Risk Analysis, Vol. 41, No. 5, 2021 DOI: 10.1111/risa.13596

Perspective

Challenges Associated With the Response to the Coronavirus Disease (COVID-19) Pandemic in Africa—An African Diaspora Perspective

Andre M. N. Renzaho [1,2,3,*]

The 2014–2016 Ebola outbreak in West Africa extracted huge health, social, and economic costs. How can lessons learnt during the 2014–2016 Ebola outbreak in West Africa help to mitigate the likelihood of a long-term devastating effect of the coronavirus disease (COVID-19) outbreak on the African continent? Despite COVID-19 spreading quickly across the globe after being first reported in Wuhan, China on December 31, 2019, African countries remained relatively unaffected until the second week of March 2020. The majority of Africa countries have been at low to moderate risk. However, they have experienced many sociocultural, economic, political, and structural challenges. These have included laboratory capacity and logistical challenges; ill-equipped public health systems; land border permeability, and delayed preparedness to transnational threats; and abject economic deprivation, lack of basic infrastructure, and associated sociocultural implications. There needs to be a strong country-level leadership to coordinate and own all aspects of the responses to the COVID-19 pandemic in a collaborative, transparent, and accountable way. Strategic and sustained response plans to fight the pandemic should incorporate culturally competent strategies that harness different cultural practices and strengthen cultural security. They should also promote and strengthen the implementation of the International Health Regulations.

KEY WORDS: Africa; coronavirus disease; COVID-19; Ebola; pandemic

1. INTRODUCTION

The 2014–2016 Ebola outbreak in West Africa extracted huge health, social, and economic costs. The three countries mostly affected by the Ebola outbreak—Guinea, Liberia, and Sierra Leone—lost US$2.2 billion in GDP, and were left with a weakened health system and health system leadership as the outbreak had negative impacts on the health workforce (US CDC, 2019). The Ebola outbreak also led to a breakdown in trust between communities and the health system and associated reductions in utilization of health facilities (Elston et al., 2016). How can lessons learnt during the 2014–2016 Ebola outbreak in West Africa help to mitigate the devastating effect of the coronavirus disease (COVID-19) pandemic on the African continent? Despite COVID-19 spreading quickly across the globe after being first reported in Wuhan, China on December 31, 2019, African countries remained relatively unaffected until the second week of March 2020. The majority

[1]School of Social Sciences, Western Sydney University, Penrith, New South Wales, Australia.
[2]Translational Health Research Institute, Western Sydney University, Penrith, New South Wales, Australia.
[3]Burnet Institute, Maternal, Child and Adolescent Health Program, Melbourne, Victoria, Australia.
*Address correspondence to Andre M. N. Renzaho, School of Social Sciences, Western Sydney University, Locked Bag 1797, Penrith 2751 NSW Australia; tel: +61 2 47360107 (ext 2107); fax: +61 2 47360150 (ext 2150); andre.renzaho@westernsydney.edu.au

of Africa countries have been at low to moderate risk (Gilbert et al., 2020). However, they have experienced many sociocultural, economic, political, and structural challenges (Nachega, Seydi, & Zumla, 2020). Lessons learnt from previous Ebola outbreaks have not been used to inform the COVID-19 response. This article outlines and discusses few of the challenges.

2. FACTORS THAT MIGHT AFFECT AFRICA'S SUSTAINED RESPONSE PLANS

2.1. Laboratory capacity and logistical challenges

One lesson from the Ebola outbreak in Western Africa is that it took almost three months for countries like Guinea to identify the Ebola virus (World Health Organization, 2015), by then the damage had already been done. There is no doubt that a strong public health response to manage emerging viral diseases depends on the adequacy and reliability of viral laboratories. In China, and the many affected countries, self-funded and government supported laboratories have played a critical role in COVID-19 detection and diagnosis capacity, outbreak monitoring and surveillance, and treatment and prevention. In contrast, African countries heavily rely on external assistance including the provision of COVID-19 testing kits, training of health workers as well as strengthening surveillance mechanisms. When the COVID-19 outbreak was announced, African countries did not have the laboratory capacity to test for the coronavirus, and more than a month in the outbreak, only Senegal and South Africa had the capacity to do so. By mid-February, a mere 24 countries indicated that they had the laboratory capacity to test for the coronavirus, predominantly supported by the World Health Organization (WHO). By March 27, 2020, 49 African countries could test for COVID-19.

However, there are challenges related to access to and supply of the reagents necessary for testing. What we have learnt since the COVID-19 outbreak is that infected but asymptomatic people drive the pandemic. It has been estimated that persons with mild symptoms or who are asymptomatic account for approximately 40–45% of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections (Oran & Topol, 2020), but rates as high as 50–80% have been reported (Day, 2020; World Health Organization, 2020). Asymptomatic persons can transmit the virus to others for an extended period of time (up to 14 days) (Oran & Topol, 2020). Mass-testing has emerged as the best way to identify, isolate, and monitor COVID-19 cases. Therefore, large-scale availability of testing is an effective strategy to quickly obtain samples from suspected cases, and hence a fundamental and critical aspect of COVID-19 control with minimal risk to healthcare personnel (Araz, Ramirez-Nafarrate, Jehn, & Wilson, 2020).

However, the challenges for African countries to achieve mass-testing relate to logistical and operational issues, including shortages of testing kits, limited numbers of skilled technicians, and long delays for collecting samples (Araz et al., 2020). It may also be possible that COVID-19 cases and deaths are being misdiagnosed. For example, the number and proportion of deaths associated with COVID-19 in Kenya remain low. Yet a study of anti-SARS-CoV-2 IgG antibodies among blood donors reported a population-weighted, test-adjusted national seroprevalence of 5.2% (Uyoga et al., 2020). That is, one in 20 Kenyans aged 15–64 (1.6 million people) had antibodies to SARS-CoV-2, indicating past infection. The seroprevalence reported in Kenya was comparable to that reported in countries hard-hit by the pandemic such as China, Brazil, Switzerland, Spain, and the United States after the initial epidemic peak (Uyoga et al., 2020). This means that the situation could be worse than is reported. This pattern could even be worse in countries like Tanzania or Burundi where senior political leaders have shrugged off COVID-19 risk. In these countries, it is possible that governments adopt injudicious policies to save a political face or falsify COVID-19 case statistics to defend their political stance. In doing so, they have gone to great lengths to discredit medical authorities and laboratories.

Similarly, the overall capacity and coverage of available laboratories is low, meaning that COVID-19 testing is predominantly carried out in major cities and urban areas. The lack of good roads and transport system, poor electricity infrastructure, and unreliable and expensive communication networks compromise the effectiveness of the specimen collection. They lead to delayed and reduced quality of specimens' storage and shipping, delayed access to diagnostic services, and delayed early detection and treatment. Another challenge is the quality assessment of African viral laboratories and the lack of COVID-19

testing guidelines (World Health Organization Regional Office for Africa, 2016). For example, the newly developed South African guidelines for case-finding, diagnosis, management, and public health response to COVID-19 (South African National Health Laboratory Services and National Department of Health, 2020) have set minimum requirements for lab technicians. They state that testing for COVID-19 must be performed by staff trained in technical and safety procedures, with molecular testing carried out by a biological safety level 2 (BSL-2) laboratory technician and only properly trained and competent technicians in a BSL-3 are allowed to perform viral culture and isolation (South African National Health Laboratory Services and National Department of Health, 2020).

There are fewer BSL-3 laboratories in Africa (Aftab, Sadia, & Shoji, 2015), and as exposed by the 2014–2016 Ebola outbreak in West Africa, there are significant gaps in regional laboratory capacity in terms of technical ability and laboratory infrastructure for the diagnosis of emerging and dangerous pathogens outbreaks, especially viral pathogens causing emerging zoonotic infections in humans (World Health Organization Regional Office for Africa, 2016). The lack of COVID-19 testing national guidelines and limited number of laboratory technicians with the necessary training and qualifications can have a devastating effect on the health system. Some of the negative effects include poor quality of specimen, poorly timed specimen, or compromised handling, and shipment of specimen (South African National Health Laboratory Services and National Department of Health, 2020). The paucity of adequately trained laboratory technicians and insufficient BSL laboratories to test molecular and biological agents in Africa could be a consequence of years of underinvestment in public health infrastructure, leading to over-reliance on eternal assistance

2.2. Ill-equipped public health systems and infrastructures

Public health systems of African countries may not be well equipped to handle the COVID-19 pandemic. For example, China has a strong health system, with >95% of its citizens having health care coverage, 41 physicians, nurses and midwives, and 42 hospital beds per 10,000 people (WHO, 2019). Being the world's second largest economy, China has put in place fiscal stimulus and pumped billions of dollars into its economy to counter the economic loss from the COVID-19 (Zhang, 2020a; Zhang, 2020b). It also has the financial means to fight the outbreak without external assistance bar technical assistance and critical medical supplies (Zhang, 2020b). In contrast, in Sub-Saharan African countries, there is a critical shortage of healthcare workers; and health shocks, poor health infrastructure, and the lack of health insurance coverage cause significant economic loss. The current density per 10,000 populations for physicians, nurses and midwives, and hospital beds merely averages 2.2, 10, and 14, respectively (WHO, 2019), falling far short of the 44.5 doctors, nurses and midwives per 10,000 people WHO threshold (World Health Organization, 2016). The lack of health insurance coverage means that in the majority of African countries the total health expenditure is significantly made of household out of pocket payments, which limits access to and utilization of health services. Poor health financing is compounded by inadequate technical efficiency characterized by uncoordinated financial management, and poor workforce management and distribution (Garbayo, Campbell, & Nakari, 2012). Together, these factors lead to poorly trained health workforce and wastage of skills and funds.

2.3. Land border permeability and delayed preparedness to transnational threats

Cross-border movements constitute a critical aspect of the African economies through cross-border trades and transfer of labor. However, they also constitute a significant route for diseases transmission. In the response to the COVID-19 pandemic, identifying cross-border human and viral movements between African countries becomes a prerequisite for early detection, referral and quarantine, treatment, and control planning across hotspots of transmission. Nonetheless, land cross-border movements control and management have produced major challenges. The cross-border infrastructure is neglected, hence making cross-border coronavirus tracing and laboratory surveillance difficult to coordinate and manage effectively. For example, recent data show that truck drivers account for a significant share of the spread of COVID-19 in East and Southern Africa (Jones & Schmidt-Sane, 2020). COVID-19 cases in these regions are high among truck drivers as well as people with whom they have been in contact

along their routes (Dube, 2020; Jones & Schmidt-Sane, 2020; Nakkazi, 2020). In addition, land border shutdowns in Africa do not address the issue of illegal or undocumented migrants crossing borders in search for job opportunities and security in regional bilateral corridors such as Zimbabwe–South Africa, Mozambique–South Africa, or Burkina Faso–Côte d'Ivoire. Identifying, testing, and quarantining (including self-isolation) illegal migrants as COVID-19 control strategies represent a challenge because these migrants are hidden and unregistered. They mostly perform the "3-D" jobs (dirty, dangerous, and demeaning) as a mean for survival and are in desperate need of accommodation and food for survival. Not only are the 3-D jobs hard to find, they are also difficult to keep, as illegal migrants are very mobile and change jobs frequently to dodge apprehension and deportation.

At the beginning of the COVID-19 pandemic, most countries put various measures in place to contain the spread of the COVID-19 pandemic, including travel related restrictions and screening. Although some African airlines suspended flights to and from China, with the increasing Africa–China economic relations and Africa's reliance on China for its exports, airlines such as Ethiopia airways—Africa's largest airline—and Air Algérie did not follow suit. Consequently, African countries continued to welcome a significant number of passengers from China a day. It was not until the second and third week of March 2020 that a number of African countries started to put in place some forms of travel related restrictions and border shutdowns. However, behaviors and practices to reduce viral respiratory disease transmission on transcontinental flights must include predeparture screening of travelers and isolate and deny boarding to those who are unwell until they are medically safe to travel. Screening of passengers on outbound flights was an area that was neglected at the beginning of the COVID-19 pandemic. The emphasis was on screening for passengers on inbound flights on arrival. In addition, WHO recommends a 14-day quarantine period but emerging data from China suggest an incubation period as long as 19 days, with a possible range of 0–24 days (Bai et al., 2020; Guan et al., 2020). At the beginning of the pandemic, uncertainty about the incubation period for the COVID-19 presented a challenge to quarantine systems for resource-constrained African countries due to issues around testing capacity, the lack of universally accepted guidelines for quarantine facility infrastructure, and delayed political action.

2.4. Abject socioeconomic deprivation

The best expert advice to prevent the spread of the COVID-19 has centered on four key points: washing hands regularly with soap and water, covering nose and mouth with disposable tissues or flexed elbow when coughing or sneezing, avoiding close contact with people displaying symptoms, and self-isolating and staying at home when sick. Implementing these measures in Africa is a serious challenge. Africa is known to be the poorest continent on earth; a significant majority of its population still lack access to electricity, experience scarcity of clean and safe drinking water, and live with poor sanitation and hygiene (Renzaho, 2020). African major cities are characterized by informal settlements with poor housing and living conditions due to poor urban planning. These poor living conditions are often exacerbated by overcrowded urban households and the principles of kinship and extended family households. Therefore, one cannot wash hands when she/he does not have adequate access to water and soaps or self-isolate when they do not have enough bedrooms for every member of the family (Renzaho, 2020). In these conditions, any member of the family who gets infected is more likely to pass the diseases to the entire family.

3. CONCLUSION

While most African countries may have epidemic preparedness and response committees in place, they can be strengthened by the International Health Regulations [IHR (2005)] Monitoring and Evaluation Framework (World Health Organization, 2018). A recent study summarizing lessons learnt from implementation of the IHR (2005) found that only 14 African countries have national experience in implementing it but with significant gaps in the implementation of the IHR (2005) core capacities (Suthar, Allen, Cifuentes, Dye, & Nagata, 2018). They have experienced challenges in integrating the IHR (2005) within existing health systems. These challenges have included inter alia: duplication of surveillance strengthening efforts; lack of budget lines for public health preparedness; limited competencies and training of the workforce to implement IHR (2005); and limited laboratory accreditation,

quality assurance, and information systems (Suthar et al., 2018). Initiatives that are in place are often poorly funded with limited knowledge transfer and skill-building, have governance structures that are inadequate, and rely on external financial and technical assistance. Such challenges represent a missed opportunity for building resilient and culturally competent health systems and allow African governments to divorce themselves from meeting the needs of their constituencies. There needs to be a strong country-level leadership to coordinate and own all aspects of the responses to the COVID-19 pandemic in a collaborative, transparent, and accountable way. Strategic and sustained response plans to fight the pandemic should incorporate culturally competent strategies that harness different cultural practices and strengthen cultural security. They should also promote and strengthen the implementation of the IHR (2005) and enforce compliance with international human rights standards to hold African governments accountable

ACKNOWLEDGMENTS

The author thanks Dr. Daniel Doh for commenting on the initial draft

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