



OPEN LETTER

Leveraging investments in Ebola preparedness for COVID-19 in Sub-Saharan Africa [version 1; peer review: 3 approved]

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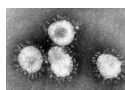
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Abstract

The emergence of SARS-CoV-2 in China and transmission to more than 80 territories worldwide, including nine countries in Africa, presents a delicate situation for low-resource settings. Countries in Eastern and Central Africa have been on high alert since mid-2018 in anticipation of regional spread of the Ebola virus from the Democratic Republic of Congo. Significant investment has been made to support enhanced surveillance at point of entry and hospitals, infection control practices, clinical case management, and clinical research. With a new threat on the horizon, African countries have an opportunity to leverage the existing capacities for Ebola preparedness to brace for the imminent threat.

Keywords

COVID-19 preparedness, Ebola, Coronavirus, SARS-CoV-2



This article is included in the [Coronavirus \(COVID-19\)](#) collection.

Open Peer Review

Reviewer Status

	Invited Reviewers		
	1	2	3
version 1			
18 Mar 2020	report	report	report

- Gavin Yamey**, Duke University, Durham, USA
- Molefe B. Phirinyane**, Botswana Institute for Development Policy Analysis (BIDPA), Gaborone, Botswana
- Christopher J. Morgan** , Burnet Institute, Melbourne, Australia

Any reports and responses or comments on the article can be found at the end of the article.

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Author roles: **Ayebare R:** Conceptualization, Writing – Original Draft Preparation; **Waitt P:** Conceptualization, Writing – Review & Editing; **Okello S:** Writing – Review & Editing; **Kayiira M:** Writing – Review & Editing; **Atim Ajok M:** Writing – Review & Editing; **Nakatudde I:** Writing – Review & Editing; **Bhadelia N:** Conceptualization, Supervision, Writing – Original Draft Preparation, Writing – Review & Editing; **Lamorde M:** Supervision, Writing – Review & Editing

Competing interests: No competing interests were disclosed.

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Background

A novel Coronavirus (SARS-CoV-2) rapidly emerged in China and has spread internationally. On Jan 30, 2020, it was declared a Public Health Emergency of International Concern (PHEIC) by the World Health Organization (WHO) after exceeding 10,000 cases and 200 deaths, with 18 countries reporting cases. The declaration was in part justified by the need to strengthen preparedness in countries with weaker health systems¹. Concerns exist about these countries' capacity to prevent, detect and respond to the COVID-19 outbreak. As of the time of writing, more than 30 African countries with 25 in sub-Saharan Africa have each reported a case of COVID-19 and 18 other countries are at risk of importation of a COVID-19 case from China. Weaknesses in public health systems were a prominent driver of the 2013–2016 Ebola virus disease (EVD) outbreaks in West Africa and similar challenges have fuelled the 2018 EVD outbreak in the Democratic Republic of the Congo (DRC), which is ongoing. We, therefore, questioned whether capacities enhanced for EVD could be leveraged to SARS-CoV-2, a biologically distinct virus requiring a broader public health response.

Coordination

Coordination structures are essential to ensure emergency and contingency plans are in place, operational structures exist with clear communication channels, and adequate resources are available for impending threats. During the West Africa EVD outbreak, Nigeria, transitioned its emergency coordination centres and public health activities for polio eradication to respond to EVD². In the current EVD outbreak in DRC, the WHO has provided dedicated preparedness support to enhance national capacities for EVD in DRC and its nine neighbouring countries. Currently, seven out of the 10 countries have met their minimum targets for EVD coordination³. The declaration of a PHEIC is a timely intervention to enable African countries to mobilize resources domestically and through international sources to operationalise preparedness plans. Utilization of existing structures will be critical for the timely organization of preparedness and response efforts. Yields from this resource have been key in establishing SARS-CoV-2 testing capacity in over 40 countries on the continent within one month of declaration of a PHEIC through the Africa CDC coordination body.

Risk communication

Risk communication entailing significant community outreach and education on infection prevention and control as part of the EVD response has supported improvements in hand hygiene, social distancing, case identification and reporting. Similarly, risk communication is needed for COVID-19 ensure standard precautions are enhanced particularly in the context of respiratory hygiene. To date, the risk communication platforms are being utilized to disseminate infection control measures for COVID-19 and to identify public myths about the novel disease condition, so that targeted communication to demystify public confusion and rumours is delivered.

Personal protective equipment logistics

In healthcare settings, careful logistics planning is critical to ensure panic buying of face masks and respirators by the

general public does not lead to scarcity in health units. Stockpiles of personal protective equipment for EVD could in the interim, support some needs for COVID-19 but such decisions should only be made after careful assessment of ongoing risk of importation of EVD. Unfortunately, these same countries must also plan for scenarios with concurrent outbreaks for COVID-19 and EVD and test their systems to ensure resilience against resource limitations and workforce fatigue.

Surveillance

Surveillance efforts deployed for EVD in Eastern and Central Africa could be modified to incorporate current case definitions for COVID-19. Consequently, surveillance in health facilities will be critical, including in private facilities frequented by international travellers and intensive care units that may not have been adequately addressed in EVD preparedness efforts. Already, expensive screening for EVD at land borders neighbouring DRC could require an extension to all national borders if COVID-19 cases are reported in surrounding countries. In countries with laboratory detection capacity, testing is currently centralised in a few laboratories that meet the necessary biosecurity requirements. While domestic and international efforts are underway to acquire more testing capacity, sample collection and transportation systems enhanced for EVD and international referral diagnostic testing could be utilized to inform public health and clinical management strategies.

Infection control, clinical case management capabilities and use of investigational therapeutics

Biological differences between Ebola virus and SARS-CoV-2 in the mode of transmission and case presentation will limit some benefits of EVD preparedness. Country scenarios must include plans for exponentially larger patient numbers than for EVD. While EVD requires close contact, COVID-19 is transmitted mainly through droplets, contact with contaminated hands and potentially through aerosol-forming procedures. Facility-based isolation capacity is likely to be exceeded during a large outbreak and self-quarantine at home may be needed for milder cases. Cohorting severe cases under investigation will be highly dependent on the availability of appropriate hospital beds, laboratory confirmation capacity and a skilled workforce. Hospital-based clinical case management teams that have received training in care for critically ill patients are a resource to leverage to bridge the gap for COVID-19. In Uganda, the existence five teams based at five different hospitals, two of which are in the capital, is an example of a scalable baseline human resource capacity. Cardinal features of the training such teams have received include infection prevention and control⁴, outbreak investigation, laboratory, clinical case management.

Optimised supportive clinical care for EVD patients has been recently introduced but will be challenging to scale, even if adapted for COVID-19. Respiratory support in dedicated facilities may rapidly become inadequate and consequently, efforts to detect early and contain imported cases are critical. African countries can engage in research for medical

countermeasures (vaccines and experimental drugs). The successful conduct of the PALM trial (PAmoja tuLinde Maisha) in the ongoing EVD outbreak in DRC serves as an example that can be used for therapeutic research for COVID-19⁵. Sub-Saharan Africa also has vast experience working with some of the investigational products being studied in China; ritonavir-boosted lopinavir has been used in Sub-Saharan Africa as antiretroviral therapy for treatment-experienced patients in Sub-Saharan Africa and most recently, remdesivir was used in the PALM trial for EVD in DRC. With results from the COVID-19 trials set to be made available soon, Africa has a unique opportunity to

rapidly access life-saving investigational therapeutics that are familiar and potentially readily available.

Conclusion

Although challenges remain, African countries that have been supported for EVD preparedness in ongoing and past EVD outbreaks have capacities that can be enhanced for the COVID-19 preparedness and response.

Data availability

No data are associated with this article.

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Open Peer Review

Current Peer Review Status:   

Version 1

Reviewer Report 27 May 2020

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Christopher J. Morgan 

Burnet Institute, Melbourne, Vic, Australia

This concise, well-expressed open letter addresses the highly relevant topic of commonalities in emergency responses for immunization, EVD and COVID-19 and their importance to health system strength and resilience. This reviewer notes anecdotal reports of similar pivoting to COVID-19 by coordination systems for emergency responses to polio in Papua New Guinea. This letter is timely and well presented.

Minor suggestions include:

Coordination:

- Make specific mention of the **rapid response and contract tracing functions** under polio emergency responses, as applied first to EVD and now to COVID-19;
- Consider whether new communication channels such as WhatsApp group necessitated by travel restrictions, apply as examples in this analysis.

Surveillance:

- Consider whether the option of integrated surveillance for vaccine-preventable-disease syndromes (e.g. measles) and for other public health priorities apply to this analysis, noting the likely decline in essential health service coverage will increase vulnerability to other outbreaks.
- Consider including mention of rapid diagnostics and low-cost sample transfer, which may become available and differ for COVID-19 from EVD.

Infection control:

- Given the dynamic nature of COVID-19 evidence, consider review and update of modes of spread.
- Use of "Cohorting..." as verb slightly confusing, consider revision - also seems to repeat idea in preceding sentence.
- Minor grammatical error in sentence "In Uganda, the existence ...".
- Consider special mention of oxygen (by concentrator or cylinder supply) as an essential medicine, with or without assisted ventilation, as a distinctive need of COVID-19 at all levels of clinical care (see open letter from stoppneumonia.org).

Overall, noting over 400 views now, congratulate the authors on this submission.

<https://stopppneumonia.org/open-letter-to-leaders-of-the-global-coronavirus-response-on-access-to-medic>

Is the rationale for the Open Letter provided in sufficient detail?

Yes

Does the article adequately reference differing views and opinions?

Yes

Are all factual statements correct, and are statements and arguments made adequately supported by citations?

Yes

Is the Open Letter written in accessible language?

Yes

Where applicable, are recommendations and next steps explained clearly for others to follow?

Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Global immunization, health services delivery in resource-constrained settings, global child public health.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Reviewer Report 18 May 2020

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Molefe B. Phirinyane

Botswana Institute for Development Policy Analysis (BIDPA), Gaborone, Botswana

The letter is written in clear language and a format accessible for decision makers and clinical practitioners. A few comments to make:

1. While the authors duly note the distinct biological characteristics of SARS-COV-2 from EVD, the article could benefit from the acknowledgement that researchers worldwide are still learning the effects of COVID-19 on patients, such as organ failure, apart from respiratory problems. It would be

interesting what the implications of that would be on the clinical capabilities of African states to address the challenge.

2. Sub-Saharan African countries often have financial challenges to effectively implement their health policies and other interventions. The authors could look into what fiscal lessons has Africa learnt from EVD that they could apply to COVID-19?
3. The EVD, as the authors state, affects largely two blocks of countries - central and west Africa. At that scale it would catch the attention of the African Union and trigger their response. This could have been brought on to bear on the collective response of the African countries under the auspices of the AU or sub-regional groups and the lessons this carries for their response to COVID-19.
4. This is a must read for all actors in the health sector in Sub-Saharan Africa. The piece is succinct and proposes pragmatic approaches African countries could explore.

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Is the Open Letter written in accessible language?

Yes

Where applicable, are recommendations and next steps explained clearly for others to follow?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Public policy, health governance, governance, decentralisation.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

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Gavin Yamey

Center for Policy Impact in Global Health, Duke Global Health Institute, Duke University, Durham, NC, USA

Many thanks for asking me to review this very valuable open letter that describes how Ebola response and preparedness "assets" could be leveraged in tackling the current COVID-19 pandemic.

I see that the letter has already been viewed over 300 times, which I believe attests to its value.

The letter is short, beautifully written, clear, and concise. There has been much discussion and debate about both the strengths and challenges that countries in sub-Saharan Africa (SSA) face in preparing for and responding to COVID-19 - and this letter adds helpful information to the debate.

I offer a small number of comments and responses:

1. Obviously the pandemic is evolving rapidly, and if you are producing a version 2, it would be good to update the introductory situation analysis on SSA (<https://covid19.who.int/>).
2. Under coordination, the authors say "Yields from this resource have been key" - but it is not clear what "this resource" refers to.
3. I think it would be helpful to briefly discuss the role of the Africa CDC, which was launched in the wake of the 2014-2016 Ebola epidemic. It is playing a role not just in coordination but in communication, public health messaging, and other activities (<https://africacdc.org/covid-19/>).
4. Under risk communication, it is hard to grasp what this means: "risk communication is needed for COVID-19 ensure standard precautions."
5. Under risk communication, I think it would be very helpful to briefly describe how or whether there are lessons from Ebola for how to tailor messaging to different settings. For example, there is much discussion right now about the feasibility of social distancing among the informal labor force, or in camps for internally displaced persons.
6. Under case management, it would be good to add a sentence or two on options for respiratory support where there are insufficient ventilators (what are the alternatives?).
7. The letter states that "African countries can engage in research for medical countermeasures (vaccines and experimental drugs)." I think diagnostics should also be included as a MCM.

Is the rationale for the Open Letter provided in sufficient detail?

Yes

Does the article adequately reference differing views and opinions?

Yes

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Yes

Is the Open Letter written in accessible language?

Yes

Where applicable, are recommendations and next steps explained clearly for others to follow?

Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Global health and public policy

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.
