

Chapter 10

Healthcare Emergencies in Africa: The Case of Ebola in Nigeria

10.1 Introduction

Since the first outbreak of Ebola Virus Disease (EVD) in 1976 in Congo (DR) and Sudan (now South Sudan), it has claimed hundreds of lives and remains one of the most dreadful viral infections in human history (WHO, 1978). At different points in time (before 2014), EVD outbreaks had previously occurred in Congo (DR); Sudan (the region is now a part of South Sudan), Uganda, Gabon, Cote d'Ivoire and South Africa. Guinea, Liberia, Sierra Leone and Nigeria joined the list of countries with Ebola outbreaks in 2014. Ebola is highly contagious through minimal contact with any sufferer and has the potential to develop into a pandemic. EVD outbreaks have a case fatality rate of up to 90% (WHO, 2014a). In 2014, the outbreak occurred for the first time in four countries simultaneously, in addition to imported cases recorded in the USA, Spain and Saudi Arabia. At that point the outbreak was considered a global public health emergency (WHO, 2014b). It has been observed that, as a result of increased international travel and trade, local outbreaks of infectious diseases (like EVD) often acquire international importance (Grein *et al.*, 2000). The 2014/2015 Ebola outbreak started in March (2014) in Guinea, later spread to Sierra Leone and then to Liberia. Nigeria joined the list when it recorded an imported case on July 20, 2014.

The 2014–2015 outbreaks were the worst in history, affecting several countries even beyond Africa. The worst hit countries were Guinea, Liberia and Sierra Leone, accounting for 28,616 confirmed cases with 11,310 deaths (WHO, 2016). The Ebola situation in the worst hit countries lasted up into 2016; they were declared Ebola-free in June 2016. In the beginning of the crisis, it was a situation of inadequate capacity and weak political will to manage the transmission of the virus. With the global emergency declared, there were numerous supportive measures, which helped to eventually end of the crisis. But within

the same time frame, Nigeria was able to manage its EVD outbreak within a short period. The essence of this chapter is not to focus on the history of horrors and crises generated by Ebola in West Africa, but to focus on the Nigerian example of how the disease was successfully managed, and draw lessons for future pandemics.

Following this background, the chapter examines the politics and ethics of EVD in Nigeria from the date of contact with a carrier from Liberia. The chapter also examines some public reactions, especially associated-panic with the outbreak of the virus. The defining indicators of this incubation period, like in other outbreaks, involved the risk of EVD—its perception; communication (dissemination of information to the public); management (containment strategies, healthcare frontline and government response [e.g., mobilization of resources]); and community mobilization (local understanding, social referrals, contact tracing and risk avoidance)—which should serve as cardinal points in the fight against the virus (see Smith, 2006).

10.2 Ebola in Nigeria

On July 20, Mr. Patrick Sawyer, a Liberian-American (naturalized American who was also an official in the Liberian government) flew into Nigeria from Liberia. He became severely ill upon arrival (unknowingly at the initial stage), however, Ebola was not suspected. Several people, especially healthcare givers freely interacted with Mr. Sawyer without any protective medical kits that could potentially protect against a dreadful disease like Ebola. After 2 days, Ebola was suspected. This was the beginning of the clamor that Ebola was in Lagos, Nigeria. This signifies that the first case was an imported case. Mr. Sawyer died 3 days later. Nigeria was forced to face the reality that EVD has been imported and that all of Mr. Sawyer's primary contacts were at risk of contracting the disease. This was the beginning of the politics, ethical concerns, and general public panic.

Following the aforementioned incidence, the primary concern of the government was monitoring the primary contacts of the index case, given the fact that the incubation period of EVD is 2–21 days. By implication, the primary contacts could only be considered free of EVD if there was no medical indication after 21 days. In the case of Nigeria, the period started from the date of arrival of Mr. Sawyer, July 20–August 9, 2014. Cases detected were difficult to manage, as the patients required intensive supportive care and there was no licensed/registered treatment or vaccine for EVD (WHO, 2014a). A similar situation occurred in Uganda from October 8, 2000–January 16, 2001 (Okware *et al.*, 2002). It also required following up patients and contacts for 21 days. During the period, a total of 425 cases with 224 deaths were reported; nearly 5000 contacts were followed up for 21 days (Okware *et al.*, 2002). Uganda was finally certified Ebola free on February 27, 2001, which was 42 days after the last case was reported.

10.2.1 *The Growing Number of Victims*

In general, apart from family members of the sufferers (intra-familial spread) (see Baron, McCormick, & Zubeir, 1983), the next set of people most at risk of EVD are healthcare workers (Khan *et al.*, 1999). For instance, during the outbreak in DR Congo (DR) in 1995, 80 cases (25%) occurred among healthcare workers (Khan *et al.*, 1999). In the case of Liberia, the senior physician, Samuel Brisbane, on the frontline of Ebola treatment contracted the virus and died. Similarly, an American doctor, Kent Brantly, and an Ebola doctor in Sierra Leone, Sheik Umar, were infected (Yan & Levs, 2014). In Nigeria as well, the physician, Stella Adadevoh, who treated Mr. Sawyer became symptomatic, hence she was the first Nigerian case of Ebola declared. The second death was also one of the nurses who cared for the American-Liberian. Another nurse who came into contact with Mr. Sawyer tested positive and was quarantined, while her husband was kept under surveillance. Gradually, Nigeria faced a growing number of victims. It was apparent that the health workers had been unaware of the Ebola status of Mr. Sawyer, therefore, adequate preventive and protective measures were not followed. Following the revelation that the American-Liberian (the index case) died of Ebola, the government went swiftly into action by monitoring all those who had had direct contact with the index case. Within a week, the Lagos state government announced that over 50 people were being monitored.

As expected, the virus proved to be highly infectious; within 21 days, there were 10 confirmed cases. Many of the confirmed cases were quarantined and an isolated unit was established at the Mainland Hospital in Lagos. While the number of cases was still few at this stage, the effectiveness of a control strategy depends on the adherence to infection control guidelines, surveillance strategies and public participation. This was not the right time to contemplate how to avoid an Ebola explosion in Nigeria. Given the Nigerian circumstances (doctors' strike, open borders, public panic and communal orientation), proactive measures should have started long before the arrival of Mr. Sawyer in Nigeria. The arrival could have been prevented in the first instance if, considering his country of origin, his condition would have been treated immediately as a suspected case of EVD.

As of early August 2014, the case fatality in Nigeria stood at 28.6%. The victims could still be hopeful in the light of this scientific fact, but considering the doctors' strike and the fact that this was the first Ebola crisis in Nigeria, there was a perceived pessimism regarding the survival rate. As of August 8, there were 139 persons under close monitoring; they included those who had had contact with the index case and secondary contacts. The figure would have been higher had some contacts not "escaped" monitoring by deliberately moving to other States of the federation. One of the "escapees," a nurse who was a primary contact with the late Mr. Sawyer, moved to another State (Enugu State, about 560 km away from Lagos). Before being quarantined again, the nurse had contact with 21 more people in Enugu. It was because of this development that the then Minister of Health expressed great worry that other States (apart from Lagos) might also be at risk of EVD. This accounted for more concern, both in nearby States and in neighboring countries, especially Ghana, Togo and Benin Republic.

10.2.2 *Beyond the First 21 Days*

The proactive efforts continued, but with some challenges. Additional measures were put in place to further contain the spread of EVD. Public enlightenment and lectures were intensified among various groups: market women, auto mechanics, traders, artisans, prison inmates, students, health workers, etc. More isolation centers were established across the country, but resistance was recorded in some communities. There were protests in Kakuri (Kaduna State) and Emuoha (Rivers State) against situating an isolation center in their communities. Many community members believed such centers could increase their risk, and hence vulnerability to EVD infection.

The number of EVD cases remained stable and treatment was yielding some positive results, especially within the first 37 days. As of the 38th day, (August 26, 2014), all reported cases had root in the index case, resulting in 5 deaths (apart from the index case) and 7 treated and discharged; 129 people completed the incubation period without any symptoms; and 128 people remained under surveillance. The efforts of the government were applauded both locally and internationally. As for those individuals who had evaded quarantine or monitoring: the nurse who was returned to quarantine from Enugu on August 28 and a doctor who had been treating one of the (ECOWAS) diplomats (who had had contact with the Lagos index case and had evaded quarantine to another city [Port Harcourt, about 612 km from Lagos]) both died of EVD (Ibeh, 2014). The Port Harcourt physician invariably became that city's EVD index case. He put many other individuals at risk: when they visited his home for a christening ceremony; when he continued to treat patients at his private hospital; when he was treated by other physicians when he became symptomatic; when, for a few days after his death, many people paid condolence visits to his home; and when the body was deposited in a hospital morgue. It was on August 27 that the case was confirmed (WHO, 2014c). The widow of the Port Harcourt index case (also a physician) became symptomatic; hence, two additional reported cases. This put the number of additional people who had contact with the diplomat and the deceased doctor under surveillance to nearly 200.

The Port Harcourt scenario was a case of serial denial. Critically, the escapee put several others in danger by seeking private treatment without the knowledge of the health authorities. The deceased doctor did not adhere to the repeated public health warnings. This led to renewed efforts of contact tracing and public apprehension at a time the when country was close to declaring zero cases of EVD. Invariably, the Nigeria EVD status had to be updated, as shown in Table 10.1.

Table 10.1 Ebola in Nigeria: final data

Deaths	8
Total reported cases	20
Released from surveillance	Over 300
No. of affected states	3 (Lagos, Enugu and Rivers)

10.3 The Politics of Ebola: Some Governmental Responses/Countermeasures

As noted earlier, the first priority of the government was to monitor those who had had contact with the index case for 21 days (the incubation period of the virus). Within this period, nine confirmed cases, apart from the index case, were established, with one dead. Those confirmed cases, must also have had contact with others in the society, putting even more people at risk for EVD. As a consequence, on August 7, the Federal Government of Nigeria (FGN) declared a National Emergency on Ebola. The Nigerian President also earmarked 1.9b Naira (around \$11m) for containment strategies following an approved Special Intervention Plan (SIP) to further strengthen on-going steps to contain the virus. The President charged the Federal Ministry of Health to work in collaboration with the State Ministries of Health, the National Centre for Disease Control (NCDC), the National Emergency Management Agency (NEMA) and other relevant agencies to implement containment strategies in line with international protocols and best practices in order to curb the threat of EVD in Nigeria. The SIP includes active Ebola surveillance through contact tracing, temperature examination at international airports for outbound and inbound passengers, establishment of isolation centers, procurement of required equipment and deployment of staff. A similar emergency was declared in Liberia, where schools and borders were closed and \$18m earmarked to facilitate containment strategies.

The state government of Lagos reacted sharply, knowing that EVD is a dire health emergency. There was a press conference involving neighboring states. This prompted some States of the federation to set up isolation centers. The Governor of Lagos donated 268m Naira to 134 schools for personal hygiene as part of the fight against Ebola.

As at August 8, 2014, WHO had reported that 961 people had died from Ebola in West Africa, 2 of them in Nigeria. The total number of cases was 1779—despite the fact that more cases were still evolving through investigation, this was already the highest number of confirmed cases in the history of EVD outbreaks. Consequently, on August 8, WHO declared the Ebola outbreak in West Africa a Public Health Emergency of International Concern (PHEIC) and noted that “the possible consequences of further international spread are particularly serious in view of the virulence of the virus, the intensive community and health facility transmission patterns, and the weak health systems in the currently affected and most at-risk countries.” (WHO, 2014b). One of the vital recommendations of WHO (2014b) was that there should be a large-scale and sustained effort to fully engage the community to play a key role in case identification, contact tracing and risk education. In fact, response to the EVD outbreak in the Congo (DR) in 1995 involved house-to-house searches, which helped in rapid identification of cases (Khan *et al.* 1995).

While a state of emergency was declared on EVD in Nigeria, the doctors’ strike was still on-going. This provided a basis of appeal to the striking doctors to

suspend strike action to assist in containing the viral disease. On the contrary, the doctors insisted on their demands (including upgrading of hospital facilities and welfare package), hence the strike continued. Therefore, calls for volunteers went out, with an offer to give those who came forward life insurance.

The USA also has two imported cases from Liberia who were airlifted to the USA for better treatment. The cases were quarantined and treated at Emory University Hospital. The main drug, the experimental Ebola Serum (unapproved) called ZMapp, was used. When the patients showed some signs of improvement, the affected West African countries, including Nigeria, were optimistic that the USA would make the experimental drug available. Nigeria, through the Minister of Health, made a request for the experimental drug, which, for several reasons, was turned down by the USA. Although there were still pertinent ethical questions regarding the use of the drug, many health experts advocated for the experimental drugs to be provided to the affected African countries. However, the USA argued that, as they were only treating two patients at the time, in the event of serious adverse events, the damage would be very minimal in terms of casualties or fatalities (and related unexpected consequences). If such a drug was widely used in regions with thousands of cases, the situation could be worse. There was still the need to assess the drugs in terms of unexpected events, dosage, and adverse events. More importantly, the supply was still not adequate to meet the demands of the Ebola-affected countries. The sick, who are regarded as vulnerable, were less concerned about possible adverse events since, in the absence any effective treatment, they are likely to die. Most lay people in the affected countries still could not comprehend why such ethical concerns were prioritized in the face of Ebola death toll.

One critical concern in the Nigerian case was about the hundreds of open and unmanned borders across all the regions of Nigeria. Perhaps, the FGN had less apprehension about those borders because the first case was actually imported by air. However, along these lines, the FGN did suspend Air Gambia from flying into Nigeria, since it was the main airline flying passengers from Liberia, Sierra Leone and Guinea into Nigeria (Adekola, 2014). This was an effort to stop additional imported case. As the number of victims grew, so did the possibility that other countries would also suspend receiving flights from Nigeria. This would have placed a great burden on Nigeria, since it has a huge population flying daily into several countries of the world. Such suspension of flights might have been tantamount to “socioeconomic sanction” and accrued tremendous burden on the nation’s economy. Luckily, such a ban was never promulgated.

The mainstay of the Nigeria’s success was a rapid, national, multisectoral response. It was the same scenario in Uganda, which also showed a “strong national multisectoral mobilization, which provided essential coordination and mobilized resources” (Okware et al. 2002). In Nigeria, news centers were designated and, most importantly, a health emergency was declared. Although this was the first time Nigeria had faced an Ebola crisis, even within the incubation period, the containment strategies were effective and sustained.

10.4 Public Panic and the Search for a Local Remedy

Historically, infectious diseases have often cause public panic and social distress (such was the case of HIV, SARS, EVD, Avian Influenza, Cholera, Lassa Fever and Meningitis). The peculiarities of infectious disease often make the entire world to be greatly apprehensive. An occurrence in one country could easily transmit to another country if not effectively managed and safeguarded. Such diseases often attract major news headlines across the world, and thus become a global issue. And while a number of countries might be setting up control or treatment measures, others will be immersed in protective frameworks. The apprehension often moves from the political to the social level (especially at the level of the individual), following perceived possibility of transmissions.

Smith *et al.* (2004:2) assert that “[T]he individual fear and community panic associated with infectious diseases often leads to rapid, emotionally driven decision making about public health policies needed to protect the community that may be in conflict with current bioethical principles regarding the care of individual patients.” In Africa, reactions are also traditionally driven, often leading to unscientific or crude responses to the threat. It is often possible for “uncommon scenarios” to be attributed to supernatural and mystical causes (Amzat & Razum, 2014). Controlling misconceptions and reinforcing scientifically valid evidence should be a major priority of both the media and the government (Okware *et al.*, 2002). It is important for the media to shift from “alarming” to reassuring and educative coverage (see Ungar, 1998). This was why, during the recent Ebola outbreak, the Nigerian government set up a media center led by the Minister of Health to report the state of the outbreak on a daily basis. Part of the mandate of the media center was also to address publicly circulated information about the virus and to debunk Ebola myths. This is also a kind of rumor surveillance, which is aimed at decreasing “the potential for misinformation and misunderstanding and to inform the public and health officials about disease outbreaks, facilitate a rapid response, and promote public health preparedness” (Samaan *et al.*, 2005, p. 463).

The communicability of EVD also generated panic that affected patterns of interaction in the society. This amplified public panic and led to various declarations of emergencies in Nigeria (both the Federal and State governments) and other affected countries (Guinea, Liberia and Sierra Leone). People began to query patterns of normal intimacy and general interactions. For instance, hugging, handshakes and general body contact were only undertaken with cautions. This pattern was seen not only in Lagos, where there were confirmed cases, but across several nations. While some will argue that the threshold of infection was still low to affect pattern of interaction, perhaps, it is medically recommended to be preventive irrespective of the level of perceived risk. Travel advisories were issued to countries with prolonged incidence. Many countries advised their citizen to be cautious about traveling to affected countries, while flight from those countries were also suspended.

Public panic was a reflection of the low rate of survival—only about 1–40% would survive. Survival during disease outbreaks also depends on the healthcare

system. The rate of survival also varies from individual to individual. In the Nigerian case, the symptomatic physician outlives the second person (a nurse), who died shortly after presenting with symptoms. This acuity or acuteness of EVD precipitates rapid actions among the public and generated a lot of experimentation with local remedies. More importantly, it could also lead to mistrust of the modern healthcare system. While most people are aware that survival rate is low, in the face of Nigeria doctors' strike, it could be lower as there might not be adequate care especially if the number of cases increases. In fact, Mr. Sawyer was treated in a private hospital since the doctors working in public hospital were on strike.

The level of public panic greatly depends on the level of awareness and knowledge. The general ignorance about causes, modes of transmission, levels of vulnerability, self-efficacy, and outcomes often engender "fear of the unknown, and possible over-reaction by public health officials in the use of isolation and quarantine" (Smith *et al.*, 2004:4). The ignorance often leads to misconceptions. For instance, many in Nigeria erroneously claimed that Ebola is airborne; in Sierra Leone, many relatives aggressively requested for the release of the corpse of their relatives in order to perform some burial rites, not understanding that a corpse can still spread the disease. Apart from this, there is often the problem of self-efficacy—that is ability to self-manage and implement effective action. In the context of Ebola, avoiding social contacts with people suspected of being infected can be problematic, especially when they are still asymptomatic. Contacting EVD is generally regarded as a death sentence because of the unavailability of a known cure at the moment, and the fear of isolation/quarantine could prevent a number of people from reporting their status, suspicion or risk. In the first 21 days in Nigeria (as previously observed), many secondary contacts "escaped" monitoring, thereby posing great concern/risk to the general public.

With the news of the outbreak of Ebola in Nigeria, the first reaction of many was a conspiracy theory. The critical issues were: did Mr. Sawyer escape quarantine in Liberia? Why did the Liberian government allow him to travel "knowing" that he was at risk as a secondary contact following the burial of his sister who died of EVD? Why did Mr. Sawyer deny any possibility of risk of Ebola directing the attention to a suspected case of malaria? While Mr. Sawyer was not alive to defend the circumstances surrounding his travel to Nigeria, he was being persecuted. The reason for the persecution was obvious within the incubation period of the EVD. In fact Nigerian President described him as a "crazy" man (Odunsi, 2014). The government was also concerned about tracing those who had contacts with the dead American-Liberian. The public was almost overwhelmed with anxiety. Even those who are thousand kilometers away from Lagos were in panic about the report of EVD, because Lagos is characterized with massive inflow and outflow of people. The realization was that detection of EVD in Lagos could spell a common destiny for all of Nigeria unless effective measures of containment were sustained. In general, the public reaction was positive in stopping the spread of Ebola.

Another dimension of the public fear emanates from the particular features of EVD. WHO (2014a) observed that EVD is a severe acute viral illness often characterized by the sudden onset of fever, intense weakness, muscle pain and headache. But the disease has symptom complex—it manifests like many common

diseases (including malaria). Fever (for instance) is a major symptomatic manifestation of malaria. With the high prevalence of malaria in West Africa, every occurrence of high fever might engender unwarranted nervousness. This could also lead to a number of misdiagnoses, while those with fever might tend to conceal it for fear of being quarantined or mistaken for EVD.

Regarding the search for cure, it has been previously mentioned that there could be traditionally- or misconception-driven prescriptions. That was the case in Nigeria after the first case was recorded. Just like the news of EVD, the “news” spread quickly that the beverage Gracina Kola (often called bitter kola in Nigeria) could cure Ebola. The assertion was credited to a professor of pharmacology in Nigeria, Maurice Iwu, based on inconclusive research in 1999 showing in-vitro that Gracina Kola could halt the growth and reproduction of the virus. Without any further clarification from Iwu, the “prescription” was circulated across every available means of communication, especially through the social media (Facebook, BBM, Twitter, WhatsApp, Viber, etc). This triggered a mass demand for Gracina Kola, and consequently, its price tripled. It also led to a scarcity of Gracina Kola across Nigeria within 24 hours. The FGN and scientific community later debunked the claim about the potency of Gracina Kola against EVD. The announcement was a mark of disappointment for many looking towards Gracina Kola as a probable cure against EVD.

A few days after the refutation of the potency of Gracina Kola, there was another announcement that salt-water solution could protect against EVD. The announcement was purportedly made by one of the traditional rulers in Nigeria (Ogala, Ibeh, & Audu, 2014). The prescription was received with great enthusiasm, as Nigerians exchanged telephone calls advising one another to drink and bathe with salt-water solution (Ogala *et al.*, 2014). A text quickly spread asserting that, “to prevent Ebola sickness, use hot salt water to bathe before 4am.” Another text added that people should recite some protective verses from the bible or Quran into the salt water. Many Nigerians had to wake up from sleep to perform the ritual of drinking and bathing with salt water. The “enthusiasm” was short-lived, as FGN issued a statement that salt-water has no potent ingredient against EVD.

Rumor surveillance was a major task during the outbreak. There were daily press briefings to clarify the situations and provide useful information for the general public on preventive measures. The rumors were promptly debunked.

10.5 Ethical Concerns Relating to Ebola Outbreak in Nigeria

Health emergencies, such as the outbreaks of SARS and EVD require prompt actions, which are often fraught with moral perplexities. It is in this light that Ovadia, Gazit, Silner, and Kagan (2005) averred that decision-making in a time of emergency and outbreak is associated with a high potential of ethical dilemmas. Smith *et al.* (2004, 2006) also noted that ethical issues arise in infectious diseases because of their powerful ability to generate panic in populations. The EVD

outbreak in 2014 generated concerns at the global level, and prompted WHO to declare an international health emergency. While WHO did not recommend a closing of borders, it warned that every traveler should be screened (WHO, 2014b). Mandatory screening at airports and borders negate the principle of autonomy and privacy. On any suspicion of high fever, a traveler might be subjected to further screening, denied right of movement at that moment, and if there is any other positive indication, the traveler might be quarantined.

While the persons with positive EVD status and their family members might object to such isolation, the medical protocol in the management of EVD and related disease is sacrosanct. This is necessary because EVD can be passed from one individual to another through various forms of contact. As Smith *et al.* (2004) observed the mode of transmission of infectious diseases (such as EVD and SARS) also raises questions of responsibility, since the infected individual poses a risk to others in the society. Self-referral and conformity with medical protocol of isolation are encouraged as a sign of responsibility and protection of significant others and others in the society. But in the case of Nigeria (as earlier observed), many suspected persons fled monitoring, and could have been responsible had the disease spread beyond only the affected State and scope of current surveillance of primary context with the index case.

Regarding the potential success of treatment with ZMapp in the USA, there are still some pressing questions beyond what was earlier noted. Before any American became infected, there was no mention of any “available” and promising experimental drug in the USA. Perhaps, the world might not be aware of any promising drugs if no American was infected. Sometimes, an act of omission could constitute a vital breach of ethics and humanitarian gesture. This should prompt the WHO to revisit the ethics of drug distribution in the face of highly infectious and deadly diseases like EVD and SARS.

In addition, regarding the use of experimental drugs in Nigeria, Clement Adebamowo, the Chairman, National Health Research Ethics Committee of Nigeria (NHREC/N) issued a national policy statement reiterating the ethical permissibility of the use of innovative or non-validated medical treatment designed solely for the benefits of the patient during EVD emergency without any application or prior approval by NHREC/N (Adebamowo, 2014). In order to facilitate the prompt international response to the global EVD emergency, the NHREC/N also waived the requirement that the establishment of a Material Transfer Agreement (MTA) should precede international shipment of biological samples out of Nigeria (Adebamowo, 2014). This waiver would enable the shipment of samples for further laboratory tests.

Apart from ethical issues at the national level, there are social consequences of epidemics. The EVD (like most infectious diseases) exacts significant impact on pattern of social interaction. In the case of EVD, handshakes and other forms of casual physical contact were discouraged. The Ebola emergency also forced the Catholic Church to suspend the rite or sign of peace during mass (which involve handshaking among congregants) (Ibekwe, 2014). Due to the warning that fruit bats are natural hosts of Ebola virus and that other forest animals were under suspicion, consumption of animals from hunting was highly discouraged. Consequently, the household

economy of those who specialize in trading such animals was adversely affected. Cremation and mass burial in cemeteries far away from populated areas meant that families were forced to go against traditional arrangements and forego rites (Okware *et al.* 2002). As the government might take possession of the body and bury it according to the health emergency protocol, the family might not even be allowed to see the body of the deceased (see Gostin, Lucey, & Phelan, 2014).

Another critical ethical concern is whether the refusal of the striking doctors to call off the strike should be considered as a neglect of duty (of care). The strike began approximately 2 weeks before the first case of EVD in Nigeria. The declaration of the national emergency should depend greatly on the health workers especially physicians. Iserson *et al.* (2008) rightly observed that most public health emergency plans often rely on physicians, nurses, emergency department support staff, and out-of-hospital personnel to maintain the healthcare system's front line. Perhaps, if some of them return as volunteers despite the strike, this could be humanitarian enough in conformity with some level of duty of care. A nurse on leave from Emory University Hospital exhibited altruistic practice and duty of care by returning to work to care for the American Ebola victims brought from Liberia. It could be argued that moral responsibility, duty of care and national interest override the right of healthcare workers to strike.

From the foregoing, there is no doubt that the outbreak of EVD (like other infectious diseases) raised ethical concerns; Fear of infection offers numerous opportunities to defy bioethical principles such as autonomy, beneficence, non-maleficence, privacy, and other human rights-based considerations (e.g., right to movement and association). In the face of EVD, the needs and rights of populations and certain individuals might be breached as a result of disease screening and quarantine (Smith *et al.*, 2004, p. 2). In the case of health emergencies, individuals have a societal obligation to cooperate with health and other instituted authorities in crisis management. It took the Liberian government some military involvement to curtail the movements of people in some affected quarters. In Nigeria, evading monitoring by some individuals was against public health interest and highly unethical. It is in this light that Calain, Fiore, Poncin, and Hurst (2009:7) submitted that EVD outbreak "can be seen as a paradigm for ethical issues posed by epidemic emergencies, through the convergence of such themes as: isolation and quarantine, privacy and confidentiality and the interpretation of ethical norms across different ethnocultural settings" (Calain *et al.*, 2009, p. 7), including the use of experimental drugs, contact tracing and monitoring and compulsory disease screening.

10.6 Conclusion

Nigeria was eventually declared Ebola-free on October 19, 2014. Overall, the Nigerian experience was a success story with some important lessons. As earlier observed, Nigeria was not prepared for the prevention of such an emergency. When it was clear that some West African countries were already inflicted with the crisis,

Nigeria should have taken some precautionary measures, such as airport screening of persons from those countries. Perhaps the index case could have been stopped and isolated at the airport. Whether in the throes of a crisis or not, precautionary preparedness is always recommended; the instituted capacity to manage Ebola should not be completely dismantled. The swift response and multisectoral mobilization, including information dissemination, were the real magic used to end the Ebola crisis in Nigeria.

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