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# Haemorrhagic Fevers – Getting ready: Viewpoints from Kenyan Public Health Practioners

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## Abstract

**Background:** The current wave of Hemorrhagic fevers currently being witnessed require increased bio-risk assessment exercises and vigilance at all levels of the healthcare continuum. This article review will outline key subjects from an agenda-setting, multi-disciplinary panel convened to examine implications for health systems in Kenya.

**Discussion:** Researchers' personal stories and media debates to define fundamental issues and opportunities for preparedness focused on three inter-linked subjects. First, the risks of the fear response itself were underlined as a danger to the reliability and stability of quality care. Second, healthcare workers' reservations were complicated by a demonstrable lack of societal and personal protections for infection prevention and control in communities and healthcare facilities, as evidenced by an ongoing cholera epidemic affecting over 5,000 patients across Kenya in 2015 alone. Third, a lack of clear messaging and course from leadership have limited organization and strengthened a level of suspicion in the government's ability and obligation to mobilize an adequate response. Initial recommendations include urgent investment in the needed supplies and infrastructure for basic, routine infection control in communities and healthcare facilities, provision of assurances with securities for frontline healthcare workers, establishment of a multi-sector, "all-hazards" outbreak surveillance system, and engaging directly with key community groups to co-produce contextually relevant educational messages that will help decrease stigma, fear, and the demoralizing perception that the diseases defy remedy or control.

**Summary**: The occurrence of hemorrhagic fevers especially the Ebola outbreak in West Africa provides an unprecedented opportunity for other countries like Kenya to make progress on tackling long-standing health systems weaknesses. These discussions emphasized the urgent need to strengthen capacity for infection control, occupational health and safety, and leadership coordination. Substantial commitment is needed to raise standards of hygiene in communities and health facilities, build mechanisms for co-operation across sectors, and engage community stakeholders in creating the needed solutions. It would be both distressing and irresponsible to waste the opportunity.

**Keywords:**Contact surveillance, Ebola virus disease, Global health crisis, Infection control, Personal protective equipment, Preparedness, Psychological consequences.

## 1.Introduction

Hemorrhagic fevers are increasingly being experienced around the world. The Ebola Virus Disease (EVD) epidemic in West Africa was reported in three countries (Guinea, Liberia, and Sierra Leone) with a death toll of over 11,400 people and over 21,200 cases as of January 15, 2015[1].

In August 2014 the WHO declared it a Public Health Emergency of International Concern. Travel-associated cases were documented in five additional countries, and effects were being felt worldwide.

Efforts to understand this global health crisis and the calls to action have mainly focused on the socioeconomic consequences and erosion of gains in healthcare for people in Guinea, Liberia, and Sierra Leone [2].

Comparatively little discussion examined the impacts and experiences of other countries in Africa that have not yet had Ebola Disease cases. These countries share many of the con-textual factors

that contributed to the epidemic. While containment efforts at the epi-Centre were a clear priority, the crisis presented a clear window of opportunity to address key issues for systems strengthening through-out the African region, to prevent spread and halt the next epidemic should Ebola Disease become endemic.

For example Kenya has the same health systems challenges as the affected countries, including limited financial investment in healthcare, shortage and mal-distribution of healthcare workers, medications and medical supplies, poor health information systems and weak governance [3-5].

These weaknesses create the settings for endemicity of infectious diseases like Cholera [6] the rising burden of chronic non-communicable diseases like diabetes and hypertension [7, 8] and further heightens the lack of preparedness for epidemics like the Ebola Disease.

### 1.1 Objectives

The main objective of this review is to outline from literature and discussion the underlying critical professional and societal needs to support local healthcare capacity and resilience in the face of the threat from hemorrhagic fevers and to define a means of assisting the preparedness effort.

## 2. Review Methodology

In this context, a multidisciplinary group of Kenyan Public Health Practioners convened informally on April 15th in Nairobi. The purpose of the meeting was threefold. First, to create a forum for mutual support through experience and information sharing. Second, we sought to understand the critical professional and societal needs to support local healthcare capacity and resilience in the face of this threat. Finally, we aimed to define a means of assisting the preparedness effort.

The meeting was structured by three moderated discussion sessions, each addressing a broad subject or question (see Table 1). A discussion guide and selection of articles on the Ebola Disease were made available to all participants in advance. The discussion guide presented a general aim statement and two to five more targeted key questions as the framework for each session. We describe the key subjects and analysis that emerged in each of these broad areas.

### 2.1 Expected output

To prepare a firm ground for a concept note aimed at advising the Ministry of Health (MOH). Armed with such information, the Ministries of Health (MOH) will be better placed to devise the best policies to enhance the preparedness effort.

**Table 1: Roundtable agenda themes and questions**

| Session | Theme | Questions |
|---|---|---|
| 1 | Experiences giving patient care during crisis | • How difficult has it been to care for patients with unknown infections in the past?<br>• How does this experience compare to what is happening in West Africa?<br>• How does this relate to treating people who might have TB, AIDS or cholera? |
| 2 | Major issues that Kenya is facing in the presence of the Ebola outbreak in West Africa. | • What are the psychological consequences for communities, patients, families and healthcare workers?<br>• How have the policy implications and debates been developed?<br>• What are the impacts/risks in communities?<br>• What have the operational challenges been for developing preparednessat the level of health facilities? |
| 3 | Group discussion | • Can increased access to personal protective equipmentaffect the infection control culture and impact on safety?<br>• How can we assist professionals to allow them to retain their professional ethics in the midst of this uncertain hazard and risk?<br>• Would the crisis have an impact on brain drain, and what can be done?<br>• What can be done to enhance preparedness for the population at large?<br>• What can be done to enhance resilience? |

## 3. Review Results

### 3.1 Stories on giving patient care during the crisis in West Africa

This session asked "How difficult has it been to care for patients with unknown infections in the past?" Participants shared anecdotal stories they had heard as a basis for the debate. Many of their stories were strikingly similar to reports coming from West Africa, illustrating how a reasonable yet crippling fear of the Ebola Disease threatens to remove the spirit and confidence of frontline health-care workers in the face of this threat to health and the health systems. For example, an emergency department public health officer noted that healthcare workers already operate daily under high-risk conditions despite their fears, knowing that standards of protection are inadequate. Gloves are never enough, supply of running water is inconsistent, and face masks or gowns are largely unavailable. Patients often do not disclose highly stigmatized diseases such as TB and HIV, even when the appropriate questions are asked making it difficult to screen for risks. He described how colleagues were reluctant to go near patients with fever during the H1N1 pandemic scare that occurred some years back, and many now say "they will flee if Ebola comes".

A Private Medical provider described facing the "double burden" threat of Ebola Disease during an ongoing cholera outbreak that has affected over 5,000 patients across Kenya in April 2015, explaining how the public health failure along-side the risks and challenges of managing cases with inadequate staff, space, stuff, and systems has increased fear and insecurity about the ability to manage Ebola Disease should it show up in Kenya. Importantly, the cholera experiences included notable success stories of hospital and community mobilization, for ex-ample the intervention of the Governor of Nairobi to ban the hawking of foodstuffs in Nairobi and its environs.

A nurse recounted her experience caring for a patient with fever and diarrhea like symptoms. She and her colleagues had just been discussing the media stories that had been reported from what was happening in Liberia and Sierra Leon. The patient was lying in the general ward and all the nurses were whispering about his condition. This kind of condition causes panic and a lot of anxiety on the part of the patient and the medical personnel. Feeling grossly and extremely unprepared, the medical staff remained very apprehensive leading to delays in managing the patient appropriately. The situation continued to be delicate for months as efforts were made to increase distribution of adequate Infection Prevention and Control (IPC) materials and develop the necessary isolation facilities.

A Midwife narrated the threat to professionalism, recounting the experience of her patient who recently gave birth. During delivery, her body fluids splashed onto the midwife, who reacted with horror and a stream of verbal abuse.

A lab technician at the reference lab described a request for specimen analysis on a patient who had been referred from the Jomo Kenyatta International Airport with fever like symptoms but had not had any contact with somebody from West Africa or been to West Africa. He noted that most requests for Ebola Disease testing had no associated travel or contact history. This is significant given the high cost of around 250USD required to conduct these tests.

### 3.2 Constraints faced by the Ministry of Health (MOH) in the light of the hemorrhagic fevers

This discussion sought to understand the critical needs from broader existential, organizational, and public health perspectives. Key questions probed the psychological consequences, the impacts/risks in communities, and the operational challenges for preparedness in health facilities. The major discussion subjects that emerged cut across different levels of societal response, from the basic unit of the family to communities, health centers, and national strategic efforts.

First, it was clear that widespread fear in relation to perceptions of risk, uncertainty, and the capacity or commitment of leadership to act has been a powerful and prominent force. The fear response affects healthcare workers' confidence and commitment to professionalism, leads to misuse of scarce healthcare resources such as testing, erodes the trust in the healthcare system, and under-mines the needed behavioral and organizational strategies.

It was equally clear that many of these fears are not unreasonable given the mismatch between reality and expectations of healthcare delivery. In light of the obvious lack of personal and societal protections evidenced by the current cholera outbreak, and chronic deficiencies in the space, systems, staff, and stuff to meet routine healthcare needs, the potential to meet added demands for hemorrhagic fever preparation are widely perceived as unrealistic. Healthcare workers at most institutions in Kenya do not receive workers' compensation, disability or life insurance, risk allowances, or supplemental health insurance. The threat of hemorrhagic fevers increases demands for employers to provide these amenities. Professional body advocacy for these amenities may account for some of the repeated strike threats by our health professional colleagues.

Similarly, the method and feasibility of a

robust contact tracing and monitoring system is unclear. In Kenya, a lack of unique address coordinates for most residences and businesses poses a major threat for ambulance systems to respond, and makes contact tracing difficult. Street names have now been introduced in some of the larger towns, but finding an individual location is still largely dependent on social coordinates rather than the well known and tested house numbering system [9]. Many patients are nowadays transported to hospital in the much hyped "county ambulances", which may also become a significant challenge for infection control.

A third related theme was mistrust in leadership's ability and commitment to rally the medical fraternity as well as the community when these events occur. Lack of a shared knowledge base and vision across professional sectors and societal groups reinforces a miss-match between the myths, science, policies and actual practices for hemorrhagic fever screening and infection control. Heavy politicization of hemorrhagic fever response activities and a lack of coherent messaging and direction from national, local, and institutional leadership paralyzes coordination efforts for long periods of time, further undermining confidence in an already delicate system [10].Mitigation is represented in some areas by intense efforts in team training and acquisition of additional IPC Materials, however much more of this work is needed to achieve capacity, and to establish confidence in an organized response.

Finally, the discussion explored supposed impacts of hemorrhagic fevers threat in Kenya beyond the psychosocial consequences of fear and efforts to prepare for them. The Kenyan government neither closed borders nor banned intra-regional travel from affected areas. It however suspended flights by the stellar Kenya Airways, ''the pride of Africa'' to the West African Region. This had a marked effect on tourism, business travel and the economy at large.

## 4. Discussion

Projecting in the future - what can build resilience in the face of this threat to health and the healthcare systems? An interdisciplinary, multi-level effort is needed to build resilience, as the United Nations has defined it in the context of disaster risk reduction [11]. Organisms causing hemorrhagic fevers can clearly be stopped through rapid mobilization for cases and contact finding, early medical care using adequate IPC materials and environmental controls, and preventive interventions [12]. To achieve these requires commitment, confidence, and trust between communities, healthcare workers, and government. Based on the above discussion subjects the group developed the following initial recommendations:

1) Prioritize strengthening infection prevention and control (IPC) in facilities, including reliable water and electricity. This is an urgent priority for both short and long-term investment. In particular, there should be adequate access to and proper training in the use of PPE for all healthcare workers, and that training should be followed up with structured programs for supervision, monitoring and evaluation. IPC is a critical aspect of dealing with the threat posed by hemorrhagic fevers, and should be particularly important as a focus for systems strengthening given the endemicity of cholera and tuberculosis in Kenya [6]. Investing in this critical competency is equally essential to build staff confidence and trust in leadership's commitment to quality care and their own occupational health and safety. For instance the risk of an Ebola Disease patient escaping detection at triage seems considerable in light of the non-specific nature of symptoms.
2) Provide assurances with securities for frontline healthcare workers. Specifically, healthcare workers should have guaranteed health insurance, workers' compensation and disability insurance should they contract a hemorrhagic fever disease in the process of screening and providing care to patients. The needs of their families should also be addressed, including options for isolation of healthcare workers outside of the home to protect their families from becoming infected.
3) Establish a continuous surveillance system to monitor and document all suspected cases of hemorrhagic fever and contacts in the community. This should take advantage of existing local resources such as the National Disaster Management Committee, and the epidemiological surveillance programs at the Ministry of Health (MOH). It should be well linked to and coordinated within an active network of multiagency multi-sector community and local government partners capable of responding not only to a projected hemorrhagic fever outbreak, but to regularly recurring outbreaks such as cholera that frequently destabilize health and health systems in Kenya [10].
4) Develop a coordinated and consistent education on hemorrhagic fever transmission. The educational messages should be produced in collaboration with the community leaders, organizations, work unions, frontline healthcare workers and other community-based organizations. Poor health literacy and

information access in communities, and even among healthcare workers, contributes to fear and mistrust. Public health officials in Uganda cite massive public education as a key determinant in their success containing multiple viral hemorrhagic fever outbreaks [14]. Messages should have two very important attributes. First, they should demystify the disease by focusing on the science of what works to control spread. Second, they should highlight the various stories of resilience and positive case examples such as survivors' stories and the successful responses in Uganda, Nigeria, and Senegal. This education is critical to combat the erroneous perception that hemorrhagic fevers defy control, to decrease fear and stigma, and to encourage care-seeking. However, as studies of risk perception suggest, the communication must be bi-directional and contextual to be effective [15]. We need go to the communities and ask what their members understand, what fears they may have, what practical challenges and concerns they have to implement the key recommendations, and how they think the issues should be addressed. This is the core aim of collaborative production. Winning the trust of the local religious and community leaders early and developing acceptable solutions in context has been a vital component of successful hemorrhagic fever containment strategies in the past [16-18]. Enlisting the media as allies should also be of critical importance.

## 5. Conclusion

Historically, the ability of Sub-Saharan African countries to manage infectious disease outbreaks has largely been understated and often dependent on external specialists and support. Clearly massive outside assistance is needed to contain hemorrhagic fever epidemics like the one the occurred in West Africa, yet the critical roles of local leadership and communities cannot be over looked. The crisis in West Africa provided a unique opportunity for Sub Saharan African countries not yet affected to make advances on creating culturally and contextually relevant solutions to build resilience and strengthen health systems for outbreak control. This will require significant investment and support to raise standards of hygiene and protection in communities and healthcare facilities, to build mechanisms for coordination and collaboration across sectors, and to enlist the people on the frontline - in families, communities, and healthcare facilities - as allies in the process.

Fear is only a weakness if it turns to panic. If harnessed appropriately, fear can be a stimulus for wide-ranging changes in health system strengthening. A case in point is the successful response to Ebola outbreak in Nigeria [19]. Because forewarned is forearmed, it would be both devastating and irresponsible to continue "business as usual" and waste the opportunity.

## Competing Interest

The authors declare that they have no competing interests.

## Authors' Contribution

SJ conducted the extensive literature review. LN conceived of the study review, and participated in its design and coordination and helped to draft the manuscript,OS participated in the sequence alignment. BL participated in the design of the study review.AM conducted the extensive literature review. All authors read and approved the final manuscript

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