



Letter to the Editor

Multiple burden of infectious disease outbreaks: Implications for Africa healthcare system

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Dear Editor,

Infectious diseases are responsible for a significant number of deaths globally, particularly in tropical countries, and account for approximately one quarter of deaths worldwide. They have a high impact on public health and healthcare systems in delivering its services. Africa carries the highest burden of endemic diseases globally. There have been over 30 newly emerged infectious diseases since the 1960s that many African nations achieved independence. The WHO African region witnessed a sum of 96 new outbreaks of virulent diseases in 2018, which were reported in 36 out of the 47 Member States.¹ SARS-CoV-2, the virus responsible for

COVID-19, was initially identified in Hubei Province of China in December 2019 and has subsequently disseminated to every continent. Lassa fever (LF) is a viral hemorrhagic fever caused by the Lassa virus, first identified in Nigeria in 1969 and since then has been endemic in West Africa. Ebola viral infection was first detected in two simultaneous outbreaks in 1976 in South Sudan and the DR Congo. Ebola is a rare but severe and often fatal illness in humans with significantly high fatality rate.² The monkeypox virus was first discovered in laboratory monkeys in Denmark in 1958, with the first human case reported in 1970 in DR Congo and since then, several sporadic cases have occurred in Africa.³

Africa is a known breeding ground for both new and old infectious diseases that can be deadly to humans. Many of the newly emerging infectious diseases that have lethal effects on humans are thought to originate in Africa. During infectious disease outbreaks, Africa bears a greater share of the burden as the weak healthcare systems are being severely exposed with an overburdened health system responsible for a significant number of morbidities and as such, millions of lives are being lost annually. Many affected individuals lack sufficient or no essential medical interventions that could potentially save their lives. High loss in total national revenue during these outbreaks has resulted in a little to no funding of the already underfunded healthcare system.⁴

The reoccurrence of Ebola and the COVID-19 pandemic, along with the increasing prevalence of endemic diseases, highlights concerns about Africa's healthcare system's ability to handle disease outbreaks. Healthcare providers in Africa

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face numerous challenges and obstacles when dealing with the healthcare needs that arise during such outbreaks.² These challenges are complex and multifaceted, spanning across poor infrastructure, resulting in a weak health system, high disease burden, health system corruption, poor leadership and administration, and poor quality of healthcare services. These have contributed to undermining the quality and availability of care, making it difficult for healthcare systems to meet the needs of the population during outbreaks.⁵ Inadequate resources, poor resource allocation and maintenance of healthcare resources are devastating to the ability of healthcare systems to respond effectively to outbreaks and provide adequate public interventions. Weak governance is another critical factor that contributes to these challenges in Africa such as lack of political will, non-use of evidence-based interventions, weak training and education, weak health information management systems, and poor integration of programmes.^{2,5}

Social and economic factors also play a role in the challenges faced by healthcare systems in Africa. These include factors such as poverty, lack of community participation, migration of healthcare workers, and low healthcare seeking behavior.⁶ The majority of Africans bank on daily labor for food and many lost their jobs due to COVID-19 lockdowns. This led to a lack of reliable income and difficult choices between staying home and facing hunger or going out and risking infection. The lockdowns also resulted in the closure of food markets and informal economic sectors, leading to declines in per capita income, supply chain value, and economic recessions.² These economic instabilities are a contributing factor to cross-border migration in Africa, where people continually move in search for livelihood. This high mobility of the population across porous borders hinder the response and control of infectious diseases during outbreaks⁷ and these economic consequences have placed additional strain on an already struggling healthcare system in meeting up with its demands in Africa.²

Infectious diseases pose a major threat to Africa's goal of achieving its developmental plan for 2063, known as 'Agenda 2063: The Africa We Want.' For Africa to achieve these and ensure its development as well as cope with several burdens of disease outbreaks, it is imperative for a new public health strategy that addresses infectious diseases and other challenges to be implemented. This would involve bolstering the Africa Centers for Disease Control and Prevention, investing in local production of vaccines, diagnostics and therapeutics, improving public health workforce and leadership programs, and fostering respectful collaborations and partnerships with private and international bodies.⁸ Improving healthcare infrastructure, training and capacity building, health insurance and increased budgetary allocation to health are also important interventions that could improve access to healthcare services and resources for preventing and treating infectious diseases and improve public health outcomes in Africa.^{5,9}

In conclusion, the One Health approach that encompasses a collaborative strategy aiming to improve the health and wellbeing of humans, animals, and the environment at the local, national, and global levels in all African countries is expedient to achieving the Agenda 2063 for Africa by

bringing together various sectors and disciplines. One Health seeks to maximize resources and capabilities to promote evidence-based decision-making. This approach is significant in addressing both internal and external factors that impact disease burdens and achieve better health outcomes for all.²

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Conflict of interest

The authors declare that there is no form of conflict of interest.

Ethical approval

There is no ethical issue.

Authors' contributions

POO conceived and designed the study, conducted research, provided research materials, and collected and organized data. OOJ conceived and designed the study, conducted research, provided research materials, collected and organized data, analyzed, interpreted data, wrote initial and final draft of article, and provided logistic support. ONO conceived and designed the study, conducted research, provided research materials, and collected and organized data. GE wrote initial and final draft of article, and provided logistic support. DELP III conceived and designed the study, wrote initial and final draft of article, and provided logistic support. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

References

1. Mboussou F, Ndumbi P, Ngom R, et al. Infectious disease outbreaks in the African region: overview of events reported to the World Health Organization in 2018 [published correction appears in *Epidemiol Infect.* 2019 Nov 27;147:e307]. **Epidemiol Infect** 2019; 147: e299. <https://doi.org/10.1017/S0950268819001912>. Published 2019 Nov 11.
2. Nnaji ND, Onyeaka H, Reuben RC, Uwishema O, Olovo CV, Anyogu A. The deuce-ace of Lassa Fever, Ebola virus disease and COVID-19 simultaneous infections and epidemics in West Africa: clinical and public health implications. **Trop Med Health** 2021; 49(1): 102. <https://doi.org/10.1186/s41182-021-00390-4>. Published 2021 Dec 30.
3. Moyo E, Musuka G, Murewanhema G, Moyo P, Dzinamarira T. Monkeypox outbreak: a perspective on Africa's diagnostic and containment capacity. **Int J Infect Dis** 2022; 123: 127–130. <https://doi.org/10.1016/j.ijid.2022.08.016>.
4. Nyaruaba R, Okoye CO, Akan OD, et al. Socio-economic impacts of emerging infectious diseases in Africa. **Inf Disp** 2022; 54(5): 315–324. <https://doi.org/10.1080/23744235.2021.2022195>.

5. Oleribe OO, Momoh J, Uzochukwu BS, et al. Identifying key challenges facing healthcare systems in Africa and potential solutions. *Int J Gen Med* **2019**; 12: 395–403. <https://doi.org/10.2147/IJGM.S223882>. Published 2019 Nov 6.
6. Takyi PO, Bentum-Ennin I. The impact of COVID-19 on stock market performance in Africa: a Bayesian structural time series approach. *J Econ Bus* **2021**; 115:105968. <https://doi.org/10.1016/j.jeconbus.2020.105968>.
7. WHO. *Factors that contributed to undetected spread of the Ebola virus and impeded rapid containment*; 2015. Available from: <https://www.who.int/news-room/spotlight/one-year-into-the-ebola-epidemic/factors-that-contributed-to-undetected-spread-of-the-ebola-virus-and-impeded-rapid-containment>. [Accessed 25 April 2023].
8. Nkengasong JN, Tessema SK. Africa needs a new public health order to tackle infectious disease threats. *Cell* **2020**; 183(2): 296–300. <https://doi.org/10.1016/j.cell.2020.09.041>.
9. Olaleke O, Okesanya O, Abioye S, Othoigbe M, Matthew E, Manirambona E, et al. The forms, challenges, and strength of the monkeypox surveillance system in Nigeria. Dec 23 *Ann Heal Res* **2022**; 8(4): 269–276. Available from: <https://annalsofhealthresearch.com/index.php/ahr/article/view/458>.

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