

Nigeria needs innovation and science investment to help control Covid-19

By [Christian Happi & Ifeyinwa Aniebo](#)

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[Nigeria](#), like other African countries, wasn't spared from the spread of the [coronavirus pandemic](#). To overcome this challenge, countries have been advised to keep [testing](#), treating and isolating to reduce infections.



Professor Christian Happi, director of the African Centre of Excellence for Genomics of Infectious Diseases, displays one of the most advanced automated acid extractors being used in the laboratory. Plus Utomi Ekpei/AFP via Getty Images

Nigeria has been [expanding](#) its capacity to test. The country's [laboratories](#) can carry out about [18,000 tests per million](#) daily, but this can be improved. The country ought to be doing about 40,000-50,000 tests daily.

Nigeria successfully controlled [Ebola](#) and is applying some of the lessons learned. But Covid-19 presents new challenges as scientists are still trying to understand the novel virus.

This novelty highlights the importance of continuous investment in science, research and development. The [African Centre of Excellence for Genomics of Infectious Diseases](#), Redeemer's University, Ede, is one of the few research institutions in the country with the ability to carry out whole genome sequencing. It's therefore one of the few centres working on the frontline of the pandemic. It collaborates with the second main institution, the Nigerian Centre for Disease Control.

Rwanda is an example of a country that has invested in healthcare and provides an environment for innovation. For example, Rwanda's Health Ministry [announced](#) the use of smart robots to administer temperature checks, monitor Covid-19 patients' status and keep medical records.

The robots were created to speed up service and help protect the lives of health workers. Other innovations include [drones to raise Covid-19 awareness, spraying kiosks, and step-and-wash handwashing facilities](#). Rwanda is currently celebrated as a [success story](#), having recorded only 5017 cases and [34 deaths](#), as of 23 October.

To control this pandemic and prevent a future one, Nigeria needs to start investing heavily in science research. Nigeria was one of the 10 African heads of state and government that [endorsed a target to allocate 1% of gross domestic product](#) to research and development in 2002. But progress towards this [target has been slow](#).

Scientific responses

On 1 March 2020, an Italian man was identified as the [first case](#) of Covid-19 in Nigeria by the National Center for Disease Control. Within three days of receiving the specimen, the African Centre of Excellence for Genomics of Infectious Diseases assembled a full genome of SARS-CoV-2. This was [the first](#) sequenced genome of the virus from the African continent.

This was immediately made available to the global scientific community to help inform the public health response, improve surveillance and facilitate drug, diagnostics and vaccine development.

The centre remains at the frontline of Nigeria's response by carrying out daily diagnosis of suspected Covid-19 samples. At its disposal are state-of-the-art sequencing and advanced bioinformatic tools to understand the epidemiology, evolution, spread, and virulence of the virus. This has generated data that have informed covid-19 rapid diagnostics development, vaccine design and production, as well as policy formulation. The data have contributed significantly to the international scientific community.

One of the innovations by the centre is a Covid-19 [self-screening tool](#) tailored for Nigerians to assess their risk of exposure. This phone app tool factors in not just scientific and epidemiological data but also the socio-cultural diversity of the country. The screening is available in English and different languages spoken in Nigeria.

Since the app was released, over 4,100 Nigerians have completed the test with over 6,800 users and a traffic of over 84,000 as at August 29, 2020. The tool has been effective in reducing panic, improving health access and reducing response time.

In addition to daily screening of clinical samples, a [real-time interactive map](#) showing confirmed cases across Nigeria was developed by the African Centre of Excellence for Genomics of Infectious Diseases. It gives an overview of laboratory confirmed cases nationwide, using data from the Nigeria Centre for Disease Control.

The map is updated daily as new cases are confirmed and provides an immediate update on the outbreak. This helps the country to identify hotspots and make evidence-based decisions and policies.

Investment in science research is needed

Greater investment in research and development would help Nigeria create a pool of talent and expertise to develop solutions to other problems too.

Investment in science also means investment in the future of science – the next generation of scientists. This would require investing in tertiary education, professional development, and an environment that supports mentorship. It requires infrastructure such as laboratories, laboratory equipment and uninterrupted power supply to carry out experiments.

To achieve this, Nigeria needs political will coupled with commitment, partnerships and the right leadership. The country is lagging behind in science when compared to other African countries in the region but the current pandemic gives it an

opportunity to make science a priority once and for all.

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