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Wits School of Molecular and Cell Biology lends a hand with glove donation

1 April 2020 - Wits University

The Wits School of Molecular and Cell Biology has donated medical gloves for frontline healthcare workers at Chris Hani Baragwanath Hospital in Soweto.

Healthcare workers treating COVID-19 patients urgently require medical gloves for their own protection and to avoid contamination. However, gloves and other personal protective equipment (PPE) is in

short supply.

Protective equipment saves lives

The Director-General of the World Health Organisation (WHO) highlighted in his media briefing on 27 March 2020 that the chronic global shortage of PPE is one of the most urgent threats to our collective ability to save lives.

Prof. Yasien Sayed in the Protein Structure Function Research Unit (PSFRU) in the School of Molecular and Cell Biology coordinated the donation effort. Sayed was alerted to the critical need after Wits Medical School graduate, Dr Naeem Vallee, a first-year intern doctor at the hospital, relayed the shortage via a colleague whose wife is a Wits PhD candidate whom Sayed supervises.

Through the collective efforts of Sayed, Dr Pieter De Maayer, Dr Angela Botes and Dr Vanessa Meyer, a total of 56 boxes each containing 50 pairs of gloves were donated.

“At the moment, the Department of Internal Medicine at Chris Hani Baragwanath are full in the swing of preparing to deal with the impending COVID onslaught. Three wards have been specifically isolated to host and rehabilitate and treat the patients that will come back as COVID positive. It’s an extremely tense time. The lack of personal protective equipment is huge challenge we as healthcare practitioners face in dealing with this pandemic,” said Vallee, who took delivery of the donated gloves. Vallee graduated MBBCh from Wits in 2019.

“I’m extremely grateful to Prof. Sayed and his colleagues for recognising that we on the frontline need help, and for his generosity. This is a time where we all need to work together to

prevent the spread and flatten the exponential growth curve of the COVID pandemic.”

Sayed, who personally delivered the boxes to the hospital, says: “The donation of gloves represents a small token of our appreciation of our healthcare workers’ selfless and admirable efforts, and we hope that these gloves will afford them some measure of protection against the virus.”

Fingering coronavirus ‘spike’ protein

The SARS-CoV-2 virus, the novel type of a coronavirus that causes coronavirus disease (COVID-19), has several glycoproteins on its surface. One of these proteins is referred to as the ‘spike’ protein, which is responsible for binding to receptors on the host cell prior to infecting the cell and hijacking the host’s cellular machinery for replication and reproduction of new viral particles.

The PSFRU investigates the structures, dynamics and energetics of a variety of proteins using a multidisciplinary approach that relies on the principles and methodologies of biochemistry, biophysics, molecular, and structural biology and bioinformatics.

Keeping Witsies safe

Prior to announcement of the lockdown on 26 March 2020, the School had manufactured and dispensed 70% EtOH (ethanol) surface disinfectant freely to Wits staff to minimise contamination by the coronavirus. The disinfectant comprises 95% industrial ethanol (also called alcohol) diluted with distilled water to a ratio of 70%. Alcohol kills germs effectively, as long as alcohol comprises 60% to 95% of the solution. This is a ratio shown to be effective

against germs. Alcohol attacks and destroys the 'envelope protein' that surrounds some viruses, including coronaviruses. This protein is vital for a virus's survival and multiplication.

"We use 70% ethanol to sterilize surface areas when we are required to work under sterile conditions in our laboratories, for example, when we do tissue cell culture work. The ethanol is effective in killing a number of germs, including viruses. Cleaning all objects and surfaces that we come into daily contact with is a sensible practice to protect against coronavirus," says Prof. Marianne Cronjé, Head of the School of Molecular and Cell Biology.

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