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# Impact of COVID-19 on access to healthcare in low- and middle-income countries: Current evidence and future recommendations

Melody Okereke,<sup>1</sup> Nelson Ashinedu Ukor,<sup>2</sup> Yusuff Adebayo Adebisi,<sup>3</sup> Isaac Olushola Ogunkola,<sup>4</sup> Eseosa Favour Iyagbaye,<sup>5</sup> Greatman Adiola Owhor,<sup>5</sup> Don Eliseo Lucero-Prisno III<sup>6</sup>

## Affiliations

- <sup>1</sup>Faculty of Pharmaceutical Sciences, University of Ilorin, Ilorin, Nigeria.
- <sup>2</sup>Faculty of Pharmaceutical Sciences, University of Port Harcourt, Choba, Nigeria.
- <sup>3</sup>Faculty of Pharmacy, University of Ibadan, Ibadan, Nigeria.
- <sup>4</sup>Department of Public Health, University of Calabar, Calabar, Nigeria.
- <sup>5</sup>Faculty of Pharmacy, University of Benin, Benin City, Nigeria.
- <sup>6</sup>Department of Global Health and Development, London School of Hygiene and Tropical Medicine, London, UK.

## Abstract

The COVID-19 pandemic continues to be a major public health threat globally and low- and middle-income countries (LMICs) are not an exception. The impact of the COVID-19 pandemic is far-reaching on many areas including but not limited to global health security, economic and healthcare delivery with a potential impact on access to healthcare in LMICs. We evaluate the impact of the COVID-19 pandemic on access to healthcare in LMICs, as well as plausible strategies that can be put in place to ensure that the delivery of healthcare is not halted. In order to mitigate the devastating effect of the COVID-19 pandemic on the already weak health systems in LMICs, it is much necessary to reinforce and scale up interventions and proactive measures that will ensure that access to healthcare is not disrupted even in course of the pandemic.

## 1 COMMENTARY

According to the income classification of the World Bank, low-income economies are classified as those with gross national income (GNI) per capita of \$1.025 whereas lower middle-income economies are listed as those with GNI per capita within \$1.026 and \$3.995.<sup>1</sup> Although GNI is not the heartbeat of a good health system, it is broadly viewed as a major determinant of health outcomes with a corresponding impact on access to healthcare. This is because access to

healthcare is a multifaceted and intricate prospect. Equitable and fair access to healthcare is an essential target for all countries, but especially difficult and increasingly complex in low- and middle-income countries (LMICs) given the heavy burden of healthcare needs and severely under-resourced healthcare frameworks and systems. The sustainable development goal 3 was established to ensure equitable access to quality healthcare services worldwide. However, this target has been grossly interrupted ever as the emergence of the coronavirus disease, also known as COVID-19, globally and low and middle-income countries have been invariably affected. This unprecedented event has placed even more burden on the already fragile health systems in LMICs with a potential impact on access to healthcare services.

## **2 ACCESS TO HEALTHCARE IN LMICs BEFORE THE EMERGENCE OF COVID-19**

Before the emergence of the COVID-19 pandemic globally, access to healthcare has been seen to vary as various countries have different healthcare provisions. Although some countries already have good existing health systems and accessible health frameworks, others have been suffering several setbacks such as LMICs. Access to optimal healthcare has also been a major socio-economic issue in LMICs. For certain areas, the shortage of adequate health services is exacerbated by the prevalence of inequalities in the allocation of public health institutions. Individuals living in LMICs have comparatively uneven access to quality health services than their counterparts in high-income countries.

Before the emergence of the COVID-19 pandemic in Africa, LMICs accounted for more than 70% global disease burden, but less than 15% of global health spending.<sup>2</sup> LMICs have a lesser density of health workers and availability of hospital beds per population; this decreases the availability of health services to the poor. Evidence shows that high-income countries spend many times more on health, and the majority of the health finances available in poorer countries are usually out-of-pocket expenditure.<sup>2</sup> These incidences will invariably result in poor access to healthcare in these countries. Ever as the emergence of the COVID-19 pandemic in Africa, it has had its toll on LMICs as the mortality rate of the pandemic has experienced a dramatic rise over time and is increasingly alarming. This can potentially exert pressure on already fragile health systems in LMICs with a resultant impact on healthcare providers.

## **3 KEY SECTORS OF HEALTH SYSTEMS AFFECTED BY COVID-19 AND IMPACT ON HEALTHCARE PROVIDERS**

A stable and functional health system is built on a variety of factors, including skilled healthcare personnel, well-maintained facilities and infrastructural frameworks, and adequate availability of personal protective equipment (PPE)

and medicines. In Africa, health systems have been surmounted with the various challenges posed by previous disease outbreaks such as Ebola, Zika virus, H1N1 pandemic<sup>3</sup> and the present COVID-19 pandemic. As the COVID-19 pandemic broke out in Africa, various sectors of health systems in LMICs have been threatened including pharmacy<sup>4</sup> clinical, and hospital<sup>5</sup> sectors respectively. This will have grave consequences on the delivery of healthcare services in several LMICs in Africa as a strengthened health system is essential for ensuring better health outcomes.

To further enhance better health outcomes and strengthen inter-sectoral collaboration in light of this present pandemic in LMICs, the role of pharmacy practice as a major component and driver of the health system is crucial<sup>4</sup> but this is not without challenges. Due to the lockdown policies caused by COVID-19 to reduce the incidence of transmission, pharmacy practice in Africa has suffered several setbacks in optimal healthcare delivery as the pandemic has had a potential impact on drug supply, availability, affordability and movement of pharmacists and pharmacy workers.<sup>4</sup> Before the emergence and spread of COVID-19, pharmacists have usually been the first point of contact by patients in need of healthcare services<sup>4</sup> but with the present situation of the pandemic, pharmacists in several LMICs in Africa are reluctant to address the needs of patients due to fear of disease contraction.<sup>4</sup> The effect of the COVID-19 pandemic on pharmacy practice in Africa has become very pronounced. Also, the supply chain of medicines, pharmaceutical products and PPE were greatly affected by the lockdown policy.<sup>6</sup> This also weighed on the quality of health service afforded to LMICs' populations. A possible implication is that this would have a significant impact on the standard of healthcare delivery in LMICs.

Globally, the COVID-19 pandemic has affected clinical and hospital practices<sup>5</sup> and LMICs are not an exception. Although occasional cancellation of surgeries has been experienced in the past,<sup>7</sup> the current COVID-19 pandemic has placed more unprecedented implications for patients requiring surgical attention during these times. For instance, rather than reinforcing the need for the mobilization of surgical resources needed for surgical operations, the growing demand for ventilators, hospital space and manpower, coupled with the lockdown policies is restricting surgical services from extending to critical patients and areas where they are essentially required. This has invariably affected millions of surgical patients worldwide. Of great concern also is the safety of medical doctors and surgeons who are on the frontline in course of the COVID-19 pandemic. Proper PPE is an absolute must but has proven to be a global concern with complex and volatile supply chains and distribution networks globally. This is an area worth exploring in order to minimize the risks of occupational hazards in the course of healthcare delivery. Consequently, when healthcare providers have been grossly

affected by the COVID-19 pandemic, then there are tendencies that patients in dire need of healthcare would suffer several setbacks in accessing these healthcare services.

#### **4 COVID-19 AS A BARRIER TOWARDS ACCESSING HEALTH SERVICES BY PATIENTS SUFFERING FROM CHRONIC DISEASES IN LMICS**

Every year, 15 million individuals between the ages of 30 and 69 years die from non-communicable diseases (NCDs).<sup>8</sup> More than 85% of such 'premature' deaths arise in LMICs such as India and Nigeria due to cardiovascular diseases (17.9 million), followed by cancer (9.0 million), respiratory diseases (3.9 million) and diabetes (1.6 million).<sup>8</sup> COVID-19 may have a detrimental effect on NCD outcomes for adults and children across many systems including increased vulnerability to COVID-19 infection and higher mortality levels amongst patients living with NCDs; delays in detection of NCDs progressing to more severe forms of the disease; discontinued or interrupted therapy of NCDs; an upsurge in behavioural risk factors and increased usage of dangerous substances.<sup>9</sup> Globally, two-thirds of countries confirmed that NCD programs were being included in their national COVID-19 readiness and response plans.<sup>10</sup> Inclusion was recorded by 72% of high-income countries compared to 42% of low-income countries with a primary focus on cancer, diabetes, chronic respiratory disorders and cardiovascular diseases.<sup>10</sup>

The nature of COVID-19 may make some NCDs more difficult to recognize. For example, COVID-19 has been associated with cardiovascular complications that can make the accurate diagnosis of myocardial infarction increasingly complex. Patients with existing chronic respiratory disorders such as chronic obstructive pulmonary disease, asthma, influenza, and so on. Often find it difficult to recognize when immediate medical attention can be pursued as such diseases have very common symptoms to COVID-19.<sup>9</sup> Combining all the evidence published and recorded so far, and keeping in mind the current COVID-19 scenario, it is evident that the COVID-19 pandemic would further intensify the global NCD crisis, especially in LMICs. Efforts need to be increased in LMICs to ensure effective pandemic containment because the region faces a double burden of infectious and non-infectious diseases and most of all, its weak healthcare systems.<sup>11, 12</sup>

#### **5 CONCLUSION AND FUTURE RECOMMENDATIONS**

The COVID-19 pandemic continues to be a major public health threat globally and LMICs are not exempted from this threat. The impact of the COVID-19 pandemic is far-reaching on many areas including but not limited to global health security, economic and healthcare delivery in LMICs. Responses have been mounted towards effective containment of the pandemic. However, national health

authorities and other stakeholders in LMICs must continue to ensure that access to quality healthcare services is not disrupted. Innovations are more needed than ever and LMICs need to continue to devise means to ensure country-compatible measures and policies in the fight against COVID-19. There is also the need for a unique approach to ensure a proactive response in LMICs. Early isolation of infected persons, cross-border knowledge sharing, effective contact tracing, standard reporting and reliable surveillance system, increased testing capacity, cross-border cooperation and collaboration in LMICs, effective community engagement and infection prevention and control measures, including maintaining physical distance and proper hand and cough etiquette/respiratory hygiene should continue to be prioritized in LMICs. With this, the burden on the already fragile healthcare systems in LMICs would be lessened. This will provide the opportunity to respond adequately to the unprecedented COVID-19 pandemic in LMICs and still ensure that healthcare delivery is not disrupted.

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## **CONFLICT OF INTEREST**

The authors declared no conflicts of interest.

## **AUTHOR CONTRIBUTIONS**

The concept for this commentary was developed by Melody Okereke. Melody Okereke, Nelson Ashinedu Ukor, Isaac Olushola Ogunkola, Eseosa Favour Iyagbaye, Greatman Adiola Owhor developed the draft and Melody Okereke prepared the manuscript. Yusuff Adebayo Adebisi and Don Eliseo Lucero-Prisno III assisted with data collection, revision of the draft and language edits. All the authors have read and agreed to the final manuscript.

## **References**

1. World Bank. GNI per capita, Atlas method (current US\$). <https://data.worldbank.org/indicator/NY.GNP.PCAP.CD>. Accessed July 15, 2020.
2. The World Bank. Health financing revisited: a practitioner's guide. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/874011468313782370/health-financing-revisited-a-practitioners-guide>. Accessed July 15, 2020.

3. Okereke M, Williams AE, Emmanuella NC, Ashinedu NU, Mairaj MW. COVID-19: challenges affecting the uptake of e-learning in pharmacy education in Africa. *Pan Afr Med J.* 2020; **35**(2): 70.
4. Okereke M, Adebisi YA, Emmanuella N, Jaber HM, Muthoni L, Barka NB. COVID-19: community pharmacy practice in Africa. *Int J Health Life Sci.* 2020; **6**(2): e104517.
5. Fiorillo A, Gorwood P. The consequences of the COVID-19 pandemic on mental health and implications for clinical practice. *Eur Psychiatry.* 2020; **63**(1): e32. <https://doi.org/10.1192/j.eurpsy.2020.35>.
6. Akande-Sholabi W, Adebisi YA. The impact of COVID-19 pandemic on medicine security in Africa: Nigeria as a case study. *Pan Afr Med J.* 2020; **35**(2): 73.
7. Argo JL, Vick CC, Graham LA, Itani KM, Bishop MJ, Hawn MT. Elective surgical case cancellation in the Veterans Health Administration system: identifying areas for improvement. *Am J Surg.* 2009; **198**(5): 600-606. <https://doi.org/10.1016/j.amjsurg.2009.07.005>.
8. World Health Organization. Non-communicable diseases. <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>. Accessed July 15, 2020.
9. World Health Organization. Maintaining essential health services: operational guidance for the COVID-19 context. <https://www.who.int/publications/i/item/covid-19-operational-guidance-for-maintaining-essential-health-services-during-an-outbreak>. Accessed July 15, 2020.
10. NCD Alliance. COVID-19 and non-communicable diseases (NCDs): questions and answers. <https://ncdalliance.org/resources/covid-19-and-noncommunicable-diseases-ncds-questions-and-answers>. Accessed July 15, 2020.
11. Lucero-Prisno DE III, Adebisi YA, Lin X. Current efforts and challenges facing responses to 2019-nCoV in Africa. *Glob Health Res Policy.* 2020 May 6; **5**: 21.
12. David KB, Adebisi YA. Proposed model for hospital and community pharmacy services during COVID-19 pandemic in Nigeria [published online ahead of print July 4, 2020]. *Int J Pharm Pract.* 2020. <https://doi.org/10.1111/ijpp.12652>.