Paul contamination case.* Southern States Communication Association, Memphis, TN, April 8-12, 2010.

Sellnow, T.L. & Vidoloff, K.G. *Distinct applications of dialogue and instructional messages for enhancing communication resilience*. Department of Homeland Security University Summit, Washington, D.C., March 10-12, 2010.

Sellnow, T.L. & Vidoloff, K.G. *Distinct applications of dialogue and instructional messages for enhancing community resilience.* Risk Perception and Risk-Related Behaviors: Anticipating and Responding to Crisis workshop, Los Angeles, CA, March 5-6, 2010.

Vidoloff, K.G., Woodworth, B., Burns, W.J., John, R., & Rosoff, H. *Exercise simulation facilitators.* Risk Perception and Risk-Related Behaviors: Anticipating and Responding to Crisis workshop, Los Angeles, CA, March 5-6, 2010.

Sellnow, T.L., Vidoloff, K.G., Seeger, M.W., Lubell, K., & Becker, K. *Lessons Learned from the H1N1 Pandemic: Strategies for Preparation and Risk Communication*. National Center for Food Protection and Defense webinar, March 5, 2010.

Vidoloff, K.G., Novak, J.M. & Sellnow, T.L. *Disseminating Crisis Information with New Media*. National Communication Association, Chicago, IL, November 12-16, 2009.

Vidoloff, K.G. *Defining hoaxes from a communication perspective*. Org Comm MINI Conference 2009, Northwestern University, Evanston, IL, October 16-18, 2009.

Vidoloff, K.G. & Burns, W. J. *Exercise simulation facilitators for The City of Los Angeles experiences a terrorist inspired biothreat*. Public Response to Threat: Cross-Disciplinary Contributions and Collaboration, Eugene, OR, August 10-11, 2009.

Sellnow, T.L., Vidoloff, K.G. & Ulmer, R.R. *Opportunities and Confounding Issues in Risk and Crisis Communication*. Pacific Northwest Laboratories sponsored workshop, Eugene, OR, August 10-11, 2009.

Vidoloff, K.G., Sellnow, T.L, Seeger, M.W., & Ulmer, R.R. *Collaboration in Fighting Terrorism: The Role of Risk Communication*. Southern States Communication Association, Norfolk, VA, April 1-5, 2009.

Sellnow, T.L., Vidoloff, K.G., Seeger, M.W., Littlefield, R.S., & Flood, A. *Risk Communication as an Intervention Strategy*. Department of Homeland Security University Summit, Washington, D.C., March 17-19, 2009.

Sellnow, T.L., Ulmer, R.R., & Vidoloff, K. G. *Key Points of Intervention: Communicating during a Foodborne Outbreak*. Videoconference presentation for Dairy Management, Inc. Lexington, KY, March 10, 2009.

Sellnow, T.L. & Vidoloff, K. G. *Key Points of Intervention: Communicating during Crisis*. University of Kentucky Department of Communication Graduate Student Association Symposium, March 7, 2009.

Sellnow, T. L., Littlefield, R.S., Vidoloff, K.G., & Webb, E. *Top Papers in Argumentation and Forensics: Public Communication in Response to Terrorist Hoaxes: Risk Communication as Interacting Arguments*. National Communication Association, San Diego, CA, November 20-24, 2008.

Veil, S.R., Littlefield, R.S., Kisselburgh, L.G., Cho, H., Beauchamp, K., Vidoloff, K.G., Dick, M.L., Venette, S.J., & Sellnow, T.L. *Dissemination as Success? Local Emergency Communication Management Practices*. National Communication Association, San Diego, CA, November 20-24, 2008.

Vidoloff, K.G. *Identifying and Adopting: Local Perspectives on the National Association of County and City Health Officials Public Health Logo*. Dakota Conference on Rural and Public Health, Fargo, ND, March 28, 2008.

Rowan, K.E., Kisselburgh, L., Ruvarac, A., Veil, S.R., Littlefield, R.S., Sellnow, T.L., Venette, S.J., Hyder, S., Toles-Patkin, T., Troester, R.L., & Vidoloff, K.G. *Who is Responsible for Local Emergency Preparedness? A Nationwide Research Project and Public Relations Instructional Effort*. National Communication Association, Chicago, IL, November 15-18, 2007.

Veil, S.R., Littlefield, R.S., Sellnow, T.L., Venette, S.J., & Vidoloff, K.G. *Learning to Thrive When You Teach Public Relations Course: Public Relations Boot Camp*. National Communication Association, Chicago, IL, November 15-18, 2007.

Vidoloff, K.G. Best Practices in Risk & Crisis Communication Case Studies Webcast. "*Where There is Smoke, Is There Fire? Learning about hoax terrorist threats from New Zealand's Operation Waiheke."* National Center for Food Protection and Defense, Fargo, ND, April 13, 2007.

Vidoloff, K.G. *Illustrating the Best Practices: A Case Study of the Foot and Mouth Hoax Outbreak in New Zealand*. National Communication Association, San Antonio, TX, November 15-19, 2006.

Vidoloff, K.G. *Learning about hoax terrorist threats from New Zealand's 'Operation Waiheke'*. National Center for Food Protection and Defense Team Meeting, Washington, DC, October 19 -20, 2006.

Vidoloff, K.G. *Illustrating the Best Practices in Risk and Crisis Communication: New Zealand's Response to a Foot and Mouth Disease Hoax*. Red River Applied Communication Student Conference, Fargo, ND May 2 – 3, 2006.

Sellnow, T.L., & Vidoloff, K.G. *Charting the course: Establishing ten best practices for risk and crisis communication*. Central States Communication Association, Indianapolis, IN, April 5-9, 2006.

"Tabletop Exercise for Pandemic Influenza." Centers for Disease Control and Prevention (CDC) Regional Crisis and Emergency Risk Communication Training, New York, NY October 10-12, 2006.

"Tabletop Exercise for Pandemic Influenza." Centers for Disease Control and Prevention (CDC) Regional Crisis and Emergency Risk Communication Training, Boston, MA, October 2 -4, 2006.

"Tabletop Exercise for Pandemic Influenza." Centers for Disease Control and Prevention (CDC) Regional Crisis and Emergency Risk Communication Training, Atlanta, GA, September 20-22, 2006.

## POSTER PRESENTATIONS

Vidoloff, K.G., Petrun, E.L., Sellnow, T.L. (2010, September). *Media analysis of the 2008 Salmonella saintpaul outbreak: Implications for food safety and food defense plans*. Poster Session at the National Center for Food Protection and Defense Annual Meeting, Chaska, MN.

Vidoloff, K.G. *Organizations, public information officers and pandemic influenza: A proposal to study information demands through the lens of Structuration Theory*. (2010, February). Poster session presented at the 32nd Annual Research Symposium College of Communication and Information, University of Tennessee, Knoxville, TN.

Veil, S., Sellnow, T. L., Venette, S., & Vidoloff, K.G. (2008, November). *Using the Best Practices in Risk Communication as an evaluation tool.* Poster session presented at the National Communication Association, San Diego, CA.

Sellnow, T. L., Petrun, E., Vidoloff, K. G. (2008, September). *Confounding Issues for Implementing Best Practices in Risk Communication.* Poster session presented at the annual meeting of the National Center for Food Protection and Defense, Chaska, MN.

Vidoloff, K. G., & Sellnow, T. L. (2008, September). *Risk Communication Strategies Used to Respond to the 2005 New Zealand FMD Hoax.* Poster session presented at the annual meeting of the National Center for Food Protection and Defense, Chaska, MN.

Vidoloff, K. G., & Sellnow, T. L. (2008, November). *The convergence of interacting arguments in risk communication: The inherent communication challenge of terrorist hoaxes.* Poster session presented at the National Communication Association, San Diego, CA.

Vidoloff, K. G., & Sellnow, T. L. (2008, July). *Risk Communication Strategies Used to Respond to the 2005 New Zealand FMD Hoax.* Poster session presented at the Natural Hazards Workshop, Broomfield, CO.

Veil, S. & Vidoloff, K.G. (2005, November). 10 Best Practices in Risk Communication. Poster session presented at the National Center for Food Protection and Defense Annual Meeting, Atlanta, GA.

## PROFESSIONAL PROJECTS

Collaborative project in 2008 with the City of Fargo, ND; Fargo Cass Public Health; Minn-Kota Chapter, American Red Cross; and other community organizations to edit and update the Cass and Clay County emergency guide, "Are You Prepared?" The project was supported by grant/cooperative agreement number 5U90TP817000 from the Centers for Disease Control and Prevention (CDC).

Collaborative project in 2007 with Healthy Roads Media and Fargo Cass Public Health to create emergency preparedness materials in multiple languages and multiple formats. The finished products are available http://www.healthyroadsmedia.org/topics/emergencies.htm.

Collaborative project in 2007 with NCFPD and NDSU to create a risk and crisis communication booklet for public health officials. The finished product is available online at http://risk-crisis.ndsu.nodak.edu/projects.html.

## SERVICE

Colloquium Series on Health Literacy, College of Communications and Information Studies, University of Kentucky · Fall 2010

- Planning assistant

American Meteorological Society (AMS) · Fall 2010

- Conference planning assistant
- Media training specialist

Centers for Disease Control and Prevention (CDC) Emergency Communications System Embedment Project · July 25-28, 2010

- Research participant

*Journal of Applied Communication Research* · July 2010

- Reviewer

National Communication Association · Spring 2009

- Applied Division Reviewer
- Student Division Reviewer

Kentucky Conference on Health Communication · Winter 2009

- Reviewer

Guest Lecturer, University of Kentucky Dept. of Communication · Fall 2009

- Marketing Public Relations ICS 341

National Communication Association · Fall 2009

- Registration Volunteer

National Communication Association Preconference · Fall 2009

- Preconference Planning Assistant

Extension Disaster Education Network Food Protection Conference Preconference · Summer/Fall 2009

- Planning Assistant and Risk Communication Session Moderator

University of Kentucky Dept. of Communication Graduate Student Association · Spring 2009

- Event Planner: Job Talk Presentation

National Communication Association · March 2008/2009

- Student Reviewer

Central States Communication Association · September 2008

- Student Reviewer

*Journal of Applied Communication Research* · June 2005 – November 2008

- Editorial Assistant

Centers for Disease Control and Prevention (CDC) Emergency Communications System Embedment Project · September 19 – 21, 2007

- Participant

NDSU Academic Affairs Committee · September 2006 – December 2006

- Graduate Student Representative

Central States Communication Association · October 2005 – April 2006

- Conference Planning Assistant

Signed: Kathleen G. Vidoloff