

EXECUTIVE SUMMARY

ASSESSMENT OF DIAGNOSTIC NEEDS AND DIGITAL HEALTH SOLUTIONS IN PERU, INDIA, NIGERIA AND UGANDA

This first-of-its-kind report prioritizes diagnostic gaps across four diverse countries – Peru, India, Nigeria and Uganda – and identifies both new and existing digital health solutions that can address those gaps to improve healthcare service delivery. The four countries on which the assessment was focused span low-to-moderate digital health

maturity levels, and reflect diverse demographics, socioeconomics, culture, geography and healthcare system structures. Primary and secondary research was undertaken through stakeholder interviews, patient surveys and desk-based publication reviews, to understand the challenges patients face in accessing quality testing services and how technology can help.

The assessment identified **IMPORTANT GAPS IN THE PATIENT PATHWAY**, which are common to all four countries:

- 01** Government and donor priorities focus on the ‘big three’ infectious diseases (HIV/AIDS, malaria, tuberculosis [TB]) and diseases related to maternal, newborn and child health, while the growing burden of non-communicable diseases remains largely unaddressed.
- 02** Insufficient early detection of missing TB cases at community and primary healthcare level is a key barrier to achieving TB elimination goals.
- 03** Nationwide, routine and integrated disease surveillance systems will be essential to manage the growing threats of antimicrobial resistance and disease outbreaks.
- 04** Low patient health awareness and limited access to accurate, timely and trusted health information means that patients struggle to recognize symptoms, seek care early and manage their own health.
- 05** Under-resourced healthcare workers and limited access to high-quality testing services, especially in rural areas, impacts speed and accuracy of diagnosis, patient satisfaction and patient retention within the care pathway.
- 06** Due to the perceived low quality of public health services, patients often turn to the private sector. However, service quality is also variable in the private sector and high out-of-pocket costs can deter patients from seeking further care.
- 07** A fragmented and siloed health system puts continuity of care at risk and can lead to patients sacrificing screening and diagnosis to directly access treatment in an effort to resolve their health concerns and/or minimize costs.

The assessment also identified the following KEY DIGITAL SOLUTIONS TO ADDRESS THESE GAPS:

- 01** User-friendly digital health solutions* – such as targeted direct text or audio messaging and mobile health applications – that are designed around the patient’s needs and advocated by trusted influencers, such as community health workers, local private providers and village leaders can improve early access to health information and bring screening and diagnosis closer to the patient.
- 02** Provider-to-provider telemedicine, interactive job aids, automated screening tools and smart diagnostic devices connected to digital applications that use predictive analytics and/or artificial intelligence provide clinical decision support and enhance healthcare workers knowledge and skills. This builds patient trust, subsequently strengthening the patient-provider relationship.
- 03** Interoperability standards and solutions that allow devices and systems to share and exchange information securely will enable connected diagnostics systems that make holistic patient-centred care possible; for example, by enabling healthcare workers to view a patient’s full health history, including their diagnostic results.
- 04** Digital health solutions that enable broad preventative screening at primary healthcare centres and/or bundling of basic tests, especially for diseases with high co-morbidity (e.g. TB and diabetes) can support the transition from a disease-centric to patient-centric health system approach.

ENABLERS OF SCALE:

- 01** Selected solutions should focus on ensuring interoperability with other systems, prioritizing designs that are simple, adaptable and scalable in low-resource environments and demonstrate value for the end-users.
- 02** Establishment of appropriate evaluation standards and stage gates for implementation of digital diagnostics in country can guide government and partner investment.

Finally, as this assessment was conducted during the COVID-19 pandemic, there was a consensus among stakeholders that COVID-19 has put a spotlight on the need to build capacity in diagnostic health services in the four countries and it has underlined the value of scaling up point-of-care testing.

***For more information and examples of specific digital health solutions that address diagnostic gaps, please contact FIND at digitalhealth@finddx.org**
