



STATEMENT BY THE VICE CHANCELLOR, PROF. BARNABAS NAWANGWE TO THE PRESS, TUESDAY 21ST APRIL 2020

INTRODUCTION

Good morning members of the Press.

I welcome you all to this press conference conducted via Zoom in response to the COVID-19 lockdown. I hope you are all observing the guidelines given by the World Health Organisation and different Government Departments and Agencies to stay safe. Obviously it is difficult to convince you members of the press to stay home, but please do everything possible to stay safe. There have been many questions regarding the role of universities in the fight against COVID-19. Today we want to share with you what Makerere University is doing about COVID-19.

Makerere University was closed on 20th March 2020 following a presidential directive in light of the COVID-19 pandemic. All students and staff were sent home immediately, except very few international students, who failed to get means of going home, whom we are looking after on campus.

Makerere University has a long tradition of responding to health emergencies and epidemics. We were at the forefront of the response to HIV/Aids and Ebola and our contribution in both cases is known the world over. We have built enormous capacity at our College of Health sciences to respond to emerging diseases, including the COVID-19 pandemic. Our 350 members of staff at the College of Health Sciences work very closely with the Ministry of Health. All of these continue to offer critical services to non-COVID illnesses, COVID19 national task force, clinical management for patients with COVID 19, as well as clinical research on the evolving clinical presentations of the COVID19 disease.

RESPONSE TO COVID-19

In Uganda, the first case of COVID was reported on 21st March 2020 and the numbers have since grown to 55 within one month. The Minister of Health established a 17-member multidisciplinary scientific advisory committee composed of experienced public health, clinical, biomedical, social and behavioural scientists to advise the Ministry on the overall strategy to ensure an evidence-based strategy and implementation of the COVID response in Uganda. The majority of the members of this committee are from Makerere University. The committee has extensively reviewed the global literature to inform the Ugandan policy and has also similarly assembled high priority evidence gaps for which local data is needed to urgently inform the improvements in the COVID prevention and management in Uganda. The questions and priority interventions include development of new rapid test diagnostics, to alleviate the anticipated severe shortage of test kits, which has been a major challenge globally. Other questions include tracking of the immunological response in relation to new treatment options based on plasma for COVID patients who have recovered as well as development of HERD Immunity to protect the communities from future resurgence of COVID.

Other questions revolve around enhanced treatments to reduce the severity of COVID disease and the need for more sophisticated intensive care, given the limited intensive care capacity in Uganda and the African region. The team has also identified the need to explore the socio-economic and health system impact of COVID in Uganda, to inform broader mitigation strategies. Below is a list of the priority questions:

1. Development of a rapid diagnostic test for CoVID19
2. Validation of other non-WHO accredited tests for CoVID19
3. Studies of HERD immunity/Immune response and implications for future prevention of COVID recurrence as well as clinical management
4. Chloroquine/Hydroxychloroquine and other treatments
5. Modelling of COVID19 epidemic in Uganda to inform planning and intervention mix over time
6. Environmental sampling for public health risk evaluation
7. Supporting the NIH biobank to acquire and store biological specimen for CoVID19
8. Tracking health service utilization and COVID19 impact on health systems
9. Sequencing of the SARS-CoV2 isolates among Ugandan CoVID19 patients
10. Duration of viral shedding and Infectivity following recovery
11. Effect of the Uganda COVID-19 treatment protocol on outcomes and associated factors
12. Chloroquine for Prevention of Coronavirus Disease (COVID-19) amongst healthcare workers involved in COVID patient care
13. Hydroxychloroquine vs Chloroquine for Post Exposure Prophylaxis for Coronavirus Disease (COVID-19) amongst Ugandans exposed couple with viral loads.
14. Efficacy and Safety of Corticosteroids in severe COVID-19 related pneumonia
15. Hydroxychloroquine/Azithromycin vs Chloroquine alone for Treatment for Severe COVID-19 Pulmonary Infection.

OTHER RESPONSES/INNOVATIONS

Makerere University researchers have responded to the COVID-19 pandemic with innovations to address the challenges I have mentioned above. The innovations include the following:

- a) A rapid testing kit under development by a team led by Dr. Misaki Wayengera. This kit should enable rapid testing for coronavirus and considerably lower the cost of testing currently standing at USD 65, which is obviously prohibitive for developing countries like Uganda.

The problem

- Diagnosis is a key strategy in pandemic control, enabling early detection of those infection and their isolation for treatment
- In the context of the on-going COVID19 pandemic, diagnosis has been problematic due to the global scarcity of the existing WHO approved test kits
- Moreover, the existing WHO approved kits for CoVID19 are premised on RT-PCR—detecting viral RNA. RT-PCR is itself an expensive platform (costing over US\$65 per kit), requires a laboratory, demands technical expertise, and takes long (4-6 hours) to yield results.

- Thus, it is not amenable for point of care (POC) deployment in remote equatorial African settings, most without laboratory capacity

What we are doing

- Our group at MakCHS has over the past 15 years build extensive expertise, experience and eco-systems across the academia, industry and public private partnerships for R & D of pathogen diagnostics
- We are developing an affordable (costing < US\$1), easy to use (requiring minimal expertise, user guide), rapid (yielding results within 2-5 minutes) POC test platform for COVID-19 suited for use within remote equatorial African settings
- **The swab-tube dipstick agglutination (STDS-AgX) SARS-CoV2 antigen test will utilize the nasopharyngeal sample collection swab, which is placed back into its tube containing reagents that detect the virus surface protein. On shaking, a positive result will be visualized as formation of particles (equivalent to what is seen when clear milk, goes bad)**
- In addition, we shall develop two lateral flow test (LFT) platforms for detecting host-specific antibody responses against CoVID-19 (IgM and IgG)

Use cases

- Detection of COVID19 cases within epidemic/pandemic settings (STDS-AgX COVID19 Ag test)
- Screening of travelers for COVID19 (either STDS-AgX COVID19 Ag test or IgM LFA)
- Detection of asymptomatic COVID19 (STDS-AgX COVID Ag test and IgM LFA)
- Sero-prevalence studies to determine previous exposure (IgG LFA)

Potential impact:

These home-grown assay platforms will enable Uganda and other African settings cost-effectively respond to the COVID19 pandemic. This particularly as the pandemic enters the exponential phase in many countries when many cases will emerge, and yet tests are scarce on the global scene

Time-lines

- ✓ Antibody (IgM and IgG) LFA (end of May, 2020)
 - ✓ 1st STDS-AgX COVID19 (June 2020)
- b) The Epidemic Management Tent (EpiTent) developed by a team from the Resilient Africa Network (RAN), a project involving 16 universities in 11 African countries based in the School of Public Health and coordinated by Prof. Bazeyo. The EpiTent is used for isolation of patients with severe communicable diseases like Ebola and COVID-19 and it is approved by the USAID and the WHO;
 - c) Development of a low-cost ventilator by a team involving researchers from the Resilient Africa Network, College of Engineering and Technology, College of Health Sciences and engineers from Kiira Motors Corporation. The team successfully conducted an engineering test of the ventilator on 10th April 2020 and it is now undergoing various validation tests before applying to the National Drug Authority and other certifying agencies for use on patients. The ventilator will considerably lower the cost of this very important facility from the current cost on the open international market, which ranges between USD 25,000 and 60,000. Development of the ventilator, which will cost approximately USD 5,000 is expected to be completed in the next four to eight weeks;

- d) Makerere University Health Services with support from Case Western Reserve University has built capacity to perform PCR based (molecular) tests for COVID-19. They will be able to conduct 40,000 tests and they are finalizing the details for implementation;
- e) Makerere University is partnering with several local and international research institutions and universities in the search for solutions to the COVID-19 pandemic.

RESPONSES BY OTHER DISCIPLINES

Faculty from the Colleges of Health Sciences and Engineering, design, Art and Technology are at the forefront of responding to the pandemic. However, faculty from other disciplines are making a contribution too. Several of these faculty are making a contribution to raising awareness among the community and providing correct information where fake news has raised alarms like in the case of the claim that COVID-19 is caused by the 5G Technology. Management of a pandemic like COVID-19 cannot be achieved by health science alone, societal behavior is key, hence the role of humanities and social sciences and I am glad that faculty at Makerere University from various disciplines are making their contribution.

CONCLUSION

Let me end my introductory remarks by thanking our faculty from the College of Health Sciences, who have joined the rest of the health workers in Uganda at the frontline in fighting the spread of COVID-19 disease. I also thank all our scientists who are looking for local solutions to the pandemic and we are glad to share any research results with the international community. Makerere is committed to contributing to knowledge creation and innovations for the good of humanity. We will continue along this path because this is what makes us a truly global university. I thank all of you members of the press for joining this conference. We will now take some questions, which our researchers will be happy to answer.