



media release

International Day of Epidemic Preparedness, 27 December 2023, and local expert become global: Prof Shabir Madhi

In January 2020 the whole world started turning upside-down. Over the next two to three years, the people of the world were devastated by the COVID-19 pandemic, millions of lives were lost, and hundreds of thousands of people lost their income as production and trade had to be halted and supply chains interrupted, for safety and quarantine purposes. Many healthcare systems, particularly in third world countries were left overwhelmed and under-resourced. These countries were testing and rolling out equipment and vaccines at a much slower pace compared to first world countries. COVID-19 will certainly not be the last widespread virus pandemic people have to face. There is an urgent need for strong and resilient healthcare systems to prevent another virus outbreak which could potentially exceed previous outbreaks in terms of intensity and gravity. People need to look at the recent pandemic as a harsh wake up call to start acting for preparedness, prevention and prompt response. This can be achieved through collaborations between science and indigenous knowledge, and providing education and advocacy initiatives on epidemics and pandemics to spread awareness.

At the 18th annual **Nelson Mandela Lecture** in 2020, the United Nations Secretary General Antonio Guterres lamented: "COVID-19 is a human tragedy. But it has also created a generational opportunity. An opportunity to build back a more equal and sustainable world. The response to the pandemic, and to the widespread discontent that preceded it, must be based on a New Social Contract and a New Global Deal that create equal opportunities for all and respect the rights and freedoms of all".

The United Nations General Assembly (UNGA) designated 27 December as the International Day of Epidemic Preparedness in its resolution in December 2020, because of the impacts of the COVID-19 pandemic. It is intended to highlight the importance of prevention, preparedness and international cooperation against epidemics and other widespread health emergencies. The World Health Organization (WHO) plays a vital role in coordinating action on healthcare problems at a global scale. In accordance with its mandate, to address the impacts of infectious diseases and epidemics, envisaged in the 2020 Sustainable Development Agenda. The WHO works with countries in meeting their International Health Regulations to build virus resistance.

The HIV/AIDS epidemic is still one of the most serious public health challenges, with approximately more than 35 million people globally, living with it in 2022. There was also an estimated 1.3 million newly infected people in 2022 and many people are still living with the virus without knowing it. Although the number of newly infected people has been declining over the years, the process is quite slow. Many developing nations are not making progress in the distribution of treatments and ending AIDS related deaths. This December's theme for AIDS awareness month is 'Remember to commit'. It is an important reminder that HIV/AIDS has not gone away and that there is a need for awareness, exchange of information and education to fight against stigma and prejudice, as well as the poor delivery of medication and health facilities.

Prof Shabir Madhi, Dean: Faculty of Health Sciences at the University of Witwatersrand (Wits) was awarded the prestigious **Lifetime Achievement Award** at the 2022 **NSTF-South32 Awards** for his unmatched commitment to the fields of immunology and epidemiology, and his unrelenting pursuit of innovation in healthcare. The photo was taken at the Awards gala dinner in July 2022, with Mr Buti Manamela, the Deputy Minister for Higher Education, Science and Innovation.



Upon Prof Madhi's appointment at the South African Medical Research Council (SAMRC), the SAMRC Respiratory and Meningeal Pathogens Research Unit (RMPRU) moved from being mainly focused on epidemiology and vaccines against *Streptococcus pneumoniae* and was renamed, the SAMRC/Wits Vaccines and Infectious Diseases Analytics Research Unit (Wits-VIDA) in 1995. It is internationally renowned for its research on vaccine-preventable diseases. The unit eventually grew to include clinical immunology of vaccine-preventable diseases, respiratory and enteric pathogens, basic science research, vaccines targeted at pregnant women and children, and epidemiology studies across a wide range of diseases.

"My research into preventable diseases and vaccines started in 1997 when I got involved in a programme that helps evaluate the pneumococcal conjugate vaccine," Prof Madhi said. "At the time, this was the largest clinical trial undertaken outside of North America and was targeted at children. The goal was to prevent the leading cause of under-five child mortality from any single organism."

Before COVID-19 hit, he was focused on vaccine research on pregnant women and young children. He said: "Some of the first studies we did, once again leading on the global stage with research done in South Africa, included looking at vaccines in both pregnant women living with HIV and protecting against influenza". Prof Madhi and his Wits-VIDA team were centrally involved with the COVID-19 vaccines roll-out and this work laid the foundation for the future of vaccines in the world. "Using our experience from the past 27 years, we transitioned to undertaking the first COVID-19 studies on the African continent including the AstraZeneca vaccine," said Prof Madhi. The AstraZeneca vaccine was then the most widely-used vaccine against COVID-19.

He further explained: "We did the studies around this vaccine and the Novavax vaccine and it gave us the insights we needed to recalibrate our expectations around COVID-19 vaccines. Over the past 18 months, we've uncovered that the virus has developed antibody evasion and none of the vaccines provide sustainable protection against mild to moderate COVID-19 as a result". The Wits-VIDA research fund that totals over R1 billion has created employment for more than 500 people. The research unit located at Chris Hani Baragwanath Academic Hospital, has established an expansive immunology, microbiology and molecular assay laboratory.

STEMulator link for the young-at-heart: Learn more about Intensive Care Units and analysing biological samples such as blood, on the [Hospital tile on the STEMulator](#). STEMulator.org is an exciting interactive learning platform and project of the NSTF [proSET](#) membership sector.

Read about related NSTF Discussion Forums:

- [Preparing for epidemics in South Africa – human and animal \(25-26 February 2021\) – NSTF](#)
- [Skills to prepare South Africa for future pandemics \(1 December 2021\) – NSTF](#)

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- <https://nsthf.org.za/2022/08/15/professor-shabir-madhi/>

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- runs and supports collaborative projects and youth outreach, including recognition of top performance in mathematics and science, role modelling, bursary and STEM career information
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