

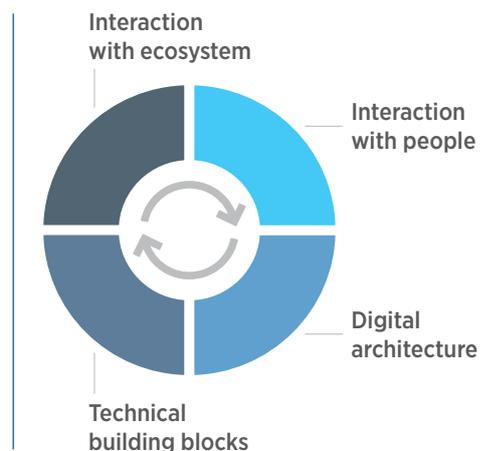
I FOREWORD

THE GLOBAL FUND TO FIGHT AIDS, TUBERCULOSIS AND MALARIA & THE STOP TB PARTNERSHIP

Harnessing the power of digital health technologies and ensuring that all TB affected people can benefit from those innovations is essential to driving progress in the fight against TB. There is a necessity to understand the technology landscape across National TB Programs (NTPs), share best practices and identify existing gaps in TB affected countries to help accelerate progress. The COVID-19 pandemic has further underlined the importance of digital tools and international cooperation and collaboration for global health.

This report explores existing digital tools used in 13 TB affected countries for the management of TB, including documentation of best practices, outstanding gaps and priorities for the future. Four interconnected themes, depicted at right, emerged in this report. In order to strengthen the use of technology in National TB Programs, it will be important to simultaneously address each of these thematic areas. In addition, the report also contains a survey of specific tools used across the cascade of care, 24 case studies of digital systems and their deployment, and 13 country profiles that document the digital ecosystem in each of the countries studied.

High-level findings and recommendations across the thematic areas are summarized below.



Multiple existing platforms for TB case management can be leveraged by countries

Countries surveyed all seek to develop an integrated “backbone” that manages information on TB affected people as well as aggregate national reporting. While much progress has been made in digitizing the cascade of care, significant gaps remain. Aggregate reporting systems often leverage shared infrastructure and are relatively mature. However, the architectures for managing individual cases are under active development and can improve interoperability with external tools to ensure continuity of care across screening, diagnosis, and treatment. About half of countries surveyed utilize a customized, home-grown platform for case management, while the remainder use systems built on DHIS2 Tracker or e-TB Manager (both open source). We would invite countries to consider the relevant elements of systems used by peers that may offer added value in streamlining case management in order to learn from each other’s systems and experiences. We support, encourage, and are keen to facilitate more detailed assessments of case management platforms to understand their relative strengths and weaknesses and collectively work towards improving their capabilities and connectedness across the cascade of care.

Clear country-level policies on data governance and management, including cloud storage, are needed to unlock progress towards improved systems

We found a lack of policy guidance in key technical areas, which unaddressed can stifle progress towards digital transformation. The question of whether, or under what conditions, a program can utilize public cloud offerings to host public-sector services is a key concern with a great deal of ambiguity. Such guidance will need to balance data sovereignty goals, including a desire to store data in-country, with security and reliability goals, where cloud services can provide modern standards, robust guarantees and economies of scale. Related practices of data privacy and sharing of data are often handled informally and are critical areas of importance for clearer policies. We would invite countries to develop and publish such policies to empower implementers in-country. The Global Fund, the Stop TB Partnership and partners are committed to facilitating progress on these topics and would invite countries to engage with us as they develop and finalize their plans.

Consultations can help address pricing or licensing concerns that prevent countries from leveraging desired tools

We found that countries often build certain tools from scratch rather than reusing available solutions. One example is diagnostic connectivity solutions, where robust versions are available on the market but are being rebuilt locally in four countries surveyed. We fully acknowledge that customizing tools to the local context and having the rights to modify and use them in perpetuity are critical for ensuring long-term uptake and sustainability. At the same time, creating new versions of mature tools that have been refined and proven elsewhere could also lead to wasteful spending or risk near-term compromises in quality and robustness. We would invite countries to be vocal to global partners whenever concerns over pricing or licensing terms prevent reusing an existing tool in the local context. For our part, we would like to facilitate market shaping, for example, by helping to identify or nurture platforms that have permissive or open-source licenses, or potentially by negotiating volume licenses that could make pricing more attractive to countries.

User-centered approaches are needed for countries to achieve desired outcomes with digital tools

Our results confirmed that successful implementation of digital health solutions requires consideration of the broader context of the population and the health system in which they operate. Just as good healthcare requires looking at persons holistically, introducing digital innovations with end-users in mind is required for appropriate adoption. Country respondents shared that needs of TB affected people and healthcare providers should be positioned at the center to support quality care. Training and education to use digital technologies by healthcare workers is critical, and so is ensuring those in health-policy leadership positions have the skills and knowledge to develop and manage in-country digital health initiatives. Countries would do well by strategically addressing ongoing skills gaps that often prevent utilization and benefit from digital technologies.

Awareness of local infrastructure gaps is critical for countries to realize the potential of digital tools

Finally, results showed that poor Information and Communication Technologies (ICT) infrastructure often limits the potential of digital health. Reliable access to connectivity and devices is often assumed by global organizations when espousing the benefits of digital health for TB. Where such technical building blocks are lacking, we invite countries to remain vigilant in prioritizing functionality or tools that are most appropriate for the local context. For example, investments in offline functionality in mobile tools may be the leading priority in low-resource contexts, even if it not needed in higher-resource contexts. In some country environments, broader investments in the technology infrastructure itself may be among the most important enablers of a digital health ecosystem and should be prioritized.

Path forward

The commendable investments made to digitize the management of TB programs deserve continued attention to ensure they are most effective and sustainable. While each country has a differing level of maturity in using digital tools for TB elimination, this report underscores that all countries are embarking on a similar journey of digital transformation, with considerable overlap in the challenges faced, the solutions developed, and the lessons learned. To date, however, the experiences of country programs have been siloed.

To catalyse progress, we invite further coordination to facilitate knowledge transfer, both between country programs and with international agencies, including the Global Fund and the Stop TB Partnership. We also invite further collaboration with the private sector, as appropriate, to advance technology support within and across countries to ensure that the best tools and resources are tackling this critical opportunity.