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Public universities are immersed knee-deep in finding COVID-19 solutions for South Africa and the world

As the largest part of South Africa's National System of Innovation in response to COVID-19, the 26 public universities are not just upholding teaching, learning, research and community engagement. In support of health and other systems, universities have within their core functions also immersed themselves in manufacturing and supplying medical equipment; undertaking clinical trials and participating in much-needed screening, testing and contact tracing. They are conducting COVID-19 research to find urgently needed solutions. In order to mitigate the risks to the most vulnerable, universities are providing strategic counsel to local, provincial and national government structures from the perspective of epidemiological models and public health strategies. They are also providing much-needed public information on the unprecedented pandemic.

Our universities are engaging in integrated, **multi-disciplinary COVID-19 research** aimed at addressing this enormous challenge the world faces. Even under lockdown conditions, research work is seeking solutions in areas such as **epidemiology, vaccine development, biomedical sciences, clinical sciences, medical and bio-engineering, data analytics, ICT, social, economic, public policy development** and much more. Some of the on-going research is being undertaken in transdisciplinary, bi-lateral or multi-institutional collaborations, and also with pharmaceutical and other manufacturing companies, civil society organisations, South Africa's science councils as well as international, multilaterals such as the World Health Organisation.

To cite examples, the medical schools at our universities are participating in the **Public Health Emergency Solidarity Clinical Trials** exploring four options (*remdesivir, lopinavir/ritonavir, lopinavir/ritonavir plus interferon, chloroquine or hydroxychloroquine*) for the treatment of COVID-19. They are collectively representing South Africa in this 45-nation initiative of the World Health Organisation (WHO).

In support of our own Presidency and the National Treasury, leading researchers at five of South Africa's public institutions are undertaking the **Coronavirus Rapid Mobile (CRAM) Survey**, which is investigating and tracking changes in social and economic outcomes of COVID-19 in a nationally representative sample of 10,000-20,000 South African individuals over the next six months. The researchers from Stellenbosch University (SU), the University of Cape Town (UCT), the University of Johannesburg (UJ), the University of the Western Cape (UWC) and the University of the Witwatersrand (WITS) are looking at indicators such as child hunger, unemployment and income.

Half of our 26-member institutions are in the frontline battles of COVID-19, participating either in the drug development, clinical trials, or are, to varying degrees, involved in **symptomatic screening; diagnostic testing or contact tracing**. The University of South Africa has offered its Ormonde facilities in Johannesburg to the Gauteng Provincial Government for use as **quarantine facilities**.

Furthermore, 14 of our universities are either **manufacturing medical devices and protective and safety equipment, inventing smart ICT solutions** to realise efficiencies in the fight against COVID-

19 or **advising government on suitable specifications of medical devices** required for adequate response to the coronavirus. In accordance with their disciplinary expertise and capabilities, these institutions are manufacturing ventilators; oxygen connectors for ventilators; ventilator masks; ventilator helmets, swabs; N95 facial masks and face shields for medical personnel, ordinary other face masks as well as sanitisers. These supplies are being produced in support of hospitals, clinics as well as communities in the universities' local or metropolitan municipalities. The Sefako Makgatho University of Health Sciences, for one, has invented a mobile application to use in screening their own students and staff for COVID-19, whereas some institutions are producing sanitisers for their surrounding communities and to deep-cleanse their own students' residences and other facilities.

Public universities, typically located in varying social contexts, have taken it upon themselves to **inform** not just their own university communities but also to **educate the larger public on the COVID-19**, its symptoms, how to prevent the spread of infection and what to do when one suspects infection. Several universities are using their student radio stations to beam information and news to their local communities. Some have set up call centres. Others have produced guidelines for medical practitioners (oral health care givers, pharmacists) in response to COVID-19. In one way or another, our universities are all connected to the global enterprise of research, development and innovation against this pandemic and, as such, are finding ways of getting their research findings out rapidly.

Finally, numerous experts from the public university system **sit on government's advisory structures** such as the Public Health Ministerial Committee on COVID-19; the Ministerial PSET Covid-19 Task Team as well as other structures within the Presidency, the National Treasury, provincial departments of health as well as within the metro councils of Cape Town, eThekweni, Gauteng and Tshwane.

For as long as public universities have been in existence in South Africa, they have striven to integrate a response to national development challenges through their core activities of teaching/learning and research. Outside of COVID-19, our universities are hugely involved, among others, in TB and HIV management research; in food, water and energy security research; in human and sustainable development research; in poverty, inequality, land reform and democracy research and much more. According to Professor Ahmed Bawa, Chief Executive Officer at Universities South Africa (USAf), the enormity of the global menace called COVID-19 has galvanised the universities into more directed action, both proactively in their multi- and trans-disciplinary research and also in response to government requests at various levels. "Our member institutions are working hard on the large global challenge of improving the treatment of CoViD-19 patients, in vaccine development, in identifying existing and new drugs to combat the disease and studying the socioeconomic impact of the virus on individuals and on society as whole."

Attachments:

- A synopsis of public universities involved in multi-disciplinary research
- Research Projects of public universities in response to COVID-19

Inquiries: 'Mateboho Green (072 807 4677)

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