

## REALITIES OF COVID-19 PANDEMIC IN NIGERIA: COPING WITH THE CHALLENGES AND CHARTING A WAY FORWARD

O.S. Ilesanmi<sup>1,2</sup> and O.F. Fagbule<sup>3</sup>

1. Department of Community Medicine, College of Medicine, University of Ibadan, Ibadan, Oyo State, Nigeria
2. Department of Community Medicine, University College Hospital, Ibadan, Oyo State, Nigeria
3. Department of Periodontology and Community Dentistry, University College Hospital, Ibadan, Oyo State, Nigeria

*Correspondence:*

**Dr. O.S. Ilesanmi**

Department of Community Medicine,  
College of Medicine,  
University of Ibadan,  
Ibadan  
E-mail: ileolasteve@yahoo.co.uk

### ABSTRACT

The impacts of COVID-19 have cut across both developed and developing countries alike. This has prompted different coping mechanisms for survival through these trying times. The reality of stigmatization in this period has negatively affected health-seeking behavior and public response to the outbreak. Challenges exist at both the community and the healthcare providing facilities. We present a review of best practices in coping with COVID-19. Our focus is on how to cope with the challenges and strategies to improve the response to the pandemic in Nigeria. It is required that safety measures be fully adopted and practiced by individuals and groups. Collaborative efforts are required by all stakeholders, government, healthcare workers, and private organizations to mitigate the negative effects of the pandemic, avoid stigmatization, and ease the return journey to normalcy.

**Keywords:** COVID-19, Infection prevention and control, Healthcare workers, Personal protective equipment, Pandemic

### Overview of the COVID-19 Pandemic

The recent outbreak of the novel Coronavirus (COVID-19, SARS-Cov-2) has shaken the entire globe like a convulsing child<sup>1</sup>. The impacts of the disease have cut across both developed and developing countries alike<sup>2,3</sup>. At the early stage of the outbreak, many disregarded the existence of the infection. A few tried to shy away, while others were optimistic regarding the near end of the pandemic. Regardless of perceptions among individuals, the impacts of the COVID-19 outbreak have swept across the entire human race like a whirlwind with several challenges, although with varying levels of severity<sup>2,3,4</sup>. The adoption of infection prevention and control (IPC) measures has helped maintain a minimal infection rate; however, these have also intensified the negative effects associated with this period<sup>5,6</sup>. The innate ability for adaptation to prevailing conditions among humans has prompted coping mechanisms for survival through these trying times.

Globally, it is currently estimated that nearly 15 million persons have been confirmed as COVID-19 cases, with about 616,000 deaths<sup>7</sup>. Similar to others, the African region has not been exempted from the COVID-19 experience with as high as 736,587 cases and 15,424 fatalities<sup>7</sup>. A daily rise in the number of COVID-19 cases is being recorded in Nigeria, with a current estimate of 37,801 cases and 805 deaths as of 22nd July, 2020<sup>7,8</sup>. In Nigeria, Lagos State is the

epicenter of COVID-19 and makes up nearly a third of confirmed cases in the country. Other highly infectious areas include the Federal Capital Territory, Oyo, and Edo States<sup>8</sup>. A larger proportion of these infections occur at the community level, and this has encountered different perceptions and reactions<sup>9</sup>. We present a review of best practices in coping with COVID-19. Our focus is on how to cope with the challenges and chat strategies to improve the response to the COVID-19 pandemic in Nigeria.

### Challenges at the Community Level and Proposed Solutions

Since time immemorial, epidemics of infectious diseases have been associated with stigmatization<sup>10</sup>. The outbreaks of typhus and cholera resulted in the stigmatization of Russian Jewish immigrants, among whom cases were initially documented. In the outbreak of the bubonic plague, which was credited to rats shipped from Hong Kong, residents of Chinese communities were discriminated against. The nomenclature associated with the outbreak of Hantavirus in the United States resulted in the discrimination of Native Americans in the region<sup>10</sup>. An adequate understanding of the nature and effects of stigmatization drove the race-free name determined by the International Classification of Diseases (ICD) and managed by the World Health Organization (WHO)<sup>11</sup>.

Although it seems trivial, the criteria for naming diseases were established by the WHO because words can create racial discrimination and can result in grave consequences<sup>12</sup>. Stigmatization has been a major theme during the COVID-19 outbreak. According to the Nigeria Centre for Disease Control, stigmatization is strongly associated with poor knowledge of COVID-19 infection<sup>13</sup>.

The poor knowledge of COVID -19 has resulted in the poor use of safety measures in many communities. Presently, compliance with IPC measures, including social distancing, washing of hands, and use of face masks, is at an extremely low level in public places<sup>14</sup>. Due to poor adherence, a walk through public place is likely to create either of two impressions on one's mind. Firstly, the likelihood of the near inexistence of COVID-19, and secondly, the casual reaction to the deadly infection among many. This could also result in stigmatization of persons practicing outlined safety measures.

The reality of stigmatization in this period has negatively affected health-seeking behavior and public response to the outbreak. Community-wide stigmatization could delay care-seeking among high-risk or infected persons, cause intolerance of specific population groups, or create dread of persons perceived to be infected<sup>15</sup>. A higher likelihood of stigmatization exists among quarantined individuals, and these persons are vulnerable to the risk of social rejection<sup>15</sup>. Due to the fear of being labeled as a carrier of the deadly disease, many individuals fail to seek care until symptoms become unmanageable or seek no care at all. This was similar to the experience during the 2003 SARS outbreak when health-seeking behavior was greatly reduced among persons of Asian descent<sup>10</sup>.

Religious communities have demonstrated adherence to safety measures through a shift from the contemporary physical meetings to meetings via electronic platforms<sup>16</sup>. These measures erupted from the fact that social activities encourage the transmission of COVID-19, hence the need for its avoidance<sup>17</sup>. A lot of religious events have been canceled, while others have been postponed. For instance, Moslems had stopped the Friday Jumat service, Christians had stopped Sunday gatherings and the sharing of cups during Communion services, while there has been a ban by the United Arab Emirates' Sharia Council on the attendance of meetings by sick people<sup>17</sup>. However, at the local community level, partial compliance with the avoidance of gatherings exist with many individuals hosting low-key events<sup>14</sup>.

Interventions targeted at the mitigation of stigma while providing adequate care for individuals, families, and communities are required<sup>15</sup>. Precedence should be placed on addressing the stigmatization of COVID-19 infected persons or high-risk individuals among public health experts and healthcare providers. This would enhance the development of positive attitudes either to infected individuals or the disease itself. A noteworthy solution during this period at the community level would be to harness a cross-cultural approach in communicating health information regarding COVID-19. Because each specific culture has its beliefs and practices, public health interventions could assess these cultural norms and build on these to encourage the uptake of COVID-19 mitigation factors<sup>17</sup>.

Improvement of community awareness has been in previous studies a strategic means for infection reduction during epidemics<sup>18</sup>. Lessons from the 2003 SARS outbreak reported the association between the knowledge of illness and the possible success of containment or control attempts regarding the illness<sup>19</sup>. Similarly, literature has highlighted the effects of Ebola-related knowledge on preventive attitudes and practices<sup>20</sup>. Data from COVID-19 studies conducted in China also reported the enabling effect of satisfactory knowledge of Coronavirus on the practice of precautionary measures<sup>21</sup>. These point to the fact that knowledge is key to preventing COVID-19. Therefore, communication of COVID-19 information needs to be intensified to improve the knowledge base of community members. Traditional and modern media is a powerful tool that could be used to address public opinion regarding COVID-19<sup>22</sup>. Although requiring monitoring activities of health experts, this strategy should be well-made use of in the communication of evidence-based information for the consumption of community members.

Evidence from China, Italy, and South Korea reveals that COVID-19 mortality increases with older age and among persons with comorbidities. Hence, social distancing has been recommended in public places for the reduction of morbidity and mortality<sup>23</sup>. However, it is highly disregarded among many persons, thus placing an increasing number of persons at risk. The use of the media in communicating the essence of these measures cannot be overemphasized<sup>22</sup>. The use of public officers in the regulation and maintenance of social distancing is also needed.

### **Challenges at the Healthcare Providing Facilities and Proposed Solutions**

Poor knowledge of IPC measures or its practice regarding COVID-19 management is a major challenge

in healthcare settings<sup>24</sup>. Reasons for poor practices of these measures have been stated to include a lack of knowledge and inadequate supply of personal protective equipment (PPE). Literature has shown that denial of the existence of COVID-19 still exists among health experts, and this is unfortunate, because it may lead to negligence of IPC practices. This would continually expose more patients and health workers to the risk of contracting COVID-19. Poor knowledge of IPC measures is not unique to the COVID-19 outbreak in Nigeria. It was a notable factor that drove emotional distress and fear of infection among health workers in China<sup>24</sup>. Different opinions have shaped the strict usage of PPE among current users, top of which is the physical distress it causes<sup>24</sup>. The benefits of PPE usage outweigh perceived associated demerits, hence the need for compliance in its usage. However, inadequate PPE exists in health facilities. Increased education of health care workers, especially on IPC during pandemics, is required to calm the fears associated with pandemic. While risking their lives in providing care, health workers should be provided with PPE in adequate quantities. This would include the provision of face masks, face shields, eye-protecting goggles, gowns, aprons, respirators, and gloves. Strategies for COVID-19 education should be all-encompassing. It should capture all health workers, frontline, or otherwise who are involved in the provision of care at any unit in health facilities.

Previously, queuing mechanisms have been adopted in the maintenance of order among persons visiting healthcare facilities either for drug purchase or consultancy. In the COVID-19 period, such mechanisms could escalate the spread of COVID-19 infection either between patients and other patients or health workers<sup>25</sup>. Rather than improving congestion at health facilities, porters should be engaged in the control of the influx of persons with a minimal number adhered to. Patient-centered care and staggered clinic appointments will reduce traffic at the health facilities. The use of single-entry points manned by health workers is required. A triaging station where questions are asked on the reason for the hospital visit is mandatory to ascertain the likelihood of entering the facility.

Poor index of suspicion and poor risk assessment has also posed challenges in healthcare providing facilities during the COVID-19 outbreak. When these situations exist, IPC measures are likely to be disregarded. Regardless of individual COVID-19 status, rapid triage, and prompt assessment of care should be done to ascertain that persons being managed are not infected. Following triage, infected persons should be led to the COVID-19 ward for prompt care. The successful

coordination of IPC structure has been strongly linked to the inclusion and active involvement of the hospital management in IPC teams<sup>26,27</sup>. However, its absence is evident across different settings<sup>23</sup>. The lack of IPC focal persons has also been identified.<sup>26,27</sup> These reveal that weakened IPC systems and structures exist in the country. The involvement of hospital management is a definitive indicator to the extent of value placed on health workers on IPC matters. This is needed to improve logistics and supervision of the safety of staff and aid the development of training protocols that meet the specific needs of their health facilities. Strengthened IPC systems establish opportunities for adequate monitoring and generating feedback from health workers in each ward.

Another major challenge is that of non-disclosure of patients who are seeking care at a health facility about their risk of exposure to COVID 19. There have been many instances where individuals are already aware that they are suspected/probable/confirmed cases for COVID-19 but hide this information from the healthcare providers when they get to the hospital for care. This non-disclosure has been a significant cause of infection of unsuspecting healthcare workers. Thus, health workers must maintain a high index of suspicion, and regardless of the information provided by the patients, they must ensure adherence to the universal protection when attending to patients in the healthcare facility. It is, however, important to understand why patients would hide such information about their COVID-19 status from the health care personnel. A likely reason may be fear of being stigmatized by the health workers. Indeed, there are numerous reports where patients have been rejected at healthcare facilities because they disclosed their probable status. Unfortunately, some of these patients lose their lives while trying to look for health facilities/personnel that would accept to treat them, only to conduct a COVID-19 test on their corpse and find out they were negative all along.

This is a major problem across the country, and a multipronged approach should be used in addressing the challenge. There must be a massive nationwide campaign against the stigmatization of people with COVID-19. Health workers, especially those working at the entry points into the health facilities, such as the accident and emergency sections and outpatient departments, should be educated on the need to make every patient welcome at the health facility, with adequate precautions at all time. Adequate PPE should also be made available to them so that they feel protected whenever they are attending to patients, whether suspected to have COVID-19 or not.

In the COVID-19 response at health facilities (HFs), the deployment of healthcare workers (HCWs) has been done; however, the number of personnel available is insufficient. The shortage of younger healthcare workers has led to the deployment of elderly persons into the response team at health facilities. This is, however, contradictory to recommendations<sup>24</sup>, because elderly persons are at higher risk for COVID-19 infection than the younger persons<sup>24</sup>. The deployment of non-critical staff in COVID-19 care is needed to provide optimal care at health facilities. A larger workforce is needed to reduce the working hours of critical staff. This would prevent burnout and help to reduce vulnerability to infection among HCWs.

At this notable period, it is required that prioritization of sick persons be done to provide prompt care for persons with the greatest need for admission. Home-based care also presents as a strategy to manage patients with mild conditions<sup>28</sup>. This approach would encourage the use of telemedicine for consultations. These measures would keep HFs from congestion, space hospital beds within 2m distance, and protect workers and patients. Such initiatives should be promoted especially now.

### **Response to COVID-19 Pandemic in Nigeria**

Poor outbreak preparedness of the national government has been reported to contribute to the increased number of infections. Poor outbreak preparedness has also been identified during the Ebola virus disease (EVD) outbreak in Ghana, resulting in the poor capacity to handle the EVD<sup>29</sup>. It has been hypothesized that the closure of the national borders immediately after the detection of the index case would have mitigated the further spread of COVID-19. However, travelers gained access to the country with ease. Currently, lockdown measures have been applied to national borders; however, porous borders still exist through which entry is gained into Nigeria<sup>30</sup>. This evident laxity of border control measures complicates the management of COVID-19 infection by the outbreak response teams. The Surveillance and Outbreak Response Management System (SORMAS) has been developed by the Nigerian Centre for Disease Control and it is deployed to gather daily intelligence reports.<sup>31</sup> However, proper coordination of the outbreak response is required to ensure complete documentation and care provision during the COVID-19 outbreak. Due to the cosmopolitan nature of the COVID-19 in Nigeria, it is required that well-equipped diagnostic equipment and facilities are provided early into the pandemic. The identification of community transmission of COVID-19 creates the need for increased testing. Increased testing helps to know the

actual infection rates and the extent of the vulnerability of each State or zone.

The engagement of community mobilization teams (CMTs) and opinion leaders have been recommended in the enhancement of the uptake of COVID-19 testing at the grassroots level<sup>32</sup>. This draws from the success story of community mobilization for COVID-19 in Hong Kong<sup>32</sup>. The role of these teams has been described as an important strategy during epidemic response<sup>33</sup>. Community-based health workers and community pharmacists could link community mobilization teams and community members to COVID-19 care. Identification of mildly symptomatic persons and prompt access to care can be enhanced through the involvement of community mobilization teams in the COVID-19 response.

The COVID-19 outbreak response is a huge task that cannot be handled alone by the Federal government. It is an opportunity for multisectoral collaboration in the joint COVID-19 response. Since the outbreak, giant strides have been recorded through the Nigerian Centre for Disease Control (NCDC). This has taken the form of active interaction between relevant ministries, agencies, and stakeholders in the coordination and implementation of response activities. Field investigations and surveillance activities have been intensified in the isolation, diagnosis, and contact tracing of persons of interest<sup>34</sup>. Also, the collaboration of the Nigerian private sector with the national government exists through the Collaboration against COVID-19 (CACOVID)<sup>35,36</sup>. Governmental and non-governmental organizations have borne the responsibility for welfare programs aimed at alleviating poverty and reducing the socio-economic impacts of COVID-19. The distribution of food vouchers and monetary cash transfers were provided for socially disadvantaged persons nationwide<sup>35</sup>. Enhanced supply of palliatives is needed to allay the impacts of COVID-19 mitigation factors among the general population.

Poor political will and government support have been reported as a source of setback in the management of the COVID-19 outbreak in Nigeria. The Nigerian government has been up to the challenge of providing support during this pandemic; however, the provided support has been inadequate. It is required that the health system is strengthened with increased capacity for adequate and timely response to COVID-19 and future public health emergencies<sup>37</sup>. Strengthening of the existing structures at the local government level via the primary health care centres is critical to the success of the response. Presently, long waiting time is the norm in the collection of the COVID-19 test result.

This is a noteworthy challenge that has discouraged enrolment for testing among many individuals across the country. Increased turnaround time is due to the limited number of COVID-19 testing centers and increased samples. The decentralization of testing centers to local government areas is highly needed in the optimization of COVID-19 testing<sup>37</sup>. This presents the benefits of reduced waiting time and a greater likelihood of willingness for the uptake of tests. Also, decentralization strategies would enhance the knowledge of COVID-19 among community members to curb further spread of the infection.

Generally, incentives and financial motivation are required in the mitigation of risks faced by healthcare workers in the management of COVID-19<sup>24</sup>. Recommendations are in existence regarding the payment of incentives to health care workers who are involved in COVID-19 response. However, in the COVID-19 era, financial motivations are either lacking or inadequate. Among persons receiving inadequate incentives, studies have reported the prevalence of lower commitment in responding to COVID-19 care<sup>24</sup>. The positive effects of incentive schemes have been identified in the improvement of COVID-19 care among patients<sup>24</sup>. This is because a direct relationship exists between the extent of motivation received and the quality of service rendered by healthcare workers. Therefore, in the improvement of health workers' dedication to the provision of healthcare during the COVID-19 pandemic, financial motivation should be taken into consideration. The satisfaction of these frontline health workers is to be overseen and actualized by persons who wield political authority.

### **Coping with the Challenges and Charting a Way Forward**

In coping with the Coronavirus outbreak and moving onward, public health should take precedence over personal interest which currently subsists. When public interests gain first place, information regarding COVID-19 transmission and prevention would be communicated early for the adoption of safety measures among individuals. This would then boost public trust concerning the government's decision and capacity to manage COVID-19.

No single tree can make a forest, so goes an adage. This saying holds true for clinical medicine and public health during the COVID-19 outbreak. Both disciplines perform their roles from different ends. While clinical medicine is involved in the administration of drugs and direct care for patients in health facilities, public health focuses on all-round health matters both at the facility and community levels. The interdependence of

both fields is required in the management of COVID-19 via a dual mechanism. This would serve to capture all members of the community, including the supposed healthy. Also, targeted interventions can be defined and adopted based on the peculiarities of facilities and communities.

Though resources are limited, it is expected that most of the available resources would be directed towards the COVID-19 pandemic. While this presents an opportunity for corruption, it is greatly hoped that government authorities would be held accountable and assume responsibility in the judicious disbursement of funds during the COVID-19 pandemic. Resources could be directed towards setting up more diagnostic facilities, equipping health facilities, and isolation centers with increased bed units, triaging equipment, IPC equipment, the adequate remuneration of health workers and patients monitoring and life support equipment.

### **CONCLUSION**

The Coronavirus pandemic has affected our ways of life and daily practices globally. Mitigation measures, including lockdown, social distancing, and the ban on social gatherings, have been put in place for the containment and control of COVID-19. The duration of the pandemic has necessitated different coping mechanisms, positive or negative, during this period among individuals. In the transition to normalcy or the new normal, it is required that safety measures be fully adopted and practiced by individuals and groups. Also, collaborative efforts are required by all stakeholders, government, healthcare workers, and private organizations to mitigate the negative effects of the pandemic and ease the return journey to normalcy. There is the need to build a resilient health system in the country that addresses the current challenges and that can be deployed in the event of another pandemic.

### **REFERENCES**

1. Genelec. COVID-19: A virus that has shaken the world [internet]. 2020 April 3 [cited 2020 July 22]. Available from: <https://www.genelec.com/-/covid-19-a-virus-that-has-shaken-the-world>
2. **Olapegba PO**, Ayandele O, Kolawole S, *et al*. COVID-19 Knowledge and Perceptions in Nigeria. Pre-print. 2020.
3. **Al-Mohrej OA**, Al-Shirian SD, Al-Otaibi SK, *et al*. Is the Saudi public aware of Middle East respiratory syndrome? JJIPH. 2016; 9:259–266.
4. **Aldowyan N**, Abdallah AS, El-Gharabawy R. Knowledge, Attitude and Practice (KAP) Study about Middle East Respiratory Syndrome

- Coronavirus (MERS-CoV) among Population in Saudi Arabia. *Int Arc Med.* 2017;10.
5. NCDC. COVID-19 Outbreak in Nigeria Situation Report. Abuja [internet]. Nigeria Centre for Disease Control. [cited 2020 July 22]. Available from: <https://ncdc.gov.ng/themes/common/files/sitreps/0daa083aead110eddba8937c1f90a6d9.pdf>.
  6. **Gbadamosi B.** War On COVID-19: Oyo Threatens to Shut Markets For Flouting Precautionary Measures. Oyo State: The Pace Setter State. [internet]. [cited 2020 July 19]. Available on: <https://oyostate.gov.ng/war-on-covid-19-oyo-threatens-to-shut-markets-for-flouting-precautionary-measures/>.
  7. ECDC. COVID-19 situation update worldwide, as of 22 July 2020. [internet]. European Centres for Disease Control. 2020 [cited 2020 July 22]. Available from: <https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases>
  8. NCDC. COVID-19 in Nigeria. [internet]. Nigerian Centre for Disease Control. 2020 [cited 2020 July 22]. Available from: <https://covid19.ncdc.gov.ng/>
  9. **Adejoro L.** COVID-19: Lagos begins clinical trial as community transmission increases. [internet]. The Punch. 2020 [cited 2020 July 22]. Available from: <https://healthwise.punchng.com/covid-19-lagos-beegins-clinical-trial-as-community-transmission-increases/>.
  10. **Person B.,** Sy F, Holton K., *et al.*, & National Center for Infectious Diseases/SARS Community Outreach Team (2004). Fear and stigma: the epidemic within the SARS outbreak. *Emerging infectious diseases*, 10(2), 358–363. <https://doi.org/10.3201/eid1002.030750>
  11. WHO. Coronavirus disease (COVID-19) pandemic World Health Organization. 2020. [cited 2020 July 22]. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
  12. WHO. WHO issues best practices for naming new human infectious diseases. World Health Organization. 2015. [cited 2020 July 22]. Available from <https://www.who.int/mediacentre/news/notes/2015/naming-new-diseases/en/>
  13. NCDC. Covid-19 Situation Report- Situation Report 39. [cited 2020 July 20]. Available from: <https://www.ncdc.gov.ng/themes/common/files/sitreps/684cf3e8c9481861e385c10cfe35849a.pdf>
  14. **Nwosu A.** COVID-19: FG decries poor level of compliance with safety measures. *Daily Post.* 2020 [cited 2020 July 22]. Available from: <https://dailypost.ng/2020/06/15/covid-19-fg-decries-poor-level-of-compliance-with-safety-measures/>
  15. CDC. Reducing Stigma. Centers for Disease Control. 2020 [cited 2020 July 21]. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/reducing-stigma.html>
  16. **Perry P, Donini-Lenhoff F.** Stigmatization complicates infectious disease management. *AMA J Eth.* 2010; 12(3), 225-230. Available from: <https://doi.org/10.1001/virtualmentor.2010.12.3.mhst1-1003>
  17. **Workneh T,** Emirie G, Kaba M, *et al.* Perceptions of health and illness among the Konso people of southwestern Ethiopia: Persistence and change. *Journal of Ethnobiology and Ethnomedicine*, 2018, 14(1), Article 18. Available from: <https://doi.org/10.1186/s13002-018-0214-y>
  18. **Chirwa GC.** Socio-economic Inequality in Comprehensive Knowledge about HIV in Malawi. *Malawi Med J.* 2019; 31:104–11. Available from: <https://doi.org/10.4314/mmj.v31i2.1>
  19. **Zhong BL,** Luo W, Li HM, *et al.* Knowledge, attitudes and practices towards COVID19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. *Int J Biol Sci.* 2020; 16:1745–1752. Available at: <https://doi.org/10.7150/ijbs.45221>.
  20. **Gidado S,** Oladimeji AM, Roberts AA, *et al.* Public Knowledge, Perception and Source of Information on Ebola Virus Disease – Lagos, Nigeria. *PLoS Cur.* 2014; 8:7.
  21. **Zhang M,** Zhou M, Tang F, *et al.* Knowledge, attitude, and practice regarding COVID-19 among healthcare workers in Henan, China. *J Hosp Infect.* 2020; 105:183-187.
  22. **Brooks SK,** Webster RK., Smith LE. *et al.* The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *Lancet*, 2020; 395(10227): 912-920. [https://doi.org/10.1016/s0140-6736\(20\)30460-8](https://doi.org/10.1016/s0140-6736(20)30460-8)
  23. **Anderson RM,** Heesterbeek H, Klinkenberg D, *et al.* How will country-based mitigation measures influence the course of the COVID-19 epidemic? *Lancet.* 2020: 395(10228): 931-934. Available from: [https://doi.org/10.1016/s0140-6736\(20\)30567-5](https://doi.org/10.1016/s0140-6736(20)30567-5)
  24. **Liu Q,** Luo D, Haase JE, *et al.* The experiences of healthcare providers during the COVID-19 crisis in China: a qualitative study. *The Lancet Global Health.* 2020;8:e790-798.
  25. **Joseph J. Cavallo,** Daniel A. Donoho, Howard P. Forman, Hospital Capacity and Operations in the Coronavirus Disease 2019 (COVID-19) Pandemic - Planning for the Nth Patient <https://jamanetwork.com/channels/health-forum/fullarticle/2763353>
  26. **Bookey-Bassett S,** Markle-Reid M, McKey CA, Akhtar-Danesh N. Understanding inter-

- professional collaboration in the context of chronic disease management for older adults living in communities: a concept analysis. *J Adv Nurs*. 2017; 73:71-84.
27. **Kebe NM**, Chiochio F, Bamvita JM, Fleury MJ. Variables associated with interprofessional collaboration: a comparison between primary healthcare and specialized mental health teams. *BMC Fam Pract*. 2020; 21(4):1-11. Available from: <https://doi.org/10.1186/s12875-019-1076-7>
  28. **Muanya C**. Lagos commences home-based care for asymptomatic COVID-19 cases. *Nigeria - The Guardian Nigeria News – Nigeria and World News*. [cited 2020 July 20]. Available from: <https://guardian.ng/news/lagos-commences-home-based-care-for-asymptomatic-covid-19-cases-management/>
  29. **Annan AA**, Yar DD, Owusu M, *et al*. Health care workers indicate ill preparedness for Ebola Virus Disease outbreak in Ashanti Region of Ghana. *BMC Public Health*. 2017;17(1):546. Available from: <https://doi.org/10.1186/s12889-017-4474-6>
  30. Vanguard. Porous borders, cause of rise in COVID-19 cases- FG. [internet]. [Cited 2020 July 22]. Available from: <https://www.vanguardngr.com/2020/04/porous-borders-cause-of-rise-in-covid-19-cases-fg/>
  31. NCDC. COVID-19 Response. Mid-Action Review: Strategic Direction. Nigeria Centre for Disease Control. 2020 [cited 2020 July 22]. Available on: [https://covid19.ncdc.gov.ng/media/files/20200716\\_COVID19\\_response\\_strategic\\_directions.pdf](https://covid19.ncdc.gov.ng/media/files/20200716_COVID19_response_strategic_directions.pdf)
  32. **Wan KM**, Ho LK, Wong NWM, Chiu A. Fighting COVID-19 in Hong Kong: The effects of community and social mobilization. *World Dev*. 2020;134(105055):1-7.
  33. **Blair RA**, Morse BS, Tsai LL. Public health and public trust: Survey evidence from the Ebola virus disease epidemic in Liberia. *Soc Sci Med*. 2017;172: 89-97.
  34. NCDC. NCDC Initiates New Measures for Pandemic Control as COVID-19 Spreads to 12 States in Nigeria. Nigeria Centre for Disease Control. 2020. [cited 2020 July 22]. Available from: <https://ncdc.gov.ng/reports/weekly>.
  35. Africanews. Coronavirus: AfDB approves \$2m package for WHO's Africa response. 2020. [cited 2020 July 22]. Available from: <https://www.africanews.com/2020/04/02/economics-of-covid-19-impact-on-africa/>.
  36. NTA. Breakdown of Contributions to Fight COVID19 in Nigeria. 2020. Nigeria Television Authority. 2020. [cited 2020 July 22]. Available from: <https://www.nta.ng/news/finance/20200402-breakdown-of-contributions-to-fight-covid19nigeriacbn/>.
  37. **Onyedika-Ugoeze N**. PTF calls for decentralization of COVID-19 response to LGA level, identifying high burden LGAs. [cited 2020 July 22]. Available from: <https://guardian.ng/news/ptf-calls-for-decentralization-of-covid-19-resonse-to-lga-level-identifying-high-burden-lgas/>