

Ebola Risk Communication Project in Liberia: Lessons in Crisis Communication

A Report from the Team at
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August 2016



Acknowledgments

This project was made possible through a grant awarded to the George Washington University (Rajiv N. Rimal, principal investigator) by the Center for Communication Programs at the Johns Hopkins Bloomberg School of Public Health through funding from the United States Agency for International Development's Health Communication Capacity Collaborative (HC3).

We are grateful for the generous assistance and input provided by the team at the Center for Communication Programs at Johns Hopkins University, including Jane Brown, Anna Helland, Najmeh Modarres, Rael Odengo, Monica Quaqua, and Elizabeth Serlemitsos. The initial idea for this project was proposed by Maria Elena Figueroa, for which we are extremely grateful. At George Washington University, we are grateful for the able assistance provided by Abigail Blanchfield, Sylvia Ezekilova, Michael Wallace, and Carol Zeeve. Finally, our research assistants were instrumental in coding the extensive data; without their hard work, this report would not have been possible. They are: Abigail Alberico, Hulliams Kamlem, Rose Covenant, Skylar Lisse, Jialin "Lynn" Meng, Eme Udoh, and Amaka Ume.

This report was made possible by the support of the American People through USAID. HC3 is supported by USAID's Office of Population and Reproductive Health, Bureau for Global Health, under Cooperative Agreement #AID-OAA-A-12-00058. The contents of this report are the sole responsibility of HC3. The information provided here is not official U.S. Government information and does not necessarily represent the views or positions of USAID, the United States Government, or The Johns Hopkins University.

Suggested Citation

Turner, M. M., Shaikh, H., and Rimal, R. N. (2016). *Ebola risk communication project in Liberia: Lessons in crisis communication*. Department of Prevention and Community Health, the George Washington University, Washington, DC.

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Executive Summary

The overall objective of the Ebola Risk Communication project was to gain an in-depth understanding of the types and qualities of Ebola-related mediated communication in Liberia during the Ebola crisis. The underlying rationale for the project was that, through a better understanding about the Ebola-related communication efforts that unfolded (or did not unfold) in Liberia, future crises can be better informed from lessons learned from this effort. One of the highlights of this project was the inclusion for analysis communication content from traditional sources of information (radio and newspaper) as well as “grass-roots” sources, such as community chalkboards and crowd-sourced (the crowd being public health workers) text messages regarding Ebola rumors. Grounding this project in traditional communication model components (i.e., source, message, channel, receiver) and recommended best practices from current crisis and risk communication literature, a codebook was developed and subsequently applied to capture the essence of the communication disseminated by various sources. We analyzed and presented the findings in the context of best practices for future risk communication efforts.

Content Analysis Methods

The primary research methodology adopted in this analysis was a quantitative content analysis of audio, print, and visual (i.e., photographs) communications derived from radio, newspaper, SMS, and photographs of community chalkboards. The time frame of the communication samples coded was from January 2014 through December 2015 (2 full years). Six coders received extensive training to learn the codebook, definitions of the codes, and examples of the codes used in the analysis. Coders were subsequently broken into teams and provided random samples of message content to code. Each team coded content from one channel (e.g., a radio team, a newspaper team) and was provided with approximately 10% of the content. Inter-coder reliability was established, by team, using this method. After three iterations, each team had a satisfactory reliability with alphas exceeding .80 in every category in the codebook.

Results

Radio. A total of 124 audio files, from 4 radio stations (UNMIL, ELBC, Radio Monrovia, and IREX) in Liberia, and 3 specific public-health funded radio programs (Youth Talk, Radio Joy, Radio Cape Mount), were coded. The programming included dramas, presidential speeches, press conferences, lunchtime specials, news and spiritual segments, and interviews. First, we examined the topics that were discussed. Overall, radio content varied widely, with topics ranging from new Ebola cases (3.8%) to former Ebola cases (4.9%) to focusing on Liberia and its ongoing political struggles (13%). Next, we examined how various sources were portrayed on radio programming. With regard to source expertise and trustworthiness, the Liberian minister of health was the most cited source (with 57 mentions of expertise). Other sources, such as the African Union, President Ellen Sirleaf, the World Health Organization (WHO), and the U.S. government, were also mentioned—but in all cases, trustworthiness of these sources was rarely, if ever, explicitly referred to. Next, we looked at how the crisis was conveyed. Most

messages were positive (37%)—with 67% of those communicating hope specifically. Few messages (n = 31 or 11%) overtly communicated compassion and empathy. Differences by radio station/program are reported in Chapter 3.

Newspaper. A total of 745 Liberian newspaper articles randomly selected from 3 major newspapers (*Daily Observer*, *Front Page Africa*, and *The Inquirer*) were coded. The article authors of these news articles varied with 57% written by named staff writers, 38% included no byline (author unknown), and 5% were attributed to an organization (e.g., BBC). Looking at topics covered in the newspapers, these data showed that content varied widely with topics ranging from international support (50%) to travel issues (e.g., travel bans) (25%) to the broader social context (e.g., the former civil war, the deteriorating health system) (24%). With regard to source expertise and trustworthiness, the Liberian government was the most mentioned source (n = 447 counts) and the highest count of expertise mentioned (with 232 mentions of expertise). Other highly cited sources were the Liberian Minister of Health, foreign governments, and the WHO. However, trustworthiness of any source is rarely mentioned, and President Sirleaf was noted as “untrustworthy” 8 times. With regard to message strategies, newspaper articles were split in tonality: 39% were positive, 38% were negative, 15% contained a mixed tone, and 8% were neutral. Of the positive messages, 47% were hopeful. Of the negative messages, 31% were fearful, 16% were angry, and 1% was guilt-based. Differences by newspaper are reported in Chapter 3.

Community Chalkboard. The team obtained and subsequently coded 17 photographs of the community chalkboard. Given the small sample size we engaged in both qualitative and quantitative analyses of the photos. The qualitative analysis indicated 3 primary frames. First, photographs often depicted Ebola as a sports competition where Ebola is up against the government—and Ebola is winning. Several chalkboards had dominant scoreboards drawn on them with the “Ebola score” changed periodically. Second, the villain frame was commonly depicted in the photographs. Several chalkboards included a drawn picture of a devil (i.e., Ebola). One board included the phrase, “I was created in the image of Satan.” Another “villain” oriented board showed the devil with an Ebola vaccine (a needle) and the phrase, “Ebola experimental vaccine suffering...due to corruption....” The third mentionable frame was the fear and anger frame. One board stated, “Ebola is real and it kills!” Another (with a picture of the devil) stated, “Killer Ebola. Ah! Ah! Ah! Look at this Pepo, you think I finished?” The quantitative analysis indicated that 41% of the chalkboards were negative in nature. Most (78%) of the boards communicated the uncertainty inherent in the crisis. Yet, only twice were notions of self-efficacy (ability to respond to Ebola) or response efficacy (effectiveness of preventive methods) ever mentioned.

SMS. Community health workers in Liberia were instructed to pay attention to ongoing and emergent rumors about Ebola and text-message those messages to the “rumor tracker” system. This unique system was aimed at keeping local officials, specifically the media, aware of the spread of rumors and enabled them to combat such rumors. In this analysis, we examined the total population of rumors sent to the tracker (N = 142). Nearly 30% of rumors regarded new cases of Ebola, 15% indicated that people were personally profiting from Ebola, and 13%

were statements about issues with prevention measures. Of messages analyzed, 39% of the rumors directly blamed the Liberian government for the outbreak. More than half (56%) of all rumors were negative with 41% of those being fear-based and 29% being anger-based.

Analytics over Time

As set out in Chapter 4, we also examined various aspects of reporting from the communication channels as to whether and how the messaging changed and evolved over time. For this exercise, we analyzed the 2 years of data by breaking each year into quarters.

For example, our analysis over time revealed that citing sources became less and less common as the crisis evolved in Liberia. Additionally, we assessed whether communication channels reported a “response was organized” theme, and found that this theme was emphasized primarily during the last three quarters of 2014 and in the first quarter of 2015.

In terms of communication about community engagement, the messages changed over modality and time. For instance, messages of this type peaked in newspapers at the end of 2014 and the first quarter of 2015—and then cease.

Another angle of our assessment involved whether reporting communicated messages of compassion and empathy during the Ebola crisis in Liberia, and the presence of rumors in the communications, as well as the pace of refutations alongside such communications over time. We observed the largest percentage of compassion and empathy related messaging in the third and fourth quarters of 2014 and in the first quarter of 2015. Generally, rumors and refutations increased over time at a similar rate; however, by the end of 2015, we found that that as rumors emerged, the media worked quickly to elucidate them.

We also analyzed whether communication of efficacy varied across different channels over time, and discovered that that newspapers and radio programs communicated the majority of messages of efficacy, and they were primarily communicated between July 2014 and March 2015, during the height of the Ebola epidemic. Last, we assessed the extent to which media messages of fear were presented over time. The prevalence of fear messages was most present in newspapers in the third quarter of 2014, and thereafter, began to decline. Radio and radio programs were not overwhelmingly engaging in fear-related discourse, and in all cases, fear messaging decreased over time.

Recommendations for Future Preparedness Efforts

For this section on recommendations, we looked at the data from the lens of the best practices of risk and crisis communication.

1. Engage in Pre-Crisis Planning

Overall, it does not appear that the public perception was that of a lack of leadership preparedness. Whereas the initial period was characterized by many rumors that filled the information void, rumors were quickly addressed across all communication channels. Indeed,

the creation of the SMS rumor tracking system went a long way in addressing these rumors head-on. In the future, under similar circumstances, the public may be less apathetic about the very nature of the government's response. Thus, providing opportunities for different media to come together proactively, to share lessons learned from this particular response in order to prepare for the next one, seems prudent. In addition, rarely were there messages about the response being unorganized.

2. Express Compassion, Concern, and Empathy

Whereas the community chalkboard was not at the forefront of expressing compassion and empathy (this was not really the purpose of the chalkboard), 11% of radio shows and 17% of newspaper articles communicated compassion, concern or empathy. We consider this to be less than ideal. During a crisis of this magnitude, it is vital that the community widely perceive the empathy and compassion of its leaders. It might be that such messages were distributed via other channels, besides the ones analyzed in this report. Further, it is important to note that studies show communication of themes like compassion, concern and empathy help to quell anger and frustration. Thus, crisis communication training (of public health professionals, health media journalists, and others involved in the response) should include a clear module on the necessity and means of conveying compassion, concern, and empathy.

It is worth noting, though, that none of the chalkboards and radio messages and only a handful of news articles engaged in stigmatizing communication. It is reassuring that messages recognized the needs of vulnerable populations and were not engaging in stigmatizing messaging. We consider this to be one of the communication successes we documented in this study.

3. Forge Partnerships with the Public

Approximately 15% of radio shows and 9% of news articles communicated about forging public partnerships. Indeed, the radio programs were quite specific about ongoing partnerships in responding to the Ebola crisis. Whereas the behavioral response tended to focus on steps that individuals could take to protect themselves, little was communicated about how individuals could engage with community organizations and other local institutions to forge partnerships. We suspect that many individuals did want to contribute to the Ebola response, but we saw little evidence in the media about steps they could take to do so. Providing these avenues for response would likely be an important step in future crises.

4. Listen to your Audience and Understand its Concerns

Approximately 10% of radio messages but less than 2% of news articles addressed a willingness to hear from the public. This finding is concerning. If messages do not convey a sense of compassion or willingness to hear from and work with the public, the public may take on the role of adversary, instead of a partner. Future risk and crisis communication efforts must take definitive and actionable steps to engage in this practice.

5. Communicate Honesty, Candor, and Openness

We found that when articles and messages tended to cite their sources of information, expertise (e.g., one's level of experience, knowledge, or training) was often mentioned, although this varied greatly by the type of source. However, trustworthiness was rarely mentioned at all, for any source, on any channel. One issue is that while expertise is more authentically and naturally mentionable (e.g., "She has been a doctor for the last 25 years"), media personnel might find it more awkward to mention people's trustworthiness (e.g., "He is an honest person on whom we can depend"). Therefore, this is an area for which communication training might be advantageous. There are subtle ways of conveying trustworthiness (e.g., noting that a person is going against his or her self-interest) that can increase the persuasiveness of the source (and what the source is advocating).

6. Accept Uncertainty and Ambiguity

In a crisis, it is important to recognize the inherent uncertainty. Doing so can mean a loss of credibility in the face of being incorrect. None of the chalkboards discussed the need to accept uncertainty; instead, most messages were framed in terms of certainty, leaving little room for nuance. Fourteen (5%) radio messages and 64 (9%) news messages included messages about uncertainty and ambiguity. Fortunately, only 13 (5%) radio messages and 18 (2.4%) news articles explicitly communicated that the crisis was "done and over."

7. Regard Crisis Communication as an Ongoing Process

Crisis messages should stress that communicating about the risks and crisis is a dynamic and ongoing practice. Twelve (75%) chalkboards, 62 (22%) radio messages and 639 (86%) of news articles stressed this aspect of the crisis. This best practice was successfully communicated to the Liberian public.

8. Collaborate and Coordinate with Credible Sources

Sources cited in the various articles and messages included government (e.g., Liberian government, President Ellen Sirleaf, the U.S. government), public health agencies (e.g., the WHO, CDC), doctors and caregivers (e.g., health care workers, doctors), patients/families of patients, and community members. Radio programs cited at different times all 18 distinct types of sources that we included in our analyses. And in many cases, their respective expertise was explicitly mentioned. Likewise, newspaper articles cited all 18 kinds of sources at distinct times, and expertise was often explicitly mentioned.

9. Communicate Self-Efficacy and Response-Efficacy¹

In preventing and controlling infectious disease, a critical step is the awareness and behavioral response(s) of the public regarding actionable and effective steps. Two of the chalkboards (12%) communicated self-efficacy and one communicated response efficacy. Radio fared better than chalkboards: 53 (19%) communicated self-efficacy and 41 (16%) communicated response

¹ We did not code for the best practice of "meeting the needs of the media" because that step would not be apparent in these media messages.

efficacy. Similarly, newspaper articles communicated self-efficacy 79 times (11%) and response efficacy 112 (15%) times.

Conclusions

Overall, this project provides insights into the sources, types, and qualities of information Liberian citizens received about Ebola during the height of the most recent outbreak. These data reveal areas of risk and crisis communication that can be improved upon in several areas. First, trustworthiness is rarely communicated in messages. Yet, trust in the message and the message source is vital to citizens' processing of the messages and acting upon the behavioral recommendations we ask of them.

Second, there are too few instances of self- and response efficacy being communicated in any of the messages. Public health experts have long known the constructive effects of knowing what actions to take, feeling confident in one's ability to take those actions, and believing in the positive outcomes of taking the actions. Yet, no channels succeeded in having more than 20% of its messages communicate *any form* of efficacy. Put another way, at least 80% of messages neglected to mention efficacy at all.

Third, given the low prevalence of efficacy messages, public health experts would suggest that emotional appeals (e.g., fear, anger) should not be used. That is, both fear-based and anger-based messages can lead to deleterious effects in the absence of efficacy. Yet, we find a high prevalence of fear and anger-based messaging in all channels.

Fourth, messages across channels communicated that the crisis was ongoing and uncertain—which are considered best practices—but, they did so without communicating empathy or a willingness to work with the public. Thus, messages tended to emphasize an anxiety frame (that is, uncertainty that may not end). Anxiety can lead to negative outcomes when not accompanied by efficacy.

It is recommended that local public health officials work with the Liberian media to develop strong(er) relationships. Such a relationship must entail mutual understanding of communication objectives as well as a common interest in the safety of Liberians. It is recommended that public health officials, in concert with the government, engage in pre-crisis planning and communication training prior to any new outbreaks. It should be understood that the news media (or authors of chalkboards), in fact, are not obligated to engage in the best practices of crisis communication. They may not see their job as one of "protector(s) of public health." Yet, in developing relationships, sharing research on the effects of poor crisis communication, and developing a sense of some common goals—these entities can begin to work together so that messages do not harm the safety of Liberians.

Chapter 1. Introduction

The Health Communication Capacity Collaborative (HC3) project is part of the U.S. Agency for International Development's (USAID) strategy to rapidly implement and scale up social and behavior change communication (SBCC) activities addressing the Ebola virus disease outbreak in 2014 in Liberia and neighboring countries. The HC3 project supports the Government of Liberia, U.S. government partners, global partners, and local organizations to design, produce and implement high-quality, impactful SBCC for Ebola prevention and care, and works to improve coordination of Ebola communication partners in Liberia, as well as regionally and globally. The HC3 work also focuses on monitoring and evaluating the impact of SBCC efforts.

The Ebola outbreak experience that Liberia underwent in 2014 and 2015 provides important public health and crisis communication lessons that can inform responses to future crises. It is important to know how the Ebola-related communication unfolded (or did not) in the country; how local, national, and international agencies responded to and communicated about the crisis; and the extent to which public communication efforts met the information needs of the general public. It is not unusual for crises to engender incorrect and unproductive communications among the public through misinformation, fear, rumors, and stigma. Hence, it is critical to describe and learn from the Ebola information environment in an effort to ensure that future public health responses are effective.

The *overall* objective of our Ebola Risk Communication project was to describe the communication environment in Liberia during the Ebola crisis period, in order to derive important recommendations for future crisis communications. Our research involved gathering and analyzing the Ebola-related information environment in Liberia in channels of newspapers, the community chalkboard, radio, and SMS communications. We also assessed the content of four Internews sub-grantee programs: *Daily Talk* 'chalkboard' newspaper; *Radio Cape Mount* community outreach program; *Radio Joy* interactive radio program; and *Youth Talk* youth-oriented and youth-led radio program. Internews is an international NGO whose mission is to empower local media worldwide. In late 2014, Internews established the "Information Saves Lives" program in Liberia to "investigate and respond to public rumors about Ebola; [...] train and empower journalists to report accurately about health issues; and [...] stimulate the exchange of information in response to the urgent Ebola health crisis" (Health Communication Capacity Collaborative [HC3], 2015, p. 1). In its 2015 report, Internews noted that managing live talk shows was a challenge for Liberian media houses, particularly in rural areas where invited guests were unable to share good knowledge or verified information about the outbreak (HC3, 2015).

We gathered content from the newspaper, radio, community chalkboard, and SMS channels over the time period of December 2013 to May 2015. Over the course of approximately six months, we collected, organized, coded, and analyzed the content of these media channels in order to categorize the underlying themes that emerge. These themes (and the underlying topics) were then quantified in order to determine the frequency with which each theme

emerges in the data. Research methods for this component included analyzing the chalkboard and radio programs, and SMS messages received during and for 12 hours following the shows/update of news on the community chalkboard. The contents of all four communication channels were analyzed, and in this report, we present our findings and make recommendations for future crisis communication efforts.

The Ebola Outbreak in West Africa

Followed by numerous international media outlets, the world learned about the West African Ebola outbreak almost in real time, with broadcasts of breaking news, new cases and deaths in record numbers, warnings and alerts, school closings, infected travelers taking it outside West Africa, and survivor stories. It is now the world's largest outbreak of Ebola. Beginning with a single reported case in the Republic of Guinea in December 2013, the killer virus swept through the region, concentrating on Guinea, Sierra Leone, and Liberia, with the geographical spread including Nigeria, Senegal, and Mali (Cenciarelli, Pietropaoli, Malizia et al., 2015). On March 23, 2014, the Ministry of Health in Guinea notified the WHO of the rapidly evolving outbreak in forested areas of the Republic, reporting a total of 49 cases, including 29 deaths (case fatality rate of 59%) (World Health Organization [WHO], 2014a). According to researchers at Harvard Medical School and Georgetown University, the spread of the Ebola virus "became an international epidemic five days after the first cases were reported when it spread from Guinea to Liberia" (Siedner & Kraemer, 2014). On August 8, 2014, eight months after the first reported case in Guinea, the WHO announced that, having met with the International Health Regulations (IHR 2005) States Parties of Guinea, Liberia, Sierra Leone, and Nigeria, it was the "unanimous view of the [Emergency] Committee that the conditions for a Public Health Emergency of International Concern" (PHEIC) under the IHR 2005 had been satisfied with respect to the surge in infections (WHO, 2014b). By many accounts, the PHEIC, declared by the WHO after nearly 1,000 deaths from Ebola, was delayed and as a result, the international response to the emergency ill-timed and fractured (Siedner & Kraemer, 2014; Gostin, 2014; Ap, 2015).

By mid-August 2014, the four affected countries of Guinea, Liberia, Sierra Leone, and Nigeria reported 3,069 confirmed, probable or suspected cases, with 1,552 deaths, and with Liberia having the highest number of cases (1,378) and deaths (694) (WHO, 2014c). The quickening rate of dispersion in Guinea, Sierra Leone and Liberia on a weekly basis led to the development of multi-sectoral and multi-national efforts, and public-private partnerships, in an effort to contain the outbreak (e.g., UNESCO, 2014; Government of Canada, 2015; *Addis Standard*, 2014; Avni, 2014). In October 2014, the WHO reported almost 9,000 confirmed, probably or suspected cases and 4,493 deaths, with widespread and sustained transmission of the virus in Guinea, Sierra Leone and Liberia (WHO, 2014d). Figure 1 below shows the numbers of reported cases and deaths in each of these countries, with Liberia having the highest quantities of each. By March 2016, approximately 28,639 cases and 11,316 deaths were reported worldwide, the majority of them arising in Guinea, Sierra Leone and Liberia (WHO, n.d.). The WHO acknowledged that the figures are ample underestimates, given the difficulty in collecting the data, limited testing capacity, and under-reporting (Enserink, 2014; *BBC News*, 2016).



Figure 1. West African Ebola epidemic (Source: Figures taken from “Ebola in Africa,” 2016)

The Ebola virus was first discovered in 1976 in northern Zaire (now the Democratic Republic of Congo) and southern Sudan (Cenciarelli, Pietropaoli, Malizia et al., 2015). In response to the unprecedented 2014-2015 epidemic that has “killed five times more than all other known Ebola outbreaks combined” (BBC News, 2016), the first-ever United Nations emergency health mission, the UN Mission for Ebola Emergency Response (UNMEER), was established in September 2014, with benchmark goals clearly stated to limit the transmission action (WHO, 2014d). Additionally, the WHO in August 2014 issued a roadmap to take over a scaled-up response to the outbreak, and in particular, “to guide and coordinate the international response to the outbreak of Ebola virus disease in [W]est Africa” (WHO, 2014e). In connection with the Ebola response roadmap, the WHO issued reports on the evolving epidemiological situation in affected countries, based on data shared by ministries of health, in an ongoing effort to improve the accuracy and availability of information on the spread of the virus and response measures. Essentially, the WHO’s Ebola response roadmap enabled an international response to take shape.

Regarding the virus’ epidemiological course, copious reporting noted the challenges in assessing the epidemiology of the disease, growth patterns, and in turn, control measures that could help contain the disease (e.g., WHO Ebola Response Team, 2014; Gatherer, 2014; Pandey, Atkins, Medlock et al., 2014). The international humanitarian aid NGO Médecins Sans Frontières (MSF), or Doctors Without Borders, described the Ebola outbreak and rapid advance in Guinea, Sierra Leone and Liberia as “out of control” and a “wartime” situation (BBC News, 2014; Nebhay & Fofana, 2014). Reports shared information about how the epic epidemic challenged the three most affected countries, Guinea, Sierra Leone, and Liberia, “in implementing control measures at the scale required to stop transmission and to provide clinical care for all persons with [Ebola virus disease]” (WHO Ebola Response Team, 2014).

Additionally, as the disease spread uncontrollably into 2015, more information continued to be issued on Ebola's incubation period, transmission of infection and symptoms, case fatality rates of both hospitalized and non-hospitalized patients, and the UNMEER targets of isolating and treating 100% of the Ebola cases and conducting 100% of burials safely by January 1, 2015 (WHO, 2015a). Although these targets were not met by WHO's January 1, 2015, benchmark due to the uneven geographical distribution of beds and cases and the under-reporting of cases, the WHO in its January 7, 2015, report stated that, "[E]fforts to attain each target will continue until the epidemic has been brought to an end" (WHO, 2015, p. 4). With the WHO cautioning against bans on international travel and trade, media outlets reported flight cancellations, halting of normal air routes, and border closures, citing in August 2014 that South Africa banned travelers from Guinea, Liberia, and Sierra Leone, and that Senegal had closed its border with Guinea (Frankel, 2014).

According to the WHO Ebola Response Team, from December 2013 to August 11, 2015, 20,035 confirmed and probable cases of the Ebola virus disease were reported in Guinea, Sierra Leone and Liberia, with men and women at equal risk of infection (WHO Ebola Response Team, 2016). News stories about nighttime curfews in affected districts, military-enforced quarantine zones, and the economic slip and unpreparedness of weak health care systems in West Africa circulated widely (Cenciarelli, Pietropaoli, Malizia et al., 2015; Gostin, 2014; O'Hare, 2015). The latter point was strongly underscored by accounts that Liberia has one doctor for every 70,000 people (Nebehay & Fofana, 2014), so even the very basic need of adequate health care personnel was lacking in the context of countries that lacked an outbreak containment protocol to begin with (Gostin, 2014).

The IHR 2005, overseen by the WHO and revised from the former regulations (IHR 1969) to make them more effective against international disease threats (Baker & Fidler, 2006), aims to keep the world informed about public health risks and events. However, what played out on a local level in Guinea, Sierra Leone and Liberia reflected a lack of community engagement, considerable ignorance and fear of Ebola, and "communication systems that [could] effectively deliver important public health information" (Gostin, 2014). Not only were containment requirements breached and cases unreported, making contact tracing and monitoring very difficult, but removal and proper burial of the dead, and burial sites themselves, became controversial (Ohlheiser, 2014).

***Scarce hospital facilities, lack of trained medical staff, fearful citizens
and lack of effective communication made for a perfect storm***

Widespread misunderstanding about Ebola existed in Liberia, which had not been seen Ebola before 2014, and whose population had an inherent distrust of the government (Kilstein, 2014). In turn, "an outburst of false rumors and violent attacks as a result of fear and mistrust of foreign aid workers" ensued (Lewis, Chandry, Ndow et al., 2015; HC3, 2015). A combination of scarce hospital facilities, lack -- and loss to Ebola itself -- of trained medical staff, fearful citizens

avoiding hospitals and secretly burying loved ones according to tradition, and lack of effective communication made for a perfect storm to exacerbate the persistent outbreak. The President of Liberia, Ellen Johnson Sirleaf, said, “The messages about don’t touch the dead, wash your hands, if somebody is sick, leave them — these were all strange things, contrary to our tradition and culture” (Smyth, 2014). Many experts said that the Ebola outbreak in West Africa was caused in part by “a failure to understand [W]est African culture” (Smyth, 2014).

“The messages about don’t touch the dead, wash your hands, if somebody is sick, leave them — these were all strange things, contrary to our tradition and culture” – President Ellen Johnson Sirleaf

The 2014 Ebola outbreak was unprecedented in scope and size, and unlike previous outbreaks, the virus infiltrated overflowing and ill-equipped urban areas, a factor that contributed to its intense spread (Gostin, 2014; Alexander, Sanderson, Marathe et al., 2015) and far-reaching geographical range. Much has been written to highlight the fragile health and economic systems in the poverty-stricken nations of Guinea, Sierra Leone and Liberia – before and after the Ebola epidemic. What has received scant research attention, however, is the role that communication either did or did not play in bringing the emergency under control, educating communities, enforcing the need for monitoring and tracing contacts, and quelling fear, public distrust and rumors, to bring about behavior change. Dr. Margaret Chan, Director-General of the WHO, wrote, “Good communications and community engagement are urgently needed to combat denial, rumors, and behaviors that fan new transmission chains” (Chan, 2014).

The Unfolding Ebola Crisis in Liberia

According to the WHO, Liberia’s first two cases of Ebola in Lofa County, near the border with Guinea, were confirmed on March 30, 2014 (WHO, 2015b) (see Figure 2 below). On April 7, 2014, the country reported 21 confirmed, probable, and suspected cases and 10 deaths, and all 5 laboratory-confirmed cases died, including one in Monrovia (WHO, 2015b). Liberia reported no new cases at the end of May 2014 (WHO, 2015b). However, then the situation markedly changed, as the first additional set of cases in the capital of Monrovia, located in Montserrado County with a population of approximately 1.5 million, were reported in mid-June, in a setting unable to cope with the exploding number of infections and no hospital with an isolation ward (WHO, 2015b). By end of June 2015, Liberia reported 51 cases, mostly situated in Lofa County, as compared with 390 cases in Guinea and 158 cases in Sierra Leone (WHO, 2015b).

At the peak of transmission during August and September 2014, Liberia was reporting between 300 and 400 new cases every week, mainly driven by an uptick of cases in Monrovia (BBC News, 2016; WHO, 2014g). The following description vividly reflects the unraveling conditions in Liberia, particularly in Monrovia, reported as the epicenter of the regional Ebola crisis (Ingoglia, 2014; MacDougall, 2014):

“Facilities had little or no personal protective equipment – not even gloves – and virtually no knowledge about how to use this equipment properly. Under such conditions, treatment of the first hospitalized patients ignited multiple chains of transmission, among staff, patients, and visitors, in ambulance and taxi drivers who ferried the sick to care, in relatives, neighbours, and eventually entire neighbourhoods. Case numbers that had multiplied quickly began to grow exponentially” (WHO, 2015b).

President Sirleaf of Liberia declared a national state of emergency on August 6, 2014 (WHO, 2015b), and enforced curfews, closed markets and schools, and quarantined communities, some of which led to riots and shootings (Aizenman, 2014).

The Liberian Ministry of Health and Social Welfare (LMHSW) reported that concurrent with the Montserrado County outbreak, cases were identified from all 15 counties in Liberia, and 12 counties reported cases during the period October 25, 2014 to November 3, 2014 (Nyenswah, Fahnbulleh, Massaquoi et al., 2014). During this same one-week time frame, with the assistance of the WHO, UNICEF, Peace Corps, and the U.S. Centers for Disease Control and Prevention (CDC), the LMHSW field teams initiated seven rapid response investigations outside of Montserrado County in hard-to-reach areas, where Ebola infections continued apace in Grand Cape Mount, Grand Kru, Grand Bassa, Gbarpolu, Bomi, and Sinoe Counties (Nyenswah, Fahnbulleh, Massaquoi et al., 2014) (see Figure 2 below). The CDC reported that three of these communities were inaccessible by road (Nyenswah, Fahnbulleh, Massaquoi et al., 2014), thereby making it difficult to accurately count cases and transport patients to Ebola treatment units.



Figure 2. Map of Liberia

Along with escalating numbers of cases and deaths emerged news of a shocking count of deaths of health care workers in Ebola treatment units and in non-Ebola treatment units in Liberia (Matanock, Arwady, Ayscue et al., 2014). In its Ebola response roadmap update dated October 10, 2014, the WHO reported that “exposure of health-care workers (HCWs) to EVD continues to be an alarming feature of this outbreak,” with 201 cases and 95 deaths in health care workers in Liberia as of October 8, 2014 (WHO, 2014f). According to a World Bank report, as of May 2015, 0.11% of Liberia’s civilian population had died due to Ebola, compared to 8.07% of its health care workers, defined in the study as doctors,

nurses and midwives, the highest percentage of health care worker deaths compared to Guinea and Sierra Leone (Evans, Goldstein, & Popova, 2015, p. 2). The authors estimate that in a “zero Ebola cases” position, achieved in Liberia on January 14, 2016, maternal mortality could increase by 111 percent in the Republic due to the loss of health care workers to Ebola (Evans, Goldstein, & Popova, 2015). This is in the context of a country that had 51 doctors for its population of 4.2 million before the outbreak (DiLorenzo, 2015).

Alongside the peak in reported cases in Fall of 2014, the number of cases in Lofa County where initial cases were first reported in Spring 2014, began to decline, attributed to increased control measures and safe burials (Enserink, 2014). On January 26, 2015, MSF announced that “Liberia ha[d] seen the sharpest decline in Ebola cases, with only 5 confirmed cases currently reported in the country” (Médecins Sans Frontières [MSF], 2015). Out of the three most affected countries, Liberia, Sierra Leone and Guinea, Liberia was the first to be declared Ebola-free in May 2015; however, the virus resurfaced twice since that date (WHO, 2016a). In the following year, on January 14, 2016, the WHO again announced Liberia free of Ebola (WHO, 2016a), with a third flare-up (since May 2015) and related death recently reported on April 1, 2016 (Toweh, 2016). The Ebola death in Monrovia confirmed on April 1, 2016, came on the heels of the WHO announcing on March 29, 2016, that Ebola is no longer an international public health emergency, noting that the West African countries can manage “new clusters due to re-emergence [that] may occur in the coming months” (WHO, 2016b).

The Re-emerging Story

May 2015: Liberia declared Ebola-free; 2 cases subsequently resurfaced
January 2016: Liberia again declared Ebola-free; third flare-up in April 2016

Crisis Communication

Liberia’s Ebola epidemic was the most devastating, with more than 4,800 dead and over 10,500 infected, as compared to neighboring Guinea and Sierra Leone (BBC News, 2016; WHO, 2015b). In the context of a crisis situation like the Ebola outbreak, content analysis of print, radio and other communication channels for the length of time of this study – 1 year, 5 months – has not been undertaken (see ACAPS Ebola Project, 2015; Liberia Media Center, 2015a and 2015b). One report titled “Monitoring the Monitor,” produced in 2015 by the International Research and Exchanges Board (IREX) with funding by USAID and in partnership with the Center for Media Studies and Peacebuilding (CEMESP), an NGO in Liberia, concluded that “Liberian media poorly covered accountability issues related to resources used to fight the Ebola outbreak in the country” (Newray, 2015).

Drawing from existing literature, we cite the (1) 2004 avian influenza outbreak; and (2) 2009 H1N1 influenza flu pandemic as two examples where public education campaigns and local media coverage appeared to effectively inform and educate the general public during a time of crisis. Starting in early 2004, several outbreaks and variations of avian influenza were reported in the U.S., Europe, Southeast Asia, and Africa (Kim, Sorcar, Um et al., 2009). Specifically,

Cambodia, Thailand, and Vietnam reported 55 human cases, including 42 deaths, to the WHO from January 2004 to February 2005 (Olsen, Laosiritaworn, Pattanasin et al., 2005). The Thai Ministry of Public Health, during periods of peak outbreak, disseminated public health messages by telephone hotline, newspaper, radio, website, television, video compact disk, and brochures, with content related mostly to prevention for the general public, but also surveillance for public health professionals (Olsen, Laosiritaworn, Pattanasin et al., 2005). One study conducted in Thailand concluded:

“[P]ublic health education campaigns and general media reports about avian influenza appear to have been effective in reaching rural people who are at greatest risk of acquiring the disease through contact with backyard poultry. However, despite widespread knowledge about avian influenza and the effective means of protection, many Thai persons have not changed their behavior” (Olsen, Laosiritaworn, Pattanasin et al., 2005).

Another study published in 2010 analyzed the development of the debate about avian influenza in medical articles, newspapers and Internet discussion groups, mainly focusing on the frequencies of publications and terminology used in those domains, and concluded qualitatively that the “fear of a potential pandemic served as a powerful tool in creating a coherent frame of reference around the debate, most notably in newspapers, but also in the public discussion groups and, to a lesser extent, in biomedical journals” (Hellsten & Nerlich, 2010, p. 9).

Similar to the Ebola outbreak, the spread and extent of rumors challenged public health officials during the 2009-2011 H1N1 influenza pandemic, and “circulated widely among different social circles, including elites, health professionals, and the general population” through media, SMS, Internet, and word-of-mouth delivery channels (Barrelet, Bourrier, Burton-Jeangros et al., 2013, p. 116). Noting that “[r]umors respond to a need for information,” one study concluded that the “review of social science literature published during and in the direct aftermath of H1N1 indicates some important findings to take into account in public health campaigns addressing pandemics in particular and risk issues in general” (Barrelet, Bourrier, Burton-Jeangros et al., 2013, pp. 116-117).

By undertaking this study, we hope to add to the larger body of work on media analysis and risk communication in the context of a global health crisis. Using the Ebola crisis as a case study, our aim is to describe how Ebola-related communication occurred during the crisis in Liberia, with the hope that lessons learned from this endeavor can be broadly applied for future local, national, and global crises that require the mobilization of resources at all levels.

Objective: To describe how Ebola-related communication occurred during the crisis in Liberia, so that lessons learned can be broadly applied to future local, national, and global crises

Our efforts are guided, to a large extent, by the literature on crisis communication best practices, summarized below and discussed in detail in Appendix C.

Ten Crisis Communication Best Practices (Seeger, 2006)

- | | |
|---|---|
| <i>1. Conduct pre-crisis planning</i> | <i>6. Accept uncertainty and ambiguity</i> |
| <i>2. Exercise compassion, concern, and empathy</i> | <i>7. Regard crisis communication as an ongoing process</i> |
| <i>3. Forge public partnerships</i> | <i>8. Collaborate and coordinate with credible sources</i> |
| <i>4. Listen to the audience, understand its concerns</i> | <i>9. Meet media's needs and remain accessible</i> |
| <i>5. Communicate honesty, candor, and openness</i> | <i>10. Communicate self-efficacy and response efficacy</i> |

The Health Communication Capacity Collaborative Global Project

This report is funded by the Health Communication Capacity Collaborative (HC3), which is a global project funded by USAID. Launched in 2012 as a five-year project (2012-2017), HC3 is designed to strengthen developing country capacity to implement innovative SBCC programs and state-of-the-art health communication, including mass media, community-level activities, interpersonal communication and new media (Population Services International [PSI], n.d.). The project is currently doing work in Angola, Bangladesh, Côte d'Ivoire, Egypt, Ethiopia, Guatemala, Liberia, Madagascar, Nepal, Nigeria, Swaziland, and Tanzania. Apart from Ebola, important health areas that HC3 focuses on are: family planning and reproductive health; child survival; maternal and child health; HIV and AIDS; and malaria, TB, and other infectious and non-communicable diseases. The project also offers expertise in SBCC for gender equity, environment, and democracy and governance.

The HC3 project has many components but the largest is capacity strengthening at the individual, organizational, and national levels. Accordingly, HC3 supports skills strengthening for a wide variety of individuals, including program managers, journalists, radio producers, health workers and counselors, health education units, and local government staff (USAID & HC3, n.d.). Another key component of HC3 is *Springboard for Health Communication*, a platform for sharing health communication knowledge, expertise, and resources that includes in-person networking at country and regional levels and virtual forums (USAID & HC3, n.d.). The project also works to advance best and emerging practices for eLearning and mHealth applications in SBCC, research and evaluation, and university-led instruction with well-designed health communication curricula along with competent university faculty (USAID & HC3, n.d.).

The HC3 collaborative effort is led by the Johns Hopkins Center for Communication Programs in collaboration with Management Sciences for Health, NetHope, Population Services International, Ogilvy PR, and Internews.

Specific Aim

In order to meet our stated objective – to describe how Ebola-related communication occurred during the crisis in Liberia – we adopt a crisis communication framework and analyze the content of the community-produced communications and messages in the mass media to determine the extent to which Ebola-related content conformed to crisis communication best practices. Subsequently, we make recommendations for future crisis communication efforts.

Our content analysis included data from the following sources:

- The SMS rumor tracking system (launched by Internews)
- Community media, operationalized as the Chalkboards
- Radio programs produced by UNMIL Radio, ELBC FM, Radio Monrovia, and IREX. In addition, three radio programs specifically formulated to address the Ebola crisis: Radio Joy, Youth Talk Radio, and Radio Cape Mount
- Newspapers: *Daily Observer*, *Front Page Africa*, and *The Inquirer*

Chapter 2. Coding Methods across All Communication Modalities

Content Analysis Methodology

Content analysis is an empirical methodological technique for systematically describing written, spoken or visual communication. It provides a quantitative (numerical) description. Here, we gained access to traditional media (e.g., newspapers, radio) and grass roots communication (e.g., rumors, community chalkboard messages) that we employed to code the communication about the emergent and ongoing Ebola crisis in Liberia. Each document was systematically coded with an a priori coding sheet.

Data Acquisition

In order to draw comparisons between the crisis communication content of traditional and grass-roots sources, we compiled four sets of messages: text messages sent to the rumor tracking system; photographs of community chalkboard; audio files of radio programs; and electronic or paper copies of newspaper articles.

The data acquisition process differed across the four modalities. For the text messages, we were able to obtain all the SMS messages that were sent to the rumor tracking system. Hence, all the messages were coded. For the chalkboard, we contacted and subsequently met with the publisher and founder and editor-in-chief, Mr. Alfred Sirleaf, to obtain as many of the chalkboard photographs as possible. Because of unforeseen circumstances (a hard-drive crash) and absence of a comprehensive record-keeping system, Mr. Sirleaf was not in possession of most of the chalkboard photographs that would have captured the content. Hence, we requested and obtained all available photographs of the chalkboards that had been taken by Johns Hopkins Center for Communication Programs-Monrovia staff and others. Additionally, we conducted an intensive internet search for photographs of the community chalkboards. This resulted in a small sample ($N = 17$), and we conducted a qualitative analyses of the photographs.

For the radio content, we obtained as many Ebola-related radio programs as possible from three standing radio stations: UNMIL, ELBC FM, Radio Monrovia, and IREX. In addition, we obtained content from three radio programs specifically formulated to address the unfolding Ebola crisis – Radio Cape Mount, Radio Joy, and Youth Talk Radio.

For the newspaper content, we relied on three papers – *Daily Observer*, *Front Page Africa*, and *The Inquirer*. For the months under study (March 2014 to March 2015), we chose eight weekdays at random from each month (most newspapers in Liberia do not publish over weekends) for inclusion in the sample. Many newspaper issues selected in this way were not available (because of poor record keeping). When the chosen issue was not available, we chose the issue closest in date that was available. Of the three newspapers, *Front Page Africa* (which is published entirely online) was the most comprehensive, in terms of its availability. The other two newspapers also carry online versions of their hard-copy editions, but they are often not available (because they are often not uploaded). Hence, we relied on hard copies for two of the newspapers (*Daily Observer* and *The Inquirer*) and electronic copies for the other (*Front Page*

Africa). All documents were in the English language. See Appendix D for a more thorough analysis of the media markets targeted by these radio and news outlets.

Coder Training

Six research assistants were hired as coders for this project. All coders underwent extensive training on the use of the codebook used for capturing data. Four separate one-hour trainings were conducted where coders learned the codes and their formal definitions, together with examples. To gain familiarity, coders also worked with example documents from outside the study's timeframe (e.g., documents from 2012). In the training process, coders were specifically asked to generate questions, which were then answered by the study team. Coders were then asked to read through other documents (beyond those covered by our content analysis) and assess whether our original codebook was extensive enough to adequately cover the types of sources, rumors, emotions, and topics discussed in the documents. This resulted in additional areas being added to the following categories: rumors, prevention measures, and sources. Finally, coders were broken into three teams (radio team, newspaper team, SMS and chalkboard team) and asked to code a random set of 10% of the population of documents to assess inter-coder reliability.

All coding was conducted in English. To establish inter-coder reliability, 10% of the total documents (within category, as in 10% of newspapers or 10% of radio files) were randomly selected using an online random digit dialer and used for training. Across all coding categories, the coders' agreement ranged from 85% to 99%. All disagreements were handled with a team meeting with the team leader. Determining this to be a satisfactory agreement rate, coders were then split up and instructed to code the remainder of documents.

Codebook

The codebook was created with two overall guiding frameworks. First, we wanted to reflect and quantitatively assess for the best practices of crisis communication. Thus, the included codes were specifically designed to answer questions about adherence to crisis communication best practices. The codebook is included in Appendix A. Second, apart from the crisis communication variables, we also coded for the channel, source, and message characteristics.

Channels. Coders coded for channel types, specific station (as well as program and program type if radio) or newspaper.

Sources. The codebook included 18 distinct sources that could have been cited or directly communicated within the message (e.g., doctor, community member, celebrity, President Ellen Sirleaf, etc.). Coders were trained to check each source that was cited in the piece. Next, coders coded for whether each cited source's expertise and trustworthiness (separately) were mentioned in the piece. We also coded for whether a "lack of trustworthiness" was mentioned in the piece. Coders also coded for who was blamed for the crisis and who was credited for solving the crisis.

Message. A number of message variables were coded: (1) topic(s) discussed in the message;

(2) crisis communication best practices present in message and crisis themes present, (3) prevention steps explicitly mentioned; (4) overall emotional tone of message or photography; (5) specific emotion stressed, (6) the primary journalistic frame; and (7) rumors repeated in the message.

In sum, the codebook included Appendix A reflects critical themes of communication, overall, and of crisis communication in particular.

Chapter 3. Results for Individual Communication Modalities

Short Message Service (SMS) Rumor Tracking System

During the Ebola epidemic in Liberia, it became clear to healthcare organizations on the ground that misinformation and rumors unfurled chaos and panic, against a backdrop of a fragile health system and disordered information environment. Observing that “[r]umors spread quickly and generally through word of mouth, SMS and social media — channels that are hard to track and monitor” — Internews partnered with the Liberian National Red Cross Society, UNICEF and Project Concern International to develop a “rumor tracker” tool to detect and manage rumors almost in real time, by sorting through the conversations and rumors being reported by health workers in the communities. A weekly newsletter informed local media and humanitarians of key information trends in their counties, with suggestions as to how to address the misinformation or rumor. In March 2015, Internews officially launched the “Dey Say” SMS rumor monitoring system; “Dey Say” refers to how people speak about rumors in vernacular Liberian English (Iacucci, 2015). This system allowed for “two-way communication” that gave “community members a voice while also allowing local media, governments and humanitarians to have a better understanding of the information needs of the community” (Internews, n.d.). The SMS Rumor Tracker System *project was funded by USAID under the HC3 initiative.*

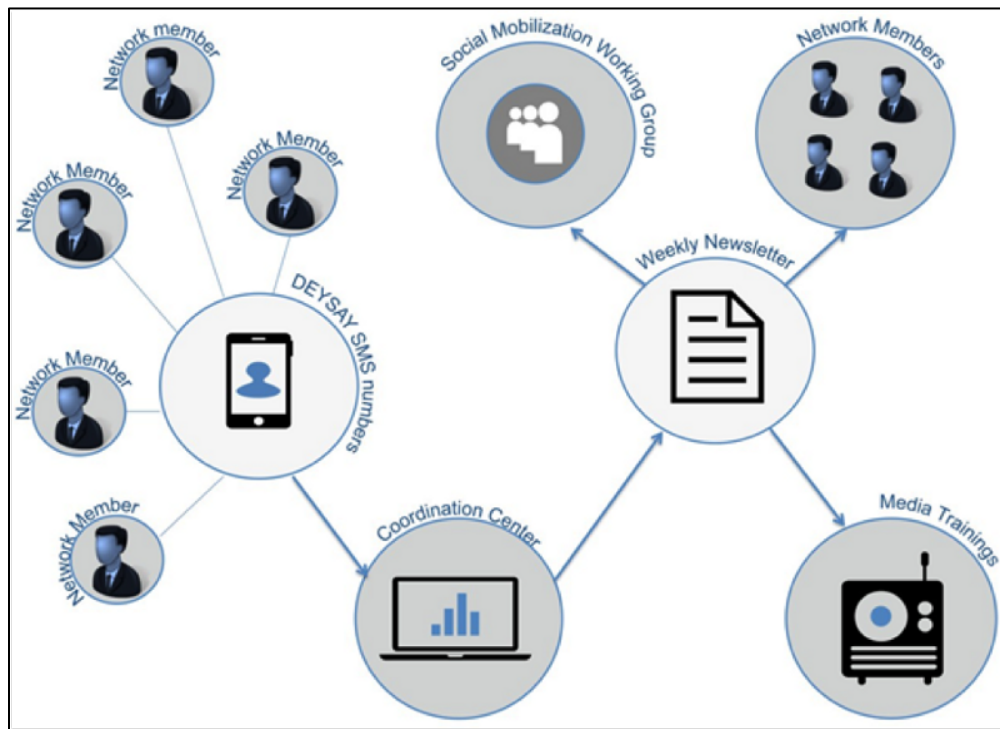


Figure 3. “Dey Say” System Architecture (Source: Internews)

The original SMS dataset contained 1,404 entries, each entry signifying an incoming SMS. Of these, 1,187 entries were blank (had a file number, name, phone number, date received, but without an actual text message). Of the remaining rows, 33 were about things happening in

Liberia, but were not coded to be an actual rumor (e.g., “some schools are allowing more than 50 to 60 students in some classes,” “the students of Montserrado county want 2 demonstrate, because they do not want d gov’t decision 2 close all schools” (sic), “Please try and spread the preventive in our various communities”). Another 49 could not be coded because they didn’t make sense or were just one word (e.g., “death,” “Muslim,” “It about the Samaritan purse bucket,” “sex and the city”). In the end, the analytic data set included 135 rumors. Although there were 135 total SMS messages coded, some files had more than one rumor within them, bringing the total response count to 142.

We examined whether the rumors cited a person or source. When rumors did have a source, the majority was a community member (n = 24). When these sources were mentioned, their trustworthiness or expertise was not mentioned. Notably, SMS is too terse to include these kinds of details; thus, it is not surprising that credibility cues were missing.

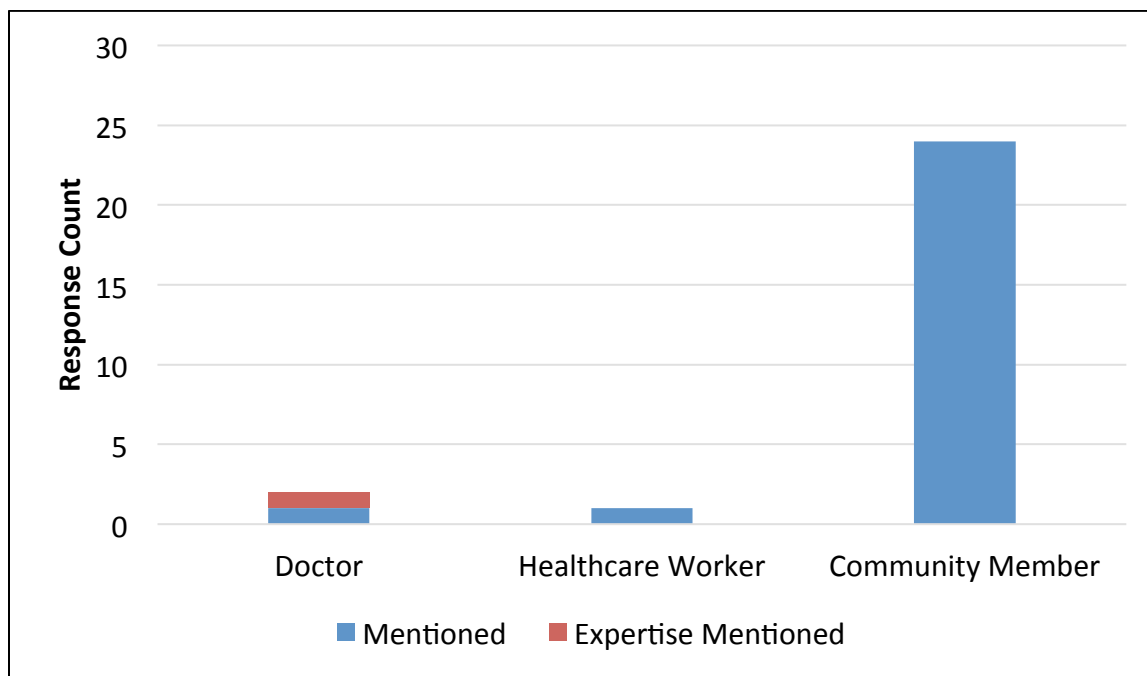


Figure 4. Sources and Expertise of Sources Mentioned in the SMS Message

With regard to source issues, we also examined whether these rumors explicitly blamed any particular entity for the Ebola crisis. In fact, 39% of the rumors blamed the Liberian government explicitly for the crisis. For example, one rumor that blamed both the government of Liberia and the United States stated, “People are saying the gol and united states government are bringing Ebola back to Liberia during this rainy season.” Ellen Sirleaf herself was also often blamed for the Ebola crisis: “Ebola can only listen to the president Ellen Johnson Sirleaf in Liberia” or “Deysay Ma. Ellen Signed New Contract By Opening All The Borders For Ebola To Come Back.”

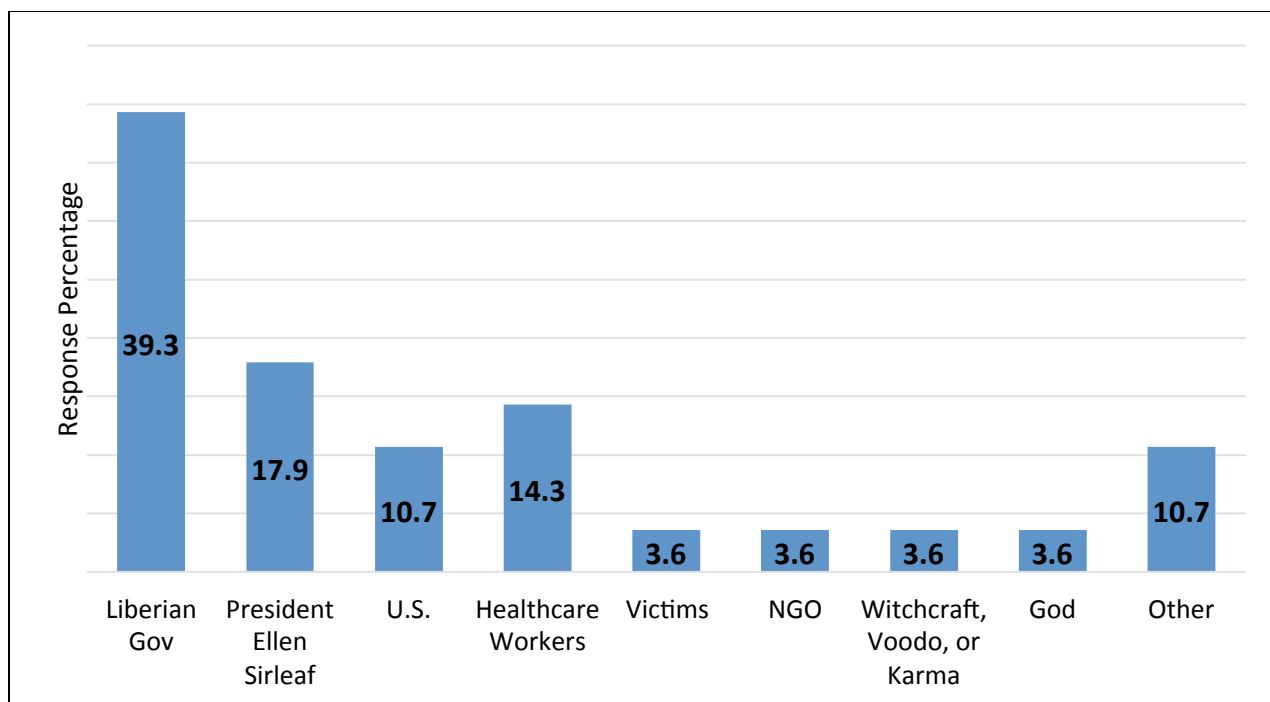


Figure 5. Who was Blamed for the Ebola Crisis in the SMS Messages

Next, we examined the characteristics of the rumors themselves (the message content). The majority of the rumors (28%) were about new cases of Ebola. For example, “The Deysay rumor right now in Tubmanburg is that there is an Ebola suspected patient at the Liberian Government Hospital in T-Burg awaiting to be tested” or “I heard that the new Ebola virus is coming only children.”

In 15% of the cases, Ebola was linked with financial profit. For example, “Ebola workers don't want Ebola finish so they can keep working. Benjamin wollor from pci react nimba county saclepea district” or “People are been paid for Ebola education in Liberia”, “Ebola was bought and brought into Liberia” and “Ebola was brought to Liberia because the government want money for development and for their personal use.” Indeed, this theme – that the Ebola crisis was in the interest of the government – was repeated: “Even though the crisis is over, Ellen is still trying to get money from the West for ebola recovery.”

Misinformation was another common theme; for example, “for the past two weeks, i have been notified in most of the communities that ebola has resurface due to dog eating,” “Desay ebola out of Liberia,” or “Deysay Ebola was never in liberia cus it still in Guinea that it came from,” and “Do not use mosquito nets, they are covered in ebola and will make you sick.” Another misinformation that was noted pertained to “cures”: “If you think you have ebola, drink bitter cola – it will make you get better.” This latter statement – about colas treating Ebola – appears to have been somewhat widespread because, as subsequently discussed, it was also a statement repeated in the community Chalkboard. One Chalkboard entry specifically noted that the health minister refuted the idea that colas can cure Ebola.

Looking more narrowly at the content and the topics included in the rumors, 27% of the rumors were focused on Liberia specifically and 21% mentioned a specific region within Liberia. Fourteen percent of the SMS rumors contained information about barriers to the recovery mission, examples of which included “people are not taking preventative measures” and “people are not washing their hands.” Mention of new Ebola cases (28% of entries) was the most-often mentioned rumor.

Table 1. Rumors Mentioned in the SMS Messages

Mentioned Rumor	Count	Percent (%)
Ebola was created by an African source	3	2.1
Ebola was created by an outside source	14	9.9
Ebola is not real	1	0.8
Routine vaccines are being used to infect people with Ebola	1	0.8
Ebola vaccine trial and routine vaccines are the same thing	1	0.8
Ebola vaccine trial is being used to infect people	8	5.6
ETUs are just a place for people to die	2	1.4
The Liberian government has misused donated funds	2	1.4
People are profiting from the Ebola virus	22	15.5
School related rumors	13	9.1
Rumors about new Ebola cases	40	28.1
Issues with prevention measures	8	5.6
Misinformation contagion	19	13.3
Other	8	5.6
Total	142	100

Table 2. Topics Discussed in the SMS Messages

Topic Discussed	Count	Percent (%)
New cases	18	12.3
Current cases	3	2.1
Stigma	3	2.1
New deaths reported	3	2.1
Barriers to recovery mission	21	14.4
Recovery	2	1.4
Broader social context	5	3.4
International support	1	0.7
Travel	4	2.7
Focus on Liberia	40	27.4
Focus on other African country	4	2.7
Focus on region of Liberia	31	21.2
Future vaccine	11	7.5
Total	146	100

Next, we examined the tonality of the rumors received by the rumor tracker. Overall, as expected, the rumors were negative in nature (56%) and 39% were neutral in valence. Five percent of rumors were coded to be positively valenced.

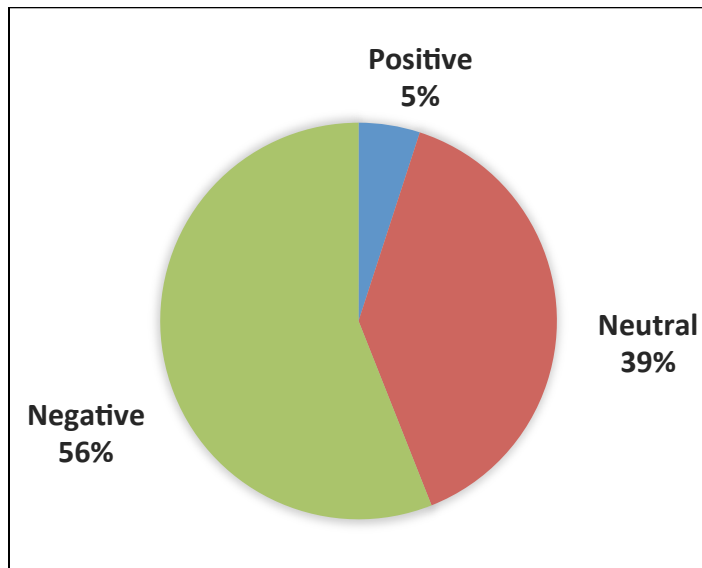


Figure 6. Overall Tone of the SMS Messages

We also examined the discrete emotions (both positive and negative) that describe these rumors. Of the negative rumors, most could be described as fear-based (41%), such as: "In Salala, Bong County community members say that if you report a sick person in your community and then they are taken to a health facility and die, the person who reported is held responsible for the death. So people are afraid to report sick persons," "Ebola came to Liberia in vaccine," and "people are saying that, the vaccines will give our children ebola."

Twenty-nine percent of the rumors were coded as being angry in tone, as in "Teachers are pay agents to contaminate children with Ebola virus and report them to the ETU." Relatively few rumors were positive or hopeful, as in this rumor: "Liberia is getting better."

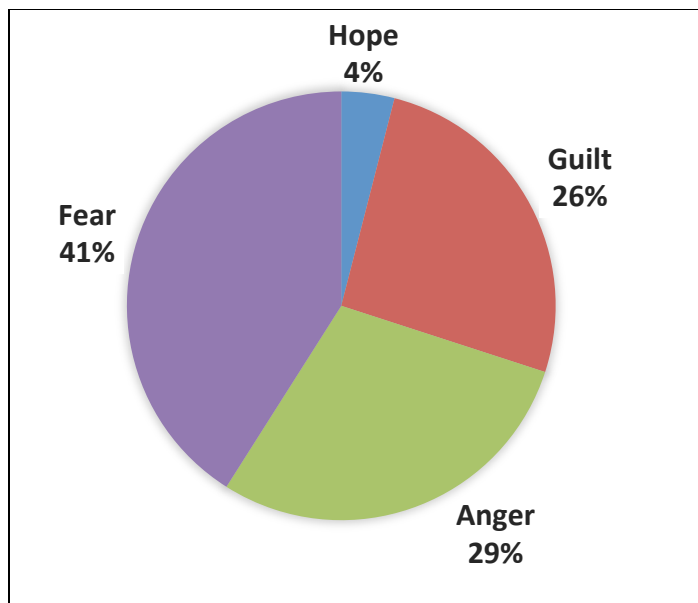


Figure 7. Primary Emotion of the SMS Messages

Community Chalkboards

At a main intersection in Monrovia with daily traffic stands a large three-panel chalkboard affixed to a plywood hut. Founder and editor-in-chief, Alfred Sirleaf, started the public news board in 2000, three years before the civil war ended in Liberia (Quist-Arcton, 2014). Writing in weatherproof chalk and in simple Liberian English so that all Liberians who pass by can read the messages, he updates the chalkboard regularly to keep locals informed, “many [of whom] cannot afford televisions or newspapers and may not have access to radios” (Quist-Arcton, 2014). In 2013, Mr. Sirleaf began adding practical information and instructions on how citizens may access specific government services, including registering a business, obtaining a birth certificate, and getting a passport (Lentfer, 2015).

In a National Public Radio piece on *The Daily Talk*, the author explained:

“When there’s a particularly hot topic, [Mr. Sirleaf] chalks out two squares with scores. So if the topic is the government’s handling of the Ebola outbreak, the score might be Ebola 2, Government 1” (Quist-Arcton, 2014).

While there was not adequate room to add political commentary, the public chalkboard did render views on the government’s response to the Ebola crisis. Mr. Sirleaf noted that he “scor[ed] the government on its health care facilities, response to the epidemic, communications to the public, [and] lack of preventative systems” (Lentfer, 2015). According to one article, an average of 5,000 people read *The Daily Talk* each day for their news consumption – “more people than those that read Liberia’s most popular website” (Lentfer, 2015). While one academic opined that the Ebola outbreak unveiled a Liberian “crisis of citizenship” that was longstanding prior to the international emergency (Pailey, 2014), Mr. Sirleaf explained that “Liberia has long had a problem with destructive rumors,” and he was fueled by a desire to “build accountability [and] fight against misinformation during the Ebola epidemic” (Lentfer, 2015).

“The legacy of the war created poverty, hardship. It is this war that prompted the creation of *The Daily Talk*. I saw the need of people wanting to be informed but there was no means of getting information, so the idea of the board came to me, *The Daily Talk* news board, the chalkboard newspaper. I believe that people should be informed of what is happening.”

Alfred Sirleaf, founder and editor-in-chief of *The Daily Talk* (Al Jazeera, 2012)

We coded 17 total community chalkboards in the data set. Because of poor record keeping, other prior issues of the Chalkboard were not available for analysis. Ten of the images were obtained from Mr. Sirleaf in person, and others were obtained from Google Images search.



Figure 8. Image of a Community Chalkboard (August 9, 2014, from Google Images)

Given the small sample size we engaged in both qualitative and quantitative analyses of the photos. The qualitative analysis indicated 3 primary frames. First, photographs often depicted Ebola as a sports competition where Ebola is up against the Government—and Ebola is winning. In fact, one chalkboard included the text “Ellen surrendered finally to Ebola after declaring war”. Another example is a board with the text “Ebola swings sword...” The scores were portrayed in vivid “Ebola vs. Gov’t” format, the discrepancy in numbers seemingly standing for the magnitude of a win or a loss. For example, a score of 7 vs. 1, in favor of Ebola against the government, portrayed that the government was hopelessly losing the battle. At another point, the scores were portrayed as 2 vs. 10, in favor of Ebola, and then 10 vs. 12, in favor of the government, perhaps acknowledging that the tide was beginning to turn. Tapping into the national interest in soccer, this use of a popular sport metaphor appears to have been a successful hook for drawing attention to the Chalkboard itself.

Second, the villain frame was commonly depicted in the photographs. Several chalkboards included a drawn picture of a devil (i.e., Ebola). One board included the phrase “I was created in the image of Satan”. One “villain” oriented board showed the devil with an Ebola vaccine (a needle) with the phrase “Ebola experimental vaccine suffering...due to corruption...” The third mentionable frame is the fear and anger frame. One board stated “Ebola is real and it kills!” Another (with a picture of the devil) stated “Killer Ebola. Ah! Ah! Ah! Look at this Pepo, you think I finished?”

The quantitative analysis indicated that 41% of the chalkboards were negative in nature. Most (78%) of the boards communicated the uncertainty inherent in the crisis. Yet, only twice were self-efficacy or response efficacy ever mentioned. The sources most typically cited in the community chalkboards were community members (88%). Nearly one fourth of the chalkboards also cited President Sirleaf, mostly in a negative light, including allegations of misappropriations of funds allocated to Ebola relief. Importantly, although these sources were mentioned on the Chalkboard, their relative expertise, trustworthiness, or reason to be skeptical about their background, was never discussed. Indeed, the predominant portrayal was

devoid of subtlety or nuance, with simple declarative headlines (e.g., “Ellen declares war”) populating the key parts of the Chalkboard.

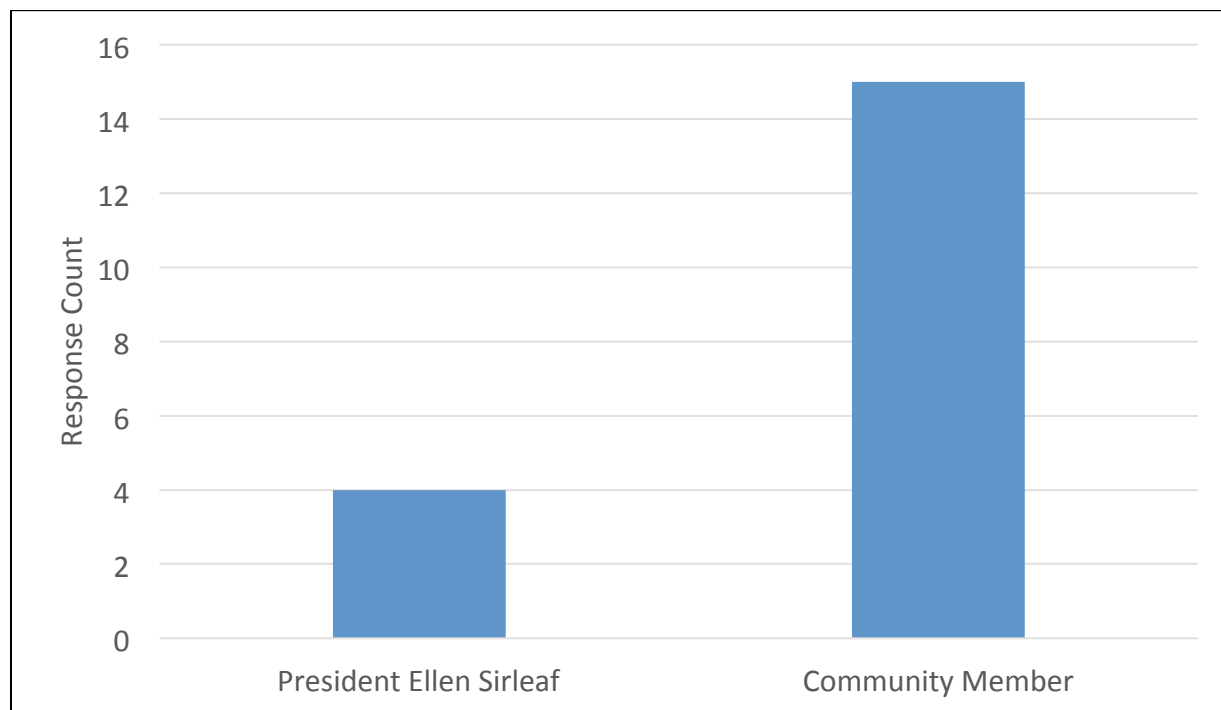


Figure 9. Sources Mentioned in the Chalkboards

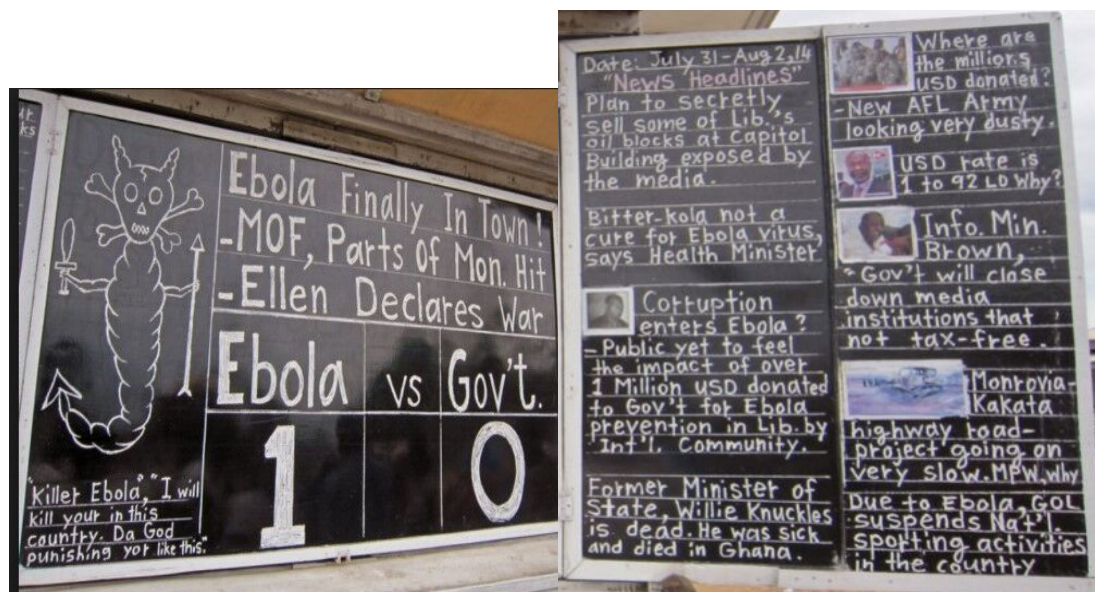


Figure 10. Chalkboard Images Citing President Sirleaf (July 31, 2014, from Google Images)

The chalkboards tended to lay the blame for the crisis on Ebola itself (50%), followed by blame on the United States (18.8%). The Liberian government was blamed approximately 6% of the time.

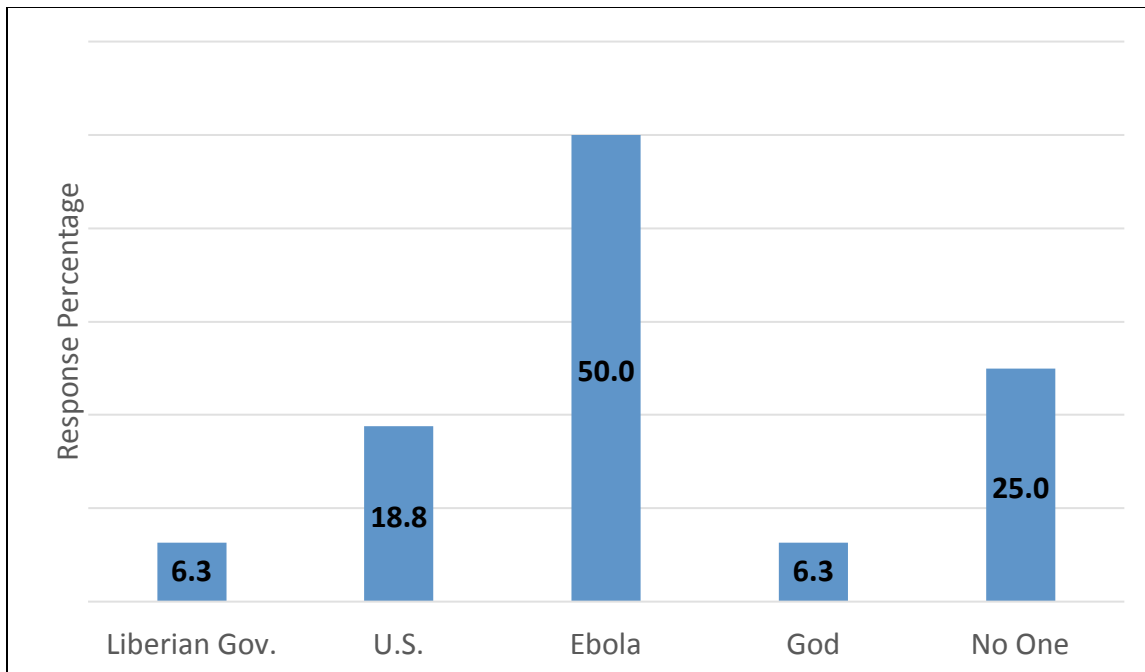


Figure 11. Who was Blamed for the Ebola Crisis in the Chalkboards



Figure 12. Chalkboard Blaming President Sirleaf (September 2014, from Google Images)

Likewise, rarely was anyone credited for solving the Ebola crisis. When such credit was given, it was to the Liberian government (approximately 19% of the time) or President Sirleaf herself

(13%). Credit for solving the Ebola epidemic followed a pattern over time, being increasingly mentioned toward the end of the outbreak.

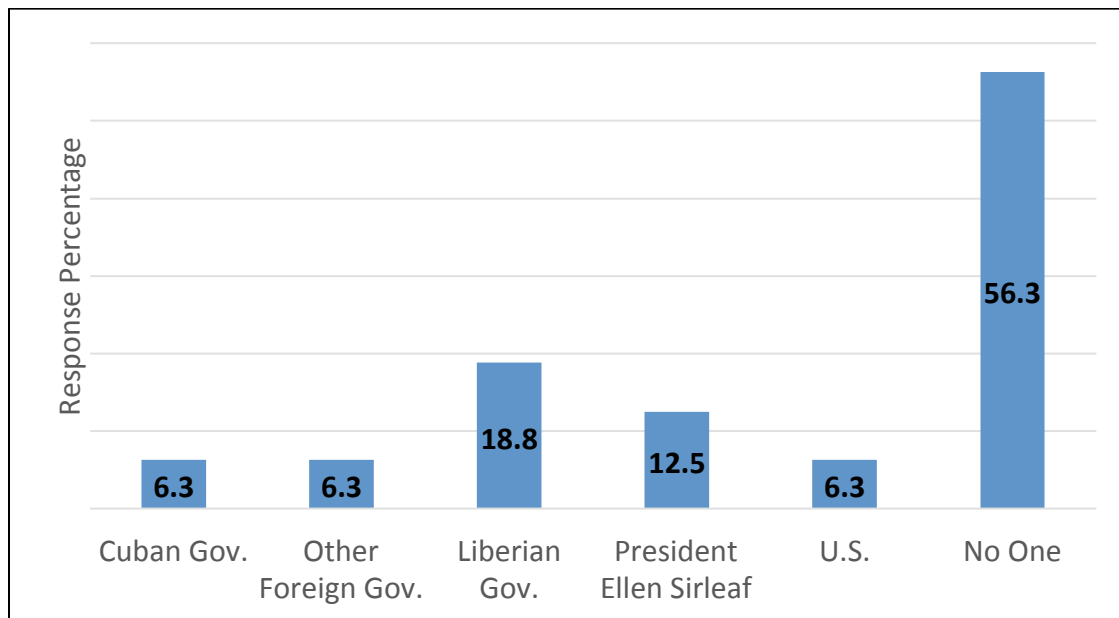


Figure 13. Who was Credited for Solving the Ebola Crisis in the Chalkboards



Figure 14. Chalkboard Crediting China with Solving the Ebola Crisis (n.d., from Google Images)

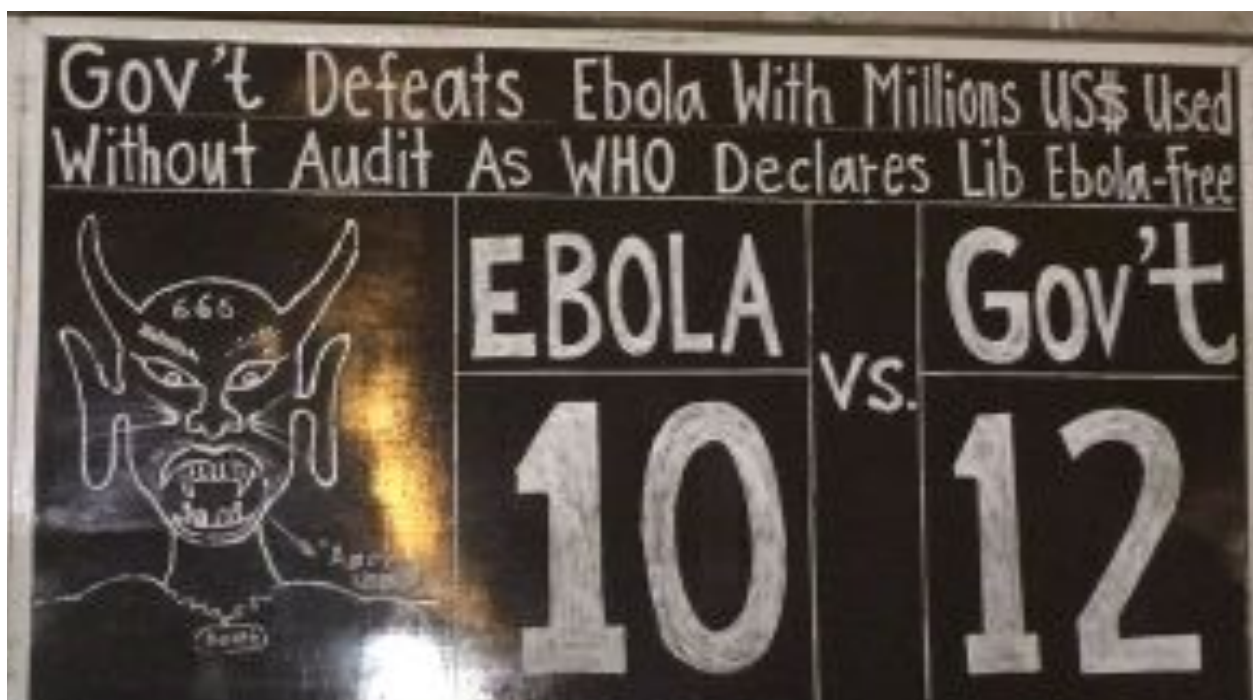


Figure 15. Chalkboard Crediting the Liberian Government (May 15, 2015, from Johns Hopkins University)

The chalkboards covered a wide range of topics. Most of the communication regarded the broader social context surrounding the Ebola crisis. Other common topics were international support and a focus on regional news.

Table 3. Topics Discussed in the Chalkboards

Topic Discussed	Count	Percent
New cases	1	2.4%
New Deaths Reported	2	4.8
Recovery	2	4.8
Broader Social Context	9	21.4
International Support	7	16.6
Phone Number	1	2.4
Focus on Liberia	5	11.9
Focus on Other African Country	1	2.4
International Focus	3	7.1
Focus on Region of Liberia	5	11.9
Future Vaccine	3	7.1
Elections	1	2.4
Sports	1	2.4
Other	1	2.4
Total	42	100



Figure 16. Chalkboard Mentioning New Cases of Ebola (Source: Google Images, n.d.)

The chalkboards did not tend to employ the best practices of crisis communication. This finding is not surprising given that Alfred Sirleaf has no ethical or organizational obligation to manage the crisis perceptions of the public in a principled manner. For example, messages that promoted self-efficacy and/or response efficacy were relatively rare. There was hardly any coverage, for example, about means of reducing the spread of Ebola and what individuals or families could do to remain safe. This is disappointing given that this might have been an effective medium through which to share prevention tips. However, the vast majority of chalkboards (70%) communicated that the crisis was ongoing.

Table 4. Best Practices Mentioned in the Chalkboards

Best Practice Mentioned	Count	Percent
Risk and crisis are dynamic and ongoing	12	75.0%
Risk is done and over	1	6.3
Self-efficacy	2	12.4
Response efficacy	1	6.3
Total	16	100

Overall, the tone of the messages was generally negative (41%), a finding that is true of most newspapers. A mixed tone, one that included a positive message either preceding or following a negative message, accounted for 35% of the chalkboard messages. Even when positive comments were included in the chalkboards, they were often accompanied by negative messages.

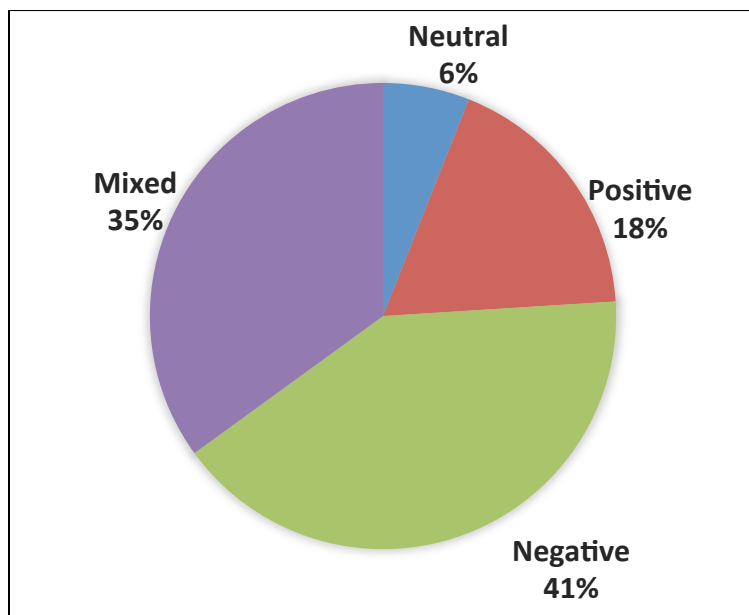


Figure 17. Overall Tone of the Chalkboards



Figure 18. Chalkboard with a Mixed Tone (February, 9, 2015, from Johns Hopkins University)



Figure 19. Chalkboard with a Positive Tone (October 28, 2014, from Johns Hopkins University)

When looking more closely at the primary emotion in the messages, the majority were fearful (42.9%). This was followed by hope (33.3%) and anger (23.8%).

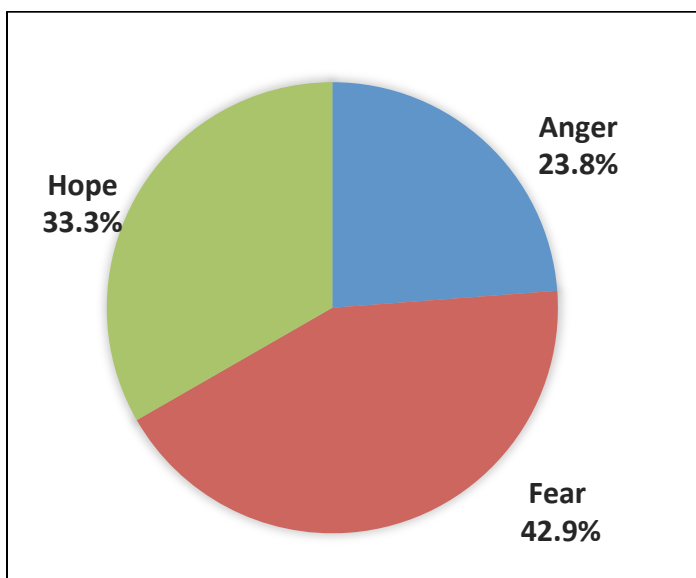


Figure 20. Primary Emotion Stressed in the Chalkboards



Figure 21. Chalkboard Communicating Fear (February 23, 2015, from Johns Hopkins University)

The majority of the messages tended to be framed, thematically, as a “disaster.” A few messages (18%) took on a hero frame, highlighting some successes.

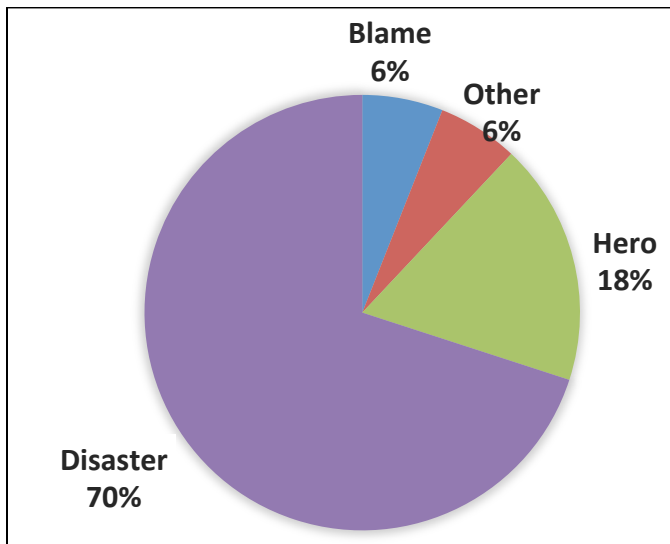


Figure 22. Primary Journalistic Frame of the Chalkboards

Likewise, the crisis theme that was most common in the chalkboards was the “uncertainty” theme (78.6%). Community engagement and the crisis being under control were the second most mentioned crisis themes.

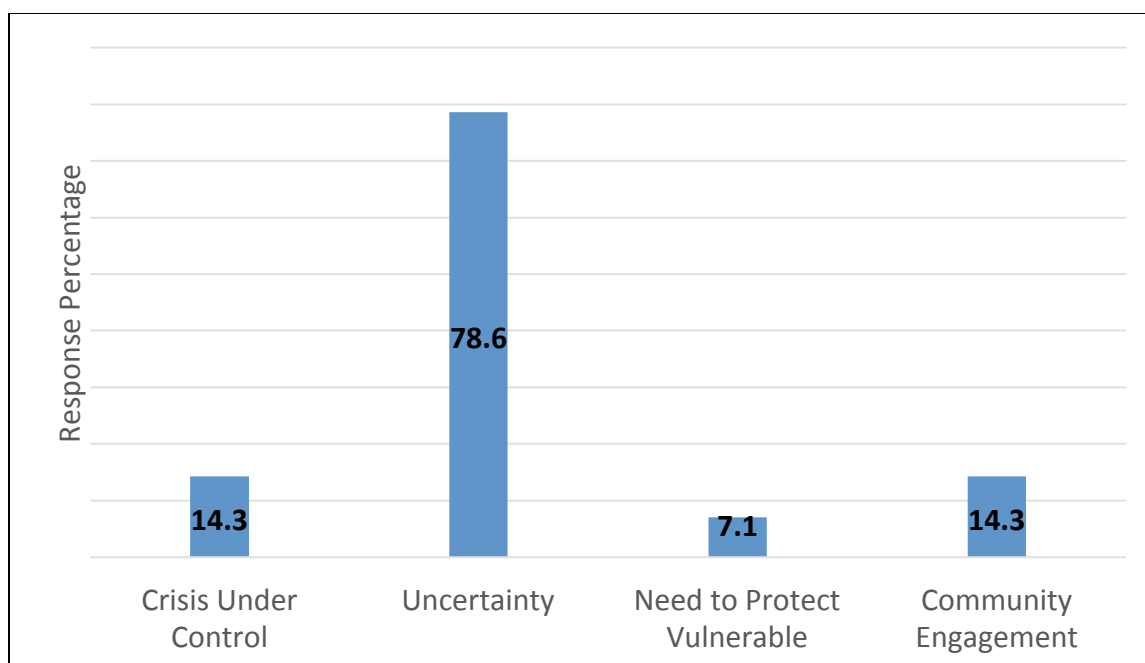


Figure 23. Crisis Themes Present in the Chalkboards

The chalkboards often repeated or brought up rumors about Ebola. Sixty-four percent of the chalkboards stated, in some fashion, that the Liberian government misused donated funds, which perpetuated the crisis. Approximately 27% of the chalkboards mentioned that Ebola was created by an outside source to harm Liberians. Notably, despite the many instances when rumors were mentioned, we found only one instance when the rumor was actually refuted: a statement attributed to the health minister stating that bitter cola was not a cure for Ebola.

Table 5. Rumors on the Chalkboards

Mentioned Rumor	Mentioned Count	Mentioned Percent	Noted Rumor Count	Noted Rumor Percent
Ebola was created by an outside source	3	27.3%	0	0%
The Liberian government has misused donated funds	7	63.6	0	0
Encourage fake prevention	1	9.1	1	100
Total	11	100	1	100



Figure 24. Chalkboard with Rumor that Ebola Was Created by an Outside Source (October 1, 2014, from Accountability Lab)



Figure 25. Chalkboard with Rumor that the Liberian Government Misused Funding (February 2, 2015, from Johns Hopkins University)

Radio

In total, we were able to secure 212 radio programs of various types through electronic files. Of these, 27 were eliminated because we either could not open them or they were not in English, and 3 were eliminated because they were repetitions. In the end, 182 radio programs were coded for inclusion in this study.

We divided the radio programs into two categories: those from regular radio stations (termed “Regular Programming” in this report) and those specifically created through external funding as part of the Ebola response (termed “Funded Programming” in this report). Regular Programming constituted 69% of the sample and the Funded Programming constituted 31% of the sample. The distribution of radio stations within these two broad categories is shown below in Figure 26 and Figure 27.

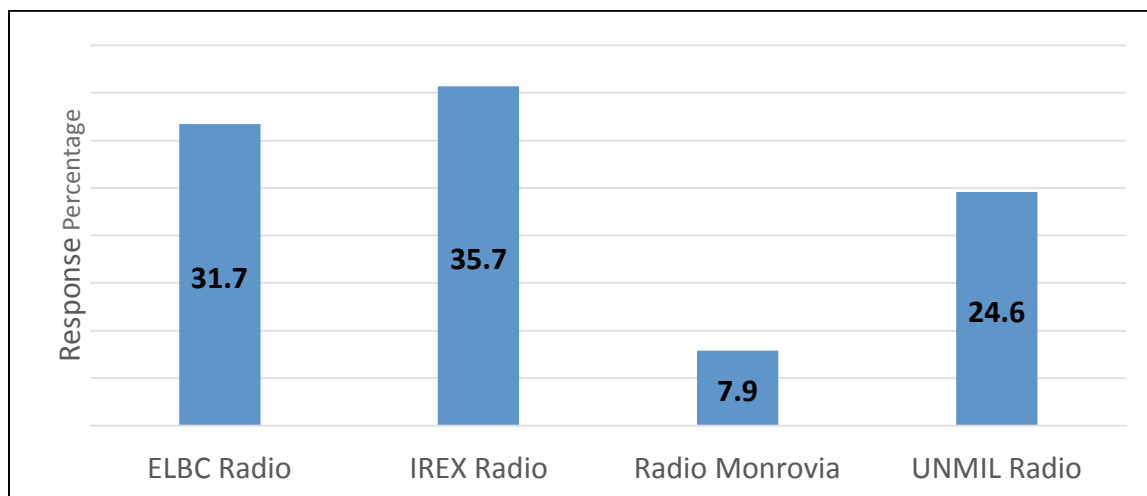


Figure 26. Percentage of Programs in the Regular Programming Category (N = 126)

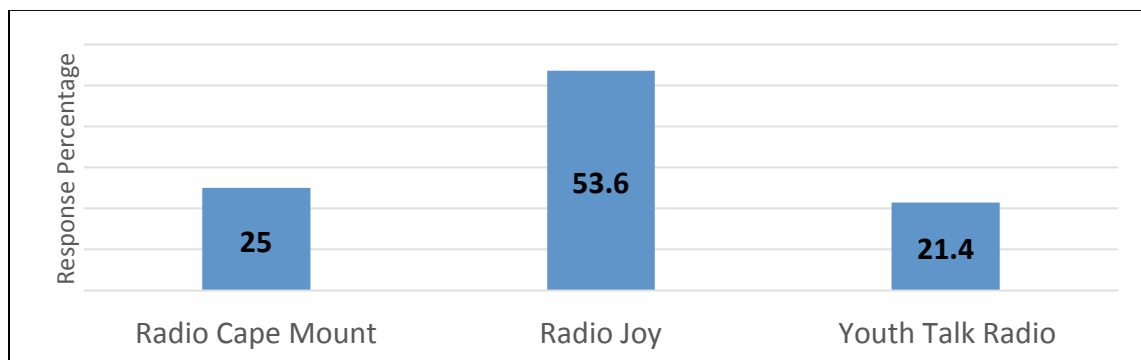


Figure 27. Percentage of Programs in the Funded Programming Category (N = 56)

In the Regular Programming category, IREX Radio and ELBC Radio contributed about a third of all programming coded in this report, and in the Funded Programming category, Radio Joy contributed about half of all programming coded in this report. Radio Cape Mount and Youth Talk Radio were almost equally represented at 25% and 21.4%, respectively.

The type of content represented on the radio messages was dominated by interviews at 47%, seconded by the “Other” category at 27% that comprised mostly songs, talk shows, and public service announcements. Twelve percent were dramas, 6% news and spiritual, 6% press conferences, 2% lunchtime specials, and 1% presidential speeches. Some programs were combinations of talk shows with songs or dramas included.

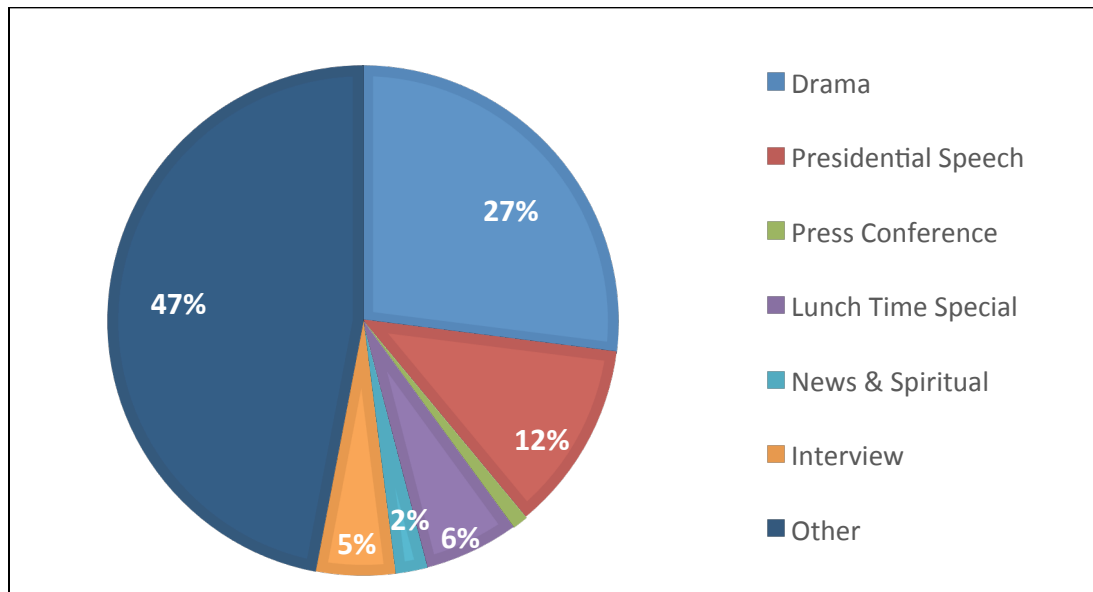


Figure 28. Type of Content in Radio Programming across all Programs

We also noted whether the program had call-ins, whether the entire programming was a drama, or if just a portion of the programming was a drama. Nineteen of the radio shows or programs had members of the general public call in to the program to publicly share their thoughts, concerns, questions, and opinions on the topics being discussed during the show. Many of the callers were community members, and several of them re-called and repeated accurate Ebola prevention messages. Twenty-five of the coded radio broadcasts were drama productions. An additional 14 radio shows included a drama within the program.

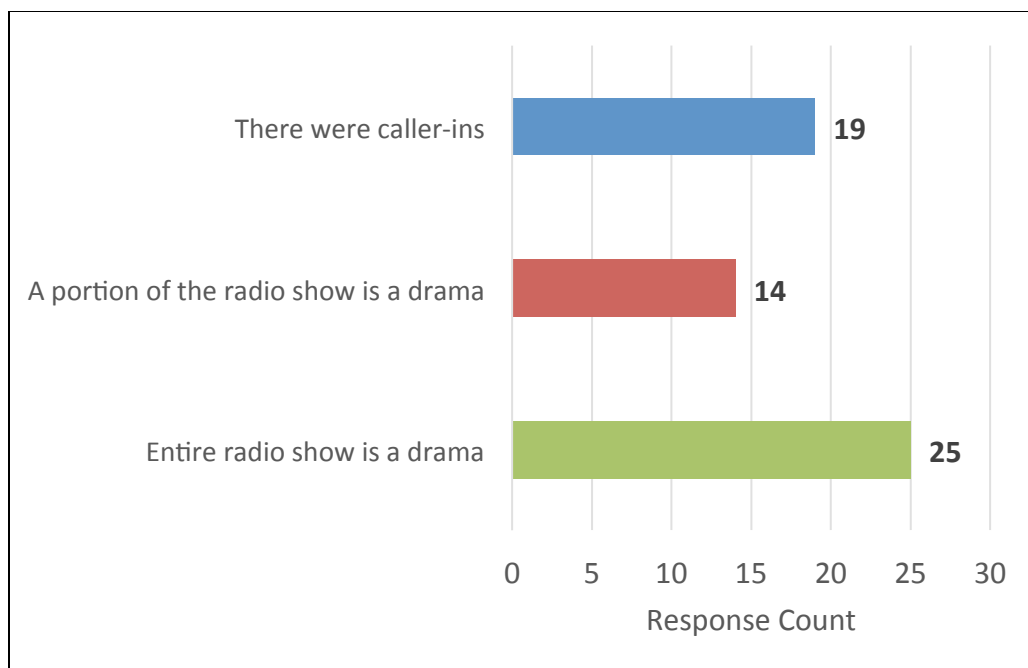


Figure 29. Number of Dramas, Partial Dramas, and Shows with Call-Ins

Next, we analyzed the source of the radio message and noted whether its expertise, trustworthiness, or non-trustworthiness was also cited. The Liberian Ministry of Health was the most cited source (60 counts) and the highest count of expertise mentioned (57 counts); community members ranked second, with 47 citations but only 7 mentions of expertise. Neither the Liberian Ministry of Health nor the community members had mentions of trustworthiness or lack of trustworthiness. Across all the cited sources, trustworthiness was rarely (2 counts) mentioned. When the Liberian government or African Union was the cited source (4 counts each), expertise was also mentioned (4 counts each); however, trustworthiness or lack of it were not mentioned. In the 14 radio files citing President Ellen Sirleaf, expertise was also mentioned (14 counts), but not trustworthiness or lack of trustworthiness. The regional group of fifteen West African countries, the Economic Community of West African States (ECOWAS), and U.S. government (but not the CDC) were not cited sources. When education officers were cited as a source (10 counts), expertise was mentioned 9 out of 10 times.

- **Ministry of Health: Most cited source and highest mention of source expertise**
- **Liberian government or African Union: When mentioned, source expertise was also mentioned**
- **Education officers: When mentioned, expertise was mentioned almost always**

Whenever the CDC and WHO were mentioned, they were cited as expert sources (2 and 5 counts, respectively). Doctors were cited as a source 15 times, and their expertise was mentioned 14 times. Health care workers (non-physicians) were mentioned 9 times, and their expertise was noted 6 out of 9 times. Ebola patients were cited 9 times, but expertise was

mentioned only once. Family of Ebola patients was cited 5 times, but no expertise attribution was made to family members.

Mentions of trustworthiness were absent in virtually all the messages.

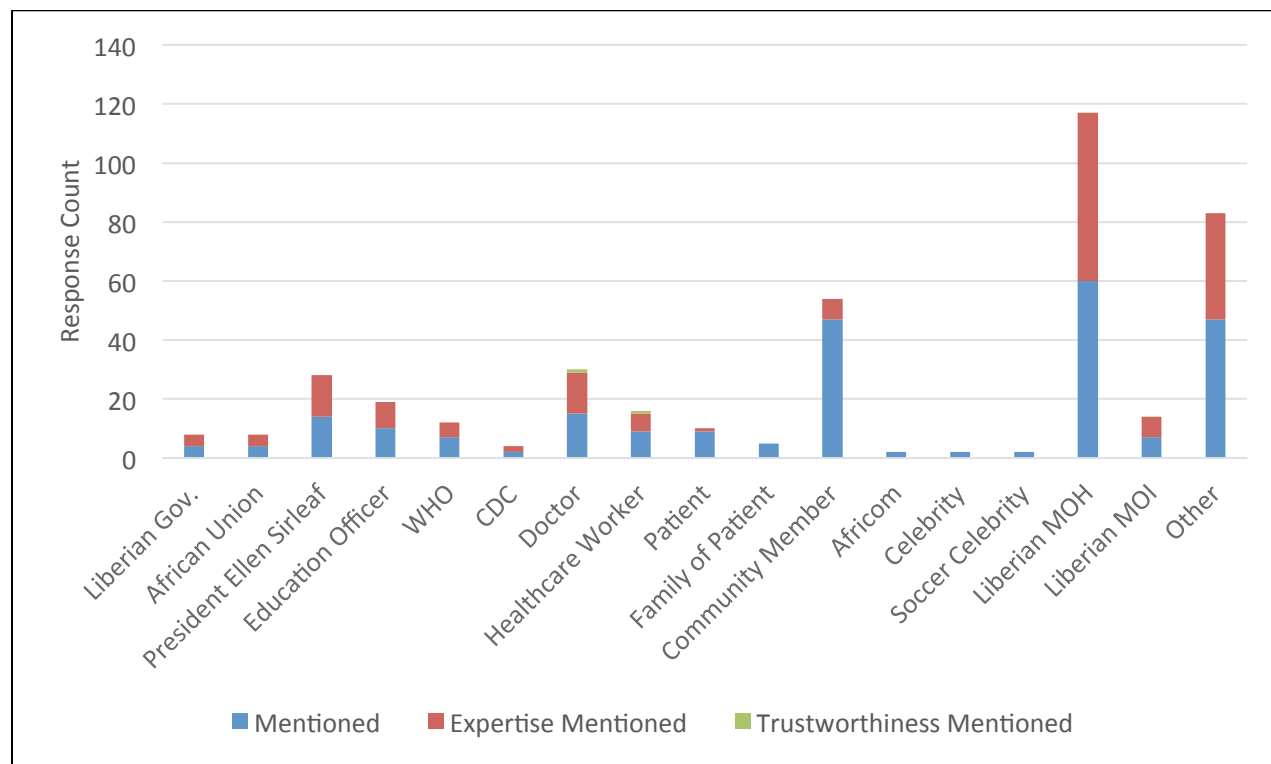


Figure 30. Sources Mentioned in Radio Programming

There were seven messages that explicitly blamed the six entities displayed in Figure 30 below for the Ebola crisis. Approximately 29% of the messages proclaimed that no one was to blame for the crisis. The United States, non-governmental organizations, witchcraft, and a punishment from God were each blamed once for the Ebola crisis. This review revealed one occurrence of the Liberian people being blamed for the Ebola crisis.

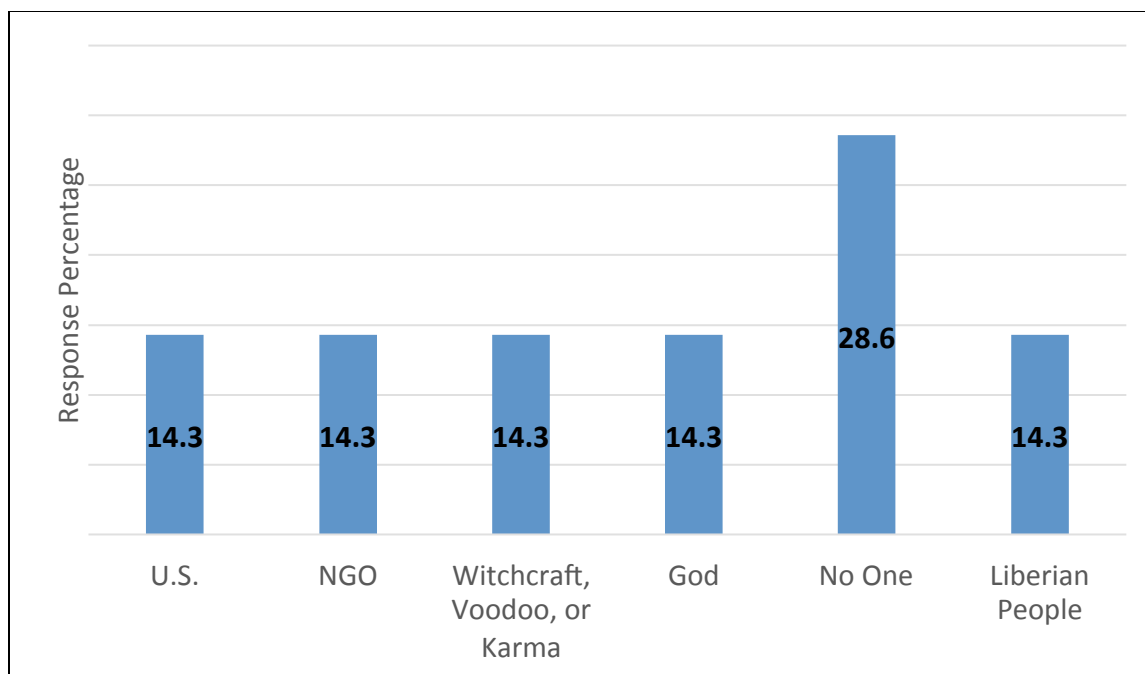


Figure 31. Sources of Blame Cited in Radio Programming

Only four programs provided credit to anyone for solving the crisis, and all of them were given to God or were construed as punishment from God. A “Gender, Children and Social Protection” coordinator said, “We want to be very grateful to God because we know it was through His divine intervention that got Liberia to be where we are now.” A Reverent said, “I’m very happy, and I want to give thanks to God, because it is through God that we’ve been able to defeat the disease.”

With regard to the topics discussed on the radio, our analysis indicated that these varied widely. Nearly one-tenth of the topics discussed through radio involved the broader social context. One interviewee expressed, “We need to restructure our health care delivery system.” Reverend John Sumo from the Liberian Ministry of Health explained, “Intermarriages where one person gets infected and the partner leaves to go across and see what is happening, these are some of the things that led to high infection.” In a separate conversation, Pastor Gbarngawo proclaimed, “We should adopt the prevention methods as tradition.”

A significant number of topics pertained to contact information, including accessing the hotline (4.9%), providing a phone number (8.4%), providing a physical address (0.3%), and providing an email address (1.3%). Phone numbers to call in to the radio stations were announced repeatedly for shows and programs to invite community members to call in. Content topics exclusive to radio included quarantined communities, Ebola treatment units (ETUs), reopening of schools, contact tracing, symptoms of Ebola, and WhatsApp Messenger, a smart phone application for free instant messaging.

Table 6. Topics Discussed in the Radio Messages

Topic Discussed	Count	Percent
New Cases	24	3.8%
Current Cases	21	3.3
Changes in Status/Former Cases	31	4.9
Stigma	37	5.9
New Deaths Reported	20	3.2
Barriers to Recovery Mission	44	7.0
Recovery	41	6.5
Broader Social Context	62	9.8
International Support	18	2.9
Travel	15	2.4
Event Promotion	8	1.3
Research	5	0.8
Contact information (phone, hotline, address, email, etc.)	95	14.9
Malaria	20	3.2
Focus on Liberia	84	13.3
Focus on Other African Country	26	4.1
International Focus	3	0.5
New Medications	2	0.3
Future Vaccine	11	1.7
Elections	7	1.1
Sports	2	0.3
ETUs	7	1.1
WhatsApp	6	1.0
Quarantined Communities	5	0.8
Reopening of Schools	5	0.8
Symptoms of Ebola	2	0.3
Contact Tracing	2	0.3
Other	27	4.5
Total	630	100

The best practices in crisis communication were utilized in messages broadcast through radio. The data show positive findings in the 79% difference between messages communicating that the risk and crisis are dynamic and ongoing (at 22.1%) and the risk is done and over (at 4.6%). At 18.9%, a fair portion of the radio messages promoted self-efficacy. Response efficacy messages were also communicated (14.6 %), and Mr. Moses Fomba stated clearly, “If you wash your hands, you will continue to be protected.”

Effective crisis communication involves portraying both risk messages as well as efficacy messages. Radio programs conveyed both types of information: ongoing risk (22.1%) and ways of enhancing efficacy – self-efficacy (18.9%) and response efficacy (14.6%).

Table 7. Best Practices Mentioned in the Radio Messages

Best Practice Mentioned	Count	Percent (%)
Risk and crisis are dynamic and ongoing	62	22.1
Risk is done and over	13	4.6
These issues can be uncertain and ambiguous	14	5.0
Compassion and empathy	31	11.1
Want to hear the public's concerns	25	8.9
Foster partnerships with the public	41	14.6
Self-efficacy	53	18.9
Response efficacy	41	14.6
Total	280	100

The prevention message for hand washing with soap and water was mentioned in 14.7% of messages. Safe burial prevention messages, such as “Do not hide dead people,” were mentioned 57 times (9.2%). No touching (hugging, kissing, holding hands, etc.) was mentioned 58 times (9.4%), and prompt notification of exposure/treatment was included in prevention steps and mentioned 59 times (9.6%). Fifty-three (8.6%) messages included “Do not touch someone with signs of Ebola” as methods of prevention. Prompt treatment seeking messages were mentioned 39 times (6.3%). Avoid contact with contaminant was mentioned 31 times (5%). Fifteen programs (2.4%) included “Don’t eat bush meat (monkey, bats, etc.) Twenty-nine messages (4.7%) included checking temperature as a prevention step.

Twenty-two prevention messages fell into the “other” category. Twelve of these “other” prevention messages include avoiding (large) crowds. A need to stop hiding sick people and contacting community leaders were each mentioned twice in 22 programs with prevention steps included in the “other” category. One of 22 was to avoid carrying sick people in commercial or personal vehicles. Others included not sharing utensils or borrowing school supplies; survivors were recommended to wear condoms even after the recommended 90-day abstinence period; and traced contacts were asked to remain in their homes for 21 days.

Minimized close contact with family when exposed, using makeshift personal protective equipment in community care, and visitors not allowed to enter health centers were the least frequent mentioned prevention steps – mentioned 7, 6, and 3 times, respectively.

Table 8. Ebola Prevention Steps Mentioned in the Radio Messages

Prevention Step Discussed	Count	Percentage (%)
Wash hands carefully	90	14.7
Practice careful hygiene	13	2.1
Check temperature before entering businesses	29	4.7
No touching	58	9.4
Avoid contact with nonhuman primates	15	2.4
Do not eat bush meat	29	4.7
Cook food properly	10	1.6
Do not touch someone with signs of Ebola	53	8.6
Practice safe burials	57	9.2
Avoid contact with contaminant	31	5.0
Ensure regular and rigorous environmental cleaning	10	1.6
Prompt notification of any suspected cases	59	9.6
Seek treatment promptly	39	6.3
Prompt notification of exposure	18	2.9
If exposed, minimize close contact with family	7	1.1
Isolate patients with Ebola within the community	20	3.2
Use makeshift personal protective equipment	6	1.0
Do not allow visitors in isolation rooms in health centers	3	0.5
Isolate patients with Ebola within health centers	10	1.6
Signs and symptoms of Ebola can appear 2-21 days later	20	3.2
Ebola survivors should abstain from sex or practice safe sex. People should not have sexual contact with those who have had or have been exposed to Ebola	18	3.0
Other	22	3.6
Total	617	100

An analysis of the overall tone revealed that 36.8% of the messages disseminated through radio were positive. The majority of messages were optimistic, hopeful, and confident. A high percentage (32.8%) of the communication was equally both positive (50%) and negative (50%). Twenty-two percent of the communication through radio was fact based, and a high number of the informational messages focused on prevention, transmission, and symptoms of Ebola.

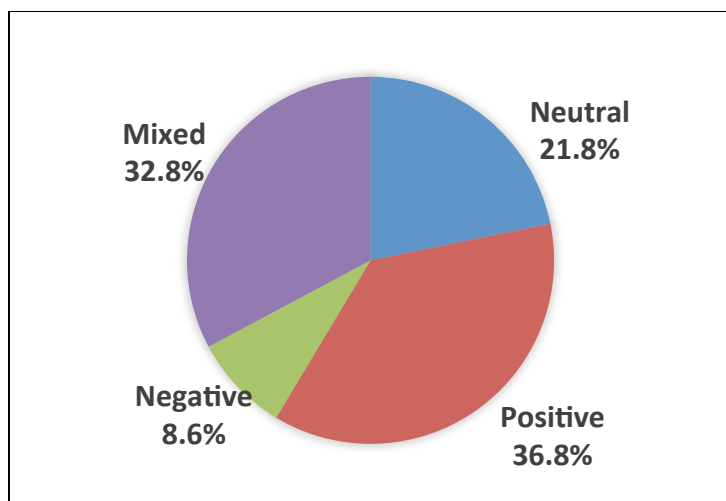


Figure 32. Overall Tone of Radio Messages

Of the programs that expressed emotion, 65% of them stressed hope in the messages. The second most emphasized emotion was fear (16.8%). Fifteen percent of emotions stressed were of anger, and 4% of emotions stressed were of guilt.

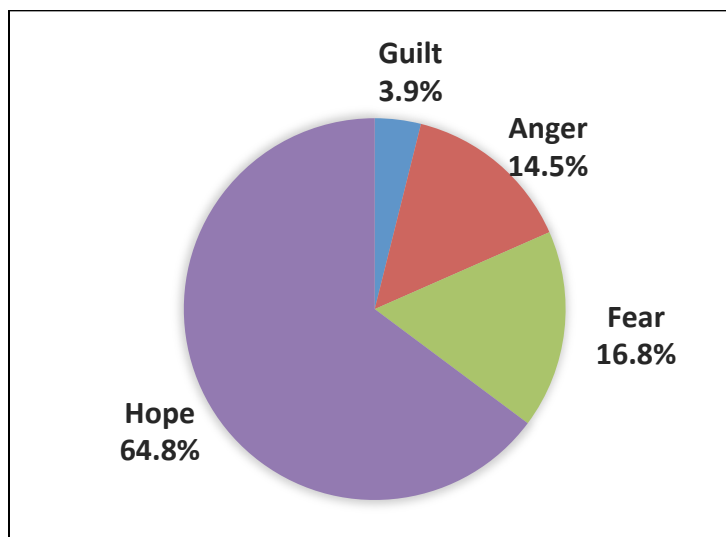


Figure 33. Primary Emotions in Radio Messages

A significant portion of the radio programming (79 shows or 47.6%) included behavioral steps. A fair percentage (23.5%) of the radio messaging tended to focus on the Ebola crisis itself as a disaster. Several of the programs promoted the anti-stigmatization of Ebola survivors and family members of survivors. None of the radio shows comprised blaming other countries as the thematic frame.

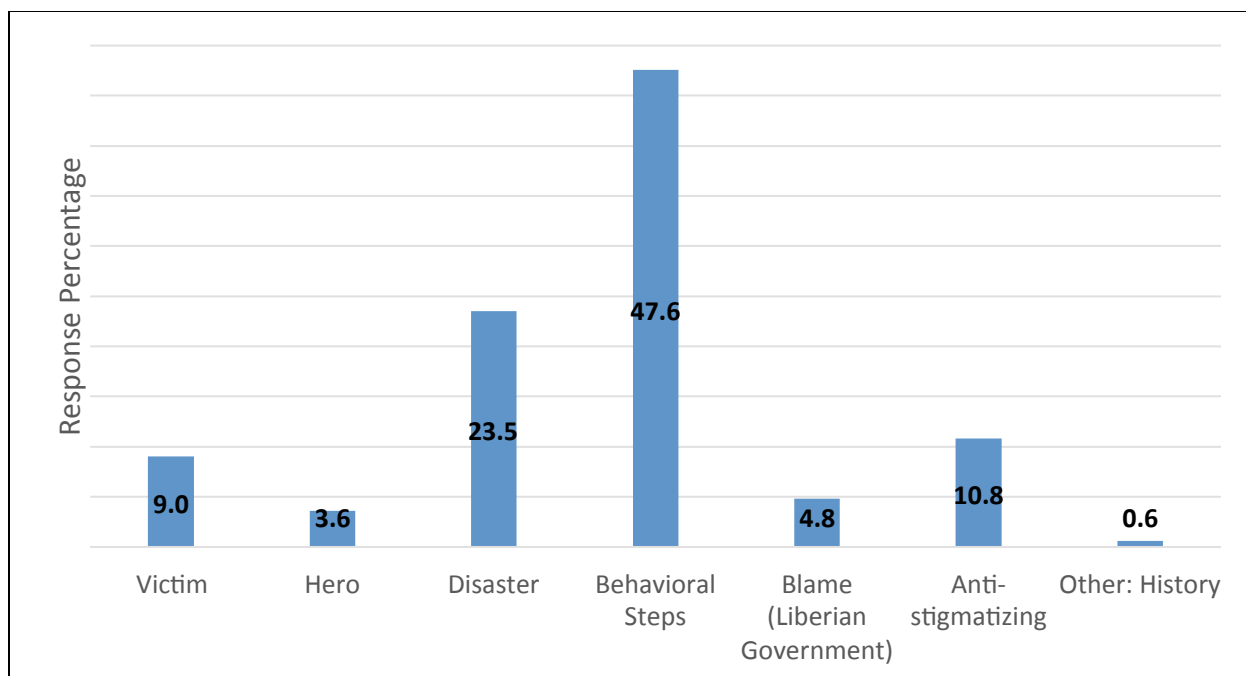


Figure 34. Journalistic Frame of Radio Messaging

Forty-nine programs (27%) did not have a crisis theme. Of the 132 (73% with crisis themes), most messages (31%) communicated community engagement as the primary crisis theme. A need to protect the vulnerable and uncertainty were also common themes at 18.2% and 15.9%, respectively. Themes of community disengagement and the crisis as under control were reported at approximately the same rates, 7.6% and 8.3% respectively. Workers honoring the dead were identified in 6.8% of programs, and 6.1% of programs indicated the response was organized. The response was characterized as being disorganized in only 2.7% of those with a crisis theme. Speediness of response was identified as a crisis theme in 1.5 % of the programs. The other category (at 0.8%) comprised survivors telling their stories and a need for mass information updates. Failure to honor the dead and slowness of response were the least identified crisis themes at 0.9%.

A majority of the radio messages were optimistic, hopeful, and confident, and a high number of the informational messages focused on prevention, transmission, and symptoms of Ebola. A significant portion of messages focused on behavioral steps for prevention. Anti-stigmatization was also stressed.

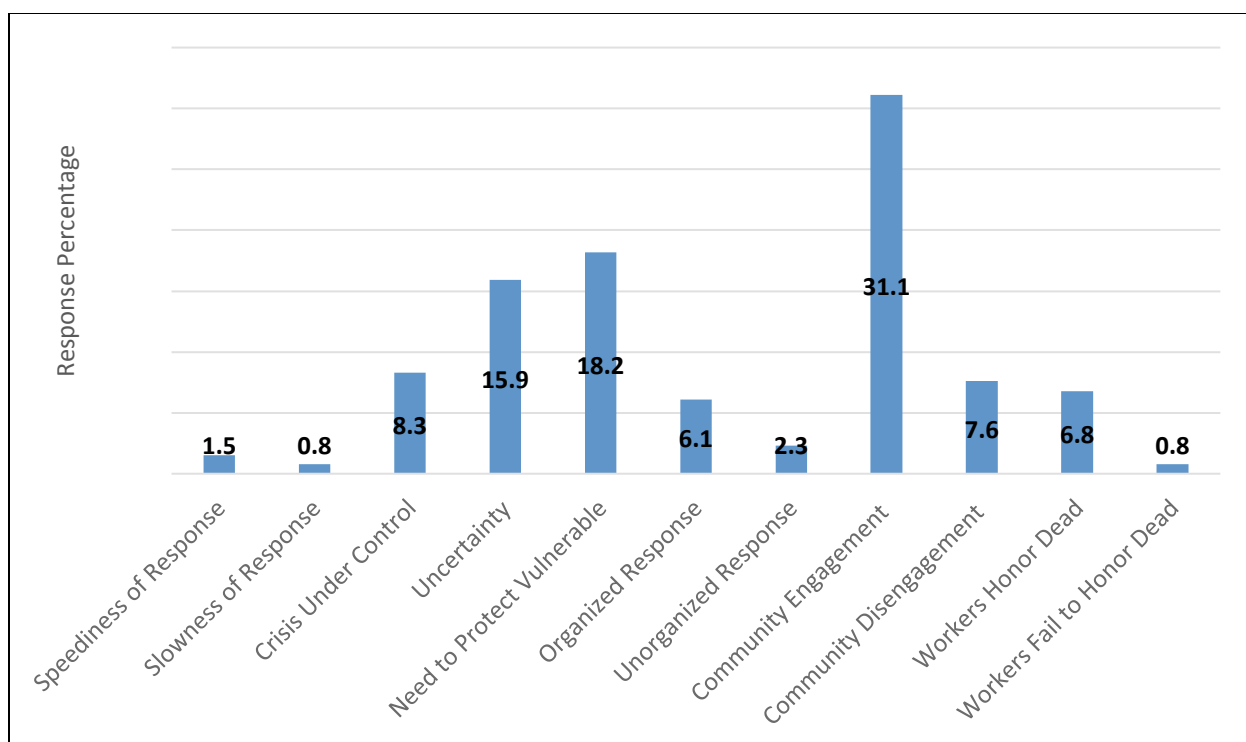


Figure 35. Crisis Themes Presented in Radio Messages

Next, we examined whether rumors were reported or communicated about on the radio. A total of 103 rumors were mentioned throughout the radio shows, and 91 of them (88%) were declared as rumors. The rumor that Ebola is not real was announced 40 times, and only once was it presented without it being characterized as a rumor. “The ETUs are just a place to die” – another rumor – accounted for a significant percentage of the rumors mentioned, at 18.4% or 19 times. This was declared as a rumor 17 out of the 19 times (89%) it was mentioned.

Table 9. Rumors Mentioned in Radio Messaging

Mentioned Rumor	Mentioned Count	Mentioned Percent	Noted Rumor Count	Noted Rumor Percent
Ebola was created by an African source	1	1.0%	1	1.1%
Ebola is not real	40	38.8	39	42.9
Routine vaccines are being used to infect people with Ebola	6	5.9	6	6.7
Ebola vaccine trial and routine vaccines are the same thing	10	9.8	10	11.1
Ebola vaccine trial is being used to infect people	3	2.9	3	3.4
ETUs were built as a place for foreigners to spy	1	1.0	1	1.1
ETUs are just a place for people to die	19	18.4	17	18.8
The Liberian government has misused donated funds	2	1.9	2	2.4
People are profiting from the Ebola virus	2	1.9	0	0.0
Encourage fake prevention	2	1.9	2	2.4

Issues with prevention measures	1	1.0	1	1.1
Misinformation contagion	7	6.8	7	7.9
Other	9	8.7	1	1.1
Total	103	100	89	100

The following rumors were exclusively revealed through radio (and noted as rumors):

- Disinfecting spray is lethal;
- The national task force is ill-conceived and comprised of politicians;
- People were getting Ebola at Redemption Hospital;
- A hospital in Margibi county closed down;
- People went on saying they were fed by shovel at the ETU; and patients were sprayed and there was no food or medication.

Newspapers

A total of 745 newspaper articles were coded across three newspapers in Liberia: *Daily Observer*, *Front Page Africa*, and *The Inquirer*. The *Daily Observer* is based in Monrovia and was established in 1981. It is often cited as the largest newspaper in Liberia. *Front Page Africa* has a daily circulation of 1,500, and was founded in 2005 as an online paper. *The Inquirer*, also from Monrovia, is also known as the *Monrovia Inquirer*, and its circulation is not published.

For coding, each selected newspaper was first read through to determine how many Ebola-related stories were included. If the paper contained three or fewer articles on Ebola, all articles were coded. If the paper contained more than three articles on Ebola, three articles were randomly chosen for inclusion.

The three newspapers each provided approximately a third of all articles coded for this analysis. *The Inquirer* contributed 241 articles (32.4%), *Front Page Africa* contributed 272 articles (36.5%), and *Daily Observer* contributed 232 articles (31.1%).

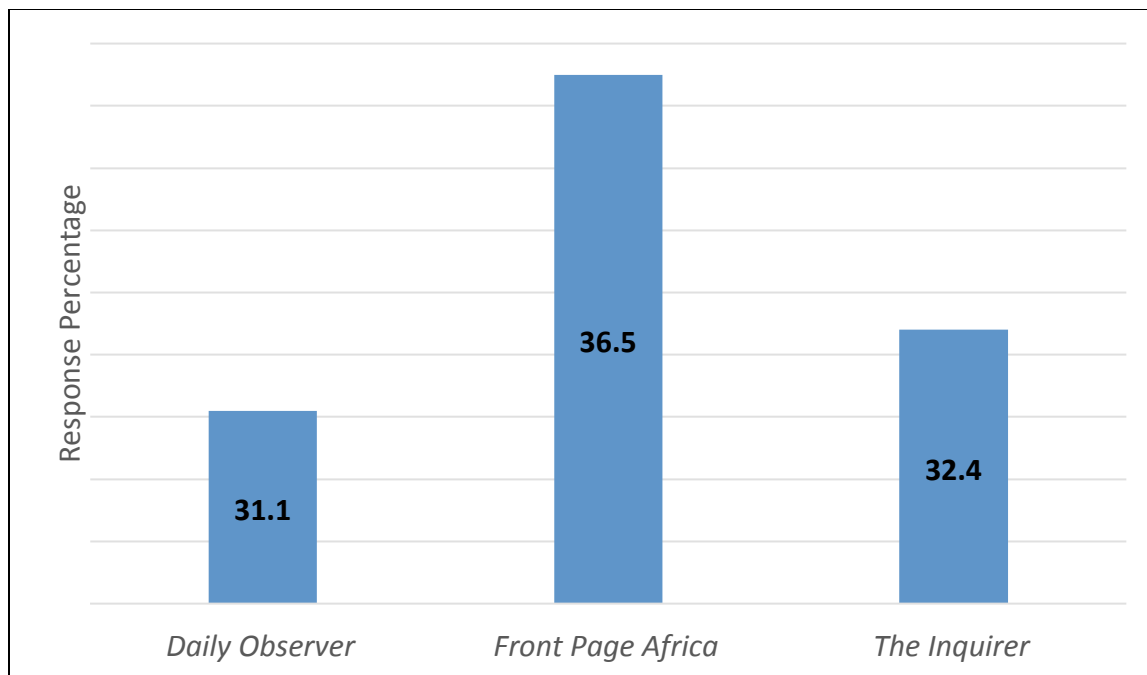


Figure 36. Percentage of Articles per Three Liberian Newspapers

The majority, 57%, of the newspaper messages coded included a byline attributing the work to an individual writer. Thirty-eight percent of newspaper messages did not include a byline, while 5% were attributed to an organization (BBC, Reuters, etc.) and 0.001% attributed to multiple writers.

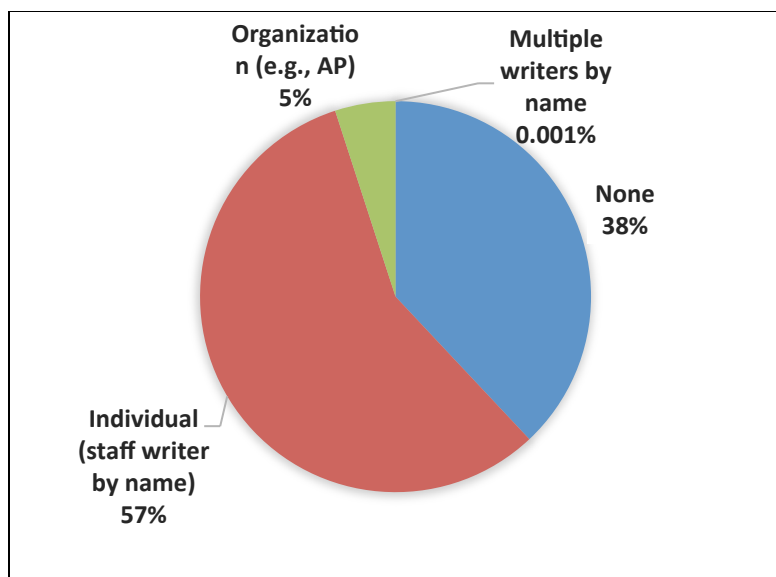


Figure 37. Byline Type of Newspaper Messages

We investigated the nature of sources mentioned in the newspaper articles, also noting whether their expertise, trustworthiness, or lack of trustworthiness was mentioned. The Liberian government was the most cited source (447 counts) and the highest count of expertise mentioned (232 counts), followed by community members (232 citations and 103 mentions of expertise). The next highest citations were the Liberian Ministry of Health (201 counts; 88 expertise). Other sources included foreign governments (450 counts; 219 expertise), the WHO (179 counts; 62 expertise), and President Ellen Sirleaf (171 counts; 74 expertise). These mentions were followed by healthcare workers who were not doctors (160 counts; 45 expertise), doctors (129 counts; 110 expertise), current or former Ebola patients (125 counts; 22 expertise), and the U.S. government, excluding the CDC (99 counts; 46 expertise). All other sources were mentioned or cited fewer than 100 times across all newspaper articles, and all sources, except the CDC, were attributed expertise fewer than 20 times.

Trustworthiness was rarely mentioned in newspaper articles; those coded as “Other,” healthcare workers, and the Liberian government, were most frequently called trustworthy, with 22, 13, and 12 mentions, respectively. Community members were next, with 6 mentions of trustworthiness. President Ellen Sirleaf and doctors were each cited five times, the U.S. government and the Liberian Ministry of Health were each cited four times, and the WHO and AFRICOM/U.S. military forces were cited three times each. The Liberian Ministry of Information, Cultural Affairs and Tourism was attributed trustworthiness twice, and the African Union, Ebola patients, and soccer celebrities were attributed expertise just once. There were 12 counts for the Liberian government and 6 counts for community members.

Though mentioning a lack of trustworthiness was rare, the Liberian government was the source most often mentioned, with 39 counts. President Sirleaf was referred to as untrustworthy 8 times. Other sources and community members were cited as untrustworthy 4 times each.

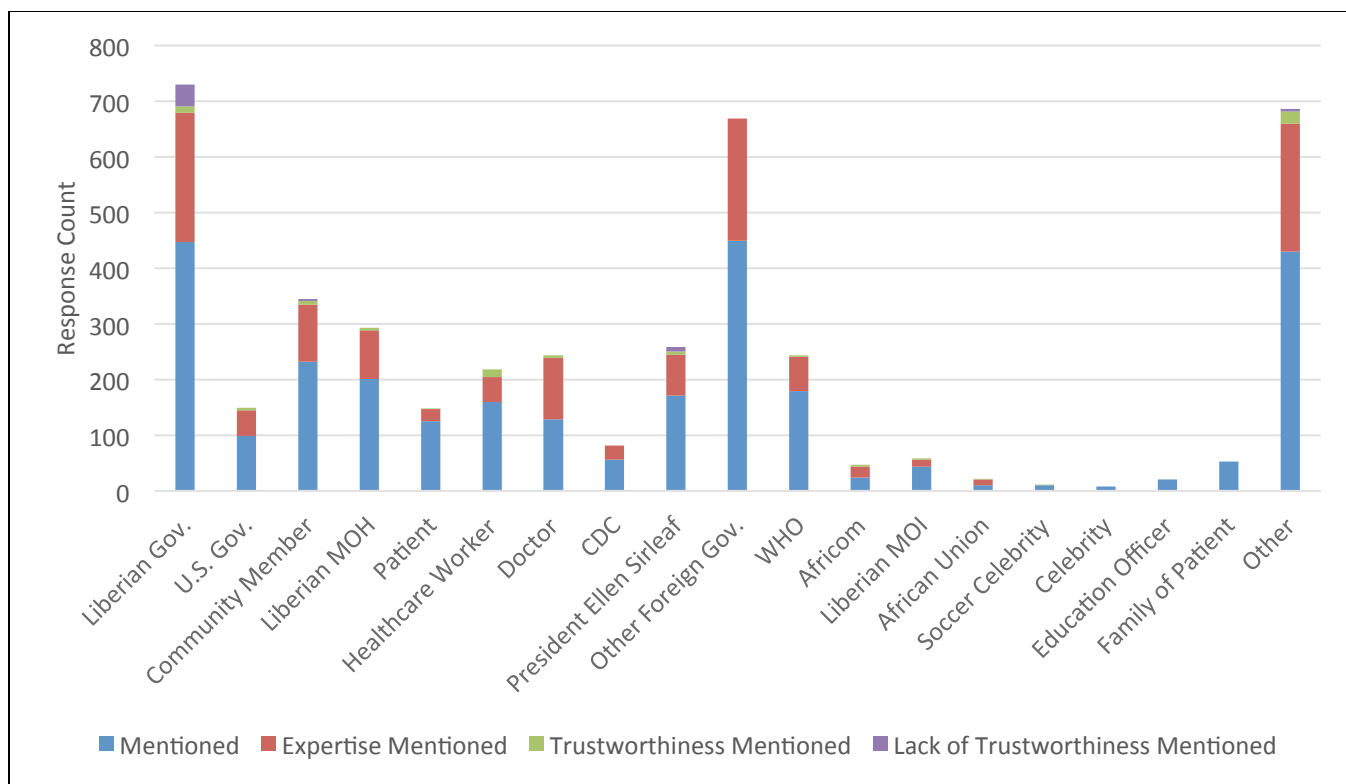


Figure 38. Sources Mentioned in Newspapers

Nearly half of the 745 articles explicitly blamed an entity for the Ebola crisis. Twelve percent blamed the Liberian government; 22.2% personified and blamed Ebola itself; 5.6% blamed an “other” entity, such as community members or the media; and 1.7% of the messages blamed religious people, places, or things. President Ellen Sirleaf, the United States, Ebola victims themselves, and all other entities were each blamed in less than one percent of articles. Fifty-three percent of the newspaper articles did not explicitly blame anyone for the crisis.

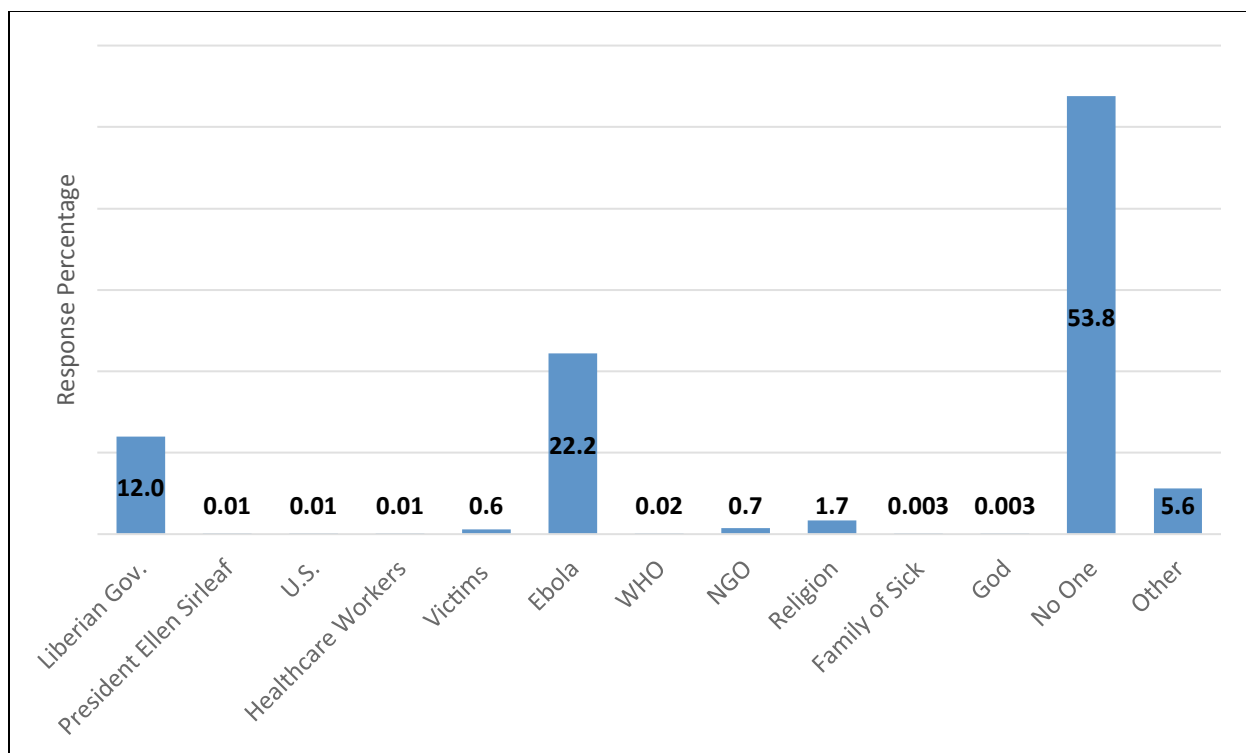


Figure 39. Who Was Blamed for the Ebola Crisis in Newspapers

Of the articles that credited an entity for solving or helping to solve the Ebola crisis, the Liberian government and non-governmental organizations were credited in 34.1% and 33% of the time, respectively. In one article, Christine Lagarde, head of the International Monetary Fund, “pointed out that the courage and tenacity exhibited by President Sirleaf and the Liberian people in confronting an unprecedented public health emergency have been extraordinary to behold.” Credit references to the Liberian government and non-governmental organizations were followed by references to healthcare workers or the training they received (18.3%). No one was explicitly credited in 17.6% of the articles, and foreign governments beside the United States, Liberia, and Cuba were credited in 14.1% of the articles.

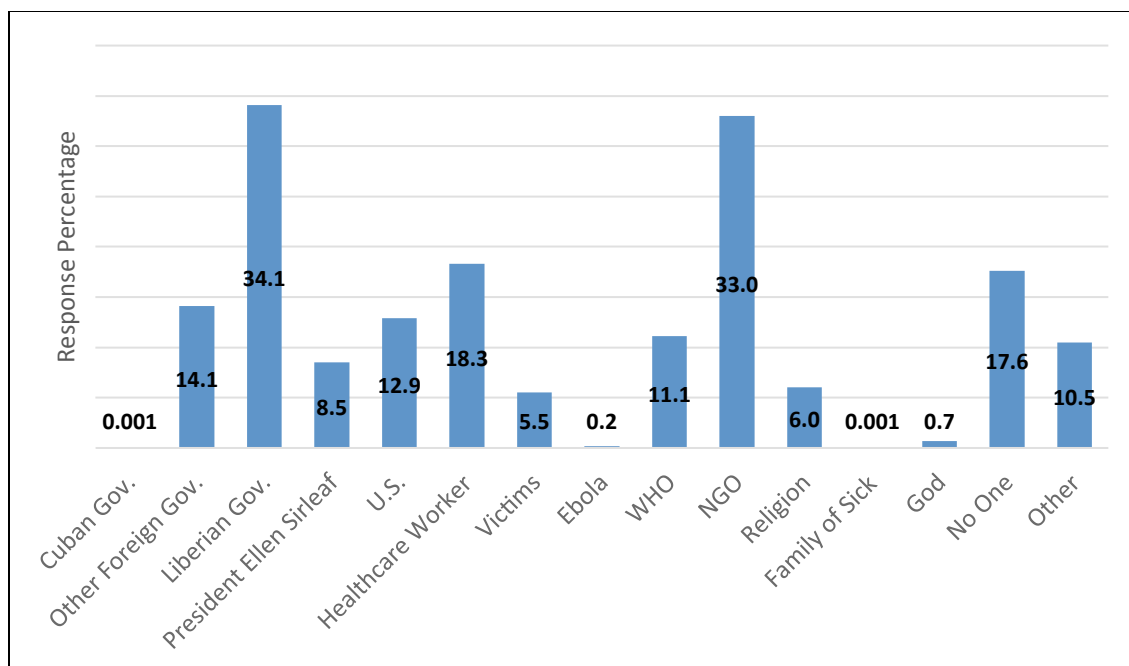


Figure 40. Who Was Credited with Solving the Ebola Crisis in Newspapers

The topics discussed in the newspaper articles varied a great deal. Locations relevant to the Ebola crisis were discussed in most of the articles; Liberia was discussed in 79.2% of the articles, with a specific region discussed in 49.7% of them. Other African countries were discussed in 34% of the articles, and countries outside Africa were discussed in 14.5% of the articles. International support was the next frequently discussed topic (50.2%); one article stated: “President Ellen Johnson Sirleaf said Liberia remains grateful to the world for the help that has poured in to help contain the epidemic.” Other discussion topics included current Ebola cases (35.3%), barriers to recovery (32.1%), and changes in status or former cases (28.5%).

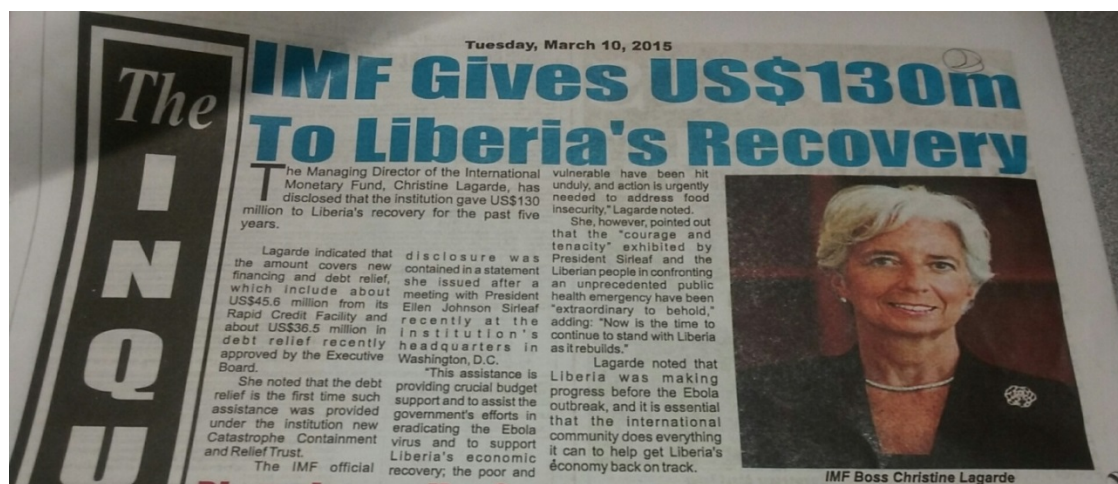


Figure 41. An Article in *The Inquirer* Mentioning International Support

Topics related to travel and discussion of new Ebola cases were each present in about 25% of the articles, including one Liberian politician’s contention that “...because Liberians want to get

garden eggs, pepper and other food stuff from Guinea, government has hastily opened the borders...the reemergence of Ebola is imminent.” Broader social context followed those topics closely and was present in 24.3% of the articles. Broader social context included topics that were directly impacted by the Ebola crisis such as education, national security, and Ebola’s impact on healthcare. For instance, a healthcare worker was concerned that, “... [because of Ebola] many common diseases, which are especially prevalent during the rainy season, such as malaria, typhoid and common colds are going untreated and may lead to unnecessary and preventable deaths.” Among the topics that were discussed in less than 20% of articles were recovery (18.8%), new deaths (14.6%), Ebola stigma (7.5%), new medications (5%), and elections (2.8%).

Table 10. Topics Discussed in Newspapers

Topic Discussed	Count	Percent
New Cases	187	25.1%
Current Cases	263	35.3
Changes in Status/Former Cases	212	28.5
Stigma	56	7.5
New Deaths Reported	109	14.6
Barriers to Recovery Mission	239	32.1
Recovery	140	18.8
Broader Social Context	181	24.3
International Support	374	50.2
Travel	190	25.5
Event Promotion	126	16.9
Hotline	10	1.3
Research	10	1.3
Phone Number	5	0.7
Physical Address	36	4.8
Influenza	9	1.2
Malaria	17	2.3
Focus on Liberia	590	79.2
Focus on Other African Country	253	34.0
International Focus	108	14.5
Focus on Region of Liberia	370	49.7
New Medications	37	5.0
Future Vaccine	32	4.3
Elections	21	2.8
Sports	3	0.4
Other	77	10.3
Total	3,655	100

Best crisis communication practices were used in many newspaper articles. As is a good practice, for example, 85.8% of articles communicated that the risk and crisis were dynamic and ongoing, compared to only 2.4% that stated the risk was done and over. Seventeen percent of articles promoted compassion and empathy. For example, a director of a Liberian NGO declared, “We must show love to our brothers and sisters who have survived from Ebola. They need our support to continue their survival; if we start to castigate, neglect and stigmatize them then we will lose the Ebola fight.” A fair number of newspaper articles encouraged self-efficacy (10.6%). President Ellen Sirleaf expressed:

“It is really inspirational to feel the sense of community effort that exists here in New Georgia. It is also inspirational to see the results of the community to fight Ebola and chase it out of the community - to look after survivors, to care for the sick, to be such a role model for other communities...”

Response efficacy was communicated in 15% of the articles.

Table 11. Best Practices Mentioned in Newspapers

Best Practice Mentioned	Count	Percent
Risk and crisis are dynamic and ongoing	639	85.8%
Risk is done and over	18	2.4
These issues can be uncertain and ambiguous	64	8.6
Compassion and empathy	128	17.2
Want to hear the public’s concerns	12	1.6
Foster partnerships with the public	69	9.3
Self-efficacy	79	10.6
Response efficacy	112	15
Total	280	100

Of the mentions of preventative methods in newspapers, 16% included the need to avoid contact with contaminants and 12.8% suggested practicing safe burials. A team of young people was noted spreading prevention messages: “...warn[ing] the residents that bathing dead bodies and continuing to be in denial of Ebola would undermine the fight against the epidemic and increase the spread of the virus.” The next highest prevention method instructed not touching (12.1%) and/or washing hands carefully (11.9%).

The remaining prevention steps were referenced in less than 10% of newspaper messages. Not to touch someone with signs of Ebola, to isolate patients with Ebola within the community, and to isolate patients with Ebola within health centers were referenced in 9.8%, 8.7%, and 8.5% of articles, respectively. All other steps were cited in 5% or fewer articles. This included the “Other” prevention category, which was consisted entirely of suggestions to use personal protective equipment.

The least recommended prevention steps were for Ebola survivors to abstain from sex or to practice safe sex (0.9%), to practice careful hygiene (0.8%), to cook food properly (0.4%), and to not allow visitors in isolation rooms in health centers (0.3%).

Table 12. Prevention Steps Discussed in Newspapers

Prevention Step Discussed	Count	Percentage
Wash hands carefully	89	11.9%
Practice careful hygiene	6	0.8
Check temperature before entering businesses	41	5.5
No touching	90	12.1
Avoid contact with nonhuman primates	14	1.9
Do not eat bush meat	22	3.0
Cook food properly	3	0.4
Do not touch someone with signs of Ebola	73	9.8
Practice safe burials	95	12.8
Avoid contact with contaminant	119	16.0
Ensure regular and rigorous environmental cleaning	10	1.3
Prompt notification of any suspected cases	29	3.9
Seek treatment promptly	15	2.0
Prompt notification of exposure	11	1.5
If exposed, minimize close contact with family	12	1.6
Isolate patients with Ebola within the community	65	8.7
Use makeshift personal protective equipment	33	4.4
Do not allow visitors in isolation rooms in health centers	2	0.3
Isolate patients with Ebola within health centers	63	8.5
Signs and symptoms of Ebola can appear 2-21 days later	37	5.0
Ebola survivors should abstain from sex or practice safe sex. People should not have sexual contact with those who have had or have been exposed to Ebola	7	0.9
Other	9	1.2
Total	845	100

An analysis of the overall tone showed that 39% of the newspaper articles were positive. The majority of articles were optimistic, hopeful, and confident. One article quoted a source saying, "I feel very fine to come and see [Ebola survivors] leaving this place. It is kind of a wonder." An almost equal number of articles were negative (38%) and contained angry, fearful, or guilt-inducing material. For example, one article expressed "Ebola is ravaging our nations and we need help from all of our partners." A fair proportion of articles (15.1%) contained communication that was 50% positive and 50% negative. Almost 8% of newspaper articles were predominantly fact-based

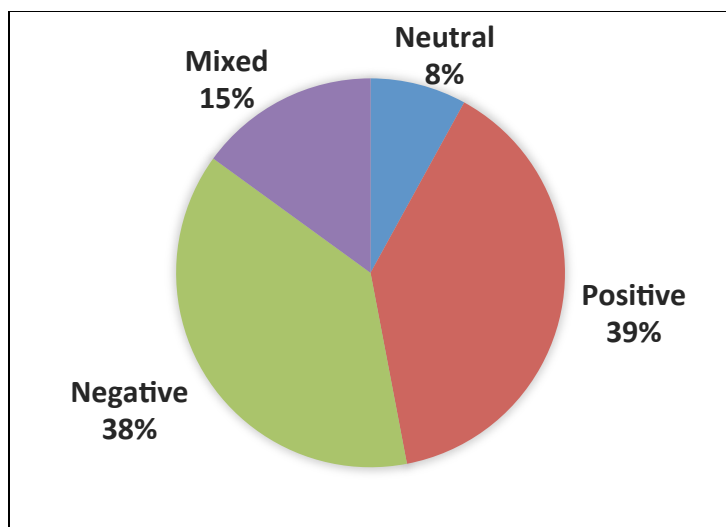


Figure 42. Overall Tone of Newspaper Articles

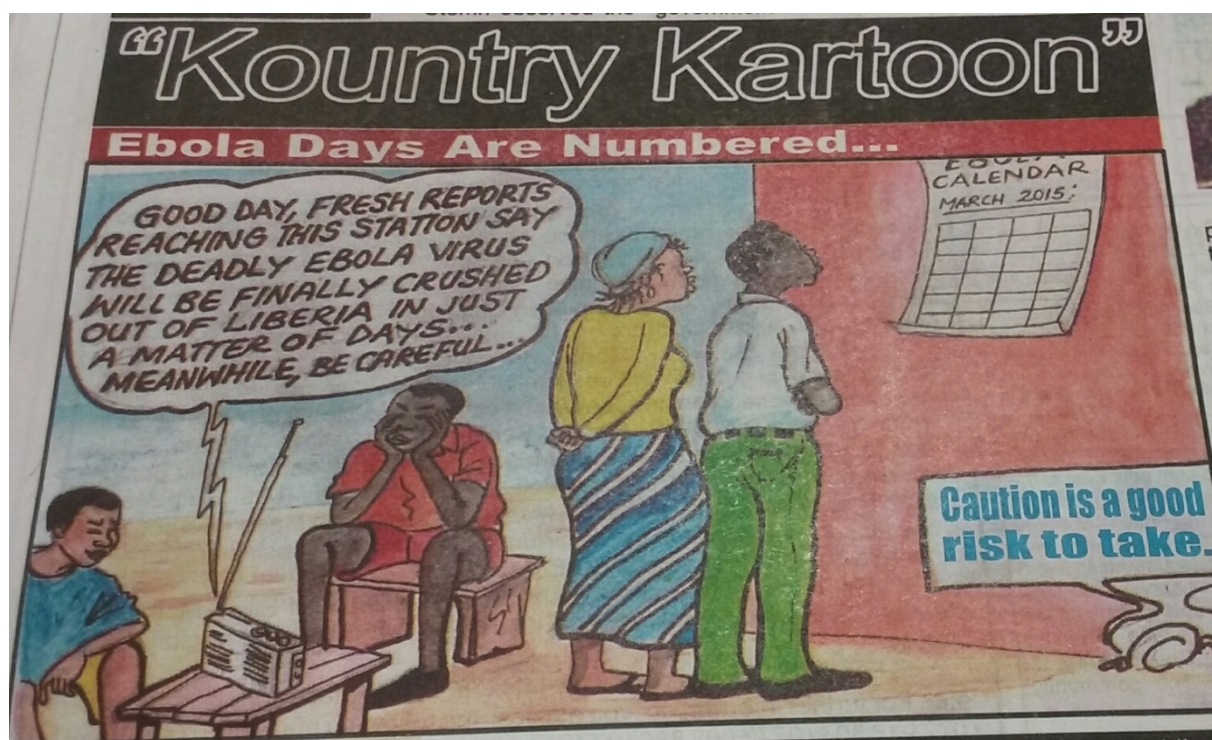


Figure 43. Example of a Positively Toned Cartoon

Of the articles that expressed emotion, 47.7% of them stressed hope. One hopeful article mentioned, “Through our efforts, the disease has retreated.” The second most emphasized emotion was fear (30.9%). For example, one article quoted someone as saying, “War you could flee. Not Ebola. Running away won’t solve the problem.” Almost 16% of emotions stressed pertained to anger and 1.3% focused on guilt.

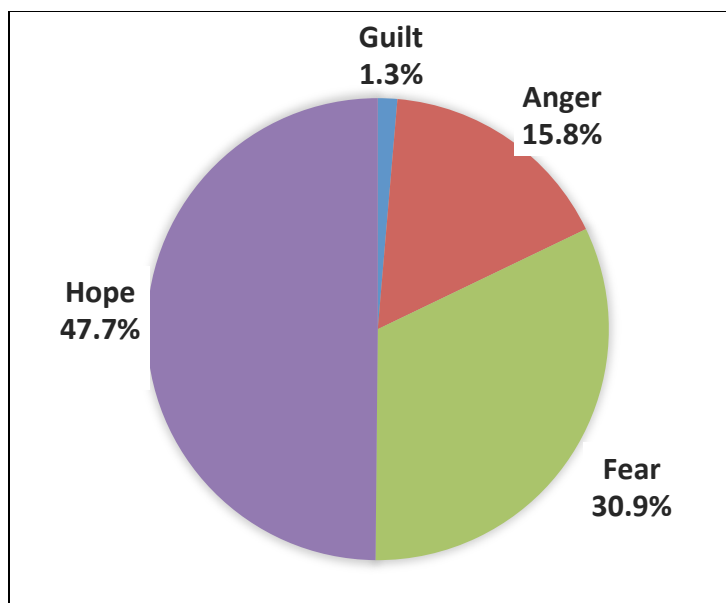


Figure 44. Primary Emotion Stressed in Newspaper Messaging

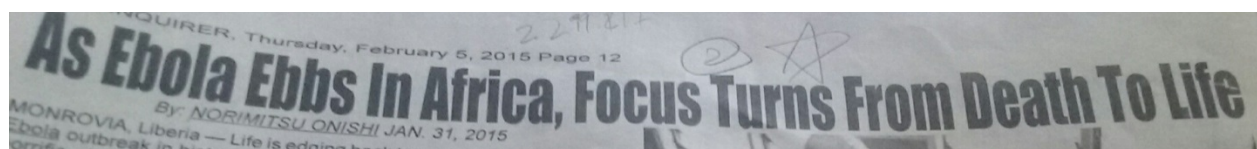


Figure 45. Example of a Headline of an Article with a Hopeful Tone

The most frequent frame for newspaper articles was a “hero frame” (38.8%), one in which something heroic is depicted. Mr. Mantaan, an Ebola survivor, was grateful that, “Following the deaths of Johnny and his granddaughter... the rest of the family members were quarantined and fed by the inhabitants [of the village] who sacrificed their resources only to save lives.” A Liberian official praised, “The WHO and various charities [who] have stepped in to fill the gap left by the weakened authorities.”

In 20.7% of articles, news was presented within the frame of the Ebola crisis itself as a disaster. Notably, an un-named source lamented that “...West African governments have tried to manage these crises unilaterally, ignoring - as demonstrated once again by the rapid spread of Ebola - that their citizenries are deeply linked and interdependent.”

The frames of remaining newspaper articles focused on the behavioral steps needed in addressing the crisis or in avoiding Ebola; this was the primary frame of 10.9% of articles. Approximately nine percent of the articles had a victim frame, and about eight percent primarily blamed the Liberian government. Straight news accounted for all articles that were coded as “Other” frame, and blaming other countries, stigmatizing, and anti-stigmatizing were each the frames in 2% or fewer articles.

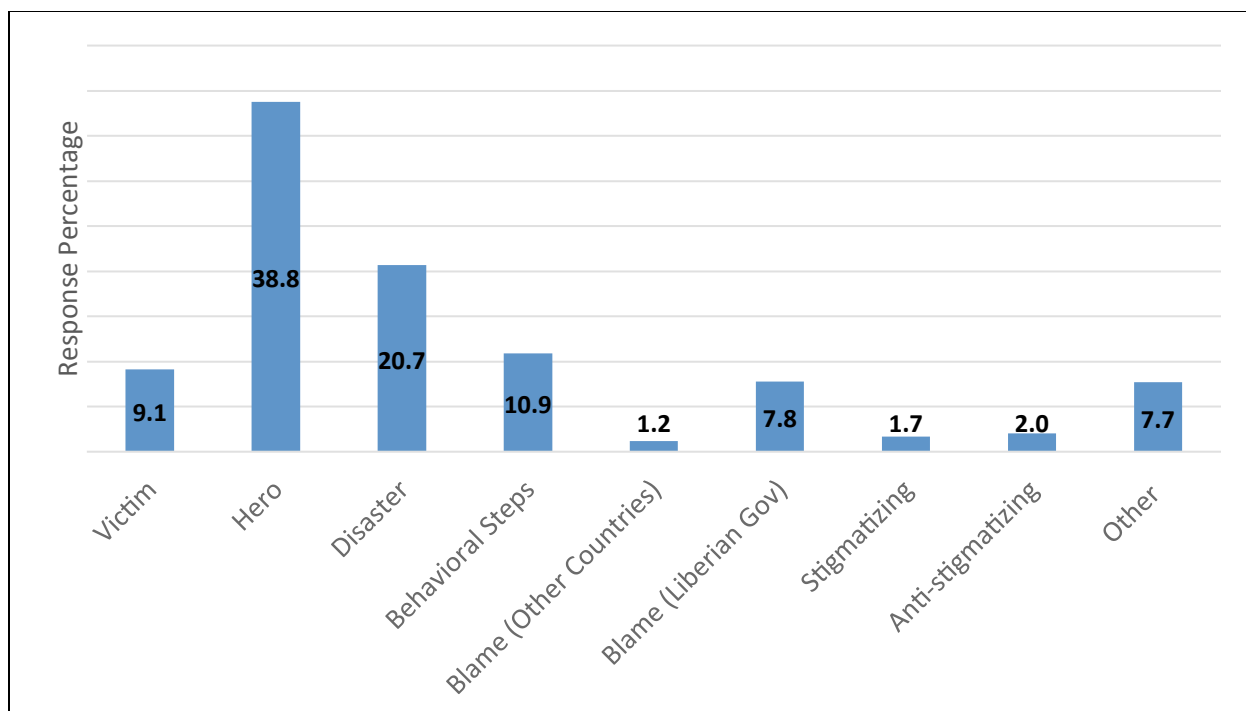


Figure 46. Journalistic Frame of Newspaper Articles



Figure 47. An Article Employing a Victim Frame

Newspaper articles could be coded as having more than one crisis themes. The most commonly cited theme was uncertainty (in 34.8% of articles). “Response was organized” and “community engagement” were also common themes at 27.2% and 25.1%, respectively. Themes of need to protect the vulnerable (12.5%) and that the response was unorganized (8.5%) were reported in a fair number of articles. Speediness of response (5.2%) and crisis under control (6.2%) were

rarely reported themes, as were frames about the community being disengaged (3.9%) or the slowness of the response (3.8%) The least occurring crisis themes were failure to honor the dead (1.6%), workers honoring the dead (0.7%), and other (0.3%).

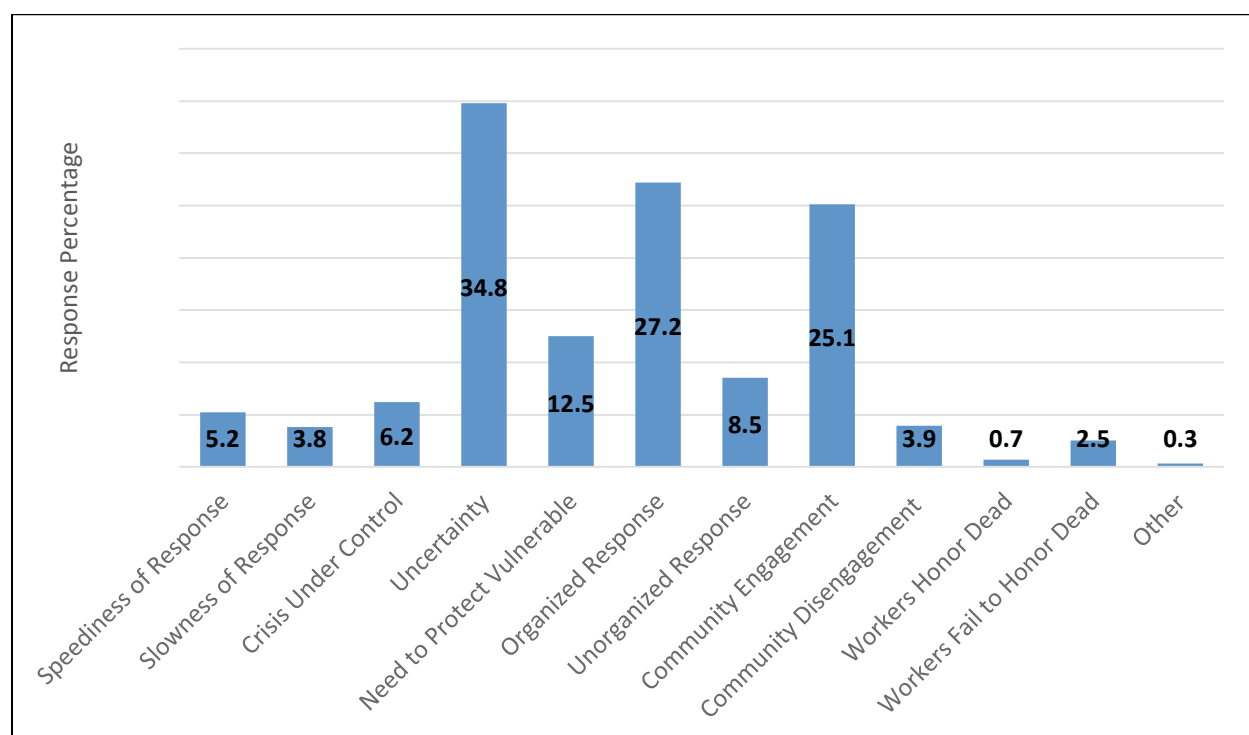


Figure 48. Crisis Theme Present in Newspapers

Among all newspaper articles, rumors were mentioned a total of 106 times; they were noted to be rumors 70 times. In other words, 70 out of the 106 mentions of rumors (66%) were refutations of the rumors. The most prevalent rumor was “Ebola is not real,” which accounted for 50 of the instances of rumors reported; but it was also the most-often noted refutation (45 instances). Far behind were rumors about Issues with prevention measures (16 instances; 3 refutations). Rumors that the Liberian government misused donated funds (13) and misinformation about how Ebola is transmitted (11) accounted for 20% of the noted rumors.

The five rumors categorized as “other” included: *Ebola does not have to be treated, Ebola vaccine or cure is available, safe burial teams charge the public money for services, and prevention methods actually infect people*. All except the last of these were noted as rumors.

The least reported rumors were that the ETUs were just places to die; that the Liberian government was encouraging Ebola to receive foreign funds; that Ebola was created by an outside source; that the Ebola vaccine trial was being used to infect people; and that routine vaccines were being used to infect people.

Table 13. Rumors Mentioned in Newspaper Articles

Mentioned Rumor	Mentioned Count	Mentioned Percent	Noted Rumor Count	Noted Rumor Percent
Ebola was created by an outside source	1	0.9%	1	1.4%
Ebola is not real	50	47.1	45	64.3
Routine vaccines are being used to infect people with Ebola	1	1.0	1	1.4
Ebola vaccine trial is being used to infect people	1	0.9	1	1.4
ETUs are just a place for people to die	3	2.8	2	2.9
The Liberian government has misused donated funds	13	12.3	5	7.1
School related rumors	1	0.9	0	0
Issues with prevention measures	16	15.1	3	4.3
Misinformation contagion	11	10.4	9	12.9
Other	5	4.7	4	5.7
Total	106	100	70	100

Additional tables pertaining to data from comparisons across newspapers are shown as tables in Appendix B.

Chapter 4. Summary of Findings Across Channels and Over Time

We analyzed key findings across the five primary channels analyzed in this report: newspaper, radio, radio program, SMS, and community chalkboard. Specifically, we examined if the types of sources cited by various channels changed *over time*. To do this analysis, we re-unitized the time variable into 4 segments (see note below Figure 49). Additionally, we grouped various sources into more general units: the Liberian government, African institutions, health care professionals, residents, international non-governmental organizations, and celebrities. These data show that in the first six (6) months of 2014, various sources were cited—but the primary source was the Liberian government and INGOs (e.g., the WHO and CDC). However, by the end of 2015, all of these kinds of citations dropped off dramatically. In fact, the most common source by the end of the crisis period was residents (followed by the Liberian government). Our analysis revealed that citing sources became less and less common as the crisis evolved over time. By the end of the crisis, journalists, for example, were writing pieces that did not include an external source; rather, the journalist himself or herself became the source of the published information.

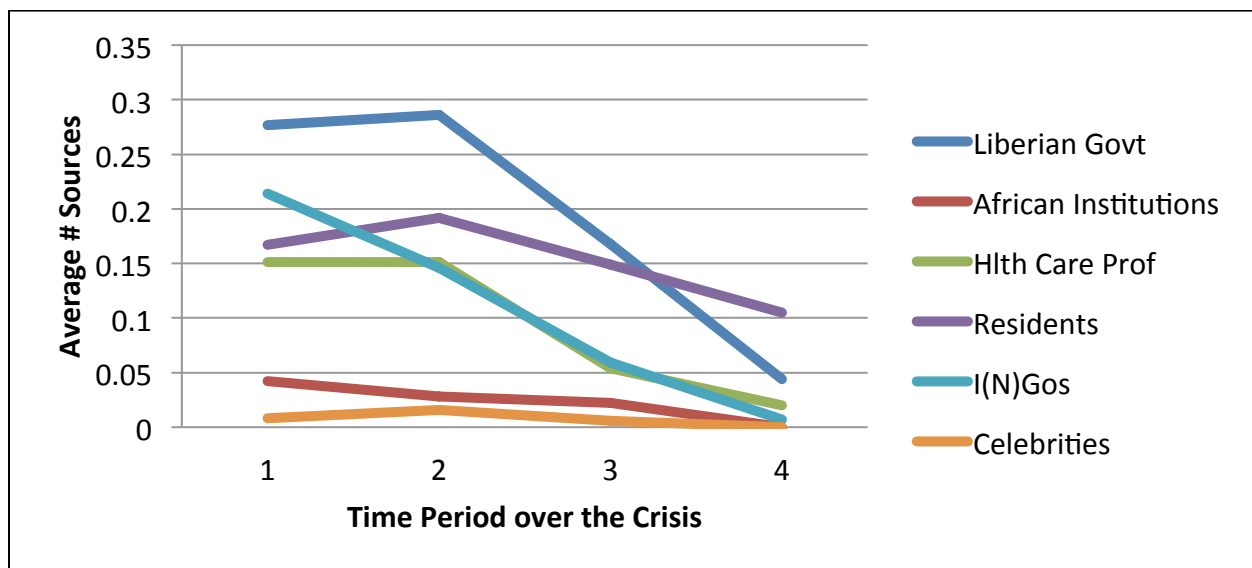


Figure 49. Sources Cited Over Time by Communication Channels

Note: Time period 1 is January 2014 to June 2014. Time period 2 is July 2014 to December 2014. Time period 3 is January 2015 to June 2015. Time period 4 is July 2015 to December 2015.

Additionally, we examined issues related to the sources of communication, beginning with who was blamed for Ebola. A primary feature of newspapers was that blame was spread across sources—but, they tended not to blame anyone overwhelmingly for the Ebola crisis. This was also true for radio messages. Half the articles in newspapers and about 40% of radio messages did not attribute blame to anyone. Radio programs, however, tended to cite witchcraft/voodoo/karma for the Ebola outbreak. Radio programs also tended to blame God for

the outbreak. By contrast, the chalkboard tended to blame Ebola itself. In the SMS rumor tracker system, the Liberian government received the bulk of the blame for the Ebola crisis. Approximately half the SMS communications blamed either the Liberian government or President Ellen Sirleaf herself. About 13% of the SMS messages tended to blame healthcare workers.

Table 14. Who Was Blamed for the Ebola Crisis Across Communication Channels

Source	Newspaper	Radio	Radio Program	SMS	Chalkboard
The Liberian government	11.2%	0.0%	0.0%	36.7%	5.9%
President Ellen Sirleaf	0.9%	0.0%	0.0%	16.7%	0.0%
The United States	1.2%	20.0%	0.0%	10.0%	17.6%
Healthcare workers	1.1%	0.0%	0.0%	13.3%	0.0%
Victims themselves	5.6%	0.0%	0.0%	3.3%	0.0%
Ebola itself	20.7%	0.0%	0.0%	0.0%	47.1%
WHO	0.2%	0.0%	0.0%	0.0%	0.0%
NGO	0.7%	20.0%	0.0%	3.3%	0.0%
Religion	1.6%	0.0%	0.0%	0.0%	0.0%
Witchcraft/voodoo/karma	0.0%	0.0%	50.0%	3.3%	0.0%
Family of sick	0.2%	0.0%	0.0%	0.0%	0.0%
God	0.2%	0.0%	50.0%	3.3%	5.9%
No one	50.1%	40.0%	0.0%	0.0%	23.5%
Other	6.0%	20.0%	0.0%	10.0%	0.0%

Given this finding about blame, we also sought to determine who was credited for fighting Ebola. Newspapers tended credit the Liberian government itself: approximately 22% of the newspaper articles cited the Liberian government. Findings for radio were in sharp contrast; all radio messages, when attribution for solving the Ebola crisis was presented, cited God as the source of the solution. We did not find either the radio or the radio program attributing the successful outcome to the Liberian government. The SMS rumor cracker was not designed to capture this issue. The chalkboard did not tend to cite anyone for the successful outcome of the crisis.

Table 15. Who Was Credited for Solving the Ebola Crisis Across Communication Channels

Source	Newspaper	Radio	Radio Program	SMS	Chalkboard
Cuban government	0.1%	0.0%	0.0%	0.0%	5.9%
Other foreign government	7.8%	0.0%	0.0%	0.0%	5.9%
The Liberian government	21.5%	0.0%	0.0%	0.0%	17.6%
President Ellen Sirleaf	5.3%	0.0%	0.0%	0.0%	11.8%

The United States	8.1%	0.0%	0.0%	0.0%	5.9%
Healthcare workers	11.5%	0.0%	0.0%	0.0%	0.0%
Victims themselves	3.5%	0.0%	0.0%	0.0%	0.0%
Ebola itself	0.2%	0.0%	0.0%	0.0%	0.0%
WHO	7.0%	0.0%	0.0%	0.0%	0.0%
NGO	19.6%	0.0%	0.0%	0.0%	0.0%
Religion	3.7%	0.0%	0.0%	0.0%	0.0%
Witchcraft/voodoo/karma	0.0%	0.0%	0.0%	0.0%	0.0%
Family of sick	0.1%	0.0%	0.0%	0.0%	0.0%
God	0.4%	100.0%	100.0%	0.0%	0.0%
No one	11.1%	0.0%	0.0%	0.0%	52.9%
Other	0.0%	0.0%	0.0%	0.0%	0.0%

When looking through the primary lens of crisis communication best practices, one sees that newspapers and the chalkboard tended to portray the Ebola crisis as something ongoing and dynamic. Close to 60% of newspaper articles adopted this frame, as did 75% of the chalkboard messages. This was also the frame adopted by radio, though with lower frequencies. Radio programs also tended to emphasize the need to foster partnerships with various community organizations, the public, etc. Radio and radio programs scored moderately high on enhancing self-efficacy: close to a third of messages tended to talk about self-efficacy or response efficacy. On average, approximately 10% of messages across newspapers and radio emphasized compassion and empathy towards people suffering from Ebola. The primary feature of the chalkboard was its emphasis that the Ebola crisis was ongoing and dynamic: approximately three quarters of messages adopted this frame.

Table 16. Best Practice Mentioned Across Communication Channels

Best Practice	Newspaper	Radio	Radio Program	SMS	Chalkboard
Risk and Crisis are Dynamic and Ongoing	57.0%	21.1%	24.4%	0.0%	75.0%
Risk and Done and Over	1.6%	5.2%	3.5%	0.0%	6.3%
These Issues can be Uncertain and Ambiguous	5.7%	4.1%	7.0%	0.0%	0.0%
Compassion and Empathy	11.4%	11.9%	9.3%	0.0%	0.0%
Want to Hear the Public's Concerns	1.1%	9.8%	7.0%	0.0%	0.0%
Foster Partnerships with the Public	6.2%	10.8%	23.3%	0.0%	0.0%
Self-Efficacy (self/group efficacy)	7.0%	20.6%	15.1%	0.0%	12.5%
Response Efficacy	10.0%	16.5%	10.5%	0.0%	6.3%

An analysis of the tonality of the communication (positive, negative, mixed, or neutral) adopted by the various channels revealed that newspapers and radio programs tended to have an equal proportion of positive and negative tone: just under 40% of articles in newspapers and about 20% of radio programs fell into these two categories. By contrast, 44% of messages on radio adopted a positive tone, and only 3% a negative tone. More than half the SMS messages were negative in tone, which is not surprising because they were specifically designed to capture ongoing rumors. A little more than 40% of messages on the chalkboard adopted a negative tone, about a third adopted a mixed tone, and only about 18% adopted a positive tone.

Table 17. Overall Tone by Communication Channel

Tone	Newspaper	Radio	Radio Program	SMS	Chalkboard
Positive	39.0%	43.7%	21.8%	4.4%	17.6%
Negative	38.0%	3.4%	20.0%	56.3%	41.2%
Mixed	15.1%	32.8%	32.7%	0.0%	35.3%
Neutral	7.9%	20.2%	25.5%	39.3%	5.9%

An analysis of the primary emotion present in each of the communication channels revealed that newspaper articles, radio, and radio programs were all characterized primarily by the adoption of a hope as the primary emotion. Almost three quarters of the regular radio and close to half of the radio programs communicated hope. Fear was the primary emotion portrayed through the chalkboard articles, and this was also the emotion that was also present in the other channels. Portrayals of anger were low but consistent across all the channels. The SMS rumor tracker tended to capture a lot of fear, followed by anger and guilt.

Table 18. Primary Emotion by Communication Channel

Emotion	Newspaper	Radio	Radio Program	SMS	Chalkboard
Guilt	1.4%	0.8%	10.2%	25.7%	0.0%
Anger	16.5%	10.8%	22.0%	28.7%	23.8%
Fear	32.3%	15.8%	18.6%	41.2%	42.9%
Hope	49.8%	72.5%	49.2%	4.4%	33.3%

A focus on heroism was the primary frame adopted in newspaper articles: just under 40% of the articles highlighted some heroic action pertaining to people's reactions to Ebola. This was not true for either the regular radio or radio programs, where the portrayal of heroism was distinctly lower. Both the regular radio and radio programs tended to highlight the behavioral

steps necessary to fight Ebola, whereas this frame was present in only 11% of newspaper articles. Thus, radio tended to communicate what behavioral steps were necessary to fight the disease, whereas newspaper articles tended to highlight the heroism involved after, perhaps, having taken those steps.

Table 19. Journalistic Frame by Communication Channel

Journalistic Frame	Newspaper	Radio	Radio Program	SMS	Chalkboard
Victim	9.1%	9.5%	8.0%	0.0%	0.0%
Hero	38.8%	2.6%	6.0%	0.0%	17.6%
Disaster	20.7%	23.3%	24.0%	0.0%	70.6%
Behavioral Steps	10.9%	50.0%	42.0%	0.0%	0.0%
Blame (other countries)	1.2%	0.0%	0.0%	0.0%	5.9%
Blame (Liberian Government)	7.8%	0.0%	16.0%	0.0%	0.0%
Stigmatizing	1.7%	0.0%	0.0%	0.0%	0.0%
Anti-Stigmatizing	2.0%	13.8%	4.0%	0.0%	0.0%
Other	7.7%	0.9%	0.0%	0.0%	5.9%

An analysis of the primary themes adopted by the various channels revealed that the uncertainty surrounding Ebola was the primary theme in newspaper articles; a little more than a quarter of the articles adopted this uncertainty theme (please see Table 20 below). Newspapers also tended to highlight the fact that the response to Ebola was organized and that the community was engaged. Community engagement was also the primary theme in about a third and a quarter of the regular radio and radio programs, respectively. The primary theme found in the chalkboard articles was one pertaining to the uncertainty surrounding Ebola.

Table 20. Crisis Theme Discussed by Communication Channel

Crisis Theme	Newspaper	Radio	Radio Program	SMS	Chalkboard
Speediness of Response	4.0%	1.1%	2.3%	0.0%	0.0%
Slowness of Response	2.9%	0.0%	2.3%	0.0%	0.0%
Crisis Under Control	4.8%	9.1%	6.8%	0.0%	12.5%
Uncertainty	26.8%	14.8%	18.2%	0.0%	68.8%
Need to Protect the Vulnerable	9.6%	18.2%	18.2%	0.0%	6.3%
Response was Organized	21.0%	8.0%	2.3%	0.0%	0.0%
Responses was Unorganized	6.5%	0.0%	6.8%	0.0%	0.0%
Community Engagement	19.4%	34.1%	25.0%	0.0%	12.5%
Community was Disengaged	3.0%	6.8%	9.1%	0.0%	0.0%
Workers Honor the Dead	0.5%	6.8%	6.8%	0.0%	0.0%
Failure to Honor the Dead	1.2%	0.0%	2.3%	0.0%	0.0%

Other	0.2%	1.1%	0.0%	0.0%	0.0%
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Given that these data pointed to the prevalence of the “response was organized” theme, we looked to see if that theme varied over time. This finding was assessed across the five channels – newspapers, radio, radio program, SMS, and chalkboard – over the whole period of the Ebola crisis in Liberia, namely, January 2014 to December 2015.

This finding reveals that the theme of being organized was emphasized primarily during year 1 (from April 2014 through December 2014), as well as in the first quarter of 2015. Please see Figure 50 below. After that, no messages in this analysis mentioned that the response was organized.

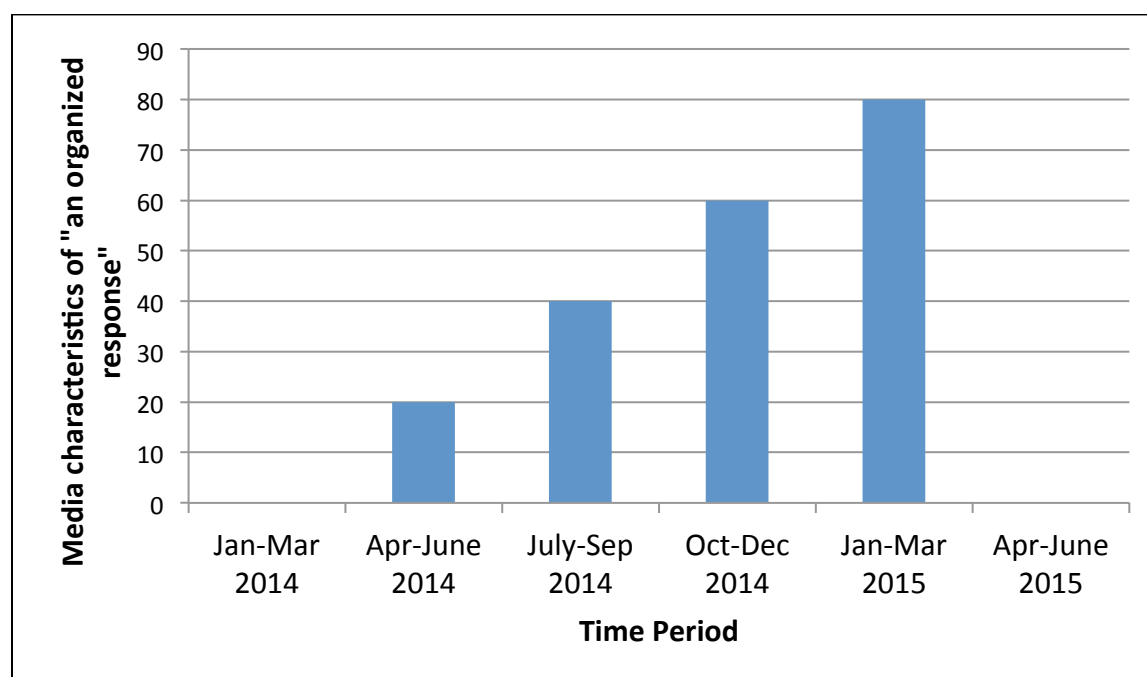


Figure 50. Media Characteristics of an Organized Response Over Period of Crisis

Similarly, in terms of messages including communications about the desire of the community to be engaged, or the desire of other entities to engage the community, we found that messages changed over modality and time. Specifically, messages of this type peaked in newspapers at the end of 2014 and the first quarter of 2015—and then stop altogether. Messages of community engagement followed a similar pattern for radio programs; however, for regular radio, we found that the messages peaked near the end of 2015.

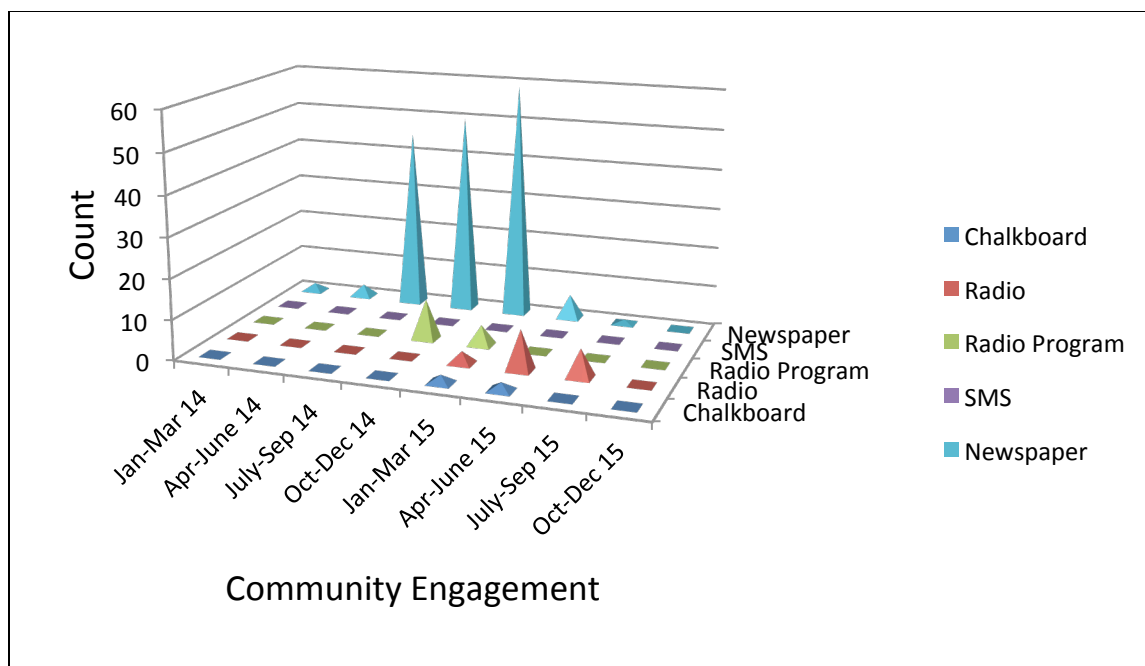


Figure 51. Communications across Channels about Community Engagement

Note: In Figure 51 above, raw numbers and not percentages are presented.

Next, we examined if various channels included messages of compassion and empathy in their communications over time. These data show that regular radio, radio programs, and newspapers were the most likely to communicate messages of compassion and empathy, but that trend varied over time. Specifically, we saw the largest percentage of such messages in the third and fourth quarters of 2014, as well as in the first quarter of 2015. This makes sense in many ways, as this was the height of the crisis and is when compassion and empathy were most necessary.

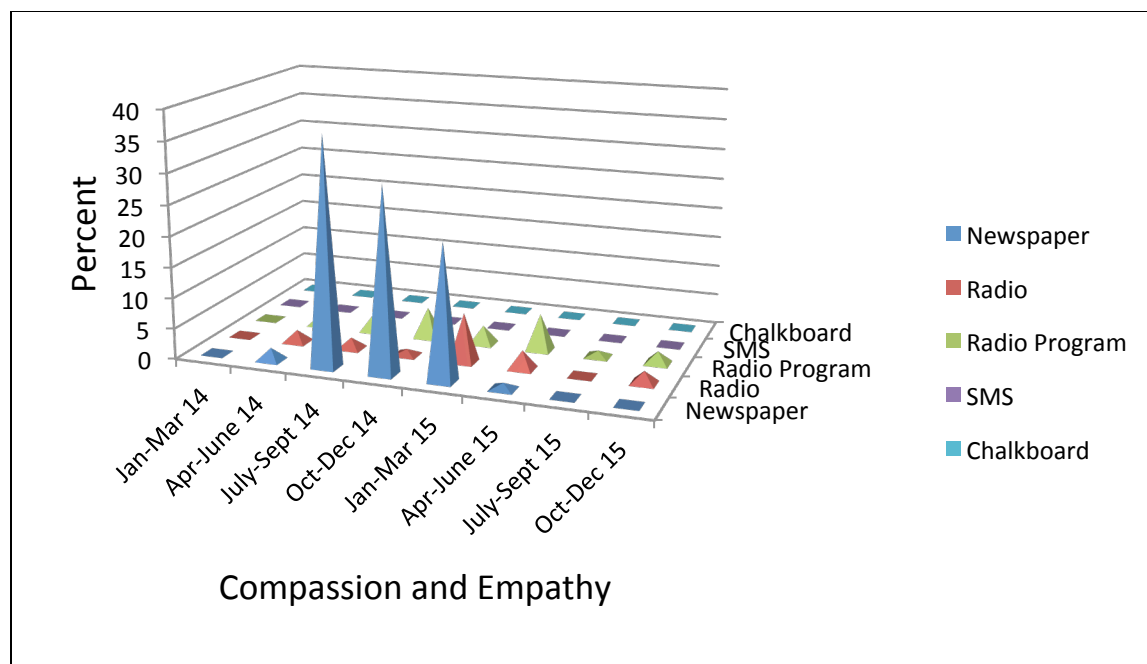


Figure 52. Messages of Compassion and Empathy Over Time and Across Channels

In this analysis, we also examined for the presence of rumors mentioned in various forms of media. Likewise, we coded for whether the rumor was explicitly noted as a rumor in the communication (i.e., a “refutation”). First, we plotted out the numbers of rumors and refutations over time. Figure 53 below shows that rumors increased over time, and refutations did as well. In fact, by the end of 2015, we can see that refutations and rumors nearly converge—showing that as rumors emerged, they were dealt with quickly by the media. The line that is labeled “Addressed” is the number of refutations minus the rumors. Here, a value of zero would indicate that every time a rumor was mentioned, it was refuted as “just a rumor.” Additionally, Figure 53 shows that by the end of 2015, nearly every rumor was refuted.

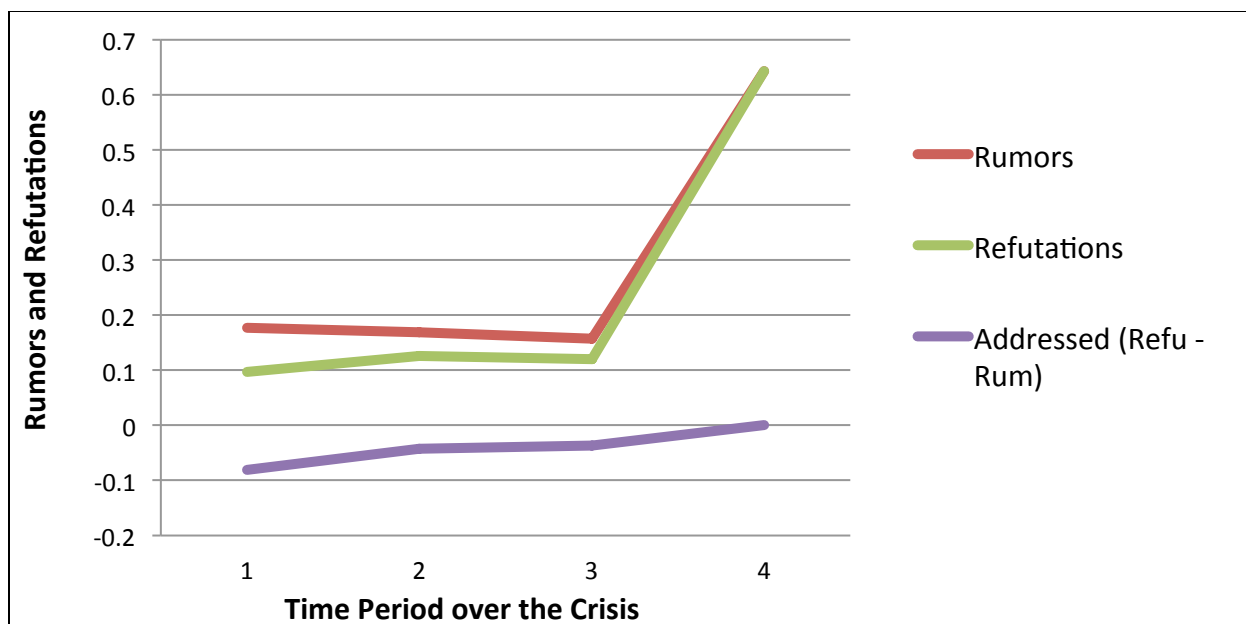


Figure 53. Presence of Rumors and Refutations Mentioned in Various Media

Note: Time period 1 is January 2014 to June 2014. Time period 2 is July 2014 to December 2014. Time period 3 is January 2015 to June 2015. Time period 4 is July 2015 to December 2015.

Next, we looked at the communication of efficacy across different channels over time. Here, we examined self-efficacy, or the extent to which messages communicated that citizens should feel confident that they can engage in various Ebola prevention steps. Earlier, we noted that the data showed that messages of efficacy were not overwhelmingly present. Figure 54 below shows this relationship plotted over time. Our analysis indicates that most messages of efficacy were communicated by newspapers and radio programs, and that they were primarily communicated in the time periods between July 2014 and March 2015—the height of the Ebola epidemic.

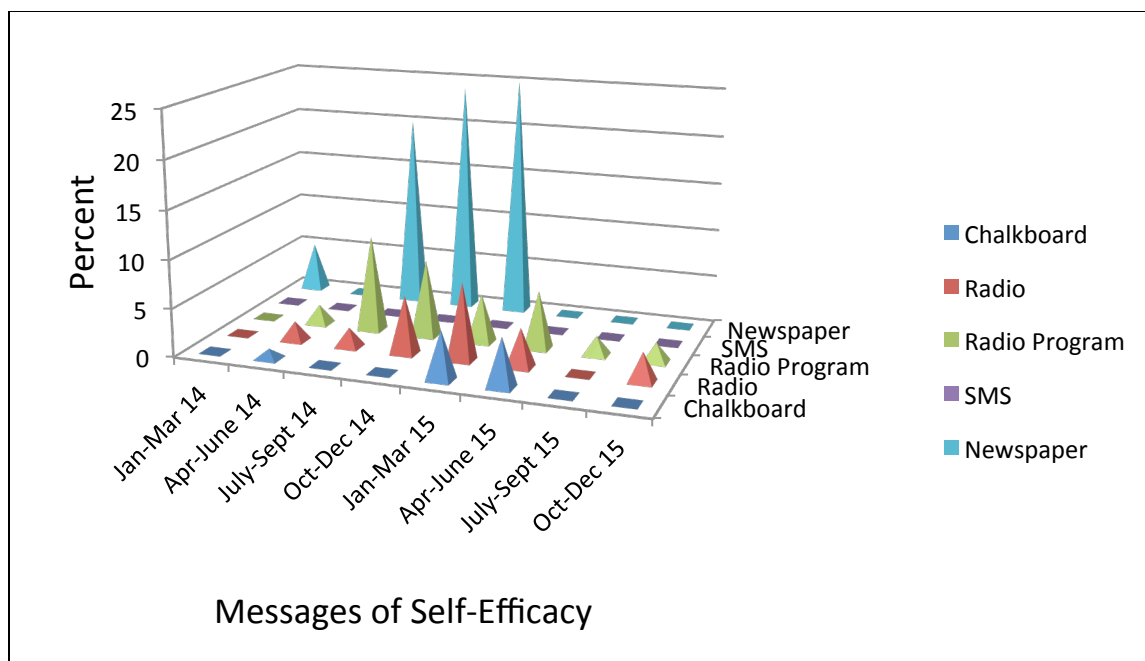


Figure 54. Communication of Efficacy across Channels Over Time

During a crisis, it is important that both citizens and officials stay calm and focused. That said, crises (especially those that can result in death) are often communicated in ways that evoke fear. When messages evoke fear, it is vital that they are accompanied by messages of efficacy. Given that we plotted efficacy messages, we also plotted messages of fear over time (please see Figure 55 below). Fear messages were most present in newspapers in the third quarter of 2014 and then began to trickle off with time. Radio and radio programs were not overwhelmingly engaging in fear messaging—which harmonizes with earlier analyses indicating their messaging focused on efficacy and compassion (and de-stigmatization). In all cases, fear messaging quelled with time.

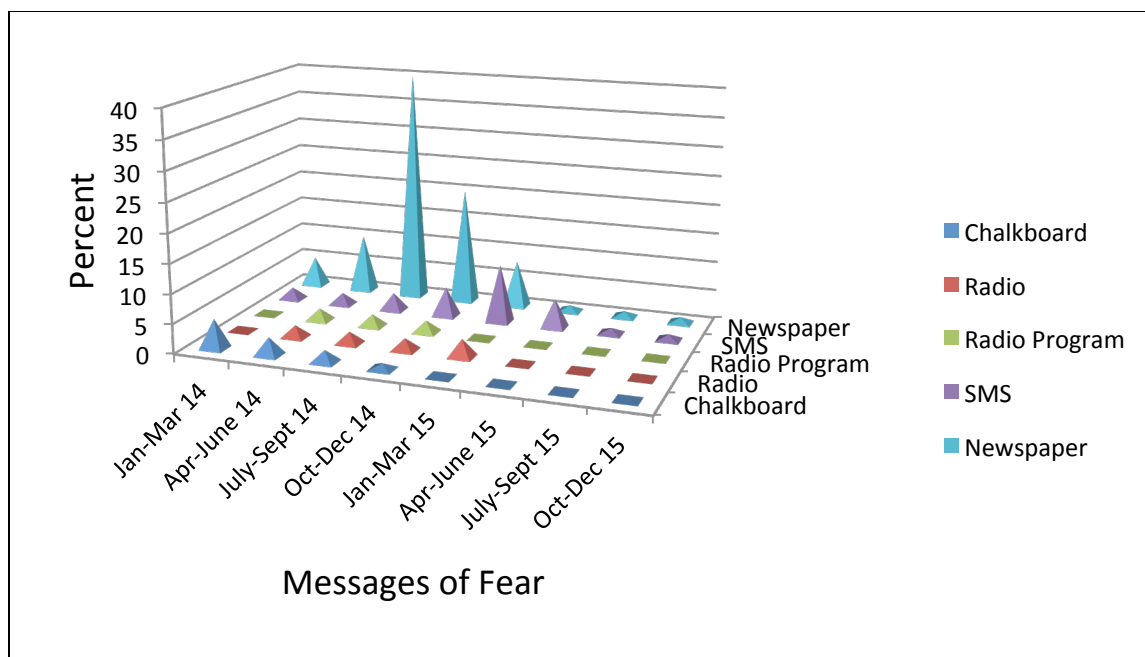


Figure 55. Communication of Fear across Channels Over Time

Top Line Conclusions for Each Modality

Conclusions: Rumor Tracker Results

- Although there were rumors regarding the Ebola crisis, they were debunked quickly and effectively
- The majority of rumors regarded new Ebola cases, that people were profiting from the virus, or that Ebola was created by an outside source.
- Rumors tended to be negative in nature and primarily fearful.

Conclusions: Community Chalkboard Results

- Chalkboards tended to frame Ebola as a villain and the people as “losers” in a large soccer match.
- Chalkboards were primarily negative in nature, focused on fear and anger, and centered on the uncertainty of the crisis.
- Chalkboards primarily focused on the broader social context surrounding Ebola and Liberia and tended not to blame anyone in particular for the issue(s).

Conclusions: Radio Results

- The ministry of health was the most cited source and was recognized for their expertise.
- Radio programs tended NOT to: blame anyone, stigmatize victims, or communicate in a negative tone.
- Radio programs tended to: emphasize self-efficacy, communicate behavioral steps, communicate hope, and engage the community.

Conclusions: Newspaper Results

- The Liberian Government was the most cited source and was recognized for their expertise.
- Newspapers tended NOT to: blame anyone, stigmatize victims, communicate self-efficacy, or communicate behavioral steps.
- Newspapers tended to: emphasize the ongoing nature of the crisis, communicate uncertainty, take on a negative or mixed emotional tone and communicate fear and anger.

Chapter 5. Conclusions and Recommendations

In this report, we have adopted a crisis communication framework to analyze the communication content across five different channels (newspapers, regular radio, radio programming, SMS, Community chalkboard) over the Ebola crisis period. We also use this framework to organize our conclusions about this crisis communication case.

A primary characteristic of an unfolding crisis is the uncertainty surrounding the nature of the crisis itself – lack of knowledge about the problem itself, potential solutions, where the locus of the response lies, who needs to do what, etc. In the face of this kind of uncertainty, rumors often feed the information void. This was also the case in Liberia. Rumors abounded. It is worth noting, however, that across all channels of communication, rumors were noted, and more importantly, subsequently refuted. For example, the rumor “Drink the bitter cola to fight Ebola” was noted across all communication channels that we analyzed; however, this also was characterized as being an untrue rumor in all channels.

The crisis communication literature is clear about the steps that one needs to take to address an ongoing crisis. Adopting this framework, below we provide an analysis of our primary findings, coupled with recommendations for future crises.

Conclusions and Recommendations for Future Preparedness Efforts

1. Engage in Pre-crisis Planning

Planning is critical. Having preparedness stressed in media messages emanating from various sources can affect positive public perception of leadership. In addition, by examining whether messages implicitly communicated a lack of preparedness on the part of leadership, we can develop a sense of public perception. From our analysis, it appears that the media were not specifically focused on the speed (and hence the timeliness) of the response – either positively or negatively. For example, only 1.5% of radio messages and 5% of news articles discussed the “speediness of response” and only 0.8% of radio messages and 3.8% of news articles communicated about the tardiness of the response. Likewise, only 6% of radio messages and 4% of news articles communicated that the response was organized (and only 2% of radio messages – radio interviews specifically – and 0.7% of news articles suggested it was unorganized). SMS and chalkboards did not discuss these themes. Thus, overall it does not appear that the public perception was that of a lack of leadership preparedness. Perhaps this was because of the novel nature of the crisis. In the future, under similar circumstances, the public may be less apathetic about the very nature of the government’s response.

2. Express Compassion, Concern, and Empathy

During any crisis, especially one where the death toll is high, it is vital to continuously and genuinely communicate concern and empathy for the affected community. None of the community chalkboards included statements of compassion, concern or empathy. Thirty-one (11%) radio shows and 128 (17%) news articles communicated compassion, concern or

empathy. However, 7% of chalkboards, 18% of radio messages, and 13% of newspaper articles included statements reflecting a need to protect the vulnerable. Likewise, none of the chalkboards and radio messages and 2% of news articles engaged in stigmatizing communication. Overall, it is concerning that more stories do not convey such compassion and empathy themes, but, it is reassuring that messages are recognizing the needs of the vulnerable and are not engaging in stigmatizing messaging. It is important to note that studies show communication of themes like compassion, concern and empathy help to quell anger and frustration. The lack of empathetic communication is considered one of the communication failures in this crisis context.

3. Forge Partnerships with the Public

When lay citizens perceive they are included as a part of the crisis solution, rather than being the entity that the solution is forced upon, they are more likely to engage in the process and listen to key messages. Yet, none of the community chalkboards included statements of fostering partnerships. Forty-one (15%) radio shows and 69 (9%) news articles communicated about forging public partnerships.

4. Listen to your Audience and Understand its Concerns

Similarly, tuning in to one's target audiences is vital for understanding misperceptions, barriers to behavioral actions, frustrations, etc. None of the chalkboards addressed this theme. Twenty-five (9%) radio messages and 12 (1.6%) news articles addressed a willingness to hear from the public. Together with best practices #2 and #3, this finding raises a major area of concern. If messages are not conveying a sense of compassion or willingness to hear from and work with the public, the public may take on the role of adversary, instead of a partner. Future risk and crisis communication efforts must take definitive and actionable steps to engage in these best practices.

5. Communicate Honesty, Candor, and Openness

In this analysis, it was not possible to assess the actual veracity of people's comments. Rather, when sources were cited (or interviewed) on these communication channels, we coded for whether their relative expertise and trustworthiness were also mentioned. Expertise (one's level of experience, knowledge, training, etc.) was mentioned for a variety of sources—though it varied greatly by the source. However, trustworthiness was rarely mentioned at all, for any source, on any channel. One issue is that while expertise is more authentically and naturally mentionable (e.g., "She has been a doctor for the last 25 years"), media personnel might find it more awkward to mention people's trustworthiness (e.g. "He is an honest guy we can depend on"). Therefore, this is an area for which communication training might be advantageous.

6. Accept Uncertainty and Ambiguity

Given the uncertainty inherent in a crisis, it is important to recognize the ambiguity and not communicate to the public a sense that leadership can reliably predict future events. Doing so can mean a loss of credibility in the face of being incorrect. None of the chalkboards discussed the need to accept uncertainty; instead, most messages were framed in terms of certainty, leaving little room for nuance. Fourteen (5%) radio messages and 64 (9%) news messages

included messages about uncertainty and ambiguity. Fortunately, only 13 (5%) radio messages and 18 (2.4%) news articles explicitly communicated that the crisis was “done and over.” Although even a small number of such messages can be dangerous if individuals ignore prevention messages or become less diligent in their prevention behaviors, we consider these findings to indicate success.

7. Regard Crisis Communication as an Ongoing Process

Similar to best practice #6, crisis messages should stress that communicating about the risks and crisis is a dynamic and ongoing practice. This allows the public to understand that messages, preventive behaviors, ongoing findings, available research, barriers to prevention, etc. may continuously change and the public will get updated as new information becomes available. Twelve (75%) chalkboards, 62 (22%) radio messages and 639 (86%) of news articles stressed this aspect of the crisis. This best practice was successfully communicated to the Liberian public.

8. Collaborate and Coordinate with Credible Sources

Our codebook allowed for coding of 18 (+ “other”) distinct sources. Sources included government (e.g., Liberian government, President Ellen, the US government), public health agencies (e.g., WHO, CDC), doctors and caregivers (e.g., health care workers, doctors), patients/families of patients, and community members. The chalkboard messages did not use a variety of credible sources, or attribute messages to sources, other than “community members.” One chalkboard cited a doctor, and another cited a healthcare worker. Radio, however, cited at different times all 18 distinct types of sources. And, in many cases their expertise was explicitly mentioned. Likewise, newspaper articles cited all 18 kinds of sources at distinct times. And, often, expertise was explicitly mentioned.

9. Communicate Self-Efficacy and Response-Efficacy²

Perhaps the most important of the best practices is the communication of self- and response efficacy. With respect to preventing and controlling infectious disease, a pivotal step is the awareness and behavioral response(s) of the public regarding actionable and effective steps. Two of the chalkboards (12%) communicated self-efficacy and 1 communicated response efficacy. Radio fared better than chalkboards: 53 (19%) communicated self-efficacy and 41 (16%) communicated response efficacy. Newspaper articles communicated self-efficacy 79 times (11%) and response efficacy 112 (15%) times. We perceive these proportions to be too low and is considered a communication failure for this context. It is fundamental that efficacy be communicated throughout the duration of the crisis and by the vast majority of messages.

We coded for the mentioning of 21 distinct prevention steps that could be taken. Although all 21 steps were mentioned at one time or another on both radio and newspaper, they were very rarely mentioned. For radio, when prevention messages were discussed, the most common topic was hand washing (15%). All other prevention messages were communicated less than

² We did not code for the best practice of “meeting the needs of the media” because that step would not be apparent in these media messages.

10% of the time. Differences by radio station/program are reported in the results section of this document. For newspaper, when prevention messages were discussed, the top 3 messages were: avoiding contact with the contaminated (16%), no touching (12%), and washing hands carefully (12%). All other prevention messages were communicated less than 10% of the time.

It is vital that public health communication focus on preventative steps that can be taken, by emphasizing on the effectiveness of those steps and communicating about what the public needs to do to be able to take those steps effectively.

Recommendations from Workshop Participants in Monrovia, Liberia, June 8, 2016

On June 8, 2016 members of the research team presented project results and conducted a workshop to discuss implications and lessons learned. Below we paraphrase the comments of the attendees:

Group 1

- *Prompt response* to every information, e.g., rumors that comes from public and private sectors
- *Unified approach*: involve the local traditional leaders in the response
- *Equipped health sector* (i.e., ambulances; train more health workers; be ready to respond to any emergency or other diseases)

Group 2

- Capacity building in risk communication, especially for community radio; they are the front line; funding training in public crisis communication for media personnel and participating community radio stations
- Rapid response should include a communication strategy that includes highlights of partnership with media and community engagement
- Strengthen relationship between NDC (National Disaster Commission) and MoH
 - Senate discredited the MoH who came out and announced Ebola in March; they said it was the MoH just wanting more money. Created confusion and mistrust.

Group 3

- Well organized and coordinated partnerships among government, health practitioners and media outlets (public and private); call media outlets and get tell them how the info. should be given out the way they want it to go so it is not sensationalized*
 - *not just about press conferences and then newspapers saying “according to the Minister”... no, sit down with the media in roundtables, discuss how to deal with the situation, but also communicate that they don't want info to spread the info the wrong way; issue here was that it was not clear what message to take out and what to keep (example of some saying Lhasa fever, some saying Ebola); if collaboration is well organized, message will go out the right way.
 - *set up a systematic approach to get information to media, to work along with rural and community leaders –journalists can get information at the source in the

communities –share with government; government can then respond through local journalists to the community

- More training for media practitioners in risk communication (pre-service, in service, and post-service)
- A partnership or collaboration between the media institutions (Network on Risk Communication; (competition among media “to be the best but it’s not about that, it’s about fighting and winning”)

Group 4

- Government and NGOs [should] form partnerships with various groups, such as youth, to educate people on the dangers and prevention of any outbreak
- To provide logistical support to the media in getting to hard to reach areas to inform the public of any outbreak
- Health workers should be provided with necessary training and medical support to swiftly combat diseases

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Appendix A: Definitions and Examples of Rumors Coded

Name of Rumor in Codebook	Definition of Rumor	Example(s) of Rumor
Ebola created by African source	Something or someone from Africa created Ebola.	People are saying that the government of Liberia is bringing Ebola to Liberia during the rainy season.
Ebola created by outside source	Something or someone outside of Liberia created Ebola.	The United States government is bringing Ebola back to Liberia. Ebola is supernatural. Ebola is a man-made virus.
Ebola is not real	The virus was made up and does not actually exist.	Ebola is not real, doctors and nurses are killing people for no reason.
Routine vaccines are being used to infect people	The routine vaccinations given in Liberia are being used to infect Liberians with Ebola.	The current polio vaccine campaign is intended to spread Ebola during the rainy season in Liberia.
Ebola vaccine trial and routine vaccines are the same thing	The routine vaccinations given in Liberia are the same as the vaccinations given in the Ebola vaccine trial.	Some mothers are refusing to take their children for their regular vaccinations because it is the Ebola trial vaccine.
Ebola vaccine trial is being used to infect people	The Ebola vaccine trial is being used as a means to infect people with Ebola.	The testing of the Ebola vaccine on humans is a way for the international community to bring Ebola back to Liberia.
Ebola treatment units (ETUs) are being built by foreigners to spy	ETUs are not a place to receive treatment for Ebola, but rather are being used by foreigners to gain information about Liberians.	
ETUs do not provide treatment, they are just a place to die	ETUs are not a place to receive treatment, people only go there to die from Ebola.	If you are suspected to have Ebola and are taken to the ETU, you will no longer survive.
Liberian government misused donated funds	Funds that were donated to the Liberian government in order to help stop the spread of Ebola were used for other purposes by the government.	The government is using the Ebola crisis to enrich a few government officials.
Encourage fake prevention	Mentions fake prevention measures, such as eating onions, to prevent one from getting sick with Ebola.	
People are profiting from the Ebola virus	People or organizations want to profit or gain from the spread of	People are gaining from the Ebola virus, so they will make

	the Ebola virus.	sure that the virus does not leave Liberia. The government owns Ebola. NGOs are happy for Ebola to return so they can make money.
School-related rumors	Includes any rumors about schools, such as do not send your child to school or they will get Ebola, the government has not ordered schools reopen, and school closure is a tactic to ruin kids.	Schools will close again anytime now because of Ebola. The government bought vaccines for all school going children in Liberia. A parent said that school workers are putting Ebola in the chairs at schools to give their children Ebola.
New Ebola cases	Reports of the next outbreak of Ebola, new cases of Ebola, and increasing rates of Ebola.	The new Ebola virus is only coming in children. Ebola is back in town. People are saying that six people are infected with Ebola in Lofa County.
Issues with prevention measures	People are not following the prevention measures that have been laid out to stop the spread of Ebola.	People are not following prevention measures.
Misinformation contagion	A rumor that contains information that is potentially dangerous if people believe it to be true and is spread throughout communities.	Washing hands with chlorinated water will lead to cancer. Ebola is gone from Liberia. For the past two weeks, Ebola has resurfaced in many communities due to eating dogs.
Other	Any other rumor that is not defined by the categories above.	In Grand Bassa County, survivors of Ebola are complaining about financial challenges. White people don't want Liberians to continue to kill bush animals.

Appendix B: Differences across Newspapers

Table 21. Who was Blamed for the Ebola Crisis by Newspaper

Source	<i>Daily Observer</i>	<i>Front Page Africa</i>	<i>The Inquirer</i>
Liberian Government	14	55	21
President Ellen Sirleaf	2	4	1
The United States	1	7	2
Healthcare Workers	3	2	4
Victims Themselves	1	34	10
Ebola Itself	17	56	93
WHO	0	1	1
NGO	0	6	0
Religion	6	1	6
Witchcraft/Voodoo/Karma	0	0	0
Family of Sick	1	0	1
God	2	0	0
No One	184	115	102
Other	15	22	11

Table 22. Who was Credited for Solving the Ebola Crisis by Newspaper

Source	<i>Daily Observer</i>	<i>Front Page Africa</i>	<i>The Inquirer</i>
Cuban Government	0	1	0
Other Foreign Government	17	45	30
Liberian Government	35	112	107
President Ellen Sirleaf	3	36	24
The United States	21	52	23
Healthcare Workers/Training	19	77	40
Victims Themselves	2	25	14
Ebola Itself	1	1	0
WHO	9	48	26
NGO	61	97	73
Religion	6	8	30
Witchcraft/Voodoo/Karma	0	0	0
Family of Sick	0	1	0
God	3	1	1
No One	80	28	23
Other	188	249	204

Table 23. Best Practice Mentioned by Newspaper

Best Practice	<i>Daily Observer</i>	<i>Front Page Africa</i>	<i>The Inquirer</i>
Risk and crisis are dynamic and ongoing	203	221	215
Risk is done and over	0	10	8
These issues can be uncertain and ambiguous	28	27	9
Compassion and empathy	27	64	37
Want to hear the public's concerns	0	5	12
Foster partnerships with the public	9	17	43
Self-efficacy	33	17	29
Response efficacy	43	16	53

Table 24. Overall Tone by Newspaper

Tone	<i>Daily Observer</i>	<i>Front Page Africa</i>	<i>The Inquirer</i>
Positive		91	86
Negative	76	123	80
Mixed	6	49	56
Neutral	39	8	11

Table 25. Portrayed Emotions by Newspaper

Emotion	<i>Daily Observer</i>	<i>Front Page Africa</i>	<i>The Inquirer</i>
Guilt	3	6	1
Anger	19	60	39
Fear	61	93	76
Hope	119	120	116

Table 26. Journalistic Frame by Newspaper

Journalistic Frame	<i>Daily Observer</i>	<i>Front Page Africa</i>	<i>The Inquirer</i>
Victim	13	32	23
Hero	90	108	91
Disaster	57	55	42
Behavioral Steps	20	14	47
Blame (other countries)	2	4	3
Blame (Liberian gov't)	10	34	14
Stigmatizing	0	9	4
Anti-Stigmatizing	8	5	2
Other: Straight News	32	11	14

Table 27. Topics Discussed by Newspaper

Topic Discussed	<i>Daily Observer</i>	<i>Front Page Africa</i>	<i>The Inquirer</i>
New Cases	17	100	70
Current Cases	36	119	108
Changes in Status/Former Cases	77	70	65
Stigma	25	22	9
New Death Reported	17	49	43
Barriers to Recovery Mission Generally	42	106	91
Recovery	38	51	51
Broader Social Context	77	50	54
International Support	81	169	124
Travel	42	102	46
Event Promotion	10	39	77
Hotline	4	2	4
Research	0	9	1
Phone Number	4	0	1
Physical Address	0	12	24
Email Address	0	0	0
Influenza	0	7	2
Malaria	5	7	5
Focus on Liberia	164	234	192
Focus on Other African Country	84	103	66
International Focus	34	53	21
Focus on Specific Region of Liberia	115	131	124
New Medications	7	24	6
Future Vaccine	7	17	8
Elections	8	9	4
Sports	2	1	0
Other	24	43	10

Table 28. Prevention Step Mentioned by Newspaper

Prevention Step	<i>Daily Observer</i>	<i>Front Page Africa</i>	<i>The Inquirer</i>
Practice careful hygiene	1	4	1
Wash your hands carefully with soap & water and/or chlorine	17	28	44
Check temperature carefully before entering business/offices (no touch thermometer)	7	19	15
No touching (hugging, kissing, holding hands)	9	43	38
Avoid contact with nonhuman primates	0	9	5
Don't eat bush meat and avoid fluids and raw meat from them	10	8	4
Cook food properly	0	2	1
Do not touch someone with signs of Ebola	3	39	31
Safe burial	15	47	33
Avoid contact with contaminant	13	57	49
Ensure regular and rigorous environmental cleaning	4	5	1
Prompt notification of suspected cases/treatment	9	14	6
Prompt treatment seeking	3	9	3
Prompt notification of exposure	0	8	3
If exposed...minimize close contact with family	1	7	4
Community care: patient isolation	8	36	21
Community care: makeshift PPE	0	7	26
Health center: do not allow visitors to enter isolation rooms	0	1	1
Health center: isolate patients	6	27	30
Signs and symptoms for Ebola can appear 2-21 days later	17	13	7
Sex: Ebola survivors should abstain or have safe sex & people should not have sexual contact with those who have had/been exposed to Ebola	1	5	1
Other: Use PPE	7	1	1

Table 29. Crisis Theme Discussed by Newspaper

Crisis Theme	<i>Daily Observer</i>	<i>Front Page Africa</i>	<i>The Inquirer</i>
Speediness of Response	7	27	5
Slowness of Response	4	15	9
Crisis Under Control	18	18	10
Uncertainty	3	105	117
Need to Protect Vulnerable	32	37	24
Response was Organized	55	74	74
Response was Unorganized	14	29	20
Community Engagement	57	60	70
Community was Disengaged	3	16	10
Workers Honor the Dead	3	0	2
Failure to Honor the Dead	0	9	3
Other	0	1	1

Table 30. Rumor Mentioned by Newspaper

Rumor Mentioned	Daily Observer: Mentioned as a rumor	Daily Observer: Noted it was a rumor	Front Page Africa: Mentioned as a rumor	Front Page Africa: Noted it was a rumor	The Inquirer: Mentioned as a rumor	The Inquirer: Noted it was a rumor
Ebola created by African source	0	0	0	0	0	0
Ebola created by outside source	1	0	0	0	0	0
Ebola is not real	12	9	22	21	16	15
Routine vaccines being used to infect people	0	0	0	0	1	1
Ebola vaccine trial and routine vaccines are the same thing	0	0	0	0	0	0
Ebola vaccine trial being used to infect people	1	1	0	0	0	0
ETUs are just a place to die	1	0	1	0	1	0
Liberian government misused donated funds	3	0	9	5	1	0
Encourage fake prevention	0	0	0	0	0	0
People are profiting from the Ebola virus	2	1	1	1	0	0
School related rumors	0	0	1	0	0	0
Ebola cases (after the last known case)	0	0	0	0	1	0
Prevention measures are selective	0	0	10	2	7	1
Misinformation contagion	0	0	6	4	5	5
Ebola doesn't have to be treated	1	1	0	0	0	0
Ebola vaccine or cure is available	2	2	0	0	0	0
Safe burial teams charge the public money for services	1	1	0	0	0	0

Appendix C: Crisis Communication Best Practices

A crisis occurs in situations in which there is a major threat to public health, the economy or survival with little response time and inadequate resources to cope (Hermann, 1963; Starbuck & Hedberg, 1977; Turner, 1976; Webb, 1994). Crisis communication involves the dissemination of messages “to prevent or lessen the negative outcomes of a crisis” (Coombs, 1999, p. 4). Effective crisis communication relies on strategies, or best practices, that provide the most critical communication-related actions to be implemented during a crisis. The objectives of these practices are to halt the consequences, maintain or restore calm, and produce confidence in the operational response (Reynolds, 2006). Crisis communication should be part of larger crisis management operations with the primary goals of saving lives, protecting property and the environment, and meeting basic human needs (Department of Homeland Security, 2008). The extent to which the goals of crisis communication are met depend on the cooperation of those affected and those engaged in communication.

It is not only important that a crisis is handled effectively but also that stakeholders and the general public perceive that it was handled effectively (Sandman, 1989). Through the media, individuals experiencing the crisis learn not only what they need to do to avert harm, they also learn how leaders are handling the crisis. Such an understanding is vital to the communicators’ subsequent trust and credibility. Institutions need to follow best practices during a crisis in an open and transparent way so that the public is aware of their actions—and they must use the media to achieve this objective. People in the midst of the crisis experience an array of emotional, cognitive, and behavioral responses when their health and lives are threatened, which may influence their risk perceptions (Lerner & Keltner, 2000). Risk perceptions, in turn, are influenced by message content, message framing, and message sources (Covello, 2003; Glik, 2007; Fischhoff, 1995, 2005; Fischhoff et al., 2002; Fischhoff et al., 2003; Frewer, 1999; Sandman, 1989).

Crises are marked by an exponential increase in people’s use of media (Glass, 2002), and media thus come to play a critical role in how the public understands the risks (Kasperson, 1992; Renn, 1991). Therefore, the need for effective crisis communication is vital during times of crisis, given the public’s increased appetite for information. The focus of this report is on the communication via a variety of modalities—formal channels like radio and newspaper – and informal, community derived channels like community chalkboards.

Crises often wreak havoc on human life and property, and they can also precipitate the demise of societal institutions’ image and public trust. Communication can be used to influence public response to a crisis and minimize downstream damage in leadership, societal institutions, and reputations (Coombs & Holladay, 1996).

The crisis communication literature has identified a number of best practices (Benoit, 1997; Covello, 2003; Heath, 2006; Reynolds, 2006; Seeger, 2006). The list of best practices used as barometers in this paper was compiled by Seeger (2006), through the use of a team of crisis communication experts. This list is based on research, anecdotal observations, experience in

crisis situations, case studies, and empirical investigations. An expert panel at the National Center for Food Protection and Defense (NCFPD) conducted an iterative review and critique of this list. According to Seeger, these practices were compiled with the realization that crisis communication is typically the work of organizations in response to a crisis, and therefore may best relate to organizational public relations. Nevertheless, the practices can be applied to other crisis managers, such as government departments that deal with crises, as in the Panama DEG case. Below, we briefly review each of the ten crisis communication best practices, making references to how each practice translated into particular codes and variables that we incorporated into the content analysis.

Communication can be used to influence public response to a crisis and minimize downstream damage in leadership, societal institutions, and reputations (Coombs & Holladay, 1996)

1. Engage in Pre-crisis Planning

Crisis communication should not begin once the crisis begins; excellent crisis communicators pre-determine the organization's vulnerabilities and plan for a crisis to occur. Pre-crisis planning involves identifying risk areas, determining a crisis response plan, and identifying necessary response resources (Seeger, 2006). Proactive communication occurs before a crisis occurs and comes with the realization that crisis communication is an ongoing process. Although pre-crisis communication may alert people to risks they did not know they were exposed to, this awareness need not be seen in a negative light as it presents opportunities to discuss events in a less emotionally charged situation, and provides a more balanced discussion (Turner & Turner, 2008). Another advantage of pre-crisis planning is that initial crisis responses can be predetermined, which makes for more efficient decision-making during a crisis. In addition, prior planning prevents mistakes and saves time (Benoit, 1997). Societal institutions are, therefore, encouraged to include crisis communication plans in their larger emergency management plans. These plans should have input from a broad cross-section of stakeholders, be based on realistic assumptions, be regularly updated and revised, as well as accommodate new understandings of risks and new insights from information-sharing networks (Benoit, 1997; Lasker, 1997; Seeger, 2006). One disadvantage of pre-crisis communication, however, is that media interest is likely to be lower than it would be during and after a crisis (Turner & Turner, 2008). Consequently, strategies need to be developed to get media involved in pre-crisis planning. Pre-crisis planning, as a best practice, was originally laid out as a pre-event process for risk managers, but we are interested in communication during a crisis. Therefore, we will analyze messages to see evidence or indications of pre-crisis planning.

2. Be Genuinely Compassionate, Concerned, and Empathetic

The law of crisis communication is to genuinely care about the people affected by the crisis. Perceived empathy and caring are important in judgments of credibility and trustworthiness (a notion that will be further discussed subsequently; Covello, 1992). Expressions of care and

concern increase perceptions of legitimacy, and faith in the actions being taken or recommended (Seeger, 2006). Compassion increases perceptions of organizational control, favorable perceptions of organizational reputation, and behavioral intentions that are supportive of an organization (Coombs, 1999). In this analysis we coded for whether messages communicated concern and empathy. Likewise, we coded for the communication of stigma, the tonality of messages, and specific emotions communicated in the message.

3. Forge Partnerships with the Public

Better decisions are made when institutions collaborate with stakeholders rather than always seek to persuade them to accept their own agenda. To this end, strategic communication should be used to forge long-term relationships with the stakeholders (Hon & Grunig, 1999). Grunig and Repper's (1992) model of strategic management and public relations states that stakeholders' perceptions of involvement in the decisions of an organization influence the management of an issue. People who perceive low levels of involvement in the decision-making process are more likely to create problems out of issues than those who perceive high levels of involvement (Grunig & Grunig, 2000). It follows, therefore, that active publics (those with high involvement) should be seen as a resources rather than a liability. To this end, crisis communication should be approached as a dialogue with the public as an equal and legitimate partner, having a right to scientifically-based information (Seeger, 2006). The myth that the public will panic if given accurate information has not been supported by research, and there is reason to believe that there is increased probability of inappropriate public response when information is withheld (Tierny, Bevc, & Kuligowski, 2006)¹. The extent to which community sources are cited in messages was coded. Additionally, we directly coded whenever message mentioned a direct desire to work with the public.

4. Listen to your Audience and Understand its Concerns

Crisis communicators must be careful to listen to their stakeholders and not simply talk "at" them. This notion is exemplified in the definition of risk communication, which we define as a multi-directional conversation between, and not restricted to, risk analysts, risk managers, and decision makers about the known and unknown information regarding risks with the goal of fostering informed and effective decision making (see Lofstedt, 2005). In public health communication, risk analysts and risk managers are often doctors and nurses, nutritionists and educators, researchers and scientists, and even the government. In order for such communicators to engage in conversations with stakeholders, it is axiomatic that they have to listen to stakeholders.

Although it is clear that there may be large discrepancies between objective risk and perceived risks (Howarth, 1988), crisis communication must take the audience's risk perception into consideration. The appropriateness of the messages will differ depending on whether audience risk perception is too low, accurate, or exaggerated. In pre-crisis situations, for example, perceptions of severity and susceptibility may be too low, and so the audience may not see the need to engage in precautionary behaviors. During a crisis, however, risk perceptions may be exaggerated; therefore, the goal would be to calm the audience in an empathetic manner that fosters efficacy (Witte, 1992, 1994) and high levels of perceived credibility and trust (Lerner &

Tiedens, 2006; Turner, 2007). In addition to risk perceptions, emotions influence behavior in crisis situations. For example, Turner's (2007) Anger Activism Model predicts that angry people who also feel efficacious are likely to engage in activist behaviors. People who are angry tend to mistrust authority and less likely to accept statements regarding the credibility of the information. Moreover, angry people are more likely to attend to negative, as opposed to positive, reports and give more weight to the former (Peters, Covello, & McCallum et al., 1997; Slovic, 1993, 1999; Slovic, Flynn, & Layman, 1991). Understanding the audience and listening to its concerns will help crisis communicators decide when and how best to communicate. We directly coded when documents mentioned a desire to listen to the public. Likewise, we coded for communication of anger.

5. Communicate Honesty, Candor, and Openness

Honesty is a prerequisite to building trust and credibility with stakeholders and the media. When an institution is perceived as dishonest, people will seek information from other sources, which takes the message control out of the hands of that institution (Coombs, 1999, Seeger, 2006). Seeger conceptualizes honesty, candor, and openness on a continuum where honesty is fundamentally not lying, candor is telling the whole truth as it is known (even when it reflects negatively on the institution), and openness refers to further accessibility and immediacy, beyond that associated with candidness. Seeger cautions against sacrificing candor and openness to allay an institution's fears of public panic lest such a sacrifice lead to reduced trust.

Credibility judgments are based on empathy and/or caring, competence and expertise, honesty and openness, and non-verbal cues (Covello, 1992). Crisis communicators are urged to be honest about the limits of scientific knowledge and to admit to uncertainty, to make careful evaluations, but at the same time to avoid giving the impression of withholding information (Turner & Turner, 2008). Heath (2006) pointed out the inevitability of emerging facts and suggested that, "The harder the organization tries to hide them, the more explosive they are once they surface" (p 246). Communicators should also be cognizant that subsequently being proven correct or incorrect will determine whether they gain or lose trust, respectively (Turner & Turner, 2008). In the words of Lundgren and McMakin (1998): "Don't promise what you can't deliver" (p. 82). In this analysis, we code for whether the expertise and trustworthiness are directly mentioned in communication. We also assess whether particular sources are directly blamed for the crisis or whether they are credited for solving it.

6. Accept Uncertainty and Ambiguity

In communicating honestly, crisis communicators need to accept the inherent unpredictability, dynamism, and uncertainty of crises, and communicate this fact to the public and the media. Acceptance and communication of this fact will allow institutions to release information as it becomes available, without appearing inaccurate and inconsistent (Seeger, 2006). However, Seeger cautions against using strategic ambiguity to conceal information that may be perceived in a negative light. The old adage, "It's not what you say, but how you say it," is applicable here.

Crisis communicators also should realize that uncertainty does not necessarily lead to anxiety, and that providing information can help people manage their uncertainty. Brashers (2001)

suggested that people can change their emotional appraisal of a situation when new information becomes available. The type of information provided determines whether emotional appraisal will become more negative (e.g., fear) or more positive (e.g., hope). When information is not forthcoming, uncertainty may give way to resignation, but when communicated in a manner that allows people to give meaning to an event, information can reduce uncertainty (Brashers, Neidig, Haas, et al., 2000; Mishel, 1990). Uncertainty, as a crisis theme, was directly coded.

7. Regard Crisis Communication as an Ongoing Process

Crisis communication is not only about immediate response, but ideally it is an ongoing and integrated part of the decision-making process, with input from all stakeholders (Grunig & Grunig, 2000). Treating risk communication as an ongoing process reduces the perception that the institution's response is simply an after-the-fact spin. Crisis communication based on a process model is all-inclusive, addressing issues from pre- to post-event (Seeger, 2006). The ongoing nature of crisis communication also necessitates that strategies be continuously revised and refined (Heath, 2006, Seeger, 2006). Turner and Turner (2008) highlighted another aspect of a process approach, namely, the importance of educating lay people about the evolving nature of science, and updating them on continuing collaborations with relevant experts, as information becomes available.

8. Collaborate and Coordinate with Credible Sources

As with partnerships with the public, it is important to form strategic partnerships with other communicators and expert sources before a crisis occurs. Collaboration and networking facilitate coordination of messages and activities, which in turn reduces confusion and inconsistent messages. In addition, coordination and collaboration with credible sources facilitates the mounting of an effective crisis response (Seeger, 2006). A large variety of sources were assessed in these documents.

9. Meet the Needs of the Media and Remain Accessible

Instead of regarding the media as a liability, organizations should foster the free flow of honest and open communication with the media as they are the public's primary source of information. This entails being frank about uncertainty and remaining accessible at all times (Seeger, 2006). Heath (2006) noted that the Internet provides an easy means for anyone to share information about a crisis, and he emphasized the need for institutions to be the first and best information source, continually providing updates to the media and filling information gaps when necessary. Failure to do so may result in the proliferation of inaccurate reports. In this analysis, we coded for a variety of possible rumors noted in the documents and assessed whether it was mentioned that the messages were, indeed, rumors.

10. Communicate Self-Efficacy and Response-Efficacy

Stakeholders must be provided information for what members of the public should do to maintain their health and safety. Self-efficacy (which refer to confidence that one is capable of taking requisite actions to reduce a threat) affects thoughts, actions, and emotions (Bandura, 1969, 1971, 1986). According to the Extended Parallel Process Model (EPPM), efficacy messages

help to foster feelings of control and, when combined with highly perceived threat and susceptibility, they lead to implementation of the recommended actions (Witte, 1992, 1994). Seeger (2006) recommended that messages should include specific harm-reducing actions, which have real and apparent utility in alleviating the effects of the crisis. In addition to being specific, efficacy messages should be unambiguous, include options, and should state the reasons for the recommended actions (Seeger, 2006). Self-efficacy and response efficacy (which refers to beliefs that the recommended action will be effective) were included in the codebook. Likewise, the coding directly considered if prevention steps were mentioned in the documents.

Appendix D: Overview of Liberian Media Channels

Liberia Media Landscape

Number of active print outlets, radio stations, television stations:

Print: 18 newspapers 8 of which are daily;

Radio Stations: 16, 2 of which are nationwide;

Television Stations: 6

Newspaper circulation statistics: Top three by circulation: Daily Observer (circulation 3,000), New Democrat (circulation 3,000), Inquirer (circulation 1,000) (Media Reach and Penetration Study, Liberia Media Center)

Broadcast ratings: Top radio station: United Nations Mission in Liberia (UNMIL) Radio Station (Media Reach and Penetration Study, Liberia Media Center)

News agencies: Liberia News Agency (state-owned but largely not functioning)

Radio

Channels	Historical facts	Listenership / Audience	Rating/Ranking	Notes
UNMIL	UNMIL Radio is an entity of the United Nations Mission in Liberia (UNMIL), a peacekeeping power built up in September 2003 to screen a truce understanding in Liberia taking after the finish of the Second Liberian Civil War. At its top, it comprised of up to 15,000 United Nations military work force and 1,115 police officers, alongside a non military personnel part. It superseded the United Nations Observer Mission in Liberia (UNOMIL). unmil.unmissions.org	Listenership: nationwide -Potential reach: 1-3 million residents Based in Monrovia, Montserrado County. -Mainly urban educated -Foreign citizens & Liberian diaspora (online) -Rural somewhat educated Liberians	Number 1 radio station Highly trusted by the public A portion of programming from foreign radio (BBC, VOA: Voice Of America)	News And Talk Programming
ELBC	Founded as the Eternal Love Broadcasting Corporation in 1960, the network was owned and operated by <u>Rediffusion, London</u> until 1968, when management passed to the <u>Government of Liberia</u> . The network	Listenership: nationwide since 2008 with the installment of a 10 kW FM transmitter, along with several secondary transmitters donated by the Chinese Government.	Somewhat trusted by parts of the public, but because it is state-owned, information mostly received with some level of	-Broadcast radio network -Former broadcast television -State-owned -Programs in English and Country talk (Mix of English, Pidgin, and local languages)

	began broadcasting television as the Liberia Broadcasting Corporation in 1964. Additionally, there are plans to reestablish a television service for the Monrovia area, in the beginning, with plans to extend it nationwide.	<ul style="list-style-type: none"> -Potential reach: 2-4 million residents -Urban & rural listeners -Educated and uneducated & Liberian diaspora (online) -Based in Monrovia (Capital city) 	skepticism.	
Radio Monrovia	Founded in 1993, Radio Monrovia, ELRM is the radio service of the Snetter Enterprises Incorporated, broadcasting on the assigned frequency of 92.1 FM from Cooper Farm, Newport Street, in the Old Ministry of Youth and Sports Building.	<ul style="list-style-type: none"> -Listenership: Monrovia and outskirts -Potential reach: 1 million residents -Limited following from the diaspora. 	Trusted	<ul style="list-style-type: none"> -News, talk, music www.radiomonrovia247.com
IREX	Also known as Radio Bomi, from Bomi County. After a fire ravaged Radio Bomi equipment, IREX and USAID provided funding to restore the station with a focus on keeping citizens informed about the Ebola outbreak with prevention messages, programs, and empowerment.	<ul style="list-style-type: none"> -Potential reach: over 100,00 residents -Mainly rural populations - Reach: Bomi County, parts of Monrovia, Grand Cape Mount, Bong, Nimba, Grand Bassa and Gbarpolu counties with a 500-watt transmitter 	Trusted within the community	<ul style="list-style-type: none"> -Community radio -Programs in English and country talk
Youth Talk	Founded on October 4, 2014, Youth Talk-Liberia, Inc – YOTAL is a NGO located in Zorzor City, Lofa County in Northern Liberia. It is youth-oriented and youth-led, operating on two frequencies (94.4MHz and 104 MHz). The Alternative-FM radio project is a joint initiative of Youth Talk-Liberia, Inc., (YOTAL) and Help Encourage Liberia Little Ones (HELLO). Both institutions are based in the Republic of Liberia and the United States of America respectively.	<ul style="list-style-type: none"> -Listenership: Lofa County and adjacent areas (Northern Liberia) -Mainly youth 	Building a reputation within the community, especially among the target audience: Liberian youth.	News and talk programming

Radio Joy	<p>-Community based media outlet founded on October 24, 2010 by Journalist Patrick C.M. Kollie. Located in Kakata City, Margibi County, Radio Joy Africa's frequency is 97.5MHz.</p> <p>-Emphasis on community participation. Call-in programs during Ebola epidemic that gave listeners the opportunities to provide feedback and receive information regarding preventive measures.</p>	<p>Listenership: Margibi County & surrounding areas (Over 200,000 people).</p> <p>- Mainly rural</p> <p>-Youth</p>	<p>Trusted within the community</p> <p>Reputable, joint interventions with BBC Liberia's staff</p>	News, talk
Radio Cape Mount	<p>Cape Mount Radio is a community radio with frequency 102.4 fm. Founded in 2007 with the support of the people of Cape Mount and Sinje Town, Liberians in U.S. (www.capemountusa.org), Search for Common Ground (www.sfcg.org), Action Aid (www.actionaid.org) Canadian Embassy in Liberia and FWA, the radio is located in Sinje Town (Northwest, 20 miles from the Sierra Leonan border).</p>	<p>Listenership: Grand Cape Mount County, about 100,000 people</p> <p>-Mainly rural</p>	<p>-Trusted</p> <p>-Supported in part with public funding</p>	<p>-News & talk</p> <p>-English & Country talk</p>

General note: There is no known formal ranking of the radio stations, nor are ratings measured by any organization. Mainly, what is being assessed is the level of professionalism in programming and the delivery of news. Both factors, in turn, frame the reputation of any news organization and significantly impact the audience's level of trust.

Newspapers

Channels	Historical facts	Readership	Audience	Ranking	Notes
Daily Observer	Also known as the Liberian Observer, founded in 1981 in Monrovia. Probable the most respected, well-established and read newspaper in Liberia.	Mainly read by educated middle-class Liberians, government employees and Liberian diaspora. -Circulation of 3,000.	-Middle class -Educated -Diaspora -Foreign residents	-Good reputation -Member of PUL (Press Union of Liberia)	Oldest existing Liberian newspaper
Front Page Africa	Liberian daily newspaper founded in 2005 by <u>Rodney Sieh</u> and headquartered in Monrovia. Originally an online-only publication, the newspaper began to print copies in 2008, expanding to a circulation of 1,500, which were collated and folded manually. As of 2012, it had a circulation of 1,500. <i>FrontPage Africa</i> has received international recognition for its investigative journalism.	Readership: mostly college-educated (70% in US, 20 % in Liberia – Ages range 18-44 years old) - Considerable online readership from the Liberian Diaspora, especially from the U.S. - Circulation of 1,500.	-Urban, educated - Middle class -Diaspora & foreign residents	Good reputation	Member of PUL
The Inquirer	The Inquirer also known as the Monrovia Inquirer is a media/news/publishing organization based in Monrovia, Montserrado County. It is one of the leading independent daily newspapers, founded January 15, 1991 during	Mainly read by educated middle-class Liberians, government employees.	-Urban, educated - Middle class -Diaspora	Mostly trusted by readers	Member of PUL

	the civil war.	- Circulation of 1,000.	& foreign residents		
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Informal ranking of Liberian newspapers:

1st -The Daily Observer <http://www.liberianobserver.com/>

2nd -Frontpage Africa <http://frontpageafricaonline.com/>

3rd -The Inquirer <http://monroviainquirer.com/> major presence online mainly young professional Liberians and Liberian diaspora.

4th -The Heritage <https://www.facebook.com/Heritage-Newspaper-Liberia-432954540061009/>

This ranking is based on information provided by the Media Reach and Penetration Study, Liberia Media Center and PUL (Press Union of Liberia).

Newspapers are almost entirely read by educated middle class citizens, foreign residents, and members of the Liberian diaspora. There are three main reasons for this phenomenon:

- The average price of L\$40 (Liberian dollars).
- The literacy rate 60.8% (64.8% for males and 56.8% for females) (UNESCO, 2010)
- The physical location and accessibility of newspapers, almost entirely limited to urban centers like Monrovia

However, they also serve to inform other parts of the population. Newspapers stands are often areas where people gather to discuss news and politics. Many less-educated citizens receive their information as they read the headlines of the newspapers and discuss with peers.

Newspapers headlines generally play a critical role in the dissemination of information, but in such context, it is even more essential because many people who are not able to afford the newspapers are still able to read the headlines and take away the information it is providing in few words.

The headlines and stories also inform radio stations and often impact the way they report to populations, mainly in rural areas that have no access to newspapers.

The Liberian Diaspora's role in the press and media is considerable. Many of the editors, hosts, and managing directors have received training overseas, have lived abroad for a number of years, or/and worked for foreign well-established news organizations BBC, VOA, Reuters, etc.).