



Preparedness of Africa for the Coronavirus Disease 2019 (COVID-19)

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INTRODUCTION

In the latter months of 2019, there were several reported cases of severe lower respiratory tract disease of unknown aetiology in the Wuhan, Hubei province of China. In the first week of 2020, a previously unknown betacoronavirus was isolated by the Chinese Center for Disease Control and prevention (CDC)(1–3). It is the seventh member of the coronavirus family that can infect human beings(4). This short review presents the categorization of the virus, the geographic distribution, populations at risk, presentation, transmission, prevention and the readiness of health systems in Africa for this outbreak.

Categorization of the Virus

Before December 2019 there were 2 known pathogenic coronaviruses known to infect man, severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle East respiratory syndrome coronavirus (MERS-CoV), first identified in China in 2003 and the Middle East in 2012 respectively(5). These cause severe lower tract respiratory syndrome in humans, both viruses have been known to have originated from bats(1,2). SARS is known to have originated from bats and civets (6) and MERS-CoV from dromedary cattle(7). Four other known coronaviruses induce mild or asymptomatic upper respiratory tract disease like the common cold (HCoV-OC43, HCoV-229E, HCoV-NL63, HCoV-HKU1)(5).

On January 7, the Chinese CDC isolated a novel coronavirus from the throat swab of a patient with pneumonia of unknown aetiology(2). The genomic sequence of the novel coronavirus is

At risk population

According to the US CDC, the COVID-19 has an incubation period of the 2 to 14 days.(6) It has a mean incubation period of 5.2 days(11), with almost all cases before the new year epidemiologically linked to the Huanan Seafood Wholesale Market in the Wuhan, Hubei province of China where seafoods and livestock (birds and rabbits) were on sale before the outbreak(4,5). Subsequently, there have been cases with evidence of human to human transmission mostly involving people visiting or living in Wuhan especially family members of infected persons and healthcare workers (4). Human to human transmission is mainly through respiratory droplet spread (coughing or sneezing)(12).

relatively different from the six already known coronaviruses after phylogenetic analysis(3), this virus belongs to the subgenus Sarbecovirus(5). The novel virus was initially designated by the World Health Organization (WHO) as the 2019-novel Coronavirus (nCoV) but renamed COVID-19 short for “coronavirus disease 2019, a cause of severe lower respiratory tract disease in humans(6).

Worldwide distribution

As of February 14th 2020, there have been 64 544 laboratory-confirmed cases of Covid-19–infected pneumonia globally with 1 383 deaths(7). Cases have been reported from 14 Asian countries, 9 European Countries, 2 countries in North America and 1 country in Oceania (7) There have been 1 381 deaths in China and 1 in Japan and 1 in the Philippines(7) All reported cases were confirmed by real-time reverse transcriptase-polymerase chain reaction(1–3).

About 51% of all affected patients already had chronic diseases and the disease is more likely to affect older men(2,3,11). The usual presentation is with fever, chills, cough and shortness of breath(8). About two-thirds of all patients will have bilateral lobar pneumonia according to chest CT and x-rays(2,3,11). The most common causes of fatality are multiple organ failure and fatal acute respiratory distress syndrome(11).

All confirmed cases and symptomatic cases are treated in isolation with supportive care such as oxygen, antipyretics, intravenous fluids(13). Severe organ dysfunction may occur in some case requiring support of vital organ function(13). Antibiotics should be given if there is superimposed bacterial infection such as bacterial pneumonia or sepsis (1).



Limiting further spread

The World Health Organization has declared the Covid-19 as an international public health emergency. Its main aim concerning the Covid-19 is to reduce the spread of the virus to other countries especially countries with weak health systems. Preventive measures include frequently cleaning hands by using alcohol based hand rub or soap and water, avoiding touching hands, nose and mouth with unwashed hands; covering nose and mouth with a tissue or flexed elbow when coughing or sneezing and discarding tissue immediately followed by hand washing; avoiding close contact with people with respiratory symptoms and enforcing infection prevention and control practices in health facilities(14). The WHO encourages governments to put strong measures in place for early detection of disease, disease isolation, containment, contact tracing, active surveillance and appropriate management of confirmed cases. It also urges all countries to actively share data with the WHO to help in the global concerted effort to curb this outbreak. The WHO is also supporting efforts to uncover the animal source of the virus, set out its extent of human-to-human transmission. Developed countries with modernized and world-class health infrastructure are well prepared to fight the spread of the virus. Some countries such as Germany, France and the United States have plans of evacuating thousands of their citizens out of Wuhan.

Focus on the health systems in Africa

In a continent already plagued with neglected tropical diseases and a history of viral disease outbreaks, we have valuable lessons learned the hard way. With the increasing trade relations between China and the continent, there has been increased transportation of people and goods between the two parties. This has put Africa at an increased risk of contracting this outbreak. Countries such as Ghana and Nigeria have been identified by the WHO as part of the top 13 priority countries where efforts have been scaled up to avoid the spread of the Covid-19(15). Some countries have initiated screening at airports with thermal imaging cameras and

non-invasive thermometers to detect possible cases. At the Kotoka International airport in Ghana, thermal scanners are used to check the temperatures of passengers arriving from countries affected by Covid-19 especially China(16). There are speculations that the virus may be spread by asymptomatic persons although this has not been fully confirmed(17–19). If this turns out to be the case, it can impede such methods of detection. In a bid to revamp efforts, some countries have set up travel advisories to citizens to delay travel to mainland China while others have even suspended visas from Chinese visitors.

There have not yet been confirmed cases of the Covid-19 in Africa and that is intriguing. Several epidemiological questions can be raised to try and understand the lack of spread of the disease in Africa. Could there have been an existing immunity in Africans against coronaviruses from previous undetected infection? Could it be because the virus does not survive if exposed to unfavourable conditions such as sunlight and heat? Are the existing health systems strong enough to detect and contain an outbreak? Do we have the appropriate laboratory technology needed to confirm new cases as per the case definition? These are valid questions we, unfortunately, have no answer to as of now. In a possible epidemic situation as such, there is the need for intensification of education of the general public to reduce the tendency of under-reporting cases to health facilities. Emergency respondents, public health practitioners, healthcare workers and researchers also need to be trained to be better prepared for such health emergencies. To increase our readiness for this outbreak, there needs to be an improvement of the transportation systems and an increased investment into infectious disease surveillance and response capacity.

CONCLUSION

As scientists race to find a cure and vaccine for the Covid-19, governments and policymakers of African countries need to show much more commitment by making appropriate investments in the health care system.

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COMMENTARY

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