

The spread of coronavirus across Africa

Jean B. Nachega, Shaheen Mehtar and Wolfgang Preiser give an overview of Covid-19 across the continent



The outbreak of the coronavirus disease (Covid-19) started with the report of a first suspected case on 8 December 2019 in Wuhan, China. The virus has been named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). On 11 March 2020, the Director-General of the World Health Organization (WHO), Tedros Adhanom Ghebreyesus, declared Covid-19 a pandemic. This crisis continues to evolve rapidly across the globe, with the number of countries affected in the WHO African Region steadily growing. As of 13 April, 45 countries in Africa have reported confirmed Covid-19 cases. The spread of Covid-19 in Africa is of concern due to the fragility of healthcare systems in most African countries and because the continent is already burdened by other major chronic public health threats such as malaria, TB, and HIV. The countries experiencing the highest Covid-19 burden so far (including China, South Korea, Ja-

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pan, Italy, and Iran) are very different from sub-Saharan Africa in numerous ways. There is thus little information available on how co-infection with HIV and/or TB will affect COVID-19. It is known that Covid-19 is more severe with associated higher mortality rates in elderly people and those with pre-existing conditions such as diabetes. It is therefore feared that the same increase in disease severity and mortality will be seen in those immunocompromised due to uncontrolled HIV infection. Another threat is the impact Covid-19 will have on already severely constrained health care services; if large numbers of seriously ill patients need care, and if a substantial proportion of health care workers becomes infected or quarantined and unable to work, morbidity and mortality rates will soar beyond those expected for the immediate pandemic. Such effects are being seen in badly affected regions of China and Italy and are expected to be far worse in Africa.¹

Why did Covid-19 reach Africa relatively late?

Why has Africa not been as severely affected as parts of Asia and Europe? Part of the answer seems to lie in the fact that many respiratory viruses thrive at low ambient temperatures. China, Iran, and Italy, home to the three largest Covid-19 epidemics as of March, are all situated in the northern hemisphere and thus in winter. Effects

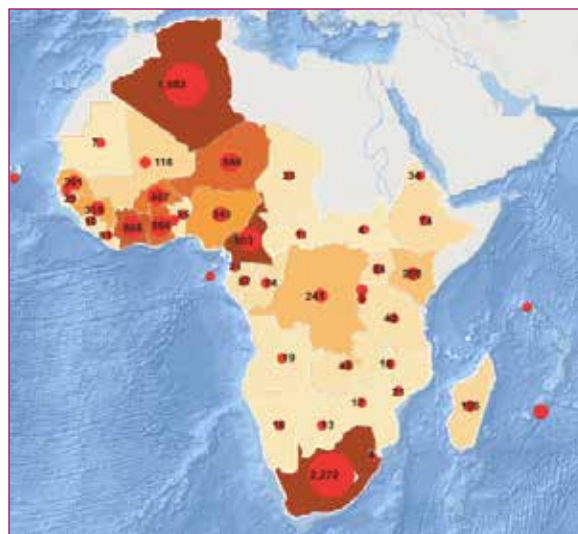
of temperature and humidity play a significant role in the spread of respiratory virus infections during what is commonly known as the 'flu' season. It is not known for sure whether this will hold true for SARS-CoV-2 or how much the seasons contribute to the shift from an epidemic to a pandemic. However, it is possible that if Covid-19 is not contained, countries in the southern hemisphere like Africa, South America, and Australia might see increased infection intensities during their winter months between May and September. Vaccination against seasonal influenza and possibly pneumococcal disease, in those for whom it is recommended, is even more critical this year for several reasons: to help preserve the capacity of the health system; to decrease the number of unnecessary Covid-19 investigations if fewer people develop respiratory tract infection due to influenza; to prevent more severe Covid-19 in those co-infected; and to reduce influenza morbidity and mortality.²⁻⁴

Scaling up screening and laboratory testing

The key principles required to control an outbreak are prompt identification of cases, their effective isolation and, if necessary, treatment, and contact tracing with quarantine imposed on exposed but healthy individuals. The diagnosis of Covid-19 is based on testing respiratory tract specimens for specific genomic sequences of the causative SARS-CoV-2 virus. The most used method for this nucleic acid testing is polymerase chain reaction (PCR). Clinical capacity to sample patients safely and laboratory capacity to undertake PCR testing are vital for Covid-19 containment. Where there are deficiencies in access to testing, community transmission may remain undetected for prolonged periods and lead to uncontrolled outbreaks, as seen in and around Seattle. Unfortunately, many laboratories in Africa do not have the necessary equipment and expertise to conduct such sophisticated tests. Another aspect is surge capacity: even where staff and facilities might be available to perform testing, it remains to be seen whether they can accommodate dozens, if not hundreds, of tests per day. Even in China, with its reasonably well-developed health system, laboratories have been overwhelmed with demand for Covid-19 tests. The WHO is helping African countries to set up testing for the virus and train health professionals in caring for people affected by it. At the end of January 2020, only Senegal and South Africa had laboratories that could test for the virus, but as of early March, 37 African countries had testing capabilities. However, if the number of cases increases on the continent, testing, monitoring, and active surveillance will need to be scaled-up.

The African response

Most cases in Africa have been imported not from China but from Europe. Several African countries have imposed quarantines on those arriving from coronavirus hotspots. Monitoring efforts attempt to detect infection in travelers arriving at airports and other entry routes. Rwanda officials, for example, have recruited final year medical students to perform screening at airports. However, these efforts have limited efficacy as (1) people



Cases in the WHO Africa Region countries, 14 April 2020

may not declare their possible exposure and (2) fever is absent during the incubation period or if someone takes antipyretic medication. The Africa Centers for Disease Control and Prevention (Africa CDC) established the Africa Task Force for Novel Coronavirus on 3 February 2020. Africa CDC is working with WHO on surveillance, including screening at points of entry, strengthening infection prevention and control in health-care facilities, clinical management of people with severe Covid-19 infection, laboratory diagnosis, and risk communication and community engagement. The Infection Control Africa Network (ICAN) has been engaged by the Africa Union to provide training in Covid 19 containment, and thus far three courses have been completed for 40 countries, both in English and French, with more training envisaged. The ECHO online program has covered Covid 19 and will be setting up a series of additional lectures for the African continent, where the emphasis is on prevention of Covid 19 local transmission. To this end, massive media communication, hotline support, and contact tracing has been greatly increased. Rwanda, a very proactive country, went into lockdown in late March after the first case of Covid-19 was diagnosed, and many other countries have followed.

Collaboration and the need for funding

As seen in China, curbing the spread of this pandemic will require a vast quantity of personal protective equipment (PPE) as medical countermeasures such as antiviral agents and vaccines are not yet available. Supplies of these relatively simple and cheap commodities, including gloves, surgical and medical (N95, FFP2 or equivalent standard) masks, coveralls, and hoods, have become scarce due to limited manufacturing capacity or hoarding. In many instances the misunderstanding and fear of transmission has led to misuse of valuable PPE for non-essential purposes, which has further contributed to shortages. Regional, national, and international organisations need to cooperate and collaborate more to optimise allocation and use of limited

Recommended resources

- AFREhealth Monthly COVID-12 in Africa Webinars Series:** www.afrehealth.org
- World Health Organization:** www.who.int/emergencies/diseases/novel-coronavirus-2019 and www.who.int/emergencies/diseases/novel-coronavirus-2019/training/online-training
- Infection Control Africa Network (ICAN) Online Training ECHO:** <https://youtu.be/OWDmx2XIOkk>
- Africa Centres for Disease Control and Prevention:** www.africacdc.org/
- World Health Organization Regional Office for Africa:** www.afro.who.int/health-topics/coronavirus-covid-19
- South African National Institute for Communicable Diseases:** www.nicd.ac.za/diseases-a-z-index/covid-19/
- Journal of American Medical Association:** <https://jamanetwork.com/journals/jama/pages/coronavirus-alert>
- The New England Journal of Medicine:** www.nejm.org/coronavirus
- The Lancet:** www.thelancet.com/coronavirus

supplies and to avoid duplicating efforts. Within nations, greater coordination among different government agencies at local, state/province, and federal levels is needed. Similarly, government and non-government agencies, academia, and the private sector need to work together to monitor available stock and production capacity and create plans for priority distribution as well as assess and, if possible, improve surge capacity for clinical and laboratory services. All these efforts will require major funding to prevent diversion from other health budget items. The WHO Secretary General, Dr Tedros Adhanom Ghebreyesus, announced on 5 February that a US\$675 million preparedness and response plan covering February to April 2020 had been initiated by the international community for China and elsewhere across the globe to protect and assist countries with weaker health systems. Also, Africa’s preparedness efforts have been boosted with a US\$25 million donation from the Bill & Melinda Gates Foundation, some of which is being used for training. More funding will be certainly needed, including from National governments. Several African countries have announced budgetary support measures to cope with the Covid-19 pandemic, including Ethiopia, Ghana and Senegal.

Conclusion

A pandemic is currently spreading across the globe. Many countries, including several ‘wealthy’ ones, are struggling to cope with the spread of Covid-19 and provide health care for affected individuals. Africa is behind the epidemic curve by a few weeks, but it is unlikely to be spared. Relatively low numbers today likely reflect only a delay behind other continents. Therefore, because of limited resources, Africa must think and work smart which means prevention is better than cure. Well planned and executed prevention strategies such as reducing unnecessary travel from high-risk countries, increasing public awareness and a transparent response from governments will make a considerable impact reducing infections on the African continent.

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4. World Health Organization. Influenza Vaccine in the Tropics. <https://www.who.int/influenza/vaccines/tropics/en/>

