Wits RHI’s Key responses to COVID-19
Wits Reproductive Health and HIV Institute (Wits RHI) is involved in an effort to curb the COVID-19 pandemic that is facing South Africa and the world at large. Prof. Helen Rees is a member of the team advising the Health Minister on COVID-19 (MAC). She is part of the Clinicians Group, the Research group and the Incident Management Team (IMT). Prof. Rees is Co-Chair of the South African arm of the SOLIDARITY study.

This is a World Health Organisation (WHO) coordinated trial that will generate high quality evidence on COVID-19 treatment options. Prof. Rees is also the International Coordinator for the global Crown Coronation study. This study is aimed at looking at strategies to protect healthcare workers.

Key projects are being spearheaded by our directors who are currently engaged in several COVID-19 studies. Specifically:

- Coordinating the WHO’s Solidarity Study across fourteen sites in South Africa (Prof. Rees National Co-PI; Dr Thesla Palanee: National Coordinator)
- Coordinating the global Crown Coronation chloroquine prophylaxis study for Health Care workers (Prof Sínead Delany-Moretlwe South African Co-PI, Prof. Rees Global Co-PI)
- National testing and contact tracing programme (Dr Gloria Maimela)
- Pregnancy Surveillance Study (Dr Lee Fairlie)
- National WhatsApp messaging and symptom surveillance programme (Dr Saiqa Mullick, Co-PI)
The World Health Organization and partners are launching a large international clinical study to find out whether any of four COVID-19 treatments are effective. This is known as the SOLIDARITY study.

Prof. Rees and infectious diseases Dr Jeremy Nel are leading the SA division of the Solidarity study of four possible treatments for COVID-19. This independent group identified the following treatment options as being justified for inclusion in the SOLIDARITY study: Remdesivir; lopinavir/ritonavir; lopinavir/ritonavir with interferon beta-1a; chloroquine or hydroxychloroquine.

In future, other treatments could be added depending on emerging evidence. The great number of international sites is designed to speed up results. Over 80 countries have indicated interest in participating in the study. Countries that have already confirmed they will join the study include South Africa, Argentina, Bahrain, Canada, France, Iran, Norway, Spain, Switzerland and Thailand.

By helping many countries adhere to the same methodology, the study will help facilitate the worldwide comparison of unproven treatments. This will overcome the risk of multiple small trials not generating the strong evidence needed to determine the relative effectiveness of potential treatments.

The South African Solidarity research team is led by senior academics and clinicians from eight medical schools (WITS, SMU, UP, UCT, Stellenbosch, NMU, UKZN, UFS, and the SA Military Health Service) who will be undertaking the study in fourteen leading hospitals across the country.

Private hospitals have also indicated interest in participating, and this is under consideration. The SOLIDARITY study provides simplified procedures to enable hospitals working at full capacity to participate. Data from the study is monitored in real time, which means medicines that are persistently failing can be removed. The protocol is being reviewed by SAHPRA and local ethics committees.
To reduce the impact of COVID-19 on the health system, CROWN Coronation study seeks to provide strategies to reduce exposure and mitigate disease, particularly amongst health care workers that are highly exposed to the virus.

Wits RHI’s Prof. Rees and Prof. Delany-Moretlwe are leading this study alongside Prof. Bruce Biccard, Prof. Linda-Gail Bekker and Dr Leon Du Toit (UCT) as part of a global effort.

Frontline health care workers are among the most highly exposed and strategies to protect them and preserve the health care system during this global crisis are urgently needed. These measures are being put in place while waiting for the vaccine to be fully developed.

There is an urgent need for global collaborations to protect and preserve the health care system during this global crisis. The aim of this multicenter, transdisciplinary, international, response adaptive, pragmatic study is to test whether chloroquine or hydroxychloroquine prevents infection or mitigates the severity of COVID-19 among healthcare workers at risk of infection with SARS-CoV-2 and what the minimum effect dose is.

Maintaining a healthy health care worker workforce is essential to success in our fight against SARS-CoV-2. In order to accomplish our aim, we will enrol up to +/-55 000 at-risk health workers in North America, Africa, Europe, Asia, and Australasia. Participants will be randomised to different weekly, twice weekly or daily doses of chloroquine, hydroxychloroquine or to placebo.

The benefit to participants in all study arms include education and intense surveillance. This study is rigorously designed and adequately powered to answer whether, and at what dose regimen, chloroquine prophylaxis is effective at mitigating the incidence or severity of symptomatic COVID-19.
Wits RHI PEPFAR COVID-19 Response

Wits RHI PEPFAR funded programmes (Tshwane CDC, Lejweleputswa APACE and Key Populations - USAID) in collaboration with PASP – ELMA, Project PrEP – UNITAID and School Based Programme - USAID) have established a PEPFAR RHI COVID-19 Response Committee which serves as a nerve centre to coordinate an internal Wits RHI COVID-19 response and to leverage resources and best practices between the programmes.

The committee response is guided by SteerCo and technical guidance from PEPFAR and its agencies: USAID and CDC; UNITAID and ELMA. PEPFAR teams on the ground have been engaged in various activities in response to COVID-19 which include; facility preparedness, district level technical support, technical support and coordination of COVID-19 messaging for key populations, contact tracing of COVID-19 exposed clients, and community door to door screening campaign for COVID-19.

Other COVID-19 Response Committee activities include tracking of Wits RHI PEPFAR staff affected or infected with COVID-19, dissemination of internal COVID-19 or any other relevant information through email, WhatsApp, etc., training of internal staff on COVID-19 using NICD material and logistics support for staff.

The Pregnancy Surveillance Study aims to evaluate the impact of SARS-CoV-2 in pregnancy and household contacts of pregnant women, since there is insufficient research on this population. This study will determine the natural history of symptomatic SARS-CoV-2 infection in pregnancy, including the potential for vertical transmission, among HIV-uninfected pregnant individuals and those living with HIV.

This will include follow-up of pregnant women and evaluation of pregnant women who are diagnosed with COVID-19 disease in pregnancy. Furthermore, a nested prospective cohort study will be conducted to estimate the transmission dynamics of SARS-CoV-2 in a subset of households with an infection identified in pregnant individuals.

Finally, there will be a surveillance of COVID-19 infection in women at delivery to understand the prevalence of COVID-19 infection in pregnancy. This study will be conducted in the inner city of Johannesburg in several facilities. Applications for funding is in progress and will be submitted for regulatory approvals shortly.

COVID-19 Surveillance in Pregnant women and household contacts
The COVID-19 Digital Risk Assessment and Mapping Tool known as HealthCheck

In a collaborative effort, Wits RHI’s is collaborating with Praekelt and the NDOH to build a USSD and WhatsApp Digital Risk Assessment and Mapping Tool called “COVID-19 HealthCheck”. The NDOH WhatsApp platform that houses the HealthCheck tool, has become the most highly utilized platform for users in South Africa currently serving millions of South Africans.

This tool complements national screening efforts by allowing users to self-report symptoms and details such as age and location, for early detection, mapping and linkage of those reporting symptoms to testing services. From the prompts on either platform, users will be asked to complete a digital risk-assessment in their choice of local language.

Based on responses users will be classified as Low, Moderate, High or Critical risk and suggested actions will be given based on this classification. Once a user is on the system, weekly prompting messages will be sent to the user base, to encourage them to recheck their symptoms.

Data that is collected by HealthCheck for each risk assessment is made available in real time to the CMORE COVID-19 Data Lake and can be used by the NDoH and NICD to map self-reported cases and risk to predict outbreaks, inform decisions around deployment of community screening and resting efforts, inform epidemiological models used to shape the national response, identify patients who need to be contacted as a part of national tracking and tracing efforts, and to integrate 3rd part data sources from Vodacom, Discovery and GovChat and others.

It will also create a wide-reaching channel for government to communicate directly with, and to educate, citizens as the pandemic evolves.