Leadership in Times of Crisis: The Example of Ebola Virus Disease in Liberia

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Abstract—The Ebola epidemic of 2014–2015 was one of the most significant public health threats of the 21st century, a crisis that challenged leadership in West Africa and around the world. Using the experience of Liberia’s epidemic control efforts, we highlight the critical role that leadership played during four phases of the epidemic response: (1) crisis recognition and early mobilization; (2) the emergency phase; (3) the declining epidemic; and (4) the long tail. We examine how the decisions and actions taken in each phase of the epidemic address key crisis leadership tasks, including sense-making, decision making, meaning-making, crisis termination, and learning, and assess how leadership approaches evolved during the different epidemic phases to accomplish these tasks. A contingency leadership theory lens is used to identify situations where strong leadership, good leader–member relations, and well-structured tasks can facilitate different leadership approaches. The first phase of the epidemic was hampered by insufficient attention to sense-making and weak decision making, in part because of the existing hierarchical leadership approach. This contributed to amplification of the epidemic. The emergency phase of the epidemic brought a change in leadership that focused on sense-making, decision-making, and meaning-making tasks. A distributed leadership approach replaced the old hierarchies. In addition to sharing leadership responsibility and authority, the distributed leadership approach involved strategically engaging stakeholders and communicating intensively. Although much of the hierarchical leadership approaches returned in the latter phases of the epidemic, there remain more empowered leaders at different levels across the country. Systematically tackling crisis leadership tasks, recognizing situations where different leadership approaches can be used, and employing a distributed leadership approach are helpful lessons to prepare for and respond to future crises.

INTRODUCTION

The Ebola virus disease (EVD) epidemic that raged through West Africa in 2014–2015 was one of the most dramatic and
important public health crises in the 21st century. It was an existential threat to three countries—Guinea, Liberia, and Sierra Leone—and challenged governments around the world. It severely threatened international public health systems in ways they have never been challenged before. Leadership at several levels was critical in eventually controlling the epidemic. However, 11,308 people died among the 28,610 Ebola cases by the time the World Health Organization (WHO) made the declaration that the Public Health Emergency of International Concern was over on March 29, 2016.1 In this article, we examine what role leadership played during the Liberian Ebola epidemic response. We characterize the main phases of the epidemic and assess how the actions and decisions taken during each phase fulfill specific crisis leadership tasks. We view the Liberian case through the lens of contingency theory to see how leadership power and relations changed during the crisis and whether this helps to explain how leadership approaches evolved in practice during the epidemic, resulting in attention to different tasks, relations, and behaviors. The Liberian case serves to generate a hypothesis that the ability to adopt different leadership approaches was contingent on the crisis situation, which in turn had an important impact on the achievement of crisis leadership tasks and ultimately on the course of the epidemic. It is our hope that lessons drawn from the Liberian experience can highlight aspects of leadership in crisis that can serve others to prepare and respond to similar crises.

**Nature of the Crisis**

The EVD outbreak in West Africa began in the southeastern forest of Guinea in December 2013, although EVD was not suspected until much later and not confirmed until March 2014. By then, it was spreading across rural areas of Guinea, Liberia, and Sierra Leone, subsequently exploding through the more densely populated urban settings by mid-2014. The outbreak was clearly exacerbated by countries already under stress. In Liberia, the country’s health system was still recovering from the ravage of over 15 years of civil war. Although Liberia’s economy was one of the fastest growing prior to the epidemic, there remained high levels of poverty (e.g., average per capita income was 690 USD in 2014), with poor road infrastructure, unreliable power and communications networks, and limited access to safe water supply. There were severe shortages of health workers, health facilities, pharmaceuticals, and other necessary materials, as well as funds to pay health workers. In the year before the outbreak, there were four strikes by workers in the public health sector, due to the inability of the government to pay required wages, put workers on government payroll, or provide appropriate housing for posts in rural areas. Health workers generally had little confidence in the system and did not trust health authorities. Given the high level of people’s suspicion of government in a postconflict environment and the government’s inability to provide health services and safely handle dead bodies as EVD cases escalated, a vicious cycle of suspicion, miscommunication, mistrust, exposure to infectious dead bodies, and explosive transmission took hold. At the same time, other governments closed their borders to the three countries, stopping trade and commerce, creating yet another vicious cycle of loss of income, limited access to food, and heightened illness. The epidemic spiraled out of control, resulting in intense fear and turmoil throughout the sub-region. This fear rapidly extended to other countries around the world.

The crisis threatened the cohesiveness of communities, local and national governments, and international organizations operating in West Africa. In Liberia, the National Ebola Response was coordinated by the national Incident Management System (IMS), under the leadership of the incident manager, this article’s lead author (TN). The coordination and response involved community and county leadership in several different ways throughout the course of the epidemic. The IMS unit, in explaining the epidemic, divided the Liberia epidemic response into four descriptive phases, based on the number of EVD cases and the broad areas of focus of the response during each phase. These phases include

1. The initial phase of crisis recognition, when the early mobilization and organization of the response occurred.
2. The emergency phase, when cases were rapidly mounting and the focus was on attempts to manage a health system and population that was overwhelmed by disease, deaths, and fear.
3. The declining epidemic, when the caseload began to fall and the focus was on effectively controlling and ending the epidemic while phasing into a regular health care delivery system.
4. The long tail of the epidemic, when there were few cases, occasional small recurrences, and the focus turned toward broader strengthening of the health system.

**METHODS**

The case study analysis was based on a systematic and retrospective review of documents, minutes, and key leadership processes used in decision making. We reviewed documents from the Liberian Ministry of Health and Social Welfare (MOHSW), Liberian Ministry of Finance, Liberian IMS,
United Nations (UN), Centers for Disease Prevention and Control (CDC), the World Health Organization (WHO), UNICEF, International Federation of the Red Cross, United States Agency for International Development, and various local and international news media, as part of an effort to document the timeline of interventions and the epidemic curve, which are reported in detail elsewhere.3 We also used the personal experiences of the authors who were involved in the epidemic response (TN and DP).

The crisis leadership tasks framework and the leadership theories were identified through a targeted literature review. The crisis leadership tasks framework was used to assess whether the activities to combat the epidemic served to address key crisis leadership tasks during the different phases of the epidemic. A crisis involves a rapidly changing situation that may require changing leadership approaches—the generic tasks and behaviors related to goal setting, decision making, and maintaining relations between members of an organization. We employed contingency leadership theory,4,5 which provides a relevant framework to assess the “situational favorableness” with respect to leader’s power, leader–member relations, and task structure in an organization. We chose contingency theory because the situation changes rapidly during the crisis, which may open the door to different leadership approaches. Using the Liberian case, we observe whether leadership approaches changed as the situational favorableness and phases of the epidemic changed. Because there was an urgent need to involve many people in an adaptable way during the epidemic, both within and outside the formal organization of the Ministry of Health, we examined whether the leadership applied distributed leadership6 and stakeholder theory,7 because both offer relevant approaches in such circumstances. Finally, we explore whether the leadership approaches taken had any relationship to the accomplishment of crisis leadership tasks and impact on the epidemic itself.

Leadership Crisis Tasks

Seeger et al.8 defined crisis as “a specific, unexpected and non-routine event or series of events that create high levels of uncertainty and threaten or are perceived to threaten an organization’s high priority goals,” a time notable for its confusion, surprise, shock, and stress.9 In times of crisis, people look up to their leaders and expect that they will minimize the impact of the crisis at hand, in the face of blame and criticism, chaos, disruptions in normal routines, and uncontrolled media reports. Despite extreme conditions, leaders in these situations are required to grasp and address the crisis while maintaining a sense of normality to make prudent decisions. The decisions involve personal and political risks and consequences that could make or mar their political careers.

Boin and colleagues,10 in their decade-long collaborative and cross-national case research on the politics of crisis management, studied how leaders dealt with strategic challenges, the political risks and opportunities they faced, mistakes they made, pitfalls they avoided, and paths they took to manage crisis. They formulated five core tasks of crisis leadership, including sense-making, decision making, meaning-making, terminating, and learning. Sense-making, the first task of any crisis, involves attempting to understand the crisis as it unravels. It involves understanding and addressing barriers to recognition of the crisis, organizational limitations, and evaluating the psychological dimensions of sense-making, including issues related to stress, performance, and reality testing. Decision making includes evaluating alternatives and making critical choices, building teams and implementation with crisis coordination, and putting crisis leadership in place. Meaning-making refers to “crisis management as political communication”—the actions of communicating crisis to the population within and outside the country, while maintaining credibility. Crisis termination essentially refers to how the crisis ends, which may consist of blame games, actions, and the challenges of accountability at the end of the crisis. Learning refers to actions and reforms that result from analysis and learning from the crisis to strengthen organizations and systems.

Leadership Theories Adopted for Times of Crisis

Contingency theories are a class of behavior-based theories developed during the 1960s that contend that there is no one best way for leaders to be effective in all situations. Several studies have shown that effective leadership depends on three contingencies, including characteristics of the leader, the followers, and the situation at hand.4,5 The most effective approach is contingent on factors such as leader characteristics (e.g., skills, traits, and behaviors), follower characteristics (e.g., skills, traits, behaviors, maturity, and the relationship that the followers enjoy with the leader), degree of task structure, and characteristics of the situation at hand (e.g., goal clarity, urgency, and the nature of work to be done). Fiedler describes the relationship between leadership approach and the degree of situational favorableness, as determined by three empirical dimensions11:

1. Leader–member relations—low if leader is new, not readily accepted or respected by followers and high if accepted and respected.
2. Degree of task structure—low if task is ambiguous or vague and high if task is well structured and activities/routines are predictable.

3. Leader’s position power—low if less power is formally attributed to the leader and high if the leader has significant positional power that is formally attributed.

Situations are considered highly favorable if all three dimensions are high and low when all three are low.

Distributed leadership (DL) as a concept has seen rapid growth since 2000, with Peter Gronn providing a good description of the theory. Accordingly, DL represents a departure from the classical “individual agency” approach that highlights the individual as a leader (e.g., traits, skills, behaviors, empowering, transactional–transformational). DL is seen to be a social process that is systemic, and leadership evolves at different levels as multiple actors interact over time. In a DL approach, attention turns from individual accounts, attributes, and actions of individual leaders to what is described as “situated leadership practice.” Spillane and Diamone suggested that DL has two aspects—a “leader-plus” aspect and the practice aspect. The leader-plus aspect argues that instead of just thinking of leaders as those in designated roles, it is the collective work of all of the individuals who have a hand in the leadership and management practice (including people in informal positions) that should be acknowledged.

The practice aspect is seen to be a product of the interaction between leaders, followers, and the situation. The theory offers a new unit of analyzing leadership that is seen to be holistic rather than being a collection of actions of individuals. “Shared leadership,” “collective leadership,” “collaborative leadership,” “co-leadership,” and “emergent leadership” are few related formulations that have also argued for reframing leadership as not being limited to one individual; rather, they describe leadership as a collective and social process.

Bolden’s review of DL literature and related concepts concluded that DL offers a unit of analysis for leadership that is more integrated and systemic. DL is not, and should not be seen as, replacing “vertical” or hierarchical leadership. In a hierarchical organization, power typically belongs to the position rather than the individual, with leadership involving a pyramid structure with a narrow center of power on the top and wide base and where communications largely occur between immediate superiors and immediate subordinates. Pierce suggested:

The issue is not vertical or shared leadership. Rather the issues are: When is leadership most appropriately shared? How does one develop shared leadership? And how does one utilize both vertical and shared leadership to leverage the capabilities of knowledge workers?

Stakeholder theory looks at relationships between an organization and people in its internal and external environment. The core idea behind this theory is based in strategic management—organizations that are able to recognize, commit to, and manage their stakeholder relationships are likely to survive and thrive in the long term. Freeman and Gilbert argued that in order for organizations to be successful enterprises, they need to understand the diverse groups of customers and be able to successfully address their needs. Heath has argued for knowing and developing strong relationships with stakeholders before crisis occurs. Ulmer reasoned that there is a need for investing in stakeholder relationships pre-crisis because they can exert a significant influence upon an organization, because “stakeholders have a vested interest in the success of the organization and may represent a network of support during crisis. Stakeholders, for example, may serve as advocates for organizations in crisis by providing political support and crisis-mitigating resources.” If stakeholder relations are not strong, these groups may withdraw their support during a crisis, prolong the effects of a crisis, or intensify the threat associated with the event. Political or organizational leadership thus plays a fundamental role in identifying key internal and external stakeholders and developing relationships and value positions both before and after a crisis event.

THE LIBERIAN CASE

In the description of the Liberian Ebola epidemic, we outline the main actions taken by Liberian leadership, summarizing their linkage to the key crisis leadership tasks, and examine the situational favorableness and leadership approaches in each phase of the epidemic (Table 1).

Precrisis

Before the Ebola crisis, the hierarchy of the leadership of the MOHSW had directors or managers of programs reporting to assistant ministers of divisions, who then reported to deputy ministers heading departments, who reported directly to the minister. The minister reports to the president. With the exception of program managers and directors, all others are politically appointed and serve at the will of the president.

There were three departments within the ministry: Department of Administration, headed by a deputy minister who managed administration, finance, and logistics; Department of Health Services, whose deputy minister was also the chief

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| Epidemic Response Phase | Key Actions Taken                                                                 | Crisis Leadership Tasks                                                                                         | Contingency Assessment—Situational Favorableness | Dominant Leadership Approaches |
|-------------------------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|----------------------------------|
| Phase 1—Crisis recognition and early mobilization and organization; disbelief and denial | National IMS spearheading response. Large groups of decision makers—predominantly at the country level—national Ebola task force | Sense-making needed but response characterized by vague, ambivalent, and sometimes contradictory signals | Low—Leader–member relations evolving; task structure vague; leader position strong | Top-down leadership, traditional hierarchies in early incident command; command-and-control use of positional power |
| Phase 2—Emergency at its peak; escalating disease, death, and fear | Setting up functional IMS across government, multiple IMS thematic teams, and with community engagement strategies; regular and disciplined meetings with engaged stakeholders, focused on learning from actions and decision making; leadership distributed through thematic groups, county teams, and frontline health workers; communicating within Liberia and to international community | Sense-making tasks performed, clear identification of the barriers and organizational roles; decision making related to building teams and taking action; meaning-making with active communications to population and stakeholders | High—Leader–member relations strong; task structure highly structured; leader’s position power: very strong | Overcoming traditional hierarchies with rapid transition to new hierarchy and authority of IMS structure; distributed leadership applied through empowered thematic groups and county teams; Strategic engagement of stakeholders |
| Phase 3—Declining epidemic; caseload declining and transition from epidemic end to regular health system | Focused and integrated rapid responses to local epidemics; decentralizing and institutionalizing IMS structures | Terminating—returning to a sense of normality | High but declining—Leader–member relations good; task structure more predictable; leader’s position power strong but declining | Declining distributed leadership as old hierarchies rise; continued stakeholder engagement |
| Phase 4—The long tail of the epidemic and learning | Emphasis on building surveillance systems and restoring the broader health system | Learning—drawing lessons for contingency planning and training for future crises | Mixed—Leader–member relations good; task structure returning to normal; leader’s position good | Return to traditional hierarchal dominance; pockets of distributed leadership; continued engagement of stakeholders |

**TABLE 1.** Epidemic Response and Crisis Leadership Tasks, Contingency Assessment, and Leadership Approaches
medical officer of the Republic of Liberia; and the Department of Planning, Research and Vital Statistics, headed by a deputy minister with two assistant ministers, one for vital statistics, and one for planning. In the Department of Health Services, there were two assistant ministers/deputy chief medical officers for preventive services and curative services, respectively. The assistant minister for preventive services had oversight responsibility for the Environmental Health Division, Expanded Program on Immunizations, Family and Reproductive Health Division, and other national programs. The assistant minister for curative services was responsible for all in- and outpatient public health facilities (hospitals, health centers, and clinics) throughout the country, as well as clinical laboratory services. This system was bogged down with bureaucratic bottlenecks and therefore was not very efficient in its operations. The leadership approach prior to the epidemic was characterized by hierarchical relationships and communications, limited engagement of stakeholders, and an uncertain ability to take on crisis leadership tasks.

**Initial Phase of the Crisis (Phase 1)**

This period was characterized by the establishment of an initial leadership structure, without the ability to take on the crisis leadership tasks to make sense of the situation. Leadership remained centralized and hierarchical, with many actors involved, though not organized to make effective decisions or communicate effectively (meaning-making) and not well adapted to the urgency and magnitude of the situation. Situational favorableness was low as characterized by leader–member relations that were still evolving and where there was high ambiguity about the tasks to be done.

To coordinate the public health response to Ebola, the government of Liberia set up an Ebola Task Force, led by the president. This body was handicapped by its large size, which limited the efficiency of meetings and follow-up, and by inadequate communication with partners and authorities in Liberia’s 15 counties. Senior task force officials had competing duties in their ministries and agencies. Members of the legislature were made members of the president’s initial task force. A national trust fund was established by the government and endorsed by the national legislature to fight EVD. But a separate team set up by the government managed the trust fund. In the MOHSW, only the minister of health or the deputy minister of health for health services (chief medical officer) was allowed to attend the president’s task force meetings. They would report back to the coordination meeting setup by the MOHSW chaired by the minister or his designee, the chief medical officer, along with the WHO representative who was the cochair. There were separate uncoordinated groupings. At the beginning was the task force chaired by the president, co-chaired by the speaker of the house of representatives, with the minister of internal affairs playing a major coordinating role and sometimes chairing sub-committees. The MOHSW, on the other hand, was coordinating the health response from the ministry complex in Congo Town, another part of Monrovia. On the logistics front, another team was meeting at the General Services Agency, attempting to mobilize logistics and organize the response. The initial coordination process was very chaotic and far from that of a health sector response. It was more politically driven and politically focused and hence seemed more suited to a political or civil war response.

The minister of health would attend the task force meetings chaired by the president. However, what was discussed in those meetings did not filter down to the health team. The minister of interior was seen very frequently in the MOHSW to take feedback to the president of Liberia. There was tremendous pressure on the government from the national legislature to outsource the management and activities of the response to international agencies. The result was the spread of rhetoric over action, which facilitated transmission of the Ebola virus, as it continued to spread exponentially, creating more deaths and panic among the people. Liberians and foreign residents alike fled the country in increasing numbers, including ministers and other government officials, who were later sacked by President Sirleaf for refusal to return home to engage in the fight against this deadly disease.

Between March and August 2014, the medical aspect of the response was consolidated under a National Coordination Committee, with Dr. Nestor Ndirimirije (then the WHO representative to Liberia) and Dr. Walter T. Gwenigale (then the minister of health and social welfare) functioning as coleads. Together they had daily meetings in the ministry’s conference room with hundreds of people attending who did not necessarily have a role to play in the response. With such large groupings, no one was making concrete decisions. Coordination was therefore compromised in many instances and much bickering occurred between the government representatives, international agencies, and nongovernmental organizations such as Médecins Sans Frontières (MSF), a Belgian nongovernmental organization operating in Liberia, which at the time ran the largest Ebola treatment unit (ETU) in Monrovia. Everyone wanted to be in control or thought they knew the best approach in responding to the crisis. This bickering was so pronounced that discussions, which should have been monitored and confidential, were circulated in
minutes to a wide email chain and media outlets. With this kind of unsolicited access to response discussions, the *New York Times* published an article detailing key elements of these discussions and bickering, much to the chagrin of the government.\(^{30}\)

**Emergency Phase (Phase 2)**

This phase is characterized both by a heightening of a crisis and by a radical change in the leadership structure. Several early events in Liberia altered global perceptions of Ebola from a tropical infection to a threat to global health security.\(^{31}\) These included the first-ever infections in two American health care workers, acquired in Monrovia\(^{32}\); the first recorded international spread of EVD to Nigeria by an infected traveler from Liberia\(^{33}\); importation of Ebola from Liberia into the United States and Spain\(^{34}\); and estimates from mathematical models of the future number of cases if the outbreak continued unchecked.\(^{35}\) On August 4, 2014, the US Ambassador to Liberia declared a state of disaster; on August 6, the president of Liberia declared a state of emergency; and on August 8, WHO called Ebola in West Africa a public health event of international concern.\(^{36}\)

In late July 2014, the CDC, with the support of WHO and other partners, proposed the idea of setting up an IMS, with an incident manager devoted exclusively to the response.\(^{37}\) The MOHSW adopted the concept and on August 11, 2014, Tolbert Nyenswah, the assistant minister of health for preventive services and deputy chief medical officer, was appointed by the minister of health, at the behest of the president, to be the incident manager and chair of the IMS. The incident manager was charged with the sole responsibility of leading Liberia’s national Ebola response. He reported directly to the president first and then briefed the minister of health and his deputies. The new leadership immediately took on the crisis tasks of sense-making, by assessing and organizing what the IMS and individuals could do. This opened the way for active decision making through empowered teams and crisis coordination and meaning-making through continuous communications within the IMS, to the general public, and among partners. The new leadership rapidly set up a new organizational structure with fewer layers—a distributed leadership approach using thematic and county teams and an energetic and strategic engagement with both local community leaders and international stakeholders. Situational favorableness improved during this phase. Flat hierarchies and targeted teams with specific tasks (thematic teams) and defined authorities and responsibilities also improved leader–member trust and relations.

Against this backdrop, the incident manager subsequently set up an inner core of advisors including the WHO, CDC, and later the UN Mission for Ebola Emergency Response. Small, restricted, daily IMS meetings facilitated follow-up on operational decisions. Liaisons from key external partners participated, including the WHO, CDC, MSF, United States Agency for International Development, UN Mission for Ebola Emergency Response, and other UN agencies. International partners, with the WHO recognized as the lead technical partner, cochaired the IMS’s technical groups, overseeing coordinated interventions for case management, contact tracing, safe burials, surveillance, laboratory work, social mobilization, and other essentials. The president of Liberia interacted directly with the incident manager and remained closely involved in the process. Separately, the president convened the Presidential Advisory Committee on Ebola, a small body consisting of senior officials of government and international partners, who advised her on policy and other sensitive issues.

Under the leadership of the incident manager, the IMS increased the efficiency of the response by introducing a flattened management structure with structured working groups with clear authority and accountability. Once the IMS was reorganized, people managing the response could no longer continue with their other activities; they were only allowed to work on the EVD crisis. In September 2014, the IMS moved into an emergency operations center, which provided a single location for coordination and oversight of all operations. The incident manager had four empowered deputies, with the principal deputy handling administrative and financial matters, the second coordinating county response operations, the third dealing with Ebola-related logistics and operational issues, and a fourth for medical planning. Through intergovernmental agency collaboration, the General Services Agency managed logistics from other agencies.

Thematic areas were identified and theme leads selected from within the core MOHSW professional staff based on ability to think analytically and respond rapidly. Selection was not based on seniority. It was critical that Liberians themselves took the leadership role in curbing the epidemic. The thematic areas included surveillance and epidemiology, laboratory diagnosis, case management, contact tracing, case investigation and active case finding, dead body management and safe burials, logistics, county coordination, and social mobilization/psychosocial support.

The thematic groups were organized with a specific mandate for each, applying the following principles and design features.

- Authority for organizing plans was delegated to each thematic lead. The teams were led by Liberians, with
Coleaders selected from amongst international partners, so that the IMS did not have to deal separately with organizations planning activities in the same thematic area, thereby avoiding duplication of functions or activities.

- The IMS received feedback and communicated with each of the thematic groups. The IMS meeting was the venue to endorse thematic team plans and ensure that partners were appropriately engaged.
- Operational meetings with staff were held at 10 a.m. daily, with not more than ten people. Critical issues for thematic areas that could not be resolved at larger IMS meetings were discussed and acted on in these meetings; for example, how to get food to quarantined populations, dealing with orphans, Ebola survivors, and logistics, among others.
- County teams were established for implementation, each with a deputy, one in charge of county engagement and one responsible for operations. Each county organized its own IMS with the same thematic groups for operations as the national level so that there were clear lines of communications.

In each of the thematic areas, there were many challenges and risks involved in developing and implementing strategies where the stakes were so high and where there were so many unknowns about the best technical approaches. The IMS emphasized four pillars to interrupt Ebola transmission: (1) early detection and isolation of cases; (2) safe transport of suspect patients; (3) safe burial; and (4) infection control in health care settings. Isolating persons with Ebola was an immediate, overriding objective. By mid-July 2014, only two 20-bed ETUs were operational, in Foya and Monrovia. MSF and Samaritan’s Purse were the principal organizations working with MOHSW to provide Ebola care, but Samaritan’s Purse withdrew after several of their staff were infected with Ebola. By the end of July 2014, the crisis intensified as the national level so that there were clear lines of communications.

Communications played a central role in leadership and management of the epidemic and was vital within the IMS, particularly with regard to discussions over strategic directions. The emphasis was on implementing the “one plan, one program, one response” strategy, based on agreed-upon interventions. There were daily discussions and open communications channels, with direct access to the incident manager at all times, day or night.

Effective communication was also a prerequisite to good public relations. The public was kept abreast of all aspects of the response, through multiple channels of communication (radio, newspaper, posters, billboards, television) and daily press briefings. Messages were precise, yet hopeful and culturally sensitive, while presenting a true picture of the situation, stating specifically the efforts that were being made toward EVD containment. Both the message and the messenger were properly placed, so that ordinary Liberians could understand the message and recognize the messenger.
to teach people about the signs and symptoms of Ebola and give them basic health protection information. Liberia has a strong oral tradition; therefore, thousands of general community health volunteers were mobilized and trained to deliver health messages locally. In October 2014, the nation’s traditional leaders convened and resolved to support the government’s interventions. From November 2014, traditional and community leaders supported training all of Liberia’s 88 districts. Novel methods were instituted, such as providing traditional chiefs with mobile phones to alert county health officials if suspect cases appeared. By December 2014, sufficient systems were in place throughout Liberia to support a national campaign to reduce Ebola incidence to zero. The evidence-based “Ebola Must Go” campaign defined actions every individual, family, and community could take to support the national response.

The Declining Epidemic (Phase 3)

This phase marked a change in focus toward the crisis leadership task of terminating—a return to a sense of normality. Situational favorableness started to decline as member-leader relationships began to change to reflect the previous hierarchies, and although tasks remained clear and focused to allow the IMS to put greater control efforts on smaller clusters of the evolving epidemic, other nonepidemic activities started to gain importance. The phase also involved a decline in the distributed leadership approach that had worked during the emergency phase, as old hierarchies reemerged. Stakeholder engagement continued, but the set of issues changed and the sense of urgency declined as stakeholders worked toward the end of the epidemic while looking to future challenges.

Events from mid-November 2014 heralded the waning of Liberia’s epidemic. About half of Ebola cases were now in discrete rural outbreaks, frequently initiated by infected travelers from Monrovia. New tactical approaches—based on the fundamental principles of case isolation, rapid diagnosis, and contact tracing—were implemented to rapidly address clusters in remote areas and combat Ebola in Monrovia. Ebola had become less widespread, allowing recognition of individual transmission chains in a way not possible earlier.

The IMS promoted the rapid isolation and treatment of Ebola strategy, empowering county authorities, with support from partners and the central level, to respond quickly to hot spots in remote settings. Urgent activities included epidemiologic assessment, isolation and safe-care for suspected cases, collection of appropriate specimens and their dispatch to an Ebola laboratory, identification and monitoring of contacts, and referral of cases to the nearest ETU or CCC. Community sensitization and engagement were essential to facilitate development of rudimentary isolation and care facilities in hard-to-reach areas as well as to assure safe burials. With community support, contacts were voluntarily quarantined in local houses or remote locations to allow appropriate follow-up.

Some villages were so remote in the forest that even motorcycles could not reach them. Helicopter airlift facilitated the response, but restrictions on US military air deployments and delays in commercial contracts limited this support. Despite the logistic constraints, the response was effective. Analysis of 12 remote outbreaks in nine counties in 2014, representing 263 patients of whom 59% had laboratory-confirmed Ebola and 72% died, showed that clusters were recognized earlier, transmission chains became fewer, duration of outbreaks shortened, and case fatality proportions declined.

By December 2014, fewer than ten cases were being reported daily, about half from Montserrado County (which includes Monrovia), and the focus turned to contact tracing and follow-up of laboratory-confirmed cases in and around Monrovia. In December 2015, Montserrado County set up its own IMS. A decentralized approach was introduced in Monrovia, dividing the city into four sectors in which partners supported an integrated response for smaller populations.

Considerable resources were invested in containing the only known cluster of 22 cases, 15 fatal, in Monrovia from early January to mid-February 2015. This cluster (the St Paul’s Bridge cluster) was characterized by three generations of transmission and challenging social circumstances including resistance, poverty, urban gangs, substance abuse, and extensive exposures in health care settings. The last case patient in the cluster was isolated on February 18, 2015, and discharged with negative Ebola tests in early March. Liberia was on the road to being declared Ebola-free when on March 20, 2015, a 44-year-old woman in Monrovia was confirmed positive for Ebola and died one week later. She likely was infected through sexual intercourse with an Ebola survivor whose illness had occurred more than five months earlier; his semen was shown to be positive 199 days after his onset of illness. Despite having a later start to the epidemic and more cases than Guinea or Sierra Leone, Liberia was the first to be declared Ebola-free, with this patient being the last Ebola case prior to the declaration.

At the same time, issues around how to resume health and social services through the routine health system became more prominent on the agenda. Whereas some of the discussions around transition to routine services were held through
the IMS, increasingly the old ministry of health structures and leadership reemerged. The long-planned transfer of the “social welfare” wing from the renamed Ministry of Health (MOH) to another ministry was also put into effect.

**Staying at Zero and Beyond (Phase 4)**

During this phase, the influence of crisis leadership declined considerably. Situational favorableness continued to decline in parallel with the diminishing importance of the IMS and crisis leadership, though there remained good leader–member relationships and task clarity within the IMS. There remained with some overlap of responsibilities and accountabilities between IMS and the MOH units that take up the routine disease control and information system functions. Whereas some attention is being paid to the main crisis leadership task of learning lessons for preparation for future crisis, there has been a return to the traditional hierarchal leadership approach, while distributed leadership approaches remained in smaller pockets of the MOH. Engagement with international stakeholders continued as the agenda turned toward building a resilient health system. But most of the individuals representing international stakeholders who were involved in the earlier phases of the epidemic are gone, and the appetite for learning from the experience does not seem large. Most of the external assistance during the emergency phase provided temporary solutions, and though there is attention to strengthening public health systems, there has been relatively little systematic learning, such as finding ways to build on the critical role that communities played in overturning the epidemic.³

With the epidemic contained, Liberia’s priorities for Ebola have been, first, to ensure that resurgent or reintroduced Ebola is recognized quickly and managed safely and, second, to restore the general health system. The IMS structure continued to function to implement border screening and community event-based surveillance in counties bordering Sierra Leone and Guinea,⁴² to maintain a high level of clinical suspicion among providers, and to detect potential cases through the swabbing of cadavers. Its value was demonstrated by recognition of the index case in another small epidemic wave on June 29, 2015, with six reported cases in Margibi County. Since Liberia was declared Ebola free, both this cluster and one smaller cluster of cases in Liberia were rapidly identified and quickly contained. This most recent small epidemic began on March 31, 2016, when a woman from Guinea died of Ebola in Monrovia, with two infected children surviving.

Routine services must be restored to prevent even greater loss of life from traditional concerns such as vaccine-preventable diseases.⁴³ Yet efforts to strengthen routine services could not be addressed through the structures set up for the epidemic response but relied on traditional management approaches that existed prior to the epidemic. The situation is more mixed for investment in public health systems, particularly those related to epidemic surveillance and response, where the IMS structure and leadership is still more influential. These responsibilities require close coordination between the Disease Prevention and Control Unit and the Health Management Information System, Monitoring & Evaluation, and Research Unit. This can be challenging given that these units are in different departments in the MOH, and they each have other responsibilities to consider. Considerable strengthening is still needed in surveillance; laboratory strengthening; emergency operations center support; epidemiology expertise; outbreak response capacity, including risk communication and health promotion; and the ability to make decisions based on data.⁴⁴,⁴⁵ It was the lack of good public health systems that facilitated the escalation of the West African Ebola epidemic to escape control in the first place.⁴⁵,⁴⁶ These weak systems can now benefit from a new Ebola vaccine in containing future outbreaks.⁴⁷

Ebola survivors, who number in the thousands in West Africa, suffer from the after-effects of the virus, which include physical, psychological, and social sequelae ranging from visual disturbances, severe fatigue, joint pain, stigma, and discrimination, heightened by recognition of sexual transmission as an ongoing source of infection. Many Ebola infections resulted from acts of compassion such as caring for loved ones, assisting the sick, or participating in funerals. For survivors to be ostracized would be an unacceptable conclusion to this unique event in global health. Although responsibility for social services for Ebola survivors is now in the purview of the Ministry of Gender, Children & Social Protection, the IMS team, in collaboration with the Survivor’s Network, played a significant role in forging a national Ebola survivors care and support policy earlier this year.

**DISCUSSION**

A single case examined retrospectively does not allow us to test specific hypotheses about leadership in crisis or formally evaluate the effects of leadership approaches on the Ebola epidemic. We employed relevant frameworks and theories about leadership to provide complementary insights about accomplishment of key crisis leadership tasks, how the situation can be assessed for the potential of strong leadership intervention, and how different...
leadership approaches can be effective in a crisis. The case demonstrated a clear evolution of crisis leadership tasks that was delayed during the first phase of the epidemic but changed quickly during the emergency phase of the epidemic. The dominant leadership approaches changed over this time, with a rapid, though temporary, shift to a strong and distributed leadership approach during the critical emergency phase of the epidemic—this proved to be highly effective. Leadership in the MOH changed significantly in the later phases of the epidemic, in terms of both personnel and a return to a largely hierarchical leadership approach, without a complete return to the patterns of the preepidemic period.

Leadership in the early phase of the crisis (epidemic response phase 1) appeared to be very hierarchical and marred with coordination and communication challenges. A centralized top-down incident command-and-control structure appeared to have been activated, with little decision making at the top and no structures to facilitate communications and decision making at lower levels of the system. Given the evolving leader–member relations during the crisis and vague task structure, leadership utilized positional power to assess the situation on the ground and direct people. The public, media, and other stakeholders were assessing trust and confidence in leadership carefully. There was little time to build relationships and leaders tried to assume a task orientation. Some sense-making activities seemed to be occurring to assess the gravity of the situation and involve several stakeholders to help brainstorm and develop informed interventions, although not in a very organized manner and without the needed decision making and communications. Stakeholder interest and engagement varied based on their priorities and involvement was based on stakeholder inclusivity rather than by strategy. There was ongoing discussion while understanding the ground realities, implementing what appeared a political response, rather than a structured health system response. During this phase, leaders utilized positional power to assess the threat, command resources, and invite thought and content experts to decide what the crisis was about. These behaviors contributed to considerable delays in addressing the epidemic, a major factor in its explosive spread.

During the emergency phase of the response, the situation was favorable to overturn the traditional hierarchy of the MOHSW with the installation of the IMS, which created clearer lines of authority and communication throughout the health system. Leadership was distributed through thematic groups, county teams, and front-line health workers; stakeholders were engaged in a more strategic and managed approach. Decisions were taken and reviewed daily on the basis of available data and communicated intensively within the health system, with the population, and with international stakeholders (meaning-making). This approach acknowledged leadership at different levels in the government and communities, not just formal leadership. The unit shifted from few designated officials to a broader group of task forces that had clarity of roles and authority to be successful. The thematic groups had clear mandates, design features, and, more important, common guiding principles to ensure success. The operational principles for the daily meeting of all of the thematic groups and limiting the numbers of people at the meetings ensured timely, accurate, and reliable communication and effective decision making. It also allowed for cross-thematic brainstorming and impact and consequence analysis for all decisions. Though thematic groups may argue over best strategies and approaches together, at the end there was consensus and buy-in due to involvement. Robust implementation at the county levels occurred through county leads and deputies who were empowered and felt responsible. Adequate resources were provided in a timely manner to enable these county teams implement the decisions. Key stakeholders and the public began to trust leadership, which in turn led to enhanced leader–member relations. Roles also were also more structured in this phase and leaders had more buy-in from implementation teams. Although the epidemic started later and resulted in more cases in Liberia than in Sierra Leone and Guinea, the effectiveness of the distributed approach taken by the IMS helped Liberia get through the emergency phase more rapidly than the other countries.

During the third phase of response and the return to normality, the balance began to shift from leadership based in the IMS and toward the return of the traditional MOH bureaucracy. The incident manager had gained power within the traditional bureaucracy, in part through promotion to deputy minister of a newly created Department of Public Health Emergencies and in part because of the continued need to identify and respond to several smaller Ebola epidemics. The distributed leadership practices that had been put in place continued within sections of the MOH, particularly those concerned with disease prevention and surveillance. The IMS continued to engage with stakeholders strategically (e.g., to promote community engagement in epidemic responses and to encourage international partners to support the building of sustainable public health systems). However, efforts were directed toward restoring the old hierarchies of the ministry and to restore the decision-making practices and relationships that existed prior to the outbreak.
During the long tail of the epidemic response, the trend toward old leadership approaches continued, with some effort toward lesson learning and institutionalization. The current government plans are intended to strengthen county health teams and the role of front-line health workers, priorities that will require a distributed model of authority and communications to work well. The Liberian health system remains desperately weak. The present challenges in building a resilient system lack the unexpected and dramatic nature of the EVD epidemic, as well as the urgency and attention it requires. Some of the most important lessons from the epidemic are proving difficult to apply. The successful stakeholder engagement strategy of the emergency phase relied on understanding and empowering communities, and the IMS also depended on authorizing teams to do work while having a structure for regular communications and problem solving. Now that the crisis has passed, these lessons have been hard to incorporate into the routine functioning of the MOH or for its relationship with communities and other partners, and the situational favorableness has changed. Yet many important lessons have been learned and need to be more widely shared and discussed, including those documented in the personal reflections of the incident manager.48

CONCLUSION

The West African Ebola epidemic attacked some of the most vulnerable populations in the world and challenged leaders from remote villages in Liberia to national governments and international bodies. In this article, we described how the main crisis leadership tasks evolved over the phases of the epidemic in Liberia. Contingency theory helped to show when the situation was favorable for different leadership approaches. The original hierarchical approach was not able to take on the crisis leadership tasks of sense-making, decision making, and meaning-making in the first phase of the epidemic, allowing the epidemic to escalate. This was rapidly turned around during the emergency phase, when conditions were favorable for strong leadership to take on the main crisis leadership tasks and employ a very different and distributed leadership approach. The distributed approach gave authority not only within the epidemic response teams but also empowered local leaders and communities to take action and manage multiple stakeholders. These changes were critical to the turnaround of the epidemic in Liberia. Yet many of the old patterns of leadership resumed as the epidemic abated, though there remained pockets of distributed leadership and active stakeholder engagement. There has not been sufficient learning from the epidemic in its waning phase, particularly about the importance of empowering communities and leaders across the MOH. In part this is due to new priorities and because the situation is not as favorable to maintain the strong leadership that adopted a distributed approach. Sustaining leadership capacity in communities through a distributive leadership model may ensure quicker response during future crises. Though the IMS was very effective in responding to the crisis, its single purpose orientation has limitations for building and maintaining capacity at the community level. Communities should continue to be engaged in addressing the routine health issues they face, not just during crises. We encourage a deep and wider learning phase as the epidemic has resolved—not just for the Liberian leadership but equally for those involved in global health policy and programming.

DISCLOSURE OF POTENTIAL CONFLICTS OF INTEREST

We declare no conflict of interest or relevant financial disclosure.

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