



## Letter to the Editor

## COVID-19: Unpacking the low number of cases in Africa



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## ABSTRACT

Coronavirus disease 2019 (COVID-19) has infected over nineteen million people globally with over 700 000 fatalities as of 9 August 2020. To date, Africa has recorded the least amount of COVID-19 confirmed cases. As of 9 August 2020, Africa has 1, 037, 135 cases compared to 10, 615, 855 in Americas and 3, 061, 264 in Europe. In this piece, the authors unpack the low numbers of laboratory confirmed COVID-19 cases in Africa - is it a case of limited testing capacity due to poor health systems or otherwise?

## Dear Editor,

The coronavirus disease 2019 (COVID-19) pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections continues to threaten populations across the globe. At the time of writing, while many clinical trials are currently underway, there is still no vaccine or effective antiviral treatment for COVID-19. Many countries have, appropriately, implemented lockdowns to reduce the rapid spread of COVID-19, as well as preparing healthcare systems to save lives. At the time of writing, Africa has reported 1, 037, 135 cases of COVID-19, including 22, 916 deaths, compared to America (10, 615, 855 cases and 389, 793), Europe 3, 061, 264 cases and 207, 215 deaths), and Asia (4, 886, 417 cases and 106, 711 deaths) [1]. More than 19 million COVID-19 cases have been reported globally, with over 700, 000 deaths [2].

Presently, no country or continent knows the total number of people infected with COVID-19, despite the confirmed cases. The counts of confirmed cases largely depend on how many people have been tested in each region. To properly monitor the spread of the virus, countries need widespread testing. The African region has about 1.2 billion population, and about 2.4 million people have been tested for COVID-19. However, the continent has a testing target of 8000 tests per million population [3]. South Africa has conducted 54, 224 tests per million population, with Egypt conducting 1, 317 tests per million population and Nigeria conducting 1, 504 tests per million population [4]. Among European countries, the UK has conducted 266, 500 tests per million population. In Asia, Iran has conducted 31, 360 tests per million population. The USA has conducted 195, 072 tests per million population. In South America, Peru has conducted 77,178 tests per million population [4]. Africa has the least cases and testing numbers comparatively.

COVID-19 testing prompts vary from country to country based on local conditions and capacities. In South Africa, people who qualify to be tested for COVID-19 include hospitalized patients with respiratory conditions, contacts of known positive cases, health-care workers and returnee citizens. While in Nigeria testing is targeting travelers into the country with symptoms of fever, cough or breathing difficulties, and symptomatic persons with known contacts of positive cases or are resident in an area of high COVID-19 prevalence. Egypt has planned to offer

COVID-19 testing in all general hospitals. The country has the most numbers of government designated testing sites, 320, compared to 26 and 17 in Nigeria and South Africa, respectively [5–7].

COVID-19 is a novel disease and as such diagnostic kits are being developed, validated and distributed. The lockdowns implemented have affected diagnostic kits production and supply chains which has impacted availability of testing materials to scale up COVID-19 testing, and Africa is not spared. One of the main challenges faced by laboratories in the continent is that most of the diagnostic infrastructure requires the use of proprietary test materials, which includes reagents, consumables and cartridges [8]. Despite these challenges, the Centres for Disease Control and Prevention (Africa CDC) rolled out a new initiative to improve testing for COVID-19 response across the African continent [3].

The WHO has recommended countries to ramp up testing capacity and availability as widespread accurate testing is essential to contain the virus spread. The efficacy of this strategy is dependent on resource availability (testing kits and healthcare staff) and functional health systems as this impacts the epidemic dynamics and mitigation plans [9]. The COVID-19 test gold standard is the nucleic acid –based real time quantitative PCR, which is expensive cumbersome and requires a high level of expertise [10]. The alternative serological tests are of low sensitivity and specificity and are mostly available in high-income countries [11]. Further, Africa still faces challenges such as low staffing levels and poor referrals systems that are slowing testing [8]. A number of authors have cited inadequate health systems, limited testing capacity and poor reporting systems as important factors to the low number of COVID-19 in Africa [12–14].

Despite lacking the same testing capacity as other regions in the world, the low numbers of confirmed COVID-19 cases can be explained in part due to experiences in handling infectious diseases on the continent. Firstly, resources meant for widespread HIV and tuberculosis testing were leveraged in the fight against COVID-19 [15]. Secondly, the political will exhibited by most governments has been a key element in the response to the pandemic. Governments were swift in imposing lockdowns, restricting movement, and setting up task forces to coordinate efforts [16]. Thirdly, though not backed by evidence, the issue of weather may have given Africa the much needed “lifeline” [17]. Fourthly, compared to Europe, Africa had a lower importation risk of the virus

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based on the data on the volume of air travel from China to Africa [18]. The estimated risk of importation per country: Egypt, Algeria, and South Africa had the highest importation risk whilst Nigeria, Ethiopia, Sudan, Angola, Tanzania, Ghana, and Kenya were at moderate risk. Finally, Africa's young population may be another reason for the low infection rates experienced on the continent. The median age in Africa is 19.4 years, compared with 40 in Europe and 38 in the US. Case fatality rates for ages above 60 years were higher in Italy compared to other countries, suggesting that the disease is more severe in older populations.

In conclusion, we argue that it is not accurate to offer limited testing capacity, poor health systems and under-reporting as the only explanations for the lower numbers of COVID-19 cases reported in Africa. Africa's lower COVID-19 cases can be attributed to early mitigatory responses enhanced by leveraging existing infection control systems, and the general low risk of virus importation from COVID-19 hotspots. A recent surge in cases, in particular South Africa is a cause for concern and so is the winter season that much of Africa is experiencing. As lockdowns and restrictions are slowly being eased or lifted, there is a need to maintain vigilance in education, awareness, testing and resource mobilization for procurement of medical consumables to reduce the transmission of the virus.

#### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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