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Public Health Leadership in a Crisis: Themes from the Literature

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ABSTRACT

Recent catastrophic events and subsequent effects of leadership on afflicted populations demonstrates a need for improvement and increased managerial skill. The problem is catastrophic events create situations unfamiliar to many public health leaders. This manuscript was crafted from a review of 28 articles for the publication date range 1992-2012. Public health leadership in a crisis theorizes the application of four leadership skills: technical skills, interpersonal skills, conceptual skills, and emotional skills. A leader of a public health crisis will have to use these four skills for coordinating, managing, and direction of staff and resources. In addition to leading and managing public health resources, a leader in this role will also have to effectively communicate to the public and the media. This leadership theory connects lines of leadership skill to various stakeholders and collaborators. The importance of this leadership theory is for future public health crisis leaders to gain better understanding of the role of public health leadership in a crisis.

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1.0 INTRODUCTION

This paper seeks to flesh out the leadership aspects of all-hazards public health crisis. An all-hazards public health crisis can range from communicable disease outbreaks to natural disasters to acts of bioterrorism. The aspects of leadership discussed this paper involve the leadership skills, traits, and emotional intelligence of appointed leaders during a crisis situation. There is a limited quantity of published literature on the subject of public health crisis leadership. A search of the CINAHL Plus database using the keywords [public health + leadership + crisis] resulted 28 articles for the publication date range 1992-2012. It is the purpose of this manuscript to fill this gap in the knowledge.

This manuscript will contribute to the conversational of knowledge about all-hazards crisis leadership in a public health setting. We live in an era of emerging zoonotic diseases, population shifts towards cities,

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and the threats of bioterrorism, where there is need for better comprehension of crisis leadership in a public health setting. This manuscript is intended to allow better understanding of crisis leadership in a public setting and to affect a positive social change about it in the future.

2.0 LITERATURE REVIEW

Several themes emerged from review of literature, dating from the year 2004 to 2011, that discussed several aspects of leadership during a crisis period. These themes related to the three categories of leadership skills: technical skills, interpersonal skills, and conceptual skills (Nahavandi, 2012). A fourth attribute of leadership, emotional intelligence, was also prominent in the current literature. The technical skills of leadership identified in the literature associated to having knowledge of the specific crisis (infectious disease, natural disaster, or bioterrorism). The interpersonal skills of leadership identified in the literature related to leadership during the active crisis period. The conceptual skills of leadership identified in the literature associated to preplanning and preparation for a crisis, systems thinking during the actual crisis, regionalization and geopolitical coordination, and legal and ethical decision points. Components of emotional intelligence identified in the literature related directly to crisis communication. Core traits of the trait theory of leadership and personality traits of leadership were also notable in the literature, however not salient.

2.01 TECHNICAL SKILLS OF LEADERSHIP

The manuscript by Gray (2005) provided an account of the planning and utilization of the academic health sector during a crisis. The organizations involved in planning and implementation need to consider that health care workers and researchers at the frontline (whether in the hospital, the community, or part of the infrastructure support network) require information, supplies, attention, and care, and particularly emotional support, during such a crisis (Gray, 2005). Gray identified the lack of emphasis on zoonoses in the current health education curricula. In additon, Gray recommended the leadership role in public health matters-in the era of bioterrorism-to include: real-time inventory of research and response capacity to include the academic, industry, and government communities; research platforms in place across the country such as appropriately secure animal care facilities, biobanks, and other technologies necessary to immediately address research issues arising from a crisis; and a coordinated process to move people and resources into place when a health crisis requires such action.

Another area of technical skill was presented in the manuscript by Reeder & Demiris (2009). In this work, the researchers emphasized the necessity of Continuity of Operations Planning (COOP) for population health disasters and crisis (Reeder & Demiris, 2009). Reeder & Demiris defined COOP as the actions taken before, during, and after a disaster to maintain the delivery of an organization's essential services. The technical skills of leadership arise from the need to understand the complexity of the decision making process in emergency situations and specifically in the context of public health (Reeder & Demiris, 2009).

2.02 INTERPERSONAL SKILLS OF LEADERSHIP

The work by Bruckmüller & Branscombe (2010) identified the relationship between the stereotypes of gender and the role of leadership. The authors found that gender stereotypes depict men as a better fit for leadership in general and women as better suited in times of crisis (Bruckmüller & Branscombe, 2010). Bruckmüller & Branscombe posit this gender stereotype of women in a leadership role originates from stereotypical female characteristics of interpersonal qualities, such as intuition or being aware of the feelings of others. These stereotypical interpersonal qualities lead to the generalization: think crisis – think female (Bruckmüller & Branscombe, 2010). On the other hand, the experimental research by Bruckmüller & Branscombe also supported the argument that stereotypical interpersonal qualities of men lead to the mindset of: think manager- think male.

The research by Hacker, Collins, Gross-Young, Almeida, & Burke (2008) examined the interpersonal skills of a public health leader in response to the apparent suicide contagion in Somerville, MA from 2000-2005.

The authors identified the actions of the Mayor, a life-long resident of Somerville, who had known several of the victim's families and acknowledged the problem of drug abuse in his inaugural speech of 2003 (Hacker et al., 2008). The manuscript also included outlines of the community support services backed by the Mayor. These support services included a local Trauma Response Network, which was formed by community members including parents, mental health professionals, and teachers who were closest to the young people impacted by the situation and were trained in posttraumatic stress management (Hacker et al., 2008). Hacker, Collins, Gross-Young, Almeida, & Burke also included other community-wide activities to increase awareness and drive prevention efforts such as: a candle-light vigil was held to honor the deceased in an effort to grieve the departed without stigmatizing the manner of death; a substance abuse "speak-out" was held, which allowed community members to talk openly about the impact of substance abuse on their lives and their community; and education forums and trainings on the signs and symptoms of substance abuse were held throughout the community while efforts were made to reach out to the recovery community and link substance abusers with needed resources.

2.03 CONCEPTUAL SKILLS OF LEADERSHIP

The conceptual skills of leadership identified associate to preplanning and preparation for a crisis, systems thinking during the actual crisis, regionalization and geopolitical coordination, and legal and ethical decision points. Systems thinking and modeling for public health was well described in a work by authors Leischow & Milstein (2006). Leischow & Milstein considered four critical points to incorporate a systems approach to public health practice. These four critical points are consistent with conceptual skills of public health leadership during a crisis, which are: an emphasis on relationships, especially focusing on the dynamics of the interactions of people and social networks; the continuing need for specialized studies, on which all good system theory depends; an approach to health and health care dilemmas that requires a leader to transcend academic boundaries and interact more effectively across organizational lines as they learn to understand and manage ever more complex challenges; and to have an understanding of ancient philosophical roots and how their modern methodological manifestations are phenomenally diverse (Leischow & Milstein, 2006). The manuscript by Leischow & Milstein presented systems thinking and modeling for public health practice as a conceptual skill of leadership.

Preplanning and preparation for a public health crisis was researched by Bell, Hyland, DePellegrin, Upshur, Bernstein, & Martin (2004). In this qualitative study, the authors researched the prioritizing of hospital resources during the Severe Acute Respiratory Syndrome (SARS) outbreak in Toronto in 2003 (Bell, et al., 2004). The authors provided a description of the priority settings within the hospital, evaluated the prioritizing using 'accountability for reasonableness', and identified the prioritizing decision making process. The key decision makers for prioritizing within the hospital setting are: Corporate Command, Hospital Command, Department Management/Chiefs, and Individual Clinicians (Bell, et al., 2004).

Another manuscript, by Stern, Koreck, & Markel (2011), described the H1N1 pandemic planning process by the government of Argentina, particularly calling attention to the lethargic approach by the presidential administration of Argentina during the confirmed outbreak of H1N1 in 2009 (Stern, Koreck, & Markel, 2011). Stern, Koreck, & Markel provided a narrative of the political and international fall-out from the delayed response by then President Cristina Kirchner. This failure of leadership during the H1N1 public health crisis in Argentina prompted the health department of Chubut, a rural province of Argentina, to coordinate the regional response (Stern, Koreck, & Markel, 2011). The response is an example of local ingenuity and systems thinking in a public health crisis situation.

The need for systems thinking in a public health crisis is identified by O'Neil (2008). O'Neil (2008) identified the lack of leadership development programs (LDP) for public health, which is in turn resulting in a shortage of public health managers. O'Neil equated the managing of people as a strategic resource. In a crisis situation, demand may outstrip supply of public health resources and could pose a threat to the allocation and distribution of those resources (Barnett, Taylor, Hodge, & Links, 2009). This is especially important during the crisis period, as managing people may improve the efficient use of resources and prevent compounding problems as the crisis carries on.

The research by Stoto (2008) supported two reasons for regionalization and geopolitical coordination public health crisis: (a) disease outbreaks do not respect geopolitical boundaries, so some sort of coordination is needed for an effective public health response, and (b) regionalization represents a more efficient use of resources than distributing resources to each of many local public health departments (LPHD). The National Association of County and City Health Officials (NACCHO) has also recognized the potential benefits of regionalization has identified four approaches to this process: (a) networking for the coordination across jurisdictions, (b) active management and coordination of LPHD, (c) standardization and some uniformity across individual health departments in the region, and (d) centralization of the resource planning and resource response (Stoto, 2008).

The work by Thomas & Young (2011) evaluated the pandemic influenza preparedness plans of all 50 states and the District of Columbia. The findings of their research showed a gross lack of ethics preparedness during a crisis, as only six states (IA, IN, NM, NC, SC, and TN) had their own guidelines for ethical decision making during a crisis (Thomas & Young, 2011). Thomas & Young noted that California had its own ethics recommendations, but was making no further progress on them. Legal and ethical issues related to crisis situations was further explored by Barnett, Taylor, Hodge, & Links (2009), as they examined the legal perspective of emergency response. The authors recognized that the declaration of an emergency often triggers new or unconventional legal responses, and authorizes varying actions of uncertain legality (Barnett, Taylor, Hodge, & Links, 2009). Barnett, Taylor, Hodge, & Links expressed the need for legal flexibility during emergencies and for legal practitioners in the public and private sectors to be prepared to prioritize and resolve relevant legal issues in real time. The authors further described the core objective is to craft laws (at a time when the traditional rules of society are in flux) that assist public health practitioners and other responders in making good decisions that benefit the community's health and that respect individual rights and expectations. A conceptual aspect of decisions that benefit the community's health and that respect individual rights and expectations is the allocation of public health resources when demand outstrips supply (Barnett, Taylor, Hodge, & Links, 2009).

2.04 CONCEPTS OF EMOTIONAL INTELLIGENCE

The concepts of emotional intelligence strongly associated with Crisis and Emergency Risk Communication (CERC). The work by Reynolds & Earley (2010) identified the leadership challenges of a crisis. These challenges stem from the uncertainty of the crisis, the informational overload, and the situational complexity of a crisis (Reynolds & Earley, 2010). Reynolds & Earley identified five key informational needs that employees, stakeholders, and the public look to get from their leaders during a crisis. These five key informational needs are: (a) to gain the facts needed to protect themselves; (b) to make well-informed decisions using all available information; (c) to have an active, participatory role in the response and recovery; (d) to act as 'watchguard' over resources; and (e) to recover or preserve wellbeing and normalcy, including economic security (Reynolds & Earley, 2010). Reynolds & Earley also identified five communication failures by leaders that hurt crisis response. The five communication failures are: (a) the release of mixed messages from multiple experts, (b) information released late, (c) leaders with paternalistic attitudes, (d) leaders not countering rumors and myths in real time, and (e) public power-struggles and confusion (Reynolds & Earley, 2010). A manuscript written by Henman (2010) supported the need for leaders to take charge of communication during a public health crisis. Henman also stressed the importance for a crisis leader to listen to the response team. By putting aside ego and listening, a leader will be able to draw answers and solutions from others (Henman, 2010).

The research by Lynch & Cole (2006) examined the human factors during emergency care. Their research brings light to the emotional needs of both the care givers and patients during an emergency crisis. The situational analysis should be taken into consideration within the concept of emotional intelligence leadership during a crisis situation. The researchers in this study acknowledged that little emphasis appears to have been placed on the recognition and development of human factors such as team communication, collaboration, personality and culture, which can affect job satisfaction and ultimately patient outcomes (Lynch & Cole, 2006). In addition, Lynch & Cole (2006) also identified that negative human interactions such as conflict, power struggles, and poor leadership influence how teams perform

in intensive care units, theaters, emergency departments, and other clinical settings. The shortage of research in these areas is reflective of the need for a clearer understanding of emotional intelligence and public health leadership in a crisis.

The work by Lau & Can (2004) further detailed the necessity of emotional intelligence during a public health crisis. In this manuscript, the authors described the societal impact of the Severe Acute Respiratory Syndrome (SARS) infection. The societal impact of the SARS infection quickly spread out to the community and hospital levels, with the sudden closure of schools and hospitals, which upset many of the nurses' personal, family, social, and career lives (Lau & Can, 2004). The researchers further identified the nurses' challenges including the absence of proven treatments and reliable diagnoses of the disease, the risk of personal safety, the shortage of personal protective equipment, and the psychological trauma resulting from the death of the first infected nurse who lost his life on duty (Lau & Can, 2004).

The research by Pender & Prichard (2009) explored crisis intervention from the aspect of the critical incident debriefing and overall critical incident stress management. The authors identified the five essential elements of crisis intervention: establishing safety, enhancing calming, building self and other efficacy, reconnecting to social networks, and instilling hope (Pender & Prichard, 2009). Pender & Prichard suggested that group workers may recognize these as therapeutic factors that emerge in groups, furthering support that gathering people after a crisis will help. The authors identified the stress mitigation tactics that are included in the overall Critical Incident Stress Management (CISM) strategy. CISM is defined as "a comprehensive, systematic, integrated, and multi-tactic form of crisis intervention that is applied to manage critical incident stress after traumatic events" (Pender & Prichard, 2009). The research by Pender & Prichard supported the argument of the necessity of emotional intelligence and public health leadership during a crisis.

"Crisis-resiliency" is another term associated to emotional intelligence and public health leadership during a crisis. Moran (2011) defined "crisis-resiliency" as the ability to recover from adversity and respond effectively during stressful situation, especially when beleaguered by private events, such as fatigue, frustration, and self-doubt. A leader may face this situation and be subject to these emotions during a public health crisis and there are two qualities for leaders in this situation to understand: they need a better understanding of how to lead change and better understanding of how to manage the stress of change (Moran, 2011). Moran further expanded on the subject of "psychological flexibility," which he broadly defines as contacting the present moment fully, based on what the situation affords, as a mindful individual, changing or persisting in behavior in the service of chosen values.

3.0 PROBLEM STATEMENT

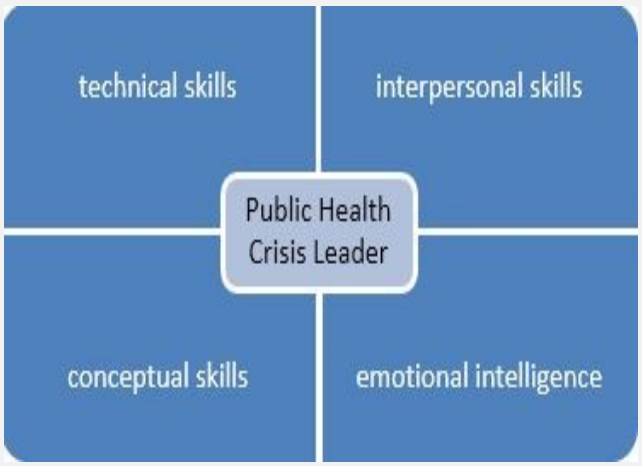
We live in an era of emerging zoonotic diseases, population shifts towards cities, and the threats of bioterrorism. The role of public health leaders is changing to address this era and the complexity of new situations that arise from it. The paucity of literature of the theoretical development and evaluation of public health crisis leadership is supportive of the statement that the application of leadership during a crisis situation requires more attention and better understanding to fully address issues that arise from it. The intention of this manuscript is to improve the comprehension of crisis leadership in a public health setting to bring about a positive social change.

4.0 PUBLIC HEALTH LEADERSHIP THEORY

There are four prominent themes to public health leadership in a crisis: technical skills, interpersonal skills, conceptual skills, and emotional intelligence. Each of these leadership themes is interlinked with the following actions and eventually to the crisis outcome: knowledge of the crisis processes, methods, tools, and techniques (Technical skills); knowledge of interpersonal relationships including communication, conflict management, negotiation, and team building (Interpersonal skills); knowledge of problem solving, logical thinking, decision making, creativity, and reasoning in general (Conceptual

skills); and self-awareness, self-regulation, self-motivation, empathy for others, interpersonal, and social skills (Emotional intelligence) (Nahavandi, 2012).

Public Health Crisis Matrix



Technical skills crisis matrix

Interpersonal skills crisis matrix

Conceptual skills crisis matrix

Emotional intelligence crisis matrix

There are five outcomes that employees, stakeholders, and the public want from their leaders during a crisis: (a) to gain all the facts to protect them, their families and their pets from the dangers they are facing; (b) make well-informed decisions using all available information; (c) have an active, participatory role in the response and recovery; (d) act as a 'watch-guard' over resources; and (e) recover or preserve well-being and normalcy, including economic security (Reynolds & Earley, 2010). The application of Leader-Member Exchange (LMX) theory during an all-hazards crisis will be of key importance for successful crisis leadership and crisis outcome.

4.01 THE ROLE OF LMX

Leader-Member Exchange (LMX) theory is especially relevant during the onset of a public health crisis. The public health crisis leader needs to be aware that followers and subordinates will separate to in-group and out-group dyads during a crisis. Therefore, the leader needs to apply the fundamentals of LMX theory during a public health crisis. The prominent LMX theory themes that emerge during a crisis are: if the task is unstructured or unclear, or the work methods are not known or are new, the LMX is high (Technical skills); the leader must be skilled in adapting behavior and other resources in a way that helps close the gap between the current situation and the desired outcomes (Interpersonal skills); creating partnerships by welcoming interactions and encouraging subordinates to negotiate the assignments (Interpersonal skills); exploring motivation to better understand the subordinate's personal aspirations, task related preferences and career goals to test the willingness of the subordinate to take on new responsibilities (Conceptual skills); identifying the out-group during the crisis situation, analyzing their past performance, and identifying some key characteristics that would help in exploring their interests in the crisis (Conceptual skills); and reducing de-motivation by identifying factors that may lead to low LMX (Emotional intelligence) (Gupta, 2009).

The outcome that leaders obtain as a result of exchanges with members has a number of important implications for a mangers and organizations (Wilson, Sin, & Conlon, 2010). These outcomes also have important implications during a public health crisis. Well-planned and well-executed crisis and emergency risk leadership, fully integrated into every stage of the crisis response, can give the organization the critical boost necessary to ensure that limited resources are efficiently directed where truly needed (Centers for Disease Control and Prevention, 2011). Therefore, the principles of LMX theory are applicable to public health crisis leadership.

4.02 EMPIRICAL EVALUATION PLAN

Public health leadership during a crisis is a form of short-term leadership. This opinion is supported by the research of Farquhar (1995). The work by Farquhar defined the term interregnum: (1) the time during which a throne is vacant between two successive reigns or regimes; (2) a period during which the normal functions of government or control are suspended; or (3) a lapse or pause in a continuous series. Farquhar's definition, "a period during which the normal functions of government or controls are suspended", can apply to a public health crisis. The measure of leadership by short-term executives may reflect demands of the situation: crisis management, stability, and readying the organization for new leadership. With the understanding that crisis management is a short-term leadership role, an empirical evaluation plan must reflect the "short-term" understanding. It would not be appropriate to use an instrument traditionally associated with leadership evaluation that was not adjusted for a short-term leadership role.

Research by Schreuder, et al. (2011) evaluated the relationship between a nurse manager's leadership behavior in relation to the illness of staff. The research method and the instrumentation used for this study provided empirical evidence supporting particular leadership style to an outcome. Even though this research and the instrument used for data collection is directed toward a long-term leadership effectiveness, it can be modified to evaluate public health crisis leadership.

The evaluation of the theory of public health crisis leadership will need to measure the four leadership skills of the public health crisis leader: technical skills, interpersonal skills, conceptual skills, and emotional intelligence. The leadership skill assessment instrument can be a tool which collects 360 degree feedback from the leader's superiors, peers, colleagues, subordinates, the public, and the news media.

This 360 degree feedback can be designed to evaluate the leader's performance by a quantitative method, qualitative method, or a mixed methods approach. Creswell (2009) defined these three evaluative methods as approaches to answering research hypothesis. The quantitative method is used primarily for survey and experimentation which can provide measures of how many members of a population have particular knowledge or attitudes. This differs from the qualitative method, as the qualitative method provides insight into a population, asking the question of "why?" in place of the question of "how many?" (Siegel & Lotenberg, 2007). The mixed methods approach is a blend of these quantitative and qualitative research methods. In this blend of methods, the order of investigation and the weighting of data from each method needs to be pre-determined by the investigators (Creswell 2009).

To further the research and evaluation of this theory of leadership during a public health crisis, a quantitative research method would be appropriate. The quantitative research method would provide empirical data about the relationship of the four leadership skills (technical, interpersonal, conceptual, and emotional intelligence) and the measured outcomes. To collect the quantitative data, a survey tool could be crafted and distributed for 360 degree feedback.

The survey tool could use a Likert scale: strongly agree, mostly agree, agree, disagree, and strongly disagree. This instrument could separately measure the four leadership skills as independent variables against the measured outcome, which serves as the dependent variable. The outcome of the public health crisis can also be measured quantitatively by a similar Likert scale. The outcome instrument would also have to be distributed for a 360 degree feedback evaluation. The data would be collected and analyzed for regression and correlation.

This empirical evaluation plan would be used following an event. By applying the quantitative research method prospectively, the opinions of the 360 degree feedback participants may be unbiased and less likely to be effected by time. A retrospective analysis of previous public health crisis events may collect data from participants whose opinion has been influenced by events following the leader's role or by the news media. Events following the leader's role and the portrayal of the event by the media would be threats to the internal validity of the retrospective data.

5.0 CONCLUSION

The era of emerging zoonotic disease and the threat of bioterrorism events require a leader skilled in public health crisis management. The paucity of research and literature on the subject of effective public health crisis leadership necessitates this theoretical leadership approach and empirical evaluation. This theory of public health crisis leadership is constructed from four basic and traditional leadership skills: technical skills, interpersonal skills, conceptual skills, and emotional intelligence.

A public health crisis situation is the driving force for a leader to develop skills in these four areas. The public health crisis is a situation that is unexpected, with little or no warning, and can be readily controlled with proper planning and training. A leader in this role will need to coordinate with several agencies and organizations, direct staffing towards favorable overall outcomes, and address the needs of the public and the media. Unlike traditional managerial leadership roles, the leader of a public health crisis is a short-term leader with possibly increased responsibilities and possibly decreased resources.

We suggest policy adaptation for the emergency management of resources and direction of staff during a crisis period. We also suggest policy adaptation requiring annual or semiannual crisis drills. Even though emergency management policy of staff and resources is common to many localities, crisis drill and

exercises may be lacking. These policy changes allow crisis leaders flexibility and practice in making decisions for the allocation of resources to areas or departments that present an urgent need. The results of drills may identify the need to create smaller, coordinated management teams for widespread underserved areas, such as residential neighborhoods isolated in the midst of a crisis. Additional policies should be created to ensure that members of the public can engage and take action during and after a crisis. An example is the creation of community outreach centers to train potential volunteer leaders using practice drills that reflect crisis situations and exercises to ensure that there are workable interventional strategies in place for a streamlined crisis response.

Historical accounts of pandemics are proof that unmanaged emerging diseases can have devastating effects on the human population. It is common to read in current literature that microbial organisms are emerging that have become resistant to current medications and pesticides. Many of these microbiological organisms pose a health threat to the public health servants engaged in helping the public. Bioterrorist activities pose another threat to populations as well, as political turmoil continues on a global scale. On several occasions during the past decade there have been bioterrorist activities that were not known until after the event occurred and people had died. Because public health crisis events do not follow geopolitical boundaries, a crisis leader may become responsible for regional populations.

The leadership skills of a public health crisis leader will extend from technical skills, interpersonal skills, conceptual skills, and emotional skills. As these skills and others are traditionally studied and researched in traditional managerial applications, a public health crisis situation is far from traditional. A leader in this role will have to be talented in these four areas.

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