



# Partnering to advance testing across Africa

## ACCESSIBLE, AFFORDABLE, QUALITY TESTS ARE FUNDAMENTAL TO HEALTH AND CARE

FIND is an international non-profit organization dedicated to transforming diagnostics and testing to solve some of the world's most challenging health issues.

Testing is a particular challenge in low-resource settings. Identifying infectious diseases like tuberculosis (TB), malaria, and hepatitis – which devastate lives and livelihoods – is crucial so that people can seek the care they need and break the chain of transmission.

Testing has often been overlooked in global health, despite being central to disease control and fundamental to achieving universal health coverage. Diagnostics often do not exist, are inaccessible, or cost too much. We have been working for nearly two decades to spur development of new tests and make them accessible to everyone in need.

COVID-19 has shown the world that testing doesn't only save lives, it allows economies to function. But countries with weak primary healthcare systems without the strong laboratory networks needed to support today's tests are being left behind in the race to contain the pandemic.

Our approach bridges research and development (R&D) to access, ensuring that new tests are available for use and sustainably supplied in low- and middle-income countries. These must be affordable, appropriate to the needs of those who will use them, and adopted into national policy so that they can be widely rolled out. A portfolio of digital tools helps to ensure that data can be collected and underpin evidence-based policy decisions.

Primary care, and maternal and child health in particular, has a unique role in saving lives, ensuring appropriate care for individuals in their communities, and being the front line against global threats, including disease outbreaks and antimicrobial resistance.

Simple, affordable, high-quality tests that can be performed in clinics or even at home are essential, and urgently needed for a wide range of diseases.

## A STRONG CONTINENT-WIDE PRESENCE

Africa has been at the heart of FIND's body of work since its inception and is home to two of our regional offices, in South Africa and Kenya. We have implemented programmes throughout the continent, helping reinforce under-resourced public health programmes and bolster disease control and elimination efforts, with tangible results for patients and health systems.

## BUILDING STRONG PARTNERSHIPS

Our African partners provide the bedrock upon which we can develop and extend our activities. We value long-lasting partnerships and continue to build in-country capacity and know-how by working closely with leading public and private institutions such as the Africa Centres for Disease Control and Prevention (Africa CDC), Institut Pasteur de Dakar, the African Society for Laboratory Medicine (ASLM), the South African National Health Laboratory Service, and various ministries of health.

**"FIND has had an incredible impact on the work we do, especially around Lassa fever, one of the most important public health diseases we deal with in Nigeria.**

**The greatest thing about working with FIND was that no solution was imposed on us, we went through an iterative process to define our priorities, define the steps and then implement it together."**

**Dr Chikwe Ihekweazu, former Director General, Nigeria Centre for Disease Control**



## BY THE NUMBERS



• Over **100** institutional partners



• **48** partner hospitals, research, and laboratory centres



• **14** university partners



• **46** clinical sites



• **24** million US dollars invested directly in Africa over the last six years

## HEPATITIS C

Hundreds of thousands of people die from hepatitis C virus (HCV) every year, and numbers are on the rise. It is estimated that 4 out of 5 people who are infected don't know it. The prevalence of HCV in the general population in Africa varies considerably, with several countries such as Egypt, Cameroon, and Burundi over 10%. Fragile health systems and very low rates of diagnosis and treatment make HCV a major public health concern.

FIND's HCV activities in Africa have focused on self-testing, molecular point-of-care technologies, specimen collection, and samples validation. We are engaged with partners in Cameroon, Egypt, Ethiopia, Ivory Coast, Nigeria, Rwanda, and South Africa.

### SPOTLIGHT: HCV self-testing

As part of laying the groundwork for maximizing impact of HCV self-testing, FIND and partners in South Africa, Kenya, and Rwanda carried out several studies to understand the usability, feasibility, acceptability, and preferences towards HCV self-testing. This work has led to multiple pieces of evidence, which have been critical in informing the first ever WHO recommendations and guidance on HCV self-testing, published in July 2021.

## NTDS

Neglected tropical diseases (NTDs) affect more than 1 billion people globally, with close to 40% of the impacted population living in the WHO African Region. These diseases often persist among the most vulnerable and marginalized communities, primarily affecting women and children. The chronic nature of these diseases can result not only in long-term disability, but also economic insecurity, stigma, and social exclusion.

Our FIND NTD portfolio focuses on those diseases with significant unmet diagnostic needs and supports the targets defined in the WHO Roadmap on NTDs and the London Declaration on NTDs – as well as Sustainable Development Goal 3.

Specifically, we focus on:

- Human African trypanosomiasis (HAT; also known as sleeping sickness)
- Leishmaniasis
- Schistosomiasis
- Buruli ulcer
- Chagas disease

### SPOTLIGHT: HAT elimination

FIND has been facilitating the development and implementation of new diagnostic solutions to support the control and elimination of HAT, including rapid diagnostic tests, which are now being used in most endemic countries. We have been providing countries with the necessary support for laboratory strengthening, training, coordination, logistics, and data management. FIND is currently supporting elimination efforts in Chad, Ivory Coast, Guinea, Uganda, South Sudan, Angola, and the Democratic Republic of Congo, and is planning to extend these activities to Sierra Leone and the Central African Republic in the near future, so that all these countries can be on track to meet WHO elimination targets.

## E-HEALTH AND DIGITAL DIAGNOSTIC SOLUTIONS

We are actively exploring and developing technologies such as computer-assisted digital X-rays, connected digital stethoscopes, clinical decision support apps, and network optimization tools to enhance diagnostic connectivity and data utilization for optimal health impact.

## TUBERCULOSIS

Over 549,000 people were estimated to have died from TB in 2020 in Africa, where a quarter of new cases worldwide occur. Many cases go unidentified, preventing treatment, hence allowing the disease to spread and drug resistance to grow.

Our R&D efforts focus on areas of critical unmet needs. These include tools to identify drug-resistant forms of the disease. We prioritize the development of user-friendly, low-cost, non-sputum-based rapid tests for diagnosing active TB that can be used in primary healthcare facilities.

In addition, we are also exploring technologies such as computer-assisted digital X-rays for optimal health impact.

### SPOTLIGHT: Detecting childhood TB

Globally, at least 1 million children under 15 years old become ill with TB every year. We are driving diagnostic innovation for childhood TB in Africa by helping develop and evaluate tests that are extremely sensitive to account for low bacteria numbers, and that do not rely on sputum, as children often cannot produce any. These include improving on existing lipoarabinomannan urine-based tests, and evaluating different stool processing techniques that can be paired with molecular testing devices. This work is being conducted in partnership with the South African Medical Research Council, the University of Cape Town, and the Mulago National Referral Hospital.



## PANDEMIC PREPAREDNESS & COVID-19 GLOBAL RESPONSE

Diagnostics are fundamental to the identification, containment, and eventual resolution of disease outbreaks. Poor diagnostic capacity compromises surveillance activities and outbreak detection and response, both at a national level and in community healthcare settings. Our ongoing pandemic preparedness programme is focused on the WHO Blueprint list of dangerous pathogens, as well as dengue fever, yellow fever, and bacterial meningitis. FIND is working with partners to build capacity and resilience in Africa and beyond.

As soon as COVID-19 emerged, FIND engaged partners, including Africa CDC, to support the pandemic response in Africa. We participated in one of the first laboratory trainings on COVID-19 testing in Dakar, Senegal, in February 2019, which brought together laboratorians from 15 countries for training on molecular testing for SARS-CoV-2, the virus that causes COVID-19. We are also part of a partnership to implement external quality assessment to strengthen the preparedness, evaluation, and improvement of molecular diagnostic capacity for SARS-CoV-2 in more than 30 African countries.

- Identifying technical solutions that will close R&D gaps
- Using digital tools to enable effective diagnostic data capture and use for surveillance and other areas
- Improving outbreak response speed by ensuring readiness to conduct robust clinical trials
- Supporting market sustainability by exploring innovative new financing solutions

Through the Access to COVID-19 Tools (ACT) Accelerator partnership, FIND is working with local partners and Ministries of Health to generate evidence and support the implementation of digital tools aimed at test-trace-isolate through operational research studies in South Africa, Rwanda, Kenya, and Uganda.

Those studies aim to support decentralized testing using digital tools and rapid diagnostic tests and support the development of local policy.

## MALARIA & FEVER

Management of fever (febrile illness) is a huge medical challenge. In Africa alone, over 600 million childhood fevers occur every year, often with highly non-specific and overlapping signs and symptoms. Our work addresses current gaps, such as lack of biomarkers and clinical decision tools, and focuses on three areas:

- R&D for improved malaria diagnostics
- R&D for fever (non-malaria) diagnostics
- Addressing barriers to access and appropriate use of quality diagnostics

Recent work has been in Ivory Coast, Benin, Senegal, Rwanda, Sudan, Botswana, and Burkina Faso.

### SPOTLIGHT: Diagnosing malaria in pregnant women

With our partners, we have evaluated a new highly sensitive RDT for detection of malaria in pregnancy and carried out a pilot implementation project. Results from Benin show that the test detects significantly more infections in pregnant women than regular rapid tests, is now used for case detection, and is being evaluated for active screening in areas that are close to malaria elimination in Senegal.

### SPOTLIGHT: Online training for COVID-19

diagnostics & testing  
Together with ASLM and the London School of Hygiene & Tropical Medicine, we developed a freely available online training course on diagnostics and testing for COVID-19 to support Ministry of Health officials, laboratory professionals, clinicians, and anyone involved in laboratory testing and diagnosis for COVID-19, with a focus on low- and middle-income settings. To date, over 16,000 people have registered, more than a quarter of whom are based in Africa.

Building on the existing processes and infrastructure for flu and COVID-19 surveillance and in line with WHO policies, FIND is adapting and building digital connectivity solutions tailored for use in low- and middle-income countries for rapid and secure data sharing, including genomics surveillance data, to detect, monitor, and manage current and emerging variants of concern.

## ANTIMICROBIAL RESISTANCE

Antimicrobial resistance (AMR) is a global health emergency. Diagnosis to ensure adequate antibiotic prescription is crucial to prevent AMR, particularly in low-resourced settings that bear most of the burden. We are working with our partners and donors to tackle AMR holistically by focusing on urgent unmet needs across the spectrum of R&D and access. This includes developing new tests designed to address AMR across the different levels of healthcare, including digital solutions for antimicrobial stewardship and connectivity solutions for surveillance.

FIND has recently partnered with Scanwell Health to create and deploy a rapid diagnostic test (RDT) reader app to aid healthcare workers in interpretation of malaria test results to further reduce the prescription of antibiotics due to incorrect interpretation of RDTs.

FIND has also worked in partnership with Africa CDC and ASLM to develop the AMR Laboratory Scorecard, a package that aims to improve the use of diagnostics to identify pathogens in human and veterinary microbiology laboratories.

### SPOTLIGHT: AMR Dx Use Accelerator

To stimulate research, speed up data generation to inform policy-makers, and drive behaviour change, we have established and managed an AMR Dx Use Accelerator to generate crucial data on a package of interventions. Almost 22,000 patients have been enrolled in one of the largest AMR studies ever conducted; in Ghana, Burkina Faso, and Uganda we are assessing rates of change in antibiotic prescription and patient outcomes in those presenting with fever.



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Diagnosis for all

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