

# The Public Need to Know: Emergencies, Government Organizations, and Public Information

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## **Abstract**

Communications with the public in times of emergency is an important function of government agencies. Successful communications can assist the public to rapidly adjust behaviors and perceptions of risk, while unsuccessful communications can promote community outrage, and impede the progress of threat mitigation. A model of interactive emergency communications, integrating the roles of government agencies, information intermediaries, and the public is presented, and tested using two case studies (the 1999 West Nile Virus outbreak in New York, and the release of anthrax in 2001). Results of the case study analysis provide insights into the process of emergency communications and the behavior and decision making of governments, intermediaries and the public. These insights, in turn, suggest actions government officials can take to improve emergency communication.

## **Biographical Note**

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## I. Introduction

When faced with emergencies, government organizations undertake a variety of information tasks designed to inform the public. Frequently, US government agencies at all levels are called upon to communicate to the public about serious matters directly affecting the well-being of individuals and communities. Emergencies range from those generated by forces of nature (tornadoes, hurricanes, floods, snowstorms), natural organisms (West Nile Virus, e. coli), individual actions (murders, child abductions), and non-state violence (September 11<sup>th</sup>, anthrax dispersal). In formulating threat responses, agencies have used a wide variety of strategies for action and information dissemination. The purpose and character of responses has varied based on the type of emergency, the capacity and culture of the organization, the agency's expectations of public action, and the perceived capacity of the populace to receive, understand, and respond to agency communications.

The purpose of this article is to provide a theoretical framework that outlines key variables in public organization information response to emergency situations. It starts with the assumption that in most public emergencies, information dissemination is not a unilateral and unidirectional activity by a single agency, but a collection of actions by multiple actors, both inside and outside of government. The article's specific focus is to trace the interplay among agencies, media, communities of professional practice, and individuals, in order to uncover the competing demands, perceptions and expectations of actors in the public communication environment. I hope this, in turn, leads to a better understanding of why different agencies use different approaches in informing the public about emergencies, and why these treatments are more or less effective in different situations.

Several theoretical perspectives have been integrated within the framework presented in this paper. These separate perspectives, each represented by a professional literature, include organizational information use and decision making; risk communication; media behavior; the roles of communities of practice and social networks in public discourse; and the developing field of public organization network theory.

The theory is tested through comparative case studies of two public information dissemination experiences, the West Nile Virus response of 1999, and the information activities surrounding the release of anthrax in 2001. The case method was used because we must attempt to understand motivations for and outcomes of actions in a contemporary environment where events cannot be controlled.<sup>1</sup> These two cases were chosen because they represented two variations of response within a single information culture (public health emergency response); involved risk to large numbers of people; were well covered by the media; engaged several governmental agencies, communities of practice, and social networks; and were embedded in a rich environment of government and professional documents and policy recommendations. Content analysis of media reports and government documents, study of professional literature about public health information practice and theory, and interviews with selected governmental participants were used to develop a deeper understanding of the circumstances, chronology, and context of the two incidents, and the methods and outcomes of public information dissemination activities.

## II. Theoretical background

### a. The role of government managers

In order to communicate effectively with the public, government organizations must collect, process, and act on information. Organizational information use has been an area of substantial research during the past forty years.<sup>ii</sup> In general, information use and processing in organizations is categorized by three groups of activities. During the process of sense making, organizational representatives monitor information cues from the environment in an attempt to detect and understand environmental changes in areas of importance to the organization. Knowledge creation makes information possessed by organizational actors and their contacts explicit, in turn providing means for individuals to integrate new knowledge into their thinking and behavior. Finally, organizational actors use decision-making to act on information received and analyzed by the agency. This decision-making may be manifested in one-time decisions or in the more routine processes of bureaucracies.

To date, most work in organizational information theory has focused on information as an input to organizations or an asset within the bounds of the agency, rather than as a factor in the generation of new information to be publicly disseminated. However, some notable exceptions to this organization-centric view of information exist. For instance, Weick<sup>iii</sup> notes that individuals may change (enact) their environments when attempting to make sense of new information. In the realm of knowledge creation, Wenger<sup>iv</sup> identifies the importance of professional and social networks outside the organization as key sources of information and knowledge. Allison and Zelikow<sup>v</sup> have identified the role of inter-unit politics and information filtering as critical factors in information analysis and decision-making about governmental policies and actions. In such an environment government agencies can choose to cooperate or compete for attention, resources, and power.

Similarly, public management literature has begun to move away from an organization-centric model to one that emphasizes networks of units and organizations attempting to cooperate in solving public problems.<sup>vi</sup> While this line of research is in its early stages, key variables for study have been identified. With regard to government emergency information management, network characteristics, an understanding of how issues are framed and information flows across units, and questions of responsibility/accountability, power, and leadership are all seen as factors to be considered when studying organizational practice in a multi-organizational environment.

Finally, public policy research emphasizes the importance of problem definition in determining how government agents and the public view, articulate, and respond to particular problems.<sup>vii</sup> In particular, differing interpretations of problem causality, frequency, severity, potential impact on particular social groups, and proposed solutions can vie for the public's attention and serve as important complicating factors in government communication in emergency situations. The role of politically elected officials in framing problems is particularly important in this regard, as they are often the government representatives who are 'front and center' in handling communications tasks during emergencies, and seek to frame the problem in such a way as to promote solutions consistent with ideological and political realities and requirements.<sup>viii</sup>

A second stream of research that focuses the methods for public agencies use to communicate with the public about potential risks has evolved in the fields of environmental study and public health.<sup>ix</sup> Borrowing heavily from decision theory,<sup>x</sup> risk communication literature has identified key variables in the public's toleration of risk and its reaction to governmental attempts to manage crises. Most important to the study of public response in emergencies is the degree of negative emotional response (outrage) the public experiences as a result of being confronted with a risky situation.<sup>xi</sup> Risk communication research has shown that the public can tolerate significant hazard levels when their emotional reaction about a risk event is low, but that insignificant hazards may not be tolerated when the public perceives agencies as unresponsive or unconcerned about public health. Factors that contribute to the level of public outrage generated by any crisis include: the memorability of events related to the risk (e.g. catastrophic results); the moral relevance of questions related to the risk (such as whether risks are shared equitably and the individuals who are proposing risk acceptance are trustworthy); whether the risk is seen as voluntary or coerced; whether the danger is manmade or natural; the risk's controllability and knowability; and the public's perception of the responsiveness of decision making and information sharing processes of organizations who are attempting to manage the risk assessment process. Research has shown that individuals place four times greater weight on the affective elements of risk (openness, reliability, credibility and fairness of the information source) than the source's perceived competence when evaluating risky situations.<sup>xii</sup>

From a normative perspective, risk communications theorists emphasize the importance of accepting and involving the public in an open fashion in risk assessment activities, including sharing decision-making power where possible.<sup>xiii</sup> They recognize, however, that public organizations may be under significant constraints with attempting to allow public participation in risk decisions. In particular, governments confront the paradox of managing open communications while not abrogating statutory responsibilities.<sup>xiv</sup> Significant factors that constrain governments in risk communications include the level of distrust many citizens feel for government agencies; expertise government agencies may possess in the area of concern; requirements that government agencies be accountable and balance the needs of those immediately affected by an emergency with society as a whole; political pressures by interested stakeholders; statutory mandates and legal liability related to decisions and decision processes; and divided authority regarding decisions and actions prevalent in federal governmental decision arenas.

#### b. The role of information intermediaries

During emergencies, information intermediaries play a significant role, not only as a means for public officials to communicate with the public, but as a method of providing government agents with information about local conditions and knowledge in areas outside their immediate expertise. With respect to emergencies, two information conduits are critically important. The media (e.g. newspapers, television, radio, web sites) provide real-time information to the public, while monitoring public conditions and reactions to agency decisions. Similarly, professional communities of practice<sup>xv</sup> provide governments with knowledge, while serving as filters for understanding more complex scientific and medical issues both for the media and the public at large.

Like government agencies, the media's ability to respond to the information challenges in emergencies is constrained by several factors. First, a reporter's coverage of a story may be bounded by cultural and political factors within his or her organization, social power considerations, and by pressures of cross-media competition.<sup>xvi</sup> In addition, members of the media may filter news in particular ways by: attempting to personalize risk stories to identify heroes and villains; maximizing claims of risk and minimizing safety claims; paying more attention to the politics rather than science of a situation; focusing more on viewpoints rather than truths; and attempting to reduce issues to dichotomies as opposed to probabilities.<sup>xvii</sup> In addition, reporters generally have limited expertise and time to cover any particular issue, and rarely tend to question the legitimacy or expertise of their source.<sup>xviii</sup> Instead, there is a tendency to look for cover-ups and alleged secrets, focus on items with strong visual impact, and highlight potential linkages to sex and crimes.<sup>xix</sup>

An important variable in media coverage of emergencies is that normal methods and sources for information collection in the governmental arena (typically governmental spokespeople) may prove inadequate, incomplete, or not readily available during the immediate crisis, leading to a broader search for information sources.<sup>xx</sup> In such situations, the opinions of more marginalized information sources receive more attention than would otherwise be the case, leading to a broader range of information, but potentially more conflict regarding the meaning and interpretation of problem causes, effects, and solutions.

In public health emergencies, the broader search for information may, for instance, lead to a greater dependence on academic and professional expertise. While appropriate for the purposes of providing a wide range of informed opinion to the public, the norms of scientific communication, focusing on communal rather than individual effects, and probability rather than certainty, can lead to difficulties in communication among the media, policy makers and the public.<sup>xxi</sup> This, in turn, can lead to public confusion, and the perception of scientific commentators as unconcerned with human consequences and as unable to provide accurate and trustworthy information. These characteristics might have the negative effect of fueling public outrage, rather than adding to communal knowledge and rational understanding of risk.

A final impact of information intermediaries is their potential to dampen or amplify the public's perception of risks.<sup>xxii</sup> Although the overall impact of information intermediaries in the formation of public opinion (in particular the role of the media) has long been debated, determinations such as the aspects of the problem to focus on and the amount of coverage to apply can have the effect of amplifying or dampening public concern and attention to problems. It is important to acknowledge, too, that in any emergency, information intermediaries will vary greatly in their presentation of risks, both within and across intermediary types and formats of communications, making the public's perception of risk dependent on the type and format of intermediary they attend to and believe, as well as their own expertise and experience in the particular area of concern.

### c. The public's role

Before the 1990's, the tendency of government agencies was to view members of the public as passive recipients of governmental services. In the area of emergency and risk communications,

this model was characterized as information transfer, and viewed as primarily one-way and educative.<sup>xxiii</sup> Such a view was consistent with the traditional organization-centric public management view, and with the notion of government as an agent of society responsible for insuring public health and welfare. Increasingly, however, government representatives have come to understand the need to view the public as an active partner in risk analysis, and as critical in the development of social values.<sup>xxiv</sup> As such, members of the public are understood as being either cooperative or in opposition to the desires of government, depending on the level of community outrage and the degree to which the proposed solutions to problem are seen as equitable and the messenger trustworthy.

In public health emergencies, the importance of public capacity for action is especially critical, in that citizens are sometimes expected by government to undertake ameliorative actions, identify areas of risk, and make decisions about seeking assistance. In this respect, they act, in effect, as agents for the state. As such, they, like government actors, must engage in sense making, knowledge creation, and decision-making, and the degree to which individual members of the public make correct and informed decisions can have significant consequences for government resources and action.

Individuals, however, do not process information and make decisions in a vacuum. Just as government agencies operate in a political environment, media sources pay attention to corporate concerns, and scientific communities of practice frame their analyses within the lexicon of their scientific discipline, members of the public are embedded in social networks. These networks, which include kinship and social relationships, serve as paths for communication, sense making, and value determination, helping drive individual understanding and decisions.<sup>xxv</sup>

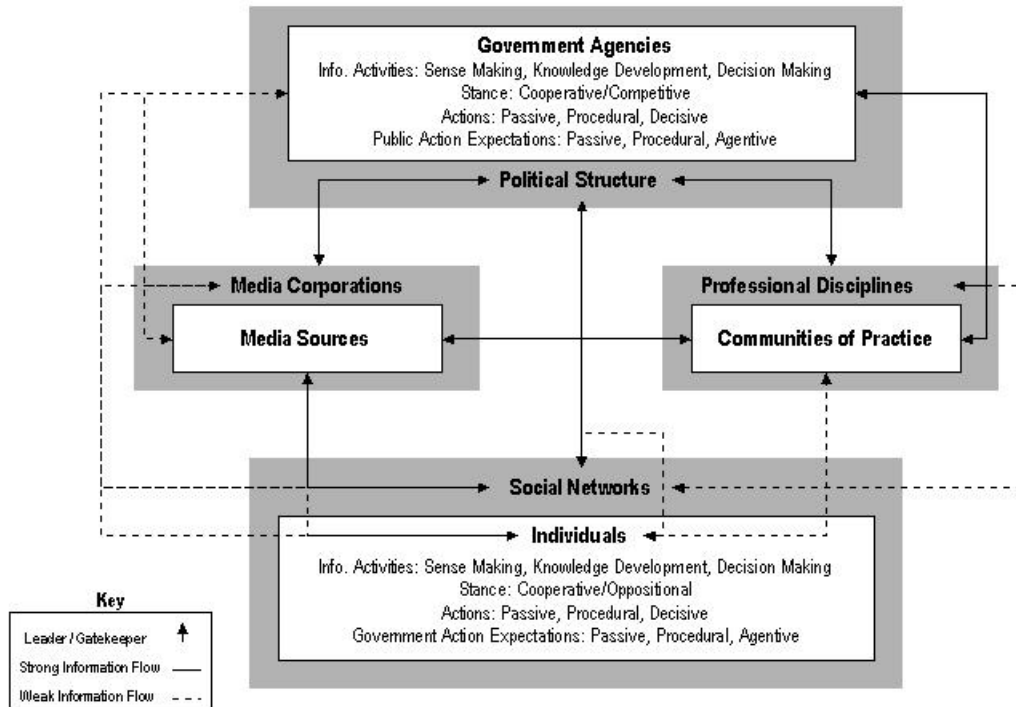
Individual capacity to analyze information is also impacted by a variety of cognitive heuristics and biases (such as availability, representativeness, and anchoring/adjustment), and factors such as information overload, position of the individual in a social network, prior experience with similar situations, perceived trustworthiness of messengers, and moral considerations of equity.<sup>xxvi</sup> These conditions mean that individual sense making and decision making will tend to be “culturally” rather than “technically” rational.<sup>xxvii</sup>

#### d. A model of emergency communications

Viewing emergency communications as a complex interaction of government agents, information intermediaries, and members of the public presents both an opportunity and a challenge to researchers. While providing a richer, more integrated perspective of government/citizen actions during times of crisis, this view challenges us to make sense of complex patterns of interactions with incomplete and often equivocal data. To achieve a better understanding of the phenomenon, we are required to proceed both from a deductive stance, developing a general model based on theory, and through induction, by testing the model against actual instances of emergency communications. While some quantitative tools may be applied to the inductive task (e.g. analysis of content, tone and source frequency patterns; community surveys), the complexity and uncontrollability of the phenomenon to be studied quickly overwhelms the capacities of most quantitative methods. Case study methodology is more suited to studying complex, real world situations, but is potentially prone to researcher effects, where

an artificial pattern to events is presented to prove or disprove theory, rather than recording what actually occurred. While researchers can guard against this by thorough and detailed analysis, perceptive biases will inevitably intrude. These dangers can only be neutralized by subsequent theory testing through study of several cases by different researchers.

Given these caveats, a theoretical model of government public information exchange, anchored on the theories elucidated above, and based on the assumption that government emergency communications is a process of information exchange rather than information broadcast, is presented in the following diagram.



Several key features deserve comment. First, all major groups in the model (agencies, media, communities of practice, and individuals) act and perceive information in environments with both *individual and collective constraints*. Secondly, government agencies and individuals engage in *information processing*: sense making, knowledge development, and decision-making. Also, government agencies can act in a competitive or cooperative manner toward one another, while members of the public can choose to cooperate with or oppose government actions. This *stance* by the parties helps determine both the coherency of government messages and the degree of trust with which they are received. Both agencies and individuals can assume different *action* roles, ranging from passivity, to following procedure (utilizing standard procedures and resources), or decisive action, which would involve acting immediately and spontaneously outside the boundaries of normal procedures and timeframes. Additionally, individuals and agencies possess *expectations* of one another, ranging from passivity (do nothing), utilization of established procedures (follow rules), or acting as agents for the other. Information flows in the model are *asymmetrical*, meaning that actors possess uneven access to information of other stakeholders, which may complicate perceptions of equity in crisis situations. And finally, each

group can be expected to possess *gatekeepers*, opinion leaders and information brokers who act as filters to and from other members of the group.

The model was tested through comparative case studies of two recent public health emergencies; the West Nile Virus outbreak in 1999 in New York City, and the 2001 release by an unknown party of anthrax spores via the public mail system. Comparison of the two incidents provides a rich context in which to explore the information use and actions of various information users, and highlights some significant differences that may provide insights for both researchers and managers responsible for managing future public crises.

The West Nile Virus (WNV) outbreak story began in August, 1999, when New York City residents in the Borough of Queens noticed the death of several crows. This was followed by avian deaths at the Bronx Zoo, and reports of human illness and death attributed to encephalitis. At first, investigators from the Centers for Disease Control (CDC), the New York City Department of Health (NYCDOH), and the New York State Department of Health (NYSDOH) thought that the viral strain causing the illnesses and death was St. Louis Encephalitis, and aggressive mosquito spraying was undertaken in New York City, eventually expanding to adjacent counties and states. After further laboratory analysis and representations from veterinary sources that the bird and human deaths might be related; the diagnosis was changed to West Nile Virus. This outbreak was the first instance of West Nile Virus reported in the hemisphere, and as such was important from public health and epidemiological standpoints. During the crisis surrounding the first outbreak of WNV, which lasted until October 1999 and claimed seven lives, public officials from New York City, surrounding localities, New York State and the CDC were called upon to rapidly and continually communicate with the public about the disease and steps to combat the mosquito-borne virus.

Like the WNV outbreak, the discovery of a case of inhalation anthrax in Florida in October, 2001 represented a public health challenge. As in WNV, state, local and CDC resources were rapidly mobilized to study and contain the bacteria, and federal, state and local representatives were called upon to communicate findings and the progress of efforts to locate the source of the bacteria, as well as treating individuals infected by anthrax. In doing so, some used the communications lessons learned during WNV.<sup>xxviii</sup> The context for the anthrax outbreak was, however, significantly different in some respects than WNV. In a country on heightened alert after terrorist attacks on September 11<sup>th</sup>, communication about the anthrax outbreak was intermingled with general speculation about terrorism. The quick discovery that the outbreak was not caused by natural sources, but rather by human action, increased speculation about international terrorist links. In addition, subsequent discovery of anthrax spores in New Jersey, New York offices of media personalities, US Capitol office buildings, the homes of isolated New York and Connecticut women, and in several post office facilities throughout the Northeast meant that the anthrax outbreak, unlike WNV, came to be handled as a non-localized criminal threat, bringing law enforcement and military leaders and managers into the communications mix. This led to variations in communications activities that are significant in providing a deeper understanding of emergency communications in the public sector.

### III. Observations

#### a. Government agencies

From the beginning of the West Nile Virus outbreak, information dissemination by government agencies to the public was regular and comprehensive, managed through regular official communications, and coordinated through regular dialogue across agency and governmental boundaries. Beginning with a press conference in early September, in which the outbreak was announced, officials from New York City and other affected localities served as focal points for information, providing up-to-date news about diagnoses, mosquito spraying schedules and decisions, environmental monitoring, and possible pathogens of the disease.<sup>xxxix</sup> Command centers, leaflets in several languages, telephone hotlines, the media, and the web were all used to provide information. One area where information was withheld, however, was the names and particulars of victims and those selected for random blood testing, except for the general location of their residence. This was done to protect client confidentiality.<sup>xxx</sup>

In contrast, anthrax outbreak information, while first announced through official sources, was released in a very different context, which colored both the original reporting and subsequent communications. In a nation alert to dangers following the September 11<sup>th</sup> attacks, anthrax had already been identified by officials and experts as a potential terrorist threat, and a run on the antibiotic Cipro (an treatment for anthrax) had occurred in late September.<sup>xxxi</sup> As such, a press and public hypersensitive to new threats reacted quickly to the discovery of inhalation anthrax infection in Florida, so that coverage soon outpaced official attempts to provide context.<sup>xxxii</sup> While some spokespeople were able to balance caution with calm, others were perceived to be over-reassuring the public. This led to subsequent charges of cover-up and incompetence.<sup>xxxiii</sup> In addition, client confidentiality broke down immediately, causing the original victim's name and other particulars to be broadcast the day of the first announcement.<sup>xxxiv</sup>

As such, announcement of the anthrax outbreak could not be framed from the beginning as a purely public health emergency, allowing for certain norms with respect to information dissemination and privacy. This had some important consequences for later information disclosure. First, the potential to identify one government source as authoritative and a focal point for future communications was quickly lost, as media outlets scrambled for information from a variety of sources, including those in the public health, public safety, and military fields. The search for information also rapidly expanded from official public health sources to experts in bio-terrorism, public safety, and military affairs. Secondly, the fact that multiple agencies at the federal and state levels became immediately involved in information dissemination (e.g. FBI, CDC, Florida, North Carolina, New York City) meant that communications was often uncoordinated, leading to confusion, public concern and outrage, and inter-agency recriminations.<sup>xxxv</sup> Lastly, the apparent lack of coordination meant that the process of public information dissemination became itself a political, rather than purely informational problem, overlaying norms of scientific objectivity with requirements that decisive leadership and organizational management effectiveness be communicated to the public.<sup>xxxvi</sup>

Throughout both outbreaks, government agencies were continually challenged to make sense of developing situations, gather and share knowledge about the diseases and their impacts, and make decisions based on available, rather than perfect information. An extant encephalitis monitoring system signaled the early presence of what was later identified as West Nile Virus, while ongoing monitoring and interpretation of environmental signals in both the veterinary and human medical and epidemiological fields linked the human virus outbreak with animal deaths and caused a change in virus identification.<sup>xxxvii</sup> Sense making about anthrax also evolved incrementally, with information of the bacteria's characteristics, lethality and spread continually revised as the outbreak unfolded.<sup>xxxviii</sup>

The presence of both diseases triggered a rapid accumulation and dissemination of knowledge within and among agencies. In WNV, government managers and decision makers quickly learned about epidemiology, mosquito surveillance and control, crow ecology, and the characteristics of pesticides.<sup>xxxix</sup> In addition, they were presented with various theories of causality, including the connection between virus abatement and global warming.<sup>xl</sup> Anthrax investigators operated in an even more complex environment, given the nature and timing of the outbreak and its potential causes. While education about bioterrorism was highlighted before the outbreak,<sup>xli</sup> the linkage of public health and public safety questions required rapid and efficient knowledge sharing across disciplines, and proved to be a major difficulty in both crisis management and criminal investigation.<sup>xlii</sup>

Like sense making and knowledge development, decision making by government agencies followed an incremental, satisficing approach,<sup>xliii</sup> using available information to make immediate decisions, and modifying decisions, procedures, and rationales as new information became available. During WNV, new information about insecticides, mosquitoes, and the change in diagnosis from St. Louis Encephalitis to West Nile Virus led to different choices about the type and timing of spraying.<sup>xliv</sup> Decision making was intended to be rationale, but was also constrained by procedures and political considerations, consistent with Allison's Model II and III scenarios.<sup>xlv</sup> The unfolding anthrax problem generated several decision changes, including those related to treatment,<sup>xlvi</sup> testing,<sup>xlvii</sup> and negotiations with antibiotic suppliers.<sup>xlviii</sup> The rationale for decision changes arose from analysis of many different types of information, and from a multiplicity of motives, ranging from scientific and medical requirements for better understanding the spread and impact of the bacteria, the necessity for procedural guidelines for physicians to aid in triage, to the political concerns of government leaders seeking a to project a level of competence and action consummate with public expectations.

As regards inter-organizational communications during emergency outbreaks, government agencies and spokespeople may seek to operate in a coordinative fashion, or conversely, may either actively use the opportunity to establish bureaucratic advantage relative to other units, or more passively fail to coordinate because of an inability to surmount organizational or cultural barriers. Evidence of all three behaviors was found in both cases.

During the WNV virus outbreak, government representatives in the public health field attempted to rapidly share information across federal levels and jurisdictional boundaries. To do this, they relied on telephone conference calls, face-to-face consultations, and electronic communications tools, consistent with the public health and scientific models of rapid and ongoing

communication.<sup>xlix</sup> However, actors experienced technical difficulties with respect to sharing testing information,<sup>l</sup> and on occasion struggled with organizational cultural and procedural barriers.<sup>li</sup> Organizational barriers also presented a challenge for at least some in the public, who had difficulty negotiating bureaucratic boundaries when seeking reassurance and direction from local and state entities.<sup>lii</sup> Perhaps more confusing to the public were disagreements and parochialism among politicians, some of whom treated the outbreak as an opportunity to continue ongoing feuds and jealousies.<sup>liii</sup>

More difficulties in coordination were evident in the anthrax case. These difficulties were exacerbated by the fact that governmental response went beyond traditional public health community boundaries. Technical difficulties in coordinating data analysis and information flow, organizational procedural and legal constraints, inter-organizational rivalries and cultural differences, and uncertainties about who should speak for government all hampered coordination and cross-agency public communication.<sup>liv</sup> The general reluctance to emphasize national differences immediately after the September 11<sup>th</sup> attacks served to blunt political adversarialism, though officials at the White House, Pentagon, CDC, and, the Department of Health and Human Services subsequently came under fire for treating the anthrax outbreak as a political, rather than public health event.<sup>lv</sup>

One area of significant difference between the WNV and anthrax cases involved governmental expectations of action for themselves and the public. During WNV, public health officials expected significant actions from both parties. While public agents developed and refined routines for surveillance, testing and treatment, both locally and nationally, members of the public were urged to take precautions against mosquito bites, to report and reduce stagnant areas of water, and not to overburden medical resources.<sup>lvi</sup> With anthrax, government agents expected to handle surveillance, testing, treatment, and criminal investigation, while seeking both to reassure the public and minimize public reaction to the threat. While the public was asked to report suspicious packages and wash their hands if they thought they might be infected,<sup>lvii</sup> it was not until governmental investigative options were exhausted that more active public assistance was sought in providing clues to the outbreak.<sup>lviii</sup> At the same time, governmental leaders attempted to suggest that people balance vigilance with normal activities,<sup>lix</sup> provided unspecified warnings of potential dangers,<sup>lx</sup> and cautioned against overstraining government service capacity.<sup>lxi</sup>

To a certain degree, the differences in governmental expectations of public response can be attributed to the difference between knowing (WNV) and not knowing (anthrax) the agents of dispersion, and as a result knowing how to focus public activities in constructive ways. Another factor that must be considered, however, is the difference between non-human and human culprits as purveyors of disease. The fact that mosquitoes were the source of infection in WNV meant that scientific rather criminal justice methods, rule of evidence, and public communications procedures applied, leading to different governmental expectations of organizational actions, information privacy, and community response, though not necessarily different public expectations.

## b. Intermediaries

Two classes of intermediaries, the media and professional experts, played significant roles in both cases. By acting as information brokers between government agents and the public, the two groups provided interpretation of technical issues, helped frame the tone and parameters of public discourse, and provided alternative explanations to official pronouncements. In doing so, the sources had the potential to individually amplify or attenuate public perceptions of dangers, though there is some question as to the net effect of multiple and competing information sources on overall public response to the threats.

The media played a pervasive role in information provision in both cases. During the West Nile outbreak of 1999, for instance, the New York Times (circulation 1.1 million) published 109 articles mentioning ‘encephalitis’ in the three-month period following discovery of the outbreak, while the New York Daily News (circulation 743,000) published 75 articles (source: Lexis-Nexis). In comparison, the New York Times published 1,549 articles that mentioned anthrax, while the Daily News published 510 pieces during the three months following the beginning of the anthrax incident. Similarly, the three major television networks spent 380 minutes on anthrax-related coverage in the period from 9/10/01 to 8/30/02.<sup>lxii</sup> While coverage of both events was significant, the anthrax outbreak was covered during a period of intensive hard news coverage (approximately 80% of all televised news), while the coverage of WNV occurred in an atmosphere where hard news (40% of all coverage) competed more heavily with categories such as high-profile criminal cases, lifestyle and personality profiles, and business/economic stories.<sup>lxiii</sup> As such, coverage of both outbreaks must be viewed within the context of the totality of information provision during their respective time periods. As indicated by the New York Times media critic Frank Rich,<sup>lxiv</sup> the events of September 11<sup>th</sup> initiated a dramatic short-term corporate shift away from infotainment, inflation of non-crisis news stories, and coverage of scandals, re-orienting the media back toward a hard news perspective. This mirrored public movement away from sources that focused on scandal and entertainment, toward more traditional means of information dissemination.

Within these institutional constraints, reporters relied on a variety of sources, including government spokespeople, independent experts, and community representatives. Their coverage varied from reporting of significant incidents and subsequent public reaction, to broader thematic discussions of topics such as government management, epidemiology, bioterrorism, and the role of the media. The overall tone of coverage also tended to vary based on the media outlet. Though all outlets studied used a mixture of tones and sources, some focused more heavily on neutral reporting, emphasizing scientific and technical issues explained by government and scientific experts, while others targeted more emotional community-based responses, the ‘man-on-the-street’ genre of reportage. Use of language also varied, ranging from strictly factual reportage to metaphors that emphasized warfare, chaos and conflict.<sup>lxv</sup> On occasion, reporters reverted to references to cultural icons (such as Hitchcock’s film *The Birds*) in describing situations, evoking deeper meanings in viewers.<sup>lxvi</sup> During periods of greater uncertainty, the media also mirrored public and professional anxieties, serving to amplify any uneasiness the public might be experiencing.<sup>lxvii</sup>

Given the importance and timeframe of emergency communications, the media relied heavily on expertise from communities of practice outside governmental channels. During WNV, physicians, veterinarians, experts in mosquito control, avian biologists, entomologists, and

environmentalists played important framing and interpretation roles. The anthrax outbreak engaged medical, bio-terrorism, communications, public policy, military, and public safety expertise.

The role experts played in the two outbreaks fell into four general categories: confirmation of official interpretations; disagreement with official interpretations and presentation of alternatives; a general critique of governmental actions; and factual knowledge creation.<sup>lxviii</sup> Often, expert commentary appeared to speak on two levels, imparting general knowledge while advancing the expert's particular theory or credentials for expertise. As such, members of communities of professional practice acted in a manner similar to Cohen, March and Olsen's 'garbage can' model of choice,<sup>lxix</sup> possessing "a collection of choices looking for problems, issues and feelings looking for decision situations in which they might be aired, solutions looking for issues to which they might be the answer, and decision makers looking for work." p.2 The difference however, lay in the fact that the experts utilized by the media as information sources were, unlike Cohen's decision makers, outside the boundaries of government. As such, they could be seen as in competition with government sources in the process of public sense making and knowledge development. In this role, they might take a complementary or oppositional stance relative to government spokespeople, depending on such factors as ideology, connection to networks and resources within government, and professional norms of behavior and communication.

At times, either when anomalous or new information occurred, the language and perspective offered by professionals sometimes differed markedly from the perspective of governmental officials and the public. For instance, the discovery of West Nile Virus in the western hemisphere, while troubling to policy makers who scrambled to reassure citizens that the actions already taken were still relevant, was treated as an exciting development by some expert commentators in the field of epidemiology.<sup>lxx</sup> Others withheld information from the public and press with the explanation that scientific results would be misinterpreted by lay individuals.<sup>lxxi</sup> Similarly, some scientists worried that one consequence of the anthrax outbreak and its linkage to bioterrorism would be a diminution in the norms of scientific discourse,<sup>lxxii</sup> while others emphasized the need to establish focused research agendas and revise risk assessment routines based on experience gained by the attacks<sup>lxxiii</sup>.

The importance of the distinction between professional and public communication is twofold. First, it indicates that the language and norms of scientific communities of practice may at times jar with the message of public agency communicators and the public, either in tone or substance, lending credence to the notion of an epistemological distance between the stakeholders in emergency communication, and the possibility of misunderstanding and miscommunication across groups.<sup>lxxiv</sup> Secondly, it underscores the fact that professional experts operated not only as integral players in the unfolding communication about emergencies but also as individuals embedded in their own social norms, structures and cultures. These cultures, while adding to the sum total of knowledge about public outbreak, operated at an important distance, with regard to methodology, purpose, and use of language, from both public policy makers and the public.

### c. The public's role

During both public health emergencies, public reaction to the crises followed patterns consistent with those predicted by risk communications research.<sup>lxxxv</sup> Analysis of the cases showed three general stages: An initial process of concern, action, and in some cases panic, coupled with outrage over perceived governmental failures to protect the public; followed by a community-level discourse about the potential risks both of the disease and potential solutions, incorporating gross estimations of the probability for exposure and disease coupled with concerns about equity and protection of children; and finally a general readjustment to the realities of the situation, modulated by a special concern for equity, accurate and timely information from impartial sources, and protection of less powerful constituencies. However, the particular context for each case provided some subtle and important differences in community and individual response.

The original outbreak of WNV evoked local outrage and accusations that previous attempts to have city government spray for mosquitoes had been ignored; vacillation between fear of mosquitoes and uncertainty about spraying; and community black humor about the cognitive capacity of local residents.<sup>lxxxvi</sup> Early responses were followed by a rush for information and immediate action to ameliorate threats, coupled with community debates about the efficacy of spraying, equity of treatment among neighborhoods, and the motives of political leaders.<sup>lxxxvii</sup> The subsequent mobilization of small community protests over Malathion spraying<sup>lxxxviii</sup> was overwhelmed by the changed diagnosis of the virus and the news that the virus had spread to other localities, though political leaders in the newly affected counties were sensitive to switch to less controversial methods for spraying, and emphasize that the new sprays were derived from crysanthemums.<sup>lxxxix</sup> Eventually, community concerns about spraying for West Nile Virus focused on more specific issues, such as the provision of information for non-English speaking citizens and heightened protection of children.<sup>lxxx</sup>

Contemporary commentators disagreed about the appropriateness of public reactions to the crisis. One columnist contrasted the relative public calm surrounding WNV favorably to an earlier panic involving asbestos in schools, stating "it's the way a world-class city ought to behave".<sup>lxxxxi</sup> However, a subsequent news commentary argued that public reaction to WNV proved out of proportion to the actual risks compared to the concurrent outbreak of e. coli in an upstate New York community, and speculated that the outsized reaction was due to fear of the unfamiliar.<sup>lxxxii</sup> Both viewpoints provide clues to the dimensions of public response to emergencies, indicating that people will tend to amplify the risks if children are involved (asbestos in schools), have difficulties measuring the relative risks of two different threats, and will tend to focus more closely on threats that are both immediate and indeterminate.

Another aspect of the WNV virus outbreak relates to the presence and influence of social networks. Spraying for mosquito control occurred during the month of September, during a period when the rituals of Jewish holy days requiring attendance in outdoor services. The intercession of Jewish community spokespeople prompted in one community the re-scheduling of spraying activities, while another political leader received support for continued spraying after consulting with Jewish community leaders.<sup>lxxxiii</sup> In another instance, the necessary connection to access testing facilities that subsequently proved important in accurately identifying the virus occurred not through either official government channels or communities of professional

practice, but the chance meeting of two individuals during a wedding reception.<sup>lxxxiv</sup> These examples point out the power of social networks as an alternative source of communication between the community and government leaders and their potential significance as an alternative network for communication and action during emergencies.

Public action and reaction during the anthrax outbreak, while following the same general trajectory as WNV, exhibited some important distinctions. First, prior to the outbreak, some members of the public had displaced anxieties about terrorist attacks with worries about anthrax and smallpox, generating a run on the antibiotic Cipro.<sup>lxxxv</sup> After the discovery of the first case and subsequent government attempts to reassure the public, members of the public showed distrust for the government's emergency communication, faulting the government's slow response to the treat and questioning the motives behind their efforts to stem the run on Cipro.<sup>lxxxvi</sup>

Reports of public expectations during the two crises also point to subtle differences between the two cases. During WNV, the public accepted the government's activist role in investigation of the disease, monitoring of new cases, and threat amelioration, though some environmentalists questioned the methods of mosquito control. They also clearly recognized activities they could undertake to minimize threats.<sup>lxxxvii</sup> In contrast, the anthrax crisis presents a more muddled picture, which may be due to the sequencing of the outbreak within the larger context of post-9/11 public reactions. In this case, the public had already developed expectations for government action (e.g. catch terrorists, tighten national security) that could not be characterized as public health responses,<sup>lxxxviii</sup> and had taken on an activist role with respect to personal preparation for emergencies (including the hoarding of food, medicine and other living essentials), and participation in more communal actions, such as prayer vigils and donations of money, goods and services.<sup>lxxxix</sup> The outbreak of anthrax accelerated a demand for antibiotics on the part of individuals, some new security measures among private corporations,<sup>xc</sup> and an expectation that the government would identify the source of the infection, but no significant new pressure for government actions. Rather, what evidence there is indicated the immediate response was an expectation by the public that they be called upon to do more, rather than less. This was reflected in the interactions between President Bush and the press immediately following the discovery of anthrax, in which he was questioned on the lack of a government 'call to arms' for the American public.<sup>xc1</sup>

A potential explanation for public reactions to the anthrax outbreak can be found in surveys by the Pew Center for the People and the Press<sup>xcii</sup> and researchers from Harvard University.<sup>xciii</sup> These sources indicate three important variables in the calibration of public expectations and reactions: the relative level of threat expectation before and after the outbreak; perceptions of overall risk; and perceived source reliability and relevance.

First, the level of general public risk perception did not change between mid-September (before the discovery of anthrax) and mid-October, indicating that the overall level of fear did not change with the announcement of the anthrax outbreak, though one might speculate that the focal point of citizen anxiety might have shifted toward specific bio-terrorism potential and away from more general terrorist threats.

Secondly, the public discriminated both in their assessment of risk to anthrax exposure and illness, and their preference for which government, intermediary, and social authorities they chose to pay attention to in seeking information about anthrax risks. While overestimating the likelihood of exposure to anthrax in the coming year (14% of respondents indicated they were very or somewhat likely to be exposed to anthrax), people surveyed felt they were twice as likely to contract breast or prostate cancer, three times more likely to be in an auto accident, and five times more likely to contract influenza during the same period. This shows that while the public’s probabilistic assessment of threats may have been off, their relative positioning of potential medical risks was reasonable.

When asked to indicate their preferences for sources of communication about anthrax, respondents differentiated sources along two general dimensions: profession and proximity. The following table shows the percentage of respondents who would place a great deal or quite a lot of trust in various individuals or professionals to provide bioterrorism information (as a percentage of those who responded other than “don’t know”).<sup>xciiv</sup>

| <b>Profession</b>            | <b>Proximity to respondent</b>   |   |
|------------------------------|--|---|
|                              | <b>Local or State</b>  | <b>Federal</b>  |
| <b>Public Health</b>         | Personal physician 79%<br>Hospital director 58%<br>Health department 56% | CDC Director Koplan 56%<br>Surgeon General Satcher 51%<br>CDC Chief Scientist Ostroff 48% |
| <b>Political leader</b>      | Governor 50%   | Health/Human Services commissioner Thompson 44%<br>Homeland Security director Ridge 44%   |
| <b>Social network leader</b> | Religious leader 48%   |   |
| <b>Public Safety</b>         | Fire department 65%<br>Police 55%  | FBI Director Mueller 39%  |

In general, the results indicated preference for state and local over federal government sources, and for public health over political representatives. The one seeming anomaly was the relatively high degree of trust shown to local fire and police representatives (as opposed to the low marks given the FBI representative), even in an area where they had no special expertise. However, this can be attributed in part to the heightened public appreciation for these roles following the September 11<sup>th</sup> terrorist attack.

In addition, the Harvard survey rated the performance of the media and the CDC in providing the proper balance of threat appraisal to the public. Among survey respondents, 40% felt the media overestimated the threat, 11% felt they underestimated the threat, while 40% felt media reportage was well modulated. In comparison, only 14% of respondents felt CDC overestimated the anthrax threat, 17% felt they underestimated the likelihood of danger, while 60% felt the CDC’s public communication was balanced. This reflection of the media’s difficulties in striking the proper balance between objective, neutral reportage and sensationalism was echoed by media analysts within the profession, particularly in light of the fact that journalists and newscasters became part of the story when anthrax attacks targeted media corporations.<sup>xciiv</sup>

In summary, the evidence indicates the presence an active public process of decision making process related to threat reaction, risk appraisal, and activity readjustment in response to government actions and announcements, the filtering process of intermediaries, and their own local deliberations. While not undertaking a rational scientific calculation of threats and sources, the public undertook relative assessments of risk, and discriminated among sources in weighing information quality. They also perceived the anthrax outbreak, even in the midst of other threats, as a public health, rather than public safety or military crisis, and preferred information from relevant public health sources.

One important side issue should be noted here. The presence of the Cipro panic prior to the anthrax outbreak also indicates that public reactions to crises can sometimes occur as a defensive response to other, more unpleasant situations, rather than direct threats based on particular public health emergencies.

#### **IV. Discussion**

Analysis of emergency communications during the two case studies provides insights both about the practice of governmental emergency communications and the theoretical model presented in this paper.

First, the cases showed important interactions among the actors in emergency communications that cannot be adequately explained by reliance on single organization “broadcast” models of emergency communications. Rather, organizational and individual information use and decision making was constructed as a response to events and the actions of other actors. In both cases, emergency communications was seen as a continual process of mutual adjustment, particularly between government officials and the public, mediated by the media and professional communities. In addition, the process and substance of communications evolved over time, both in response to others’ actions, and by the impact of new events, information, knowledge, and decisions.

Secondly, expectations for action and communication by government agents and the public played a critical role in how crisis communications evolved. Government agents had certain expectations both of themselves and the public, which sometimes mirrored the public’s perceptions of requirements for action and the provision of information, and at other times were contrary, or at a minimum, misaligned with public needs. This led to instances of recrimination, during which public agents were suspected of doing too little, providing unwarranted reassurances, or withholding information. These periods of crisis led to internal governmental pressures to react with further governmental action and communications.

An important corollary to this insight was that government agencies were not unilateral in their expectations of themselves and the public, nor were they consistent in their expectations across organizations. For instance, during the anthrax outbreak public health organizations had different expectations for action, public response, and public communications than public safety agencies (e.g. F.B.I), which led both to cross-organization friction and public dissatisfaction. This tension required aggressive intervention by political leaders, who struggled to establish a unified message.

Third, while there was some evidence of media sensationalism as well as some self-recrimination among media members, the effect of this phenomenon seems not to have led to significant risk amplification among the public. Rather, the multiplicity of information sources, coupled with an active process of public information selection and filtering based on source and quality, provided the public with a solid foundation on which to make risk and action determinations. At certain points, media articles and statements by professional experts outside government possessed a quality of “what’s going on here?” but this seemed to mirror, rather than exacerbate government and public uncertainty.

Also, when analyzing the decision-making processes of government agencies, mediating groups, and the public, three patterns emerged. Among government agencies and decision makers, short timeframes for action coupled with rapidly changing information meant that government representatives acted in an intendedly rational manner, akin to Lindblom’s model of “muddling through.” Decisions were made and revised in a flexible manner as new information and knowledge was assimilated, while representatives sought to provide the public and media with explanations for changes in procedures or actions. At the same time, agency responses were constrained both by procedural capacities (Allison’s Model II) and political considerations of power and centrality in the decision making process (Allison’s Model III).

In contrast, members of professional communities of practice acted in a way more akin to March’s “garbage can” model, attaching their knowledge, solutions, and biases to events and emerging issues, and seeking to influence the public and policy makers’ perceptions of events. This activity also occurred to a lesser extent among media representatives, evidenced by the tone of some media reports, the content and timing of editorials, and the choice of thematic reports related to the crisis events (e.g. the history of mosquito control or interagency public health rivalries, or analyses of federal government public information coordination practices.)

The public followed a “culturally rational”<sup>xvii</sup> model of decision making, aligning their actions both to rational assessments of risk and the actions and opinions of peers, community leaders, intermediary sources, and government spokesmen. Especially instructive in this regard is the fact that panic about anthrax occurred *prior* to the actual outbreak, and did not significantly accelerate when the reality of anthrax contamination entered the picture. This points to the existence of a communal process of risk assessment fueled not only by events, but also by a more general calculus of communal well-being and a need for communal action.

Finally, the actions of governmental agents and the public in emergency events were constrained by initial conditions, with regard to internal capabilities, cross-agency capacity to communication and coordinate, and environmental conditions, both among intermediaries and the public. Given this, however, all parties seemed to respond in fairly predictable ways. Government agencies attempted to control the flow of information and interpretation, while presenting a balanced persona of calm, decisive action, and control. Intermediaries aggressively sought out and presented information, while filtering meaning according to their individual agendas and interests. And finally, the public moved from a combination of outrage and unfocused need for action, toward general comprehensive of the magnitude of the risk, adjustment to threats, and finally, integration of the risk into their daily routines.

## V. Conclusions

From the perspective of governmental information management, the model and the case analyses suggest several lessons.

First, government representatives need to anticipate not only a public demand for information, but also the likely public information perspective for any given emergency. For instance, the public are likely to have different expectations of government information sharing, action, and their own participation in threat mitigation if they perceive the crisis to be predominately public health in character, as opposed to a public safety or military emergency. As such, the governmental response should be framed not according to internal organizational or ideological imperatives, but rather community expectations and norms.

Secondly, the two case studies indicated that the public are capable of rapidly integrating risk information and adjusting their activities and decisions to meet new crises. While public responses may be colored both by official and intermediary intervention and information framing, the public reaction to crises is resilient, and in some cases may actually be derailed—through increasing public outrage which distracts from the process of risk assessment and adjustment—by overly paternalistic handling of emergency communications. Although both cases provided some evidence of panic and unnecessary utilization of emergency resources, such actions tended to be confined to a small number of individuals and short-lived in duration.

Thirdly, inter-agency cooperation and information coordination, coupled with unanimity across political boundaries at the beginning of crises will tend to dampen community concern and outrage, in that a unified message by all parties decreases anxieties about governmental competency and public safety, and dampens suspicions that the public are not receiving complete and accurate information. However, this does not mean that unanimity in message should be expected or even desired throughout a crisis's life cycle. Agencies possess different competencies, values, and goals in crisis amelioration and prevention, and post-crisis institutional competition among political bodies, media sources, and communities of practice provide important mechanisms for critiquing the development of standardized procedures and institutional responses as the immediacy of the threat recedes.

Finally, analysis of the cases from the perspective of the model provides interesting insights into broader issues of information policy, particularly the role of press freedom, rights of public assembly and individual speech, and policies regarding government information disclosure (e.g. FOIA). The case evidence indicates that while a unified governmental communications structure and message is critical for public safety and confidence at the beginning of crises, the interactive nature of government and public crisis response, risk assessment, community action, and eventual integration of the risk into the communal fabric requires prompt and accurate government information, multiple channels of information provision and framing, and opportunities for public reaction and communal sense-making. Absent these, the public may misinterpret governmental motives and fail to act in helpful ways, and government agencies may be unable to effectively use the experience and knowledge gained, whether through internal adjustments or the actions of information intermediaries and the public, in redesigning governmental procedures and activities.

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