ScientificScholar®
Knowledge is power
Publisher of Scientific Journals

https://patsjournal.org

Journal of the Pan African Thoracic Society

Review Article

Strengthening health systems in Africa: The COVID-19 pandemic fallout

Samuel Nkachukwu Uwaezuoke

Department of Pediatrics, College of Medicine, University of Nigeria/University of Nigeria Teaching Hospital (UNTH) Ituku-Ozalla, Enugu Nigeria.

***Corresponding author:**
Samuel Nkachukwu Uwaezuoke,
Department of Pediatrics, College of Medicine, University of Nigeria/University of Nigeria Teaching Hospital (UNTH) Ituku-Ozalla, Enugu Nigeria.

snuwaezuoke@yahoo.com

Received : 27 August 2020
Accepted : 31 August 2020
Published : 27 September 2020

DOI
10.25259/JPATS_14_2020

Quick Response Code:

ABSTRACT

This narrative review aims to highlight the shift in the paradigm of strengthening health systems in the African setting since the onset of the coronavirus disease-19 (COVID-19) pandemic. Strengthening health systems involves upgrading a country's health-care system through increased funding for health infrastructure, health policy improvement, and universal health coverage (UHC). Inadequate funding for health infrastructure, erratic health policy, and the inability to meet UHC targets have contributed to high mortality rates among the continent's vulnerable groups. The COVID-19 pandemic has further exposed the weak health systems in many African countries, especially in sub-Saharan Africa. Before the pandemic in Africa, the African health context's challenges essentially comprised weak health systems, weak governance and accountability, high rates of out-of-pocket expenditures, adverse social determinants of health, and non-harmonization of health aid and health service delivery. During the pandemic, a significant shift in the paradigm of strengthening health systems has occurred, with emphasis on increased funding for health infrastructure, which targets the following: Improvement of health infrastructure, the motivation of the health workforce, and improvement in laboratory facilities. It is hoped that the fallout from strengthening health systems in Africa after the pandemic can be sustained by a continental peer-review mechanism to monitor compliance with increased funding for the health sector among member nations. In the post-pandemic period, further gains in strengthening the health systems can be achieved by improving UHC (through increased funding for health insurance), constant capacity training for health care workers in critical care medicine, and institutionalization of hand hygiene.

Keywords: Africa, Coronavirus disease-19 pandemic, Health financing, Strengthening health systems

INTRODUCTION

In the period of a pandemic, global health is adversely affected. Global health refers to the health of populations in the global context and has been defined as a specialty that prioritizes the improvement in health and achievement of equity in health for all people worldwide.[1,2] It can be assessed as a function of several global diseases and their global prevalence, as well as their present threat, to decrease life. The World Health Organization (WHO) and United Nations Children's Fund (UNICEF) play a key role in sustaining global health.

Strengthening health systems or health systems strengthening (HSS) is an essential component of global health. It involves upgrading a country's health-care system through increased funding for health infrastructure, improvement in health policy, and universal health coverage (UHC). The six internationally accepted core functions of strengthening health systems consist of human resources for health, health financing, health governance, health information, medical products, vaccines and technologies, and service delivery. In Africa, several international

development partners such as the WHO, the US Agency for International Development (USAID), Roll Back Malaria (RBM), and President's Emergency Plan for acquired immunodeficiency syndrome (AIDS) Relief (PEPFAR) have been in partnership with the local authorities to foster some of these core functions of strengthening health systems. Unfortunately, development partners bear the financial burden because of the low budgetary allocation to health by many African countries. For instance, most countries in sub-Saharan Africa are still faced with managing communicable diseases in their populace. Inadequate funding for health infrastructure, erratic health policy, and the inability to meet UHC targets have contributed to high mortality rates among the population's vulnerable groups. Despite the inequity in accessing health care between the high-income and low-income earners in the African setting, the authorities have failed to bridge this gap.

However, the current coronavirus disease (COVID-19) pandemic has triggered a change in the manner of strengthening health systems in the continent. Restriction of global human traffic, to contain the spread of the novel coronavirus responsible for COVID-19, has resulted in a sharp drop in "medical tourism" from the continent to the developed countries of the world. Driven by retrospection, many authorities in the continent have adopted a "renaissance approach" toward health financing. This narrative review aims to highlight the shift in the paradigm of strengthening health systems in the African setting since the onset of the COVID-19 pandemic.

COVID-19 PANDEMIC: IMPACT ON THE CONTINENT

The first confirmed case of the pandemic in Africa was reported in Egypt on February 14, 2020. In Sub-Saharan Africa, the first confirmed case was reported in Nigeria on February 27, 2020; it was imported into the country by an Italian citizen. Since then, several countries in North Africa and Sub-Saharan Africa have witnessed a steady daily rise in reported cases. Nevertheless, the figures are thought to be unrepresentative of the pandemic's real picture in the continent, given the widespread undertesting and underreporting arising from the weak health-care systems.

As many African countries continue to record confirmed cases of COVID-19, disease outcomes have remained variable with disparities in the numbers of active cases, recoveries, and mortalities. Worse still, the less developed health-care systems in the continent have brought to the fore the challenges in procuring health-care equipment, funding, workforce training, and data transmission. The impact of these inadequacies may drive the pandemic to spiral out of control, with adverse economic consequences. Moreover, some countries' initial "lockdown approach" adopted to curtail the spread of the infection has worsened the economic climate because the populace consists of predominantly low-income earners. Since the onset of the pandemic in Africa 7 months ago, many countries are still reporting exponential rises in the number of cases as the graphic curve is yet to assume the "plateau phase." As of August 22, 2002 (during this write-up), 57 African countries' statistics lend credence to this trend. However, only four of these countries (South Africa, Egypt, Nigeria, and Morocco) have crossed the 50,000 mark of confirmed cases. South Africa occupies the first position in this top four list with over 600,000 cases, followed by Egypt with over 95,000 cases, Morocco, with over 52,000 cases, and Nigeria with over 51,000 cases. However, the picture remains "fluid" as new confirmed cases are reported across the continent daily.

Despite the rising incidence of COVID-19 in Africa, the continent has recorded fewer deaths than the mortality rates in other continents such as Europe, Asia, North America, and South America. This disparity has prompted the scientific world to speculate about the possible factors that seem to attenuate the disease's mortality outcomes in Africa. For instance, two hypotheses have been advanced. The first hypothesis is the role of antimalarial immunity against the coronavirus in the African setting where malaria is endemic.[3] It is speculated that glycoproteins (GPs) produced by the coronavirus (such as membrane GPs, spike GPs, and GPs with acetyl esterase and hemagglutination properties) could be recognized by the antibodies produced in malaria (anti-glycosylphosphatidylinositol [GPI] antibodies) and could thus offer some protection against the viral infection or result in a milder presentation of COVID-19.[4] Furthermore, blood group O individuals are less susceptible to malaria as a result of mimicry of A or B antigens by infectious agents:[5] An observation that also occurs in COVID-19. Curiously, COVID-19 responds to antimalarial drugs, as some authors claim that disease progression could be shortened.[6,7] The second hypothesis is the possible protective effect of the Bacillus Calmette-Guérin (BCG) vaccine against COVID-19 in Africa, where the vaccine is still a component of the national childhood immunization program. BCG induces an epigenetic modification of the monocyte immune cells, which could be protective against COVID-19.[8] Given the cross-protection reported for BCG vaccination on viral respiratory infections, recent publications have suggested that the vaccine may also offer protection against COVID-19.[9-11] Due to the absence of in-depth statistical analysis in some of these publications, the WHO has questioned the veracity of their findings.[12] Nevertheless, it appears that when compared to countries with compulsory BCG vaccination policy (such as most African countries) and countries without this policy (such as those in Europe and North America), lower rates of COVID-19-related mortality are reported in the former than in the latter.[13]

STRENGTHENING HEALTH SYSTEMS IN THE CONTINENT: THE EXISTING TEMPLATE

Previous low levels of investment in the health sector have resulted in weak national health systems in Africa. Despite the rise in national budgetary allocations to this sector, the proportion remains relatively suboptimal and insufficient to improve quality of and access to health services. As a result of this poor investment, sub-Saharan Africa currently has the lowest life expectancy globally.[14] Furthermore, maternal mortality rates, under-five mortality rates, and the burden of human immunodeficiency virus/AIDS are relatively high in this part of the African continent.[15] These dismal health-related outcomes underscore the need for a comprehensive working document to strengthen the continent's health systems.

The Harmonization for Health in Africa (HHA) group has prepared such a document that provides the template for strengthening health systems in the continent.[16] The document encapsulates the maxim – "the case for investing in health for Africa: The case for strengthening systems for better health outcomes." It was prepared by HHA in synergy with the "Partnership for Maternal, Newborn and Child Health" and the national ministries of health in the continent, with the searchlight on countries of Sub-Saharan Africa. The fundamental objective of the template is to turn the continent's health challenges into investment opportunities. In contextualizing health in Africa, the following major challenges have been identified. These challenges include weak governance and accountability; weak health systems (characterized partly by lack of health personnel, low motivation and capacity training of the personnel, and poorly maintained health infrastructure); adverse social determinants of health; high rates of out-of-pocket health expenditures (which can exacerbate poverty in the populace); non-harmonization of health aid and health service delivery; political crises (which disrupts the sustenance of health systems required for the delivery of high-quality health-care services); as well as natural disasters.[16]

Thus, the significant investment opportunities in the African health context include the strong political will to strengthen health systems (through the delivery of more resources to the health sector); increasing resources flowing to health (through increased expenditures on development assistance for health); and encouraging the progress made by many resource-limited African countries in achieving development goals and promoting community involvement in implementing health policies. The focus on the family unit and care for relatives is an essential cultural stereotype in the African context. Therefore, the continent is better positioned to support the provision of health care by targeting families and communities: A strategy that constitutes an integral part of the health systems in developing countries.

STRENGTHENING HEALTH SYSTEMS IN THE COVID-19 PANDEMIC: THE FALLOUT

The COVID-19 pandemic has helped expose the weak health systems in many African countries, especially in sub-Saharan Africa. The disease potentially has a devastating impact on health systems, given its high risk of transmission and difficulties in testing or isolating patients early due to their atypical or asymptomatic presentation. Protecting health systems in the continent can be achieved by these measures. First, essential health services should be maintained to reduce preventable deaths. More importantly, national guidelines should be provided during the pandemic for maternal and child health services, especially on personal protective equipment (PPE) to reduce COVID-19 transmission among the populace. Second, the health workforce of countries in the continent (whose strength and commitment remain vital during the pandemic) should be protected using guidelines to minimize transmission risks. Third, health financing is crucial in the fight against the disease. Development partners and local health systems should cooperate to maximize scarce resources and avoid duplication of efforts for a more effective response to the pandemic. Nevertheless, the extent to which these measures have been implemented across the continent varies from country to country.

In the African setting, dilapidation in health infrastructure is manifested in the inability of existing hospitals to manage COVID-19 patients. Most health facilities in sub-Saharan Africa cannot test for the novel coronavirus and lack the admission facilities for critical care of patients with late stages. Thus, the lack of admission spaces and medical equipment remains a major challenge in fighting the pandemic. For instance, a shortage of ventilators exists in most countries of sub-Saharan Africa. This scarcity of ventilators is compounded by the limited number of critical care specialists or intensivists in these climes.

In addition, availability of and access to oxygen therapy militate against the effective management of patients in this pandemic. Oxygen is conventionally provided either by oxygen tanks (especially gas cylinders) or by an oxygen concentrator. Most health-care settings in Nigeria and other sub-Saharan African countries still grapple with sufficient supplies of these oxygen-delivery equipment. Worse still, the prohibitive cost of delivering adequate liters of oxygen per minute to critically ill patients is barely affordable by majority of them. The challenge with accessing oxygen therapy has become more profound during the COVID-19 pandemic despite its vital role in the treatment of COVID-19 patients.[17] Available oxygen supplies are now diverted for COVID-19 patients at the expense of non-COVID patients. Furthermore, bed spaces to accommodate the rising daily number of COVID-19 cases are limited.

Most authorities have, however, adopted specific approaches in strengthening health systems. In Nigeria, temporary isolation centers for COVID-19 cases have been created and provided with medical equipment by the national and some local authorities as areas of priority in achieving this goal [Figure 1]. The government has also increased the motivation of "frontline health workers" involved in the fight against the pandemic through improved remuneration, capacity training for infectious disease control and critical care medicine, as well as PPE provision.

These positive changes were made possible by the "sudden discovery" of the political will to strengthen health systems through extrabudgetary allocations to the health sector. Sustaining this increased flow of resources to HSS within the continent would lead to better health outcomes. Again, the demand for PPE, such as facemasks, has triggered a "revolution" for their local production, which hitherto had been non-existent, as most of these medical consumables were imported into most African countries. Maintaining this "local content" in PPE production would partly ensure a sustainable fight against the continent's COVID-19 pandemic.

CONCLUSION

Before the COVID-19 pandemic in Africa, the African health context's challenges essentially comprised (and may still comprise) weak health systems, weak governance and accountability, high rates of out-of-pocket expenditures, and adverse social determinants of health, and non-harmonization of health aid and health service delivery. These challenges underscore the low levels of investment in the health sector within the continent, especially in sub-Saharan Africa. During the pandemic, a significant shift in the paradigm of strengthening health systems has occurred. For instance, the emphasis appears now to be placed on increased funding for health infrastructure with the following main targets: Improvement of health infrastructure, the motivation of the health workforce, and improvement in laboratory facilities. To achieve these targets of strengthening health systems, authorities in sub-Saharan Africa should, therefore, collectively make the funding of the health sector the top-most priority in their annual budgetary expenditures. To sustain this fallout from the pandemic, a continental peer-review mechanism should be instituted to

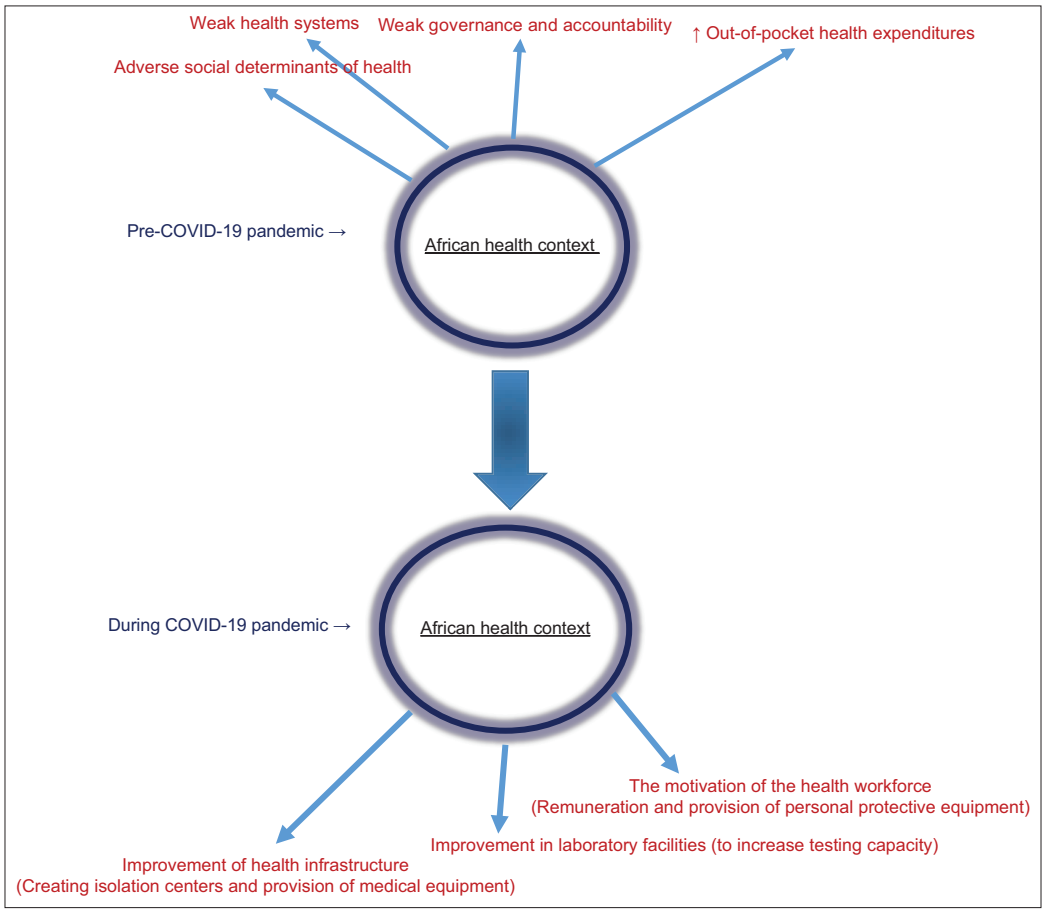

Figure 1: Strengthening health systems in Africa: The fallout from coronavirus disease-19 pandemic.

monitor compliance with increased funding for the health sector among member nations. In the post-pandemic period, further gains in strengthening the health systems can be achieved by improving UHC (through increased funding for health insurance), constant capacity training for health care workers in critical care medicine, and institutionalization of hand hygiene.

Acknowledgment

The author acknowledges with gratitude the opportunity and invitation from the journal's editorial board to write this manuscript.

Declaration of patient consent

Patient's consent not required as patients identiy is not disclosed or compromise.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Brown TM, Cueto M, Fee E. The World Health Organization and the transition from "international" to "global" public health. Am J Public Health 2006;96:62-72.
2. Koplan JP, Bond TC, Merson MH, Reddy KS, Rodriguez MH, Sewankambo NK, *et al*. Towards a common definition of global health. Lancet 2009;373:1993-5.
3. Parodi A, Cozzani E. Coronavirus disease 2019 (COVID 19) and malaria: Have anti glycoprotein antibodies a role? Med Hypotheses 2020;143:110036.
4. Gomes LR, Martins YC, Ferreira-da-Cruz MF, Daniel-Ribeiro CT. Autoimmunity, phospholipid-reacting antibodies and malaria immunity. Lupus 2014;23:1295-8.
5. Afoakwah R, Aubyn E, Prah J, Nwaefuna EK, Boampong JN. Relative susceptibilities of ABO blood groups to plasmodium falciparum malaria in Ghana. Adv Hematol 2016;2016:5368793.
6. Napoli PE, Nioi M. Global spread of coronavirus disease 2019 and malaria: An epidemiological paradox in the early stage of a pandemic. J Clin Med 2020;16:1138.
7. Touret F, De Lamballerie X. Of chloroquine and COVID-19. Antiviral Res 2020;177:104762.
8. Ayoub BM. COVID-19 vaccination clinical trials should consider multiple doses of BCG. Pharmazie 2020;75:159.
9. Sharquie IK. BCG is a good immunotherapeutic agent for viral and autoimmune diseases: Is it a new weapon against coronavirus (COVID-19)? Electron J Gen Med 2020;17:em229.
10. Sfakianos JP, Hegarty PK, Giannarini G, Dinardo AR, Kamat AM. COVID-19 and bacillus Calmette-Guérin: What is the link? Eur Assoc Urol 2020;3:259-61.
11. De Freitas E Silva R, Pitzurra R. What are the factors influencing the COVID-19 outbreak in Latin America? Travel Med Infect Dis 2020;35:101667.
12. World Health Organization. Bacille Calmette-Guérin (BCG) Vaccination, and COVID-19. Available from: https://www.who.int/news-room/commentaries/detail/bacille-calmette-guérin-(bcg)vaccination-and-covid-19. [Last accessed on 2020 Aug 22].
13. Gursel M, Gursel I. Is global BCG vaccination-induced trained immunity relevant to the progression of SARS-CoV-2 pandemic? Allergy 2020;75:1815-9.
14. Reported in World Health Report (WHO). Available from: http://www.who.int/mediacentre/news/releases/pr84/en/index.html. [Last accessed on 2020 Aug 20].
15. Kinney MV, Lawn JE, Kerber KJ. Science in Action: Saving the Lives of Africa's Mothers, Newborns and Children. Kerala: Asian School of Architecture and Design Innovation; 2009.
16. Available from: https://www.afro.who.int/sites/default/files/pdf/Health%20topics/investing_health_africa_2011-04-28.pdf. [Last accessed on 2020 Aug 20].
17. Mangipudi S, Leather A, Seedat A, Davies J. Oxygen availability in Sub-Saharan African countries: A call for data to inform service delivery. Lancet Glob Health 2020;8:e1123-4.

How to cite this article: Uwaezuoke SN. Strengthening health systems in Africa: The COVID-19 pandemic fallout. J Pan Afr Thorac Soc 2020;1(1):15-9.