January 2022

Solidarity Fund
Unity in action

# SOLIDARITY FUND SUPPORT OF NATIONAL COVID-19 TESTING EFFORTS

## Final Report

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| DESCRIPTION | BENEFICIARY | FUNDING ALLOCATED | FUNDING DISBURSED |
|---|---|---|---|
| *Test kits* | National Health Laboratory Services (NHLS) | R251 m | R250,8 m |
| *Academic laboratory testing* | South African Medical Research Council (SAMRC) | R38,1 m | R32 m |
| *Additional testing for healthcare workers* | Independent Community Pharmacy Association (ICPA) | R25,3 m | R13,7 m |
| **Total amount** | | **R314,4 m** | **R296,5 m** |

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## THE SOLIDARITY FUND'S HEALTH CARE MANDATE

The Health Response Pillar is a priority focus area for the disbursement of funds donated by South Africans to the Solidarity Fund. The pillar provides rapid solutions to augment and support the government's COVID-19 response with a focus on strengthening the health system capacity to test and treat for COVID-19, and to better understand the pandemic spread and scale through research and surveillance projects.

As the COVID-19 pandemic raged across the country, severe backlogs in testing arose. Without the ability to rapidly test for and trace positive cases, the national pandemic response would be severely hampered. Therefore, a critical part of the health pillar mandate was to help strengthen capacity for national testing efforts to help address the backlog.

The Fund wasted no time, with the first support to the National Health Laboratory Service (NHLS) being provided within 22 days of the formation of the Fund. The Fund continued to support the national testing strategy and capacity through a focus on three key projects:

- Supporting the NHLS to purchase additional COVID-19 extraction and reagent test kits[1].
- Through a partnership with the South African Medical Research Council (SAMRC), capacitating academic laboratories and historically disadvantaged institutions of higher learning (HDIHLs) to conduct testing, thereby increasing testing capacity and helping to prioritise critical tests such as those for healthcare workers and persons under investigation in hospitals, etc.
- Expanding uninsured healthcare worker testing through a partnership with the consortium of pharmacies and health practitioners led by the Independent Community Pharmacy Association (ICPA). ICPA's partner organisations include the Independent Practitioners Associations Foundation (IPAF), Black Pharmaceutical Industry Association NPC (BPIA) and the Medical Women Association of South Africa (MWASA).

Details and achievements of these projects are discussed below.

[1] A complete COVID-19 test requires the mobilisation of a number of components within the pathology chain, of which extraction and reagent kits are critical.

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## IMPACT OF THE FUND'S TESTING SUPPORT

The Fund's support to the various partners to help boost and expand the national COVID-19 testing programme has seen some significant results and helped to strengthen the ability of the National Institute for Communicable Diseases (NICD) and the government to monitor the spread of the pandemic. It has also helped build capacity within laboratories and academic institutions and furnish them with much-needed equipment that can be used to support other laboratory requirements.

Having additional testing in place helped to reduce the testing backlog at the NHLS, helped improve testing coverage, and significantly reduced the turnaround time for test results.

**1,23 million** COVID-19 tests enabled

**84** healthcare testing sites established across the country:
(GP-41, KZN-15, WC-12, MP-5,LP-3, EC-3, NW-3, FS-2)

**18 318** uninsured health care workers tested

**1,2 million** reagent and extraction kits purchased to increase NHLS testing capacity

**25 hours** – NHLS testing turnaround time, reduced from 8-10 days

### NHLS test kits

To rapidly bolster the national testing programme, the Solidarity Fund supported the NHLS with funding of R250 million within its first month of operation. This funding was used to procure extraction and reagent test kits, a critical component of testing supplies, of which there has been a global shortage during much of the pandemic.

The Fund's contribution enabled the **NHLS to complete 1 181 646 tests** alongside other inputs funded by the NHLS itself. This support also helped bolster the NHLS COVID-19 testing capacity and **reduce test results turnaround time from 8-10 days to within 25 hours.**

The high global demand for test kits had significant cost implications leaving little room to negotiate a lower price. However, the Solidarity Fund was able to source and buy testing kits in sufficiently large quantities to help the NHLS meet the testing demand. By using its network, the Fund was able to help secure supply and keep costs reasonable.

### SAMRC academic surge testing and capacity building

In order to assist the NHLS to scale its COVID-19 testing capacity and reduce test result waiting times, the SAMRC approached the Solidarity Fund for support to provide surge testing for COVID-19 using a network of academic laboratories. This surge testing would help address bottlenecks and reduce the backlog of tests while simultaneously building capacity within the chosen academic laboratories. The NHLS supported the SAMRC proposal.

The surge testing project ran from 1 June 2020 to 30 June 2021. It was implemented with seven academic laboratories and three HDIHLs. The following principles governed the initiative:

- To make use of the expertise and capability within the academic sector in South Africa to provide additional capacity for COVID-19 testing following a landscape analysis and extensive consultation with stakeholders.
- To be done in close partnership with local NHLS managers, focusing only on surplus testing needs – the intention was not to take business away from NHLS.

- NHLS laboratories retained custodianship of the primary patient specimen, data and results – these continued to be managed and reported through the central NHLS laboratory information systems.
- Academic laboratories had to be approved by NHLS to ensure compliance and follow agreed Standard Operating Procedures.

### Academic laboratory surge testing achievements

The seven academic laboratories supported to conduct the surge testing were able to make a considerable contribution to supporting the NHLS with testing.

**38 638** total tests were performed, including repeats.

**96,7 %** of tests were conducted in a turnaround time of 48 hours or less.

**93,2 %** of Tranche 1 and Tranche 2 (Pilot Phase) tests completed (38 638/41 472 [target])

Table 1 below shows the academic laboratories that participated in the surge testing project and the number of tests they each completed.

**Table 1: The academic laboratories performing surge testing and number of tests completed**

| Laboratory / Institution | Province | # Tests completed |
|---|---|---|
| RMPRU-VIDA | Gauteng | 5 499 |
| iLead | Gauteng | 10 602 |
| Africa Health Research Institute | KZN | 9 229 |
| KwaZulu-Natal Research Innovation and Sequencing Platform | KZN | 2 974 |
| Centre for the Aids Programme of Research in South Africa | KZN | 4 111 |
| Centre for Infectious Diseases Research in Africa/ South African Tuberculosis Vaccine Initiative (contracted together under IDM) | Western Cape | 6 031 |
| Centre for Proteomic and Genomic Research | Western Cape | 192 |

### HDIHLs achievements

The SAMRC also engaged three HDIHLs to develop their laboratory testing capacity. These institutions were:

- Walter Sisulu University (WSU)
- Sefako Makgatho University (SMU)
- University of Venda (UniVEN)

This support included rapidly procuring equipment and reagents required to establish effective COVID-19 testing to support HDIHLs to perform surge testing. The technical experts from the equipment providers performed all required training.

All contracted laboratories were audited by the NHLS Quality Assurance Department and approved for testing prior to onboarding. However, a new requirement for R178 accreditation introduced by the National Department of Health severely delayed the process of auditing the HDIHLs.

By May 2021, WSU was the only HDIHL laboratory to finally receive R178 approval. Although NHLS was then amenable to using them for surge testing, this was never requested by the NHLS Local Area Manager.

The SAMRC, with permission from Solidarity Fund, then requested COVID-19 research proposals from the HDIHLs and the Wastewater project, which utilizes the same HDIHL laboratories, redirecting unused funds from the testing programme. Through these research projects, the HDIHL's will be able to use the new equipment purchased and put their newly acquired training to use. They will also be contributing much-needed data on the extent and status of the pandemic. These research projects are described in the Fund's Research projects report.

Details of how each of the HDIHLs uses their improved capacity to support other initiatives are described below.

## WSU

WSU was granted R178 SARS-COV-2 testing approval from NDoH on 7 May 2021. NHLS has indicated that they will work directly with the lab if the need arises to perform surge testing in the future.

The WSU laboratory staff received a refresher training course on the laboratory equipment from the SAMRC. They will continue to provide support to the WSU team, who will be using the training and equipment to collect COVID-19 data for other COVID-19 and additional research projects.

Testing equipment procured for WSU

## SMU

SMU negotiated an exchange arrangement with the NHLS Virology laboratory whereby they gave the reagents purchased as a starter kit to the NHLS and if/when the SMU requires the test kits, the NHLS will provide new consumables with the samples that require testing. This ensured that the kits/reagents were utilised and not wasted. The lab has been performing monthly EQA samples using the machines, which is also helping to ensure they stay updated with the protocol and the use of the machines. To date, they have not failed a run.

SMU is also involved in the COVID-19 wastewater surveillance programme, testing samples weekly, utilising the equipment purchased through the testing grant. They also have other projects in the

SMU researchers using procured equipment

department which have benefited from the new equipment in the molecular laboratory, particularly the PCR workstation, new pipettes, fridge-freezer, and mini centrifuges. The lab equipment has provided considerable capacity development for postgraduates. The equipment will also be beneficial for use in future research and projects the university undertakes.

### UniVEN

UniVEN also forms part of the COVID-19 wastewater surveillance programme and has been performing weekly testing. They will be using the kits/reagents to do internal refresher training using the RNA extracted during the training on the instrument. They will also use other reagents to isolate total nucleic acid from human stool samples in an ongoing SAMRC-funded Self-Initiated Research Grant project.

UniVEN researchers using procured equipment

### ICPA-led programme for testing healthcare workers

ICPA partnered with IPAF, BPIA and MWASA to implement a project to support expanded COVID-19 testing for at-risk uninsured healthcare workers (HCWs). Together, these partners offer a broad network of pharmacies, general practitioners and healthcare practices across the country, enabling them to make testing more accessible to those on the front line with no medical insurance to be able to access private-sector testing and who cannot afford to wait extended periods of time to receive their test results from the national testing laboratory.

This support enabled healthcare facilities to mitigate the risk of COVID-19 infections within their facilities, empowers managers to make more informed decisions about staffing resources and whether or not to close their facility to minimise the risk of further spread of the virus. It also allowed healthcare workers to return to work sooner after suspecting infection.

The project ran from September 2020 until the end of March 2021, and aimed to provide an estimated 36 000 qualifying healthcare workers with free COVID-19 testing. ICPA employed an administrator at its own costs to assist with the facilitation of the project.

Using its network's 84 testing sites across the country, ICPA used its VULA Mobile app to screen healthcare workers, who, if they qualified as at-risk, would receive a voucher for a free COVID-19 test at a nearby location. The app was also used to capture data on testing and track results. The testing site and the laboratory then used that voucher number to receive payment from ICPA for providing testing services.

HamadiLab and Neuberg Global Laboratories were responsible for providing the lab testing infrastructure to ensure all tests were completed within a 48-hour turnaround time. Hamadi Laboratories was replaced with Lancet Laboratories when Hamadi could no longer assist the project.

## HCW testing achievements

**84 testing** sites were used across the country.

**19 333 uninsured HCWs were referred** for testing, **of which 18 994 were tested** over six months.

**Test results** were made **available within 48 hours** of being tested.

Figure 1: Map showing testing sites across the country

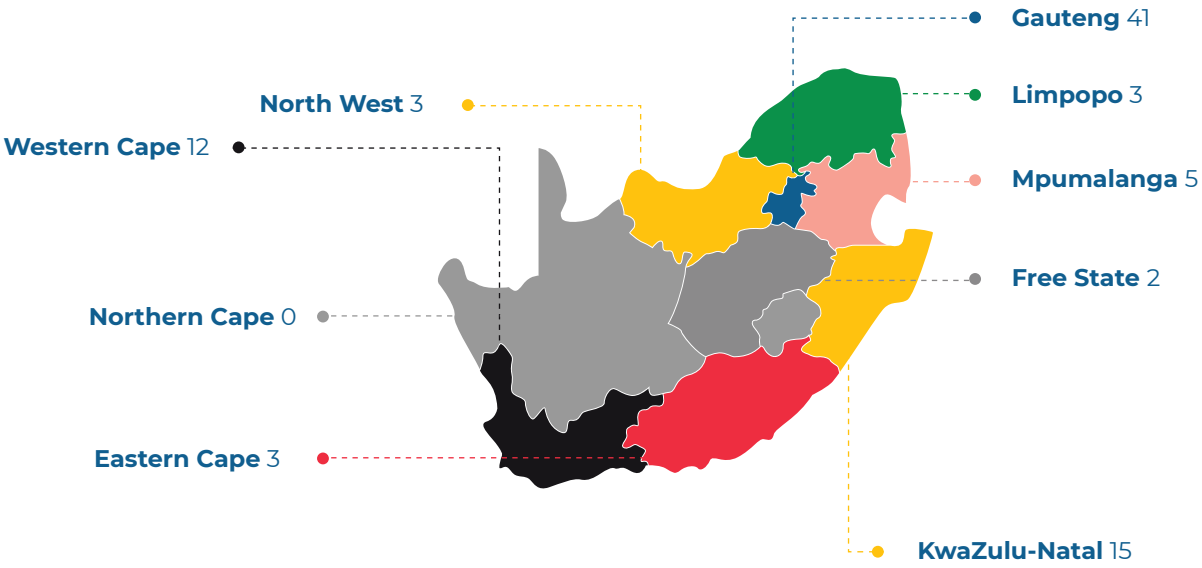
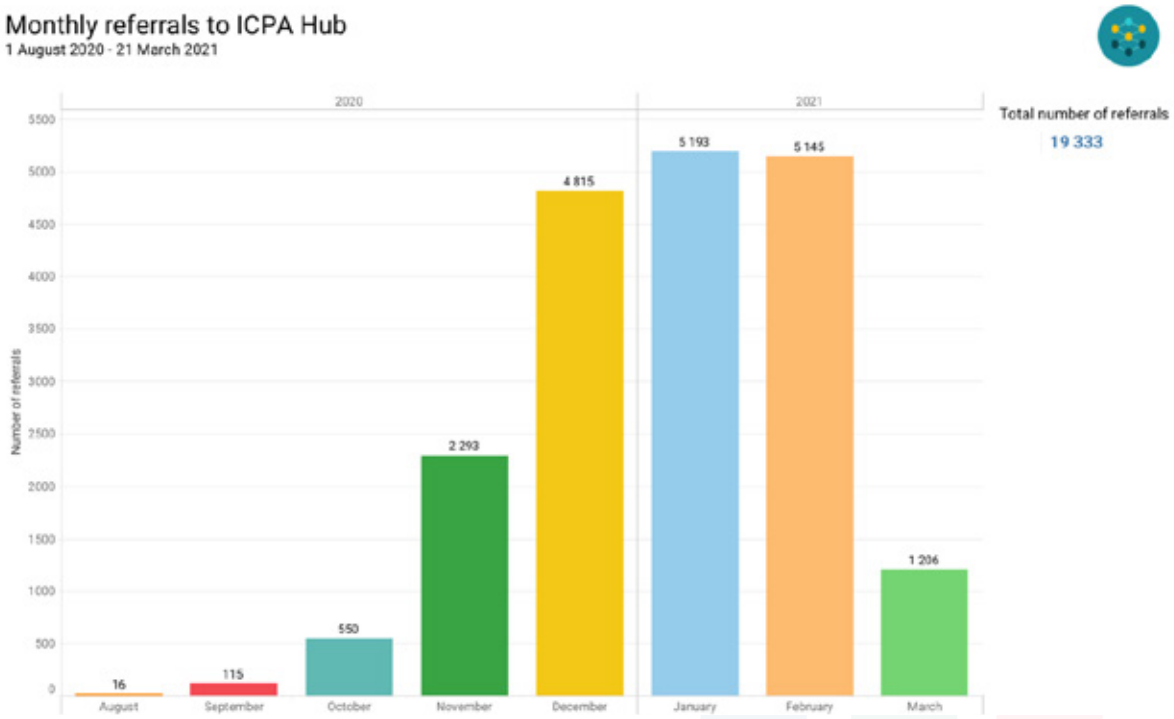



Figure 2: Number of testing referrals per month from the ICPA Vula app



The initial uptake of HCWs into the project was slow. To mitigate this, ICPA and its partners carried out a marketing campaign to help promote the project. This, together with the imminent arrival of the next wave of the pandemic, helped to improve the uptake.

A key focus of the project was to enable only uninsured HCWs who had experienced high-risk exposure to infection to access testing. However, the project saw a high occurrence of requests for tests from HCWs with perceived exposure to the COVID-19 virus, where the actual risk of exposure could not be ascertained. The project had to then mitigate the expectations of these HCWs as well as their facilities.

Despite these challenges, the project was able to set up a testing system that could meet the uncertain and changing pandemic landscape. ICPA were able to alert facilities of a possible threat of a COVID-19 spread within their facility. In turn, they could take the necessary precautions to avoid further infection of their staff and/or patients. Furthermore, the project provided employment through the testing sites utilised.

## 03 KEY LESSONS LEARNT AND CHALLENGES

For future testing support, the Fund has learned the following:

- Being agile and flexible is key. The national testing strategy has had to evolve to keep pace with the shifting progression of the epidemic. It has been critical to remain agile to ensure effective support to Government's testing efforts, through mutually beneficial, and sustained partnerships with the NHLS, SAMRC and ICPA.
- A comprehensive understanding of the supply chain is required for proficient planning and execution. The Fund has worked closely with its key partners to provide support in all areas to ensure adequate testing capacity, including procuring test kits (often in the context of international competition), securing adequate laboratory capacity and coordinating distribution to areas and people with the greatest need.
- To support the use of additional testing capacity it is necessary to work closely with the relevant government institutions and departments to develop agreed upon priorities that are aligned with national testing targets.
- Coordinating with a complex and wide-ranging set of stakeholders requires close cooperation and good communication to ensure alignment with national guidelines and NHLS activities while maintaining the requisite speed and agility.
- Ensuring good processes are in place will help to balance the need for speed with due process. In implementing this project, the Fund continued to follow the good governance processes it has in place (e.g. ensuring that all necessary vetting and contracting was completed).