

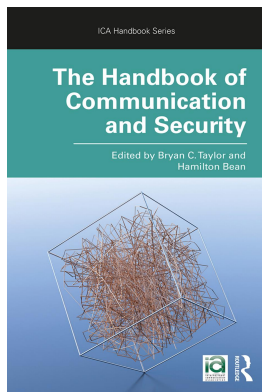
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6

Health Communication and Security

Matthew W. Seeger and Timothy L. Sellnow

Security is a frequently contested term that references principles of social, resource, economic, political, and institutional stability over time, as well as ideals such as certainty, resilience, and continuity in the ongoing conduct of institutional and everyday life (Baldwin, 1997; Tarry, 1999). Alternatively, the World Health Organization (WHO) defines *health* as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (1948). Security thus intersects with principles of individual and community health at several points. Threats to public health, such as infectious disease outbreaks or food, water, and air contamination can compromise security while larger security threats, such as natural or human-caused disasters, population dislocation, or armed conflicts, can implicate the health of individuals, communities, and entire populations. Thus, in many contexts, questions of health are closely associated with issues of security. Questions of health surface within Security Studies’ “human security” paradigm (Liotta, 2002); however, Taylor, Bean, O’Gorman, and Rice (2017) have argued that *communication vis-à-vis* security (including health-related security) remains surprisingly underdeveloped.

The purpose of this chapter is to explore the intersection of health communication and security *scholarship* and the ways that health communication *practices* have addressed larger questions of security. We first explore the concept of security and describe the post-9/11 securitization of health communication. We then provide an extended case study that addresses the connections among national health security discourses and state and local public health practices. We draw upon this case study to speculate about the fuller integration of health and security within the context of a wide range of emerging risks and threats before offering a brief conclusion.

HEALTH AND/AS SECURITY

Security is a term and concept applied to a wide variety of domains including nations and states, food and water, energy, environment, and economies as well as health. Baldwin (1997) notes that the concept of security directs attention to questions of: security for whom, for what values, how much, from what threats, by what means, at what costs, and for how long? These questions illustrate that the concept of security may be operationalized and specified in variety of ways. A wide range of threats and risks may be framed as issues of individual, social, institutional, or

national security. Security as essentially a state of stability, predictability, and well-being stands in contrast to crisis as a moment of disruption, threat, and uncertainty. In turn, *crisis* represents a specific, unexpected, non-routine event or series of events that creates high levels of uncertainty and a significant or perceived threat to high-priority goals (Seeger, Sellnow, & Ulmer, 2003). These goals may include individual, community, and public health and well-being. A security threat generally represents an especially serious risk or threat of a magnitude to allow for the suspension of normal political functions (Buzan, Wæver, & De Wilde, 1998). A threat to the public health that is routine, such as seasonal influenza, would not be a security threat, while a novel influenza pandemic, such as H1N1, would constitute a security threat.

In its most traditional iteration, security references nation states and the capacity to resist threats to sovereignty. Walt (1991), for example, equates security with peace and describes security threats primarily in militaristic terms. This traditional notion is grounded in the concept of national security. Security is maintained, therefore, through strategic development and application of military capacity and force. Nation states develop specific policies and procedures to prepare for, prevent, or engage in conflicts and these policies have the goal of promoting peace, stability, certainty, well-being, and security (1991, p. 212). From this perspective, military capacity, funding, training, and planning are essential to maintaining security.

More contemporary notions of security acknowledge a much broader range of threats to the nation state that extend beyond military threats and an associated wider view of what constitutes security (Buzan, Wæver, & De Wilde, 1998). This wider view expands both the range of issues that constitute security threats and the locus from an exclusive focus on the nation state, regions, communities, institutions, and individuals. According to this expanded view droughts, floods, fires, earthquakes, super storms, and pandemics of existing and emerging diseases such as novel influenza, Sudden Acute Respiratory Syndrome, Middle Eastern Respiratory Syndrome, and Ebola, as well as failures in infrastructure, transportation accidents, and intentional human-caused events all constitute threats to security. These and many other emerging risk factors also impact the health of individuals and populations.

With few exceptions, issues of health and disease have not generally been part of notions of security as conflict among nation states. An exception is the 1918–1919 Spanish Influenza pandemic. This novel and virulent influenza virus spread rapidly in part because of returning World War 1 veterans. Thus, the pandemic was associated with the larger war effort. Eventually, the Spanish flu led to an estimated 50 million deaths worldwide (Taubenberger & Morens, 2006). Although other infectious disease outbreaks, including HIV/AIDS, West Nile Virus, Lyme disease, Zika, and various cholera pandemics, have created widespread morbidity and mortality, the 1918–1919 Spanish Flu stands apart as the clearest example of a public health emergency rising to the level of national security threat. Questions of health and public health response were largely seen as tangential to security issues until the threat of biological warfare emerged following 9/11 (see Chapter 13 in this volume).

As described in the next section, the post-9/11 era saw the enlargement of security, including the concatenation of health and security across government institutions at national (e.g., the U.S. Center for Disease Control’s Division of Global Health Protection) and international levels (e.g., WHO’s 2005 International Health Regulations). This enlargement extended to academic arenas as well, for example the establishment of the journal *Health Security* (formerly *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science*) and the rise of health security as a topic of interest in the journal *Health Communication* and throughout Security Studies journals (e.g., Maclean, 2008; Peterson, 2002). Within Communication Studies journals, however, the term “health security” has barely made an appearance (e.g., Keränen, 2011).

The Post-9/11 Securitization of Health Communication

The events of the 9/11 attack on the World Trade Center intensified public concerns about national security. Soon after, an additional threat emerged that implicated the public health community and created a national security threat. The anthrax attack of September 2001 was arguably one of the most public and disruptive public health emergencies of recent history. This event involved letters containing processed anthrax spores mailed through the U.S. postal system to politicians and media outlets. The first letters mailed were postmarked September 18, 2001. Thus, the anthrax attack was connected in terms of time and perception to the 9/11 World Trade Center disasters, and was seen by many as an extension of this attack. Five people died from inhalation anthrax and seventeen others were infected. A significant national response was mounted including vaccinations of military personnel and health care workers. In addition, 4.8 million masks and 88 million gloves were purchased by the U.S. Postal Service and some 300 postal facilities were tested for anthrax. Over 32,000 postal workers and government personnel took antibiotics as precautionary measures. Many facilities, including the Brentwood facility in Virginia, would undergo extensive decontamination. The anthrax episode created very high levels of uncertainty and public concern, caused widespread disruption, and cost hundreds of millions of dollars. Thus, the event placed significant pressure on the public health community, including the Centers for Disease Control and Prevention (CDC), to communicate new policies and strategies effectively within a context of immediacy, high threat, and high uncertainty (Reynolds & Seeger, 2005).

The public health community was largely unprepared for the anthrax episode. Among the challenges faced were the need to communicate uncertainty, identify credible spokespersons, collaborate with other organizations, satisfy a competitive 24/7 media demand, and respond quickly (Freimuth, 2006). The CDC describes public health systems as “all public, private, and voluntary entities that contribute to the delivery of essential public health services within a jurisdiction” (CDC, 2018a). The modern public health system includes state, local, and national agencies as well as a wide range of health care providers. The CDC was founded in 1942 as the Communicable Disease Center (CDC) to lead federal efforts to eradicate malaria in the United States. These efforts followed the traditions of epidemiology initially developed in the mid-1800s to fight cholera. As a bioterrorism attack, the anthrax episode did not follow the established pattern of an infectious disease outbreak and the CDC’s management of the response was chaotic and ineffective (Hughes & Gerberding, 2002). This included significant communication failures (Chess & Clarke, 2007).

The recognition that bioterrorism such as the anthrax attack as well as other emerging infectious diseases were security issues, and that the public health system was unprepared to respond effectively, resulted in significant public investment and the development of policies and procedures to prepare for, prevent, and respond to public health emergencies. In this way, the public health system was securitized by the events of 9/11. Securitization is the process whereby states transform issues and domains into issues of national security, thus allowing for extraordinary efforts to be made in the name of state security (Buzan, Wæver, & De Wilde, 1998). The securitization of public health extended to communication capacity, training, and the development of policies, procedures, and practice at the state, national, and international levels. This included policies, procedures, and practices for communication.

Public health by tradition and practice is highly decentralized and organized at the state and local levels, and this includes communication capacity. Public health systems are quite diverse in terms of organization, funding, and coordination with other agencies. A study by

the Rand Corporation found that staff shortages, inadequate training, poor communication, and bureaucratic impediments limited public health preparedness. Following the anthrax attacks, bioterrorism became a key focus of public health agencies and efforts were directed to create state offices of public health preparedness, enhance capacity, and create coordination between response agencies. In the wake of the World Trade Center and anthrax attacks, the U.S. Congress passed an emergency supplemental appropriation of \$900 million for bioterrorism preparedness. The funding continued through 2006, with approximately \$1 billion per year allocated to state and local health departments (Wasserman et al., 2006).

This infusion of federal money into state and local public health infrastructure development increased personnel, training, and response resources. Public health preparedness was a new role for public health agencies requiring new workforce-level skills and training, including both crisis and risk communication. The concept of a public health emergency as a situation “whose scale, timing, or unpredictability threatens to overwhelm routine capabilities” was used to define a new domain of practice (Nelson, Lurie, Wasserman, & Zakowski, 2007). Concerted effort was directed toward creating a public health system, community, and network of agencies and organizations to achieve a state of preparedness. Public health emergency preparedness encompasses the “full range of prevention, mitigation, and recovery activities” as well as operational capacity to respond to a range of emergencies that threaten the public health (Nelson, Lurie, Wasserman, & Zakowski, 2007). The National Association of County and City Health Officials (NACCO) subsequently defined health security as “a state in which the nation and its people are prepared for, protected from, and resilient in the face of incidents with health consequences” (NACCO, 2018). Nelson et al. (2007) note that to be prepared to respond to public health emergencies, communities must have a preplanned and coordinated rapid-response capability, an expert and fully staffed workforce, and systems of accountability and quality improvement. Response capacity includes a public information and communication function to “rapidly provide accurate and credible information to the public in culturally appropriate ways” (Nelson et al., 2007).

In addition to state and local-level efforts, national and international public agencies have embraced preparedness and associated communication. The CDC and WHO have both created public health preparedness programs and developed resources to support effective communication during emergencies. WHO, for example, notes that during a public health emergency, “Communication will be one of the most challenging tasks during an outbreak and it should be planned well in advance” (WHO, 2018). Emergency risk communication is a complex and dynamic process that includes many variables and contextual factors interacting over time (Seeger et al., 2018). The CDC maintains a variety of communication resources including videos, blogs, and social media graphics to promote effective communication around questions of preparedness and response.

The securitization of health communication has also extended to the academic research agenda. Much of this research tracks larger questions of crisis and emergency risk communication. For example, within the journal *Health Security*, communication themes appear including media coverage of major epidemics, the use and role of social media, informational needs, coordination, and conceptual models and frameworks. These research themes are also reflected in more general treatments of emergency risk communication.

Legacy media remains a source of information for much of the general public. Thus, media coverage of major epidemics is an important factor in the public’s understanding of these risks. Ophir (2018), for example, examined media coverage of three public health epidemics, H1N1, Ebola, and Zika, in an effort to identify common themes using the crisis and emergency risk communication (CERC) framework. These included a social theme, concerning social/economic impact, a scientific theme, concerning media and health risks, and a pandemic theme, concerning

organizational responses. Other investigations have explored the tone of media coverage. Vasterman and Ruigrok (2013) found that television and newspaper coverage of the 2009 H1N1 pandemic was alarming and intense. The dynamics of social amplification of risk and the role of the media are important questions in health security (Klemm, Das, & Hartmann, 2016).

While legacy media is important in informing the public, social media has emerged as a powerful mechanism for emergency risk communication and has generated a significant amount of inquiry. Veil, Buehner, and Palenchar (2011) argue that social media is increasingly important in emergency response and examine the ways social media can contribute to best practices in emergency risk communication. Jin, Liu, and Austin (2014) used a social-mediated crisis communication model (SMCC) to examine the impact of crisis information form, crisis information sources, and crisis origin. They found that crisis origin impacted both preferred information form and source. Chew and Eysenbach (2010) conducted a content analysis of Twitter during the 2009 H1N1 outbreak and found that resource-related posts were the most commonly shared tweets (52.6%). Only 4.5% of tweets were identified as misinformation. Legacy media were the most popular sources (23.2%) for retweets. Official government and health agencies sources were retweeted only 1.5% of the time.

An additional theme in both the health security and emergency risk communication fields concerns the informational needs of the public. This approach may be understood as a traditional audience analysis approach. Several studies have examined patterns of information seeking during crisis and have identified preference based on gender, race, and age (Seeger, Vennette, Ulmer, & Sellnow, 2002; Spence et al., 2005, 2006). Piltch-Loeb, Merdjanoff, and Abramson (2018) examined information preferences around the 2016 Zika outbreak. They found differences based on education, income, ethnicity, gender, and age. Television and print were primary sources of information. Adapting messages and channels to demographic features of target audiences, therefore, is an important strategy for increasing effectiveness. Hipper et al. (2018) explored the specific informational needs of families with special health care needs, such as mobility, chronic illness, and developmental or intellectual disabilities. They note a significant gap in the research that extends beyond questions of content to questions of planning, training, timing, etc.

Coordination and communication in disaster response is an ongoing challenge and has generated several investigations primarily in disaster sociology, but also in health security. Coordination may be achieved in many ways; through pre-set policies and procedures, through organizational structures, through established communication networks and systems, and through emergent networks (Sellnow & Seeger, 2013, McEntire, 2014). Comfort, Ko, and Zagorecki (2004) note that a disaster places demands on a system that often cannot be met without accessing additional resources. This access is closely associated with larger questions of system resilience. Moreover, “different phases of disaster response require different types of information, equipment, and management skills” (p. 310). Local, emergent, and larger more formal networks are associated with the coordinated movement of resources during a disaster response. Lis and Resnick (2018) examined one formal coordination network to support regional coordination among health care agencies and providers. The network grew out of perceived needs and specific failures to address coordinated messaging and decision making. Creating, developing, and refining the network required the development of new relationships and trust, along with established policies and procedures.

General conceptual models and frameworks have been proposed to guide practice and inform research, and some of this work is directed to synthesizing principles including Sellnow’s (2014) description of key principles and Seeger’s (2006) discussion of best practices in emergency risk communication. Seeger et al. (2018) offered a broad conceptual model of emergency risk communication to help inform practice and assessment. Their model incorporates a variety of variables across three related stages of inputs, development processes, and outcome and illustrates a variety

of complex dynamics. The identification and description of variables, they argue, is essential to assigning impact, improving practice, and guiding research.

This discussion illustrates some of the major directions for communication inquiry within the health security and communication field. While these themes are important to health security, they are not distinct. Issues of media coverage of major epidemics, the use and role of social media, informational needs, coordination, and conceptual models and frameworks are endemic to disaster management, resilience, health communication, and emergency risk communication. As the following discussion of cases illustrates, communication is a critical process in the larger effort to protect the health of the public.

CASE STUDY: SECURITY, PUBLIC HEALTH PREPAREDNESS, AND EMERGENCY RISK COMMUNICATION

The public health community has long recognized the importance of communication. According to the CDC, health communication is “The study and use of communication strategies to inform and influence individual decisions that enhance health” (CDC, 2018). This includes a variety of health promotion, social marketing, and public campaign strategies to increase health literacy and alert the public about health risks and mitigation strategies. For example, both the CDC and WHO have mounted sophisticated media campaigns to reduce the use of tobacco, promote vaccinations, and reduce the unnecessary use of antibiotics.

The U.S. Environmental Protection Administration defines risk communication as “the process of informing people about potential hazards to their person, property, or community” (Reckelhoff-Dangel & Petersen, 2007). WHO defines risk communication as:

the exchange of real-time information, advice and opinions between experts and people facing threats to their health, economic or social well-being. The ultimate purpose of risk communication is to enable people at risk to take informed decisions to protect themselves and their loved ones. (2018)

Risk communication may take many forms including word of mouth, social media, flyers, and mass media campaigns and is generally carefully planned with messages that are tested and targeted.

In contrast, emergency risk communication is more spontaneous and emerges within the context of a specific emergency or security threat. It is typically more immediate and responsive than other forms of communication and generally employs more immediate forms of communication, such as broadcast alerts, radio, television, or social media (Reynolds & Seeger, 2005). Both risk communication and emergency risk communication play important roles in emergencies and both have been operationalized in a variety of ways. This includes a wide variety of functions such as pre-crisis education and promotion for community, organization and individual preparedness, developing and disseminating alerts, warning and response guidance, coordinating with other groups, agencies, and organizations, providing information to decision makers and managers, and facilitating post-crisis learning (Sellnow & Seeger, 2013). Simply stated, communication is integral to any effort to prepare for or respond to a crisis and, in many cases, communication is the response.

Principles of Emergency Risk Communication

Because public health preparedness has been recognized as a security priority and communication has been identified as a core emergency response competency, a number of programs

and principles have been developed. These include training and the development of tool kits, resource guides, frameworks, various preparedness campaigns, and systems for creating coordinated and consistent emergency risk communication messages. We describe each of these below.

As discussed earlier, the CDC developed a comprehensive training program and model for communicating during health emergencies called crisis and emergency risk communication or CERC. The CERC program is described in detail in Chapter 2 which focuses on crisis and emergency communication. CERC was developed by the CDC in response to the deficiencies in communication that were evident in the anthrax case and was targeted specifically as a resource for the public health community. Eventually, CERC evolved into a very broad program of resources, tools, training modules, guidelines, and frameworks. It is arguably the most comprehensive program of emergency risk communication material developed for public health and has been used to inform a variety of responses. It is also used as a framework for developing emergency risk communication capacity and assessing responses. CERC has helped demonstrate the value of emergency risk communication and elevate the skill level of at various state, location, national, and international levels.

Public communication campaigns have been used prior to public health emergencies to create a state of public health preparedness and in response to specific public health threats. Public health campaigns are well-established programs typically structured as risk communication messages designed to inform, educate, and persuade. The long-running effort to reduce tobacco smoking through the use of carefully crafted persuasive messages is just one example. Rising rates of obesity and diabetes are also examples of communication campaigns designed to reduce health risks and promote health security. Annual campaigns around seasonal influenza are routine for many local health departments. Government preparedness campaigns have also become common since 9/11, including the very prominent national public service campaign, Ready.Gov. This campaign was launched in 2003 and run by the Department of Homeland Security in an effort to promote individual and community-level preparedness. National preparedness month, September of each year, is also run as a campaign to promote individual, organization, and community preparedness. The CDC mounted a social media campaign in 2011 called Preparedness 101: Zombie Apocalypse focusing specifically on public health aspects of preparedness (Fraustino & Ma, 2015). The campaign used the popularity of zombies in the media to promote preparedness by suggesting that being prepared for a zombie attack can result in preparation for other kinds of disasters. The campaign began almost as an accident with a blog post and quickly went viral, eventually crashing the CDC's Public Health Preparedness website. The campaign has grown to include an ongoing blog, educational materials, posters, and a graphic novel. While the zombie apocalypse campaign has received a great deal of attention, it has been critiqued for a failure to create any meaningful behavioral change. Defenders point out the campaign has produced preparedness awareness among a younger demographic that is typically very difficult to reach (Fraustino & Ma, 2015). Public preparedness campaigns are generally recognized as essential yet have demonstrated only marginal success in changing behaviors such as storing food and water and developing personal disaster plans. Simply providing information to the public has proved ineffective (Paton, 2003). By some estimates, only about 40% of the U.S. public have household disaster kits and even fewer maintain those kits (FEMA, 2015).

Campaigns are also developed as part of the response to specific emerging infectious diseases. The emergence of the Zika virus in Brazil in 2015 and later in the United States in 2016 prompted the development of awareness and prevention campaigns targeting pregnant women, women who may become pregnant, and their partners. Zika is a vector-borne disease causing serious birth defects and is transmitted primarily by the *aedes aegypti* mosquito but may also be transmitted sexually. As with many emerging infectious diseases, the science around Zika was emerging and initial recommendations and associated messages needed to be developed under

conditions of some uncertainty. WHO recommended programs of risk communication for Zika using five major tactics:

public communication via the use of media and social media communications for fast reach to large populations; translational communication by tailoring scientific information into language and formats that can be understood by non-experts and disseminating this through information, education and communication (IEC) materials; stakeholder coordination including policy communication and constituency relations to ensure consistency of messaging and broad reach to influencers able to engage at risk-communities; community engagement to empower those affected to participate in the design, implementation, and evaluation of the response and in protecting themselves as well as disseminating information; and dynamic listening to understand and respond to people's perceptions and management of misinformation and rumours. (WHO, 2016)

Among the communication challenges associated with Zika were the available self-protection recommendations, international, intercultural, and language challenges, and the nature of the impact. Self-protection for Zika included wearing insect repellent and long sleeves and long pants in tropical and subtropical climates to avoid mosquito bites. In some cases, these proved unworkable. Those traveling to countries in Central and South America were at risk for infection and needed guidance as they entered and left the country. Intercultural issues emerged around sex and abortion. Campaign materials also needed to be translated into several languages. The impact of Zika, serious birth defects of children born to infected mothers, was intensely emotional, creating an additional level of communication complexity. The campaigns developed by the CDC and WHO were dynamic and evolved in response to these issues as well as feedback from target audiences.

A third area of focus is creating consistent emergency risk communication messages. Coordination and cooperation problems are some of the most challenging issues facing emergency responses (Sellnow & Seeger, 2013). During emergencies, groups and agencies with little history are forced to work together within highly stressful and consequential contexts. As the public health community has been incorporated into the larger emergency response system, coordination has become more difficult in part because of divergent organizational cultures. While much of the emergency response community, including police, fires, and Department of Homeland Security personnel, follows a centralized command and control culture typically associated with the military, public health has generally followed a decentralized cooperative model of working with community groups, NGOs, and other public health partners. This can lead to tension over control, tactics, and messages. The problem is often manifest in conflicting and contradictory messages released by different groups and agencies participating in the response (Lurie, Wasserman, & Nelson, 2006).

Cooperation and coordination are improved with the development and use of message clearance procedures and Joint Information Systems and Centers (JIS/C). Clearance represents an agreed-upon policy whereby all emergency risk communication messages are reviewed and approved by interested parties before release. Clearance insures that there is consensus about messages and that all relevant agencies are aware of and have reviewed information before it is released to the public. While clearance can slow the release of information, the benefit in terms of coordinated and consistent messages is significant. An additional way communication coordination is achieved is in the JIS/C. JIS/C and Emergency Operations Centers are part of the larger National Incident Command System (NIMS) which specifies organizational structures, authority systems, roles, and response protocols for all federal responses. NIMS standardizes these processes so that agencies can more effectively work together. The public information officer is a critical role specified in NIMS providing information such as evacuation routes,

alerts, and updates to diverse audiences in a timely manner. The goal of NIMS and the JIS/C is to create messages that are coordinated and consistent and that meet the needs of audiences (FEMA, 2007, p. 4).

The JIS seeks to integrate information about the crisis and the public affairs function and emergency operations to develop and deliver coordinated interagency messages that are accurate, accessible, timely, and complete (FEMA, 2007, p. 4). The JIS also develops and oversees the larger emergency risk communication strategy including determining frequency of communication, channels, rumor control, and media relations. The JIC is the context within which this coordination occurs. By integrating the emergency risk communication system with the emergency operations function, communication is positioned as part of a strategic decision function of emergency response.

In addition, emergency risk communication within public health contexts has some specific requirements that distinguish this activity from other domains of emergency response. Public health must work with an especially diverse array of public health partners, such as faith-based organizations, community groups, state and local health care providers, and social service organizations. The public health emergency risk communication function must target the health provider community including hospitals, nurses, and physicians. They must communicate health information, typically science-based guidance, which often is still emerging. The messages have significant consequences in terms of mortality and morbidity. Communication must use messages and channels that reach all audiences and target a diverse set of health-related issues and needs. This includes vulnerable populations and individuals with underlying medical conditions.

Strategic Approaches to Health Communication and Security

The positioning of health communication as part of the larger emergency response and security system involves a variety of strategies. Capacity building in public health communication, for example, has been a primary goal of preparedness. The events of 9/11 demonstrated a wide variety of deficiencies within the public health community and this included fundamental breakdowns and mistakes in communication. CERC as well as complementary programs at the state and local level were designed to address these deficiencies, and local and national training programs, professional communities, and conferences have also developed. The development of a trained public health preparedness workforce with expertise in emergency risk communication is an ongoing challenge.

Networks of public health partners are necessary to create preparedness and security. The public health system, as described earlier, is decentralized and includes a wide array of public and private health care providers. Establishing and maintaining relationships with these groups before a crisis occurs is critical to an effective response. Public health has a long history of working collaboratively at the community level and thus is well positioned to provide hyper-local-level support. Because of these long associations, public health is likely to be seen as a credible source of information which can be especially important during a crisis. New partnerships have also been required with first responders, law enforcement, and emergency management agencies. Drills, exercises, and crisis plans have required public health to work with and develop new relationships improving understanding, coordination, and communication (Lurie, Wasserman, & Nelson 2006).

An additional strategy involves incorporating public health and health communication into larger efforts to create resilient communities. The Presidential Policy Directive (PPD-21) (32) on Critical Infrastructure Security and Resilience defines resilience as “the ability

to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions. Resilience includes the ability to withstand and recover from deliberate attacks, accidents, or naturally occurring threats or incidents.” The Department of Homeland Security includes public health systems in its list of critical infrastructures. Systems that are resilient have a capacity to absorb major disturbances, improvise, and reorganize so as to retain their functionality, structure, and essential identity (Ayyub, 2014, p. 2). Resilience is a dynamic and adaptive quality rather than a static property of a system and is the “outcome of a recursive process that includes sensing, anticipation, learning, and adaptation” (see Ayyub, 2014). Public health’s close integrated within local communities, including established relationships with local groups, can facilitate community-level resilience (Lurie, Wasserman, & Nelson, 2006). Investments in public health preparedness have also helped bolster a system that has been chronically underfunded and often ignored by policy makers (Lurie, Wasserman, & Nelson, 2006).

As this discussion illustrates, the field of health security has been driven by significant disease outbreaks that create widespread threats to the health and well-being of communities. While a primary focus of health security concerns the intentional use of chemical, biological, radiological, and nuclear weapons to create harm, such as with the anthrax letters, unintentional threats, such as Zika and Ebola, are also significant. Thus, health security has embraced both intentional and unintentional risks. In addition, communication has emerged as a primary strategy of health security along with concepts such as planning, coordination, and resilience. Communication activities function at the strategic levels as resources necessary for understanding, preparing for, and avoiding risks and responding when risks erupt into crises. As noted, in many cases, communication is the response to a health emergency.

This case also illustrates areas for further inquiry. The structural integration of public health into the larger emergency management system remains a challenge and systemic inquiry into this process from an organizational perspective is needed. Structures and processes of coordination and cooperation from a communicative perspective as well as ongoing inquiry into organizational culture may be especially fruitful. Because emerging health risks are global in scope, questions about emergency risk communication on an international or intercultural level need attention. Very little research into emergency risk communication has occurred outside a western context and that state of knowledge is weak at best (Schwarz, Seeger, & Auer, 2016).

QUESTIONS AND TENSIONS IN HEALTH COMMUNICATION AND SECURITY

While much progress has been made since the anthrax episode, questions remain about public health and health communication as issues of security. The specific relationship between health communication and larger questions of preparedness and security is not clear. Current concepts and practices have moved public health into the larger system of emergency management, while at the same time maintaining a separate identity and mission. This may create confusion and conflict, especially given chronic underfunding. Critics have noted that securitization of public health risks diluting a culture of collaboration and creating a militarized system (Lloyd, 2009). Resources directed toward preparedness may detract from more traditional areas of work, such as health education, disease prevention, and working with vulnerable communities.

A related question concerns the ways an essentially decentralized system built on values of collaboration and cooperation involving private and public entities can function within a larger security framework structured as command and control. The militaristic culture of emergency

response is generally hierarchical, structured, and bureaucratic while public health is more organic and egalitarian. The connection of these two seemingly diverse organizational cultures may create ongoing tensions that are manifest in communication operations.

An additional question concerns the relative openness of communication. In general, when various domains become securitized, information is more constrained and controlled based on the assumption that openness creates additional risks. In contrast, health communication and emergency risk communication have emphasized both openness and transparency. Openness and transparency as well as scientifically accurate messages have helped establish public health messages as highly credible. Openness and transparency are part of the larger cultural conflict between emergency management and public health systems. For example, some public organizations, such as schools, have elected to remove their crisis plans from their websites in the belief that this may create additional vulnerabilities. This in turn limits the ability of the public to understand how a response will occur. The perceived effort to limit and control information also raises important ethical issues related to the rights of individuals to have access to information that may influence their health and about the risks they may face. As information becomes increasingly securitized, it becomes less accessible to the public.

Technology has fundamentally changed the nature of communication and this includes emergency risk communication associated with health. Social media has created new means for rapidly reaching audiences about emerging disease, for surveillance and situational awareness, and for providing feedback about messages (Veil, Buehner, & Palenchar, 2011). Accessing real-time health-related information from credible web-based sources has allowed individuals to educate themselves and exert more control over their personal health. At the same time, social media has created new demands for agencies and created new challenges. These include the need to manage rumors as they emerge on social media, respond quickly to issues, and provide rapid updates to agency websites, Facebook pages, and Twitter feeds. The widespread use of social media has made it more difficult for health communicators to control messages. Technology has also improved the ability of agencies to share information through systems that are increasingly interoperable.

Finally, the range of threats and their magnitude is increasing. While bioterrorism is frequently cited as the impetus for the securitization of public health (Keränen, 2011), issues such as emerging infectious disease, climate change, and organizational and technological failures create equally daunting scenarios. If securitization allows for extraordinary measures, then defining a crisis as a security threat can result in the suspension of norms, as well as deploying additional resources.

CONCLUSION

As crises and disasters occur more frequently, receive more media coverage, implicate questions of health, and are increasingly portrayed as security issues, the role of public health preparedness and communication has become more prominent (Lurie, Wasserman, & Nelson, 2006). This has brought a variety of new responsibilities and roles, including new obligations for communication. In response, public health has brought important communication resources to the areas of public health preparedness and security. At the same time, public health has added new communication competencies and strategies. Important questions remain as to how and how effectively health communication functions within the larger security context. The integration of public health into the emergency response and the attendant focus on health and well-being have improved the effectiveness of responses.

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