



Case Study: FIND

Be Data Driven: FIND's Actionable Diagnostic Data for Improved TB Care (ADDforTB) Initiative

Principle(s) addressed:

Design With User, Reuse and Improve, Understand the Existing Ecosystem, Be Data Driven



GeneXpert is a molecular test for TB that has been rolled out throughout Myanmar in collaboration with the country's government

Overview

The FIND Actionable Diagnostic Data for Improved TB Care (ADDforTB) initiative was implemented in Myanmar. The ADDforTB initiative aimed to determine if data quality improvement and user-centered dashboards with diagnostic data from GeneXpert machines, could be used to empower healthcare staff and improve patient care offered under the tuberculosis (TB) disease programme. FIND identified two key areas for improvement:

- » **Providing the right data to the right people at the right time** – information tailored and limited to specific audiences
- » **Mentorship on end-to-end data use** – how to access the data, what the data means, when to act, and what actions to take

The project sought to ensure that the connectivity solutions used were [contextually appropriate](#) and deployed in a [user-centered](#) manner. Existing diagnostic processes were mapped and reshaped to achieve optimal data usage, through engagement with stakeholders, on-site visits to understand current activities, and the adoption of a mentoring approach to enable data use and action. Efforts facilitated timely programmatic decision-making and resulted in a number of positive outcomes, including quicker identification of failing GeneXpert modules, with a 60% reduction in repair time. As a result, delays in the time to TB diagnosis were reduced, enabling patients to be linked to care more quickly, and the realization of cost savings for the health system.

ABOUT FIND

FIND is the Foundation for Innovative New Diagnostics.

We are a global non-profit organization driving innovation in the development and delivery of diagnostics to combat major diseases affecting the world's poorest populations.

Diagnostics often do not exist, are inaccessible, or cost too much. They remain under-resourced and overlooked, despite being pivotal for guiding the best treatment for individual patients; for preventing the spread of disease and antimicrobial resistance; and for enhancing surveillance for early disease detection and monitoring.

With priorities aligned to those of the global public health community, we turn complex diagnostic challenges into simple solutions through unique partnerships with the public, private and non-profit sectors.

FIND is a WHO Collaborating Centre for Laboratory Strengthening and Diagnostic Technology Evaluation.

Our work bridges R&D to access: we have deep technical and practical experience in the definition of needs, development of fit-for-purpose products, generation of evidence for regulators and policy-makers, analysis of market dynamics, the introduction of new products, and strengthening of laboratory systems.





Background:

The Foundation for Innovative New Diagnostics (FIND), is a global non-profit organization that drives innovation in the development and delivery of diagnostics to combat major diseases affecting the world's poorest populations. Over 50 million FIND-supported products have been provided to 150 low- and middle-income countries (LMICs) since the start of 2015. As a World Health Organization (WHO) Collaborating Centre for Laboratory Strengthening and Diagnostic Technology Evaluation, FIND works with more than 200 academic, industry, governmental, and civil society partners worldwide.

A crucial element of FIND's access work is improving data quality and usage. Myanmar is recognized by the WHO as a "high-burden" country for tuberculosis (TB), including multi-drug resistant TB and TB/HIV coinfection. Under the guidance of the Myanmar national TB programme, the GeneXpert diagnostic platform, which identifies TB and drug susceptibility, was rolled out across the country in 2013. Compared with standard culture testing, GeneXpert, reduces the time to get a TB diagnosis from months to hours. Therefore, people with TB can be linked to care more quickly, and vital information can be obtained to support national TB response efforts and surveillance.



However, the potential for obtaining [actionable data](#) from GeneXpert machines was not being realized. Despite large investments from donors to implement electronic data collection, there was a limited emphasis on how the data could be used to help improve service delivery. This severely impacted the abilities of laboratory staff, data engineers, and the clinical team to function effectively, which led to diagnostic delays that ultimately impeded patient care and limited the overall programme impact.

FIND, in collaboration with the Myanmar national TB programme and the Clinton Health Access Initiative (CHAI), sought to determine whether data could be collected and used more efficiently, to complement the efforts of healthcare staff and improve diagnostic service delivery.

IMPACT

Since 2003, FIND has been instrumental in the development of 24 new diagnostic tools.

Over 50 million FIND-supported products have been provided to 150 low- and middle-income countries since the start of 2015.

Our work has been transformative in the diagnosis of tuberculosis and malaria and helped bring sleeping sickness elimination within reach.

PROGRAMMES

- Antimicrobial Resistance
- Hepatitis C & HIV
- Malaria & Fever
- Neglected Tropical Diseases
- Pandemic Preparedness
- Tuberculosis

"The Foundation for Innovative New Diagnostics (FIND), is a global non-profit organization that drives innovation in the development and delivery of diagnostics to combat major diseases affecting the world's poorest populations. "

RESOURCES

Visit FIND's website at:
<https://www.finddx.org/>

Learn more about FIND's Operating Model & Governance at:
<https://www.finddx.org/ops-gov/>

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Project Lifecycle:

Analysis & Planning

FIND conducted a landscape analysis to examine existing technology and data-related practices. Laboratory users, regional staff, engineers, microbiologists, and national TB programme leadership were engaged through on-site visits and interviews, to determine:

- » The diagnostic equipment available and how it was being used
- » The target populations for priority testing
- » Who was performing the tests
- » Which data was being generated
- » How the data was being used
- » What they wanted to be able to do with the data

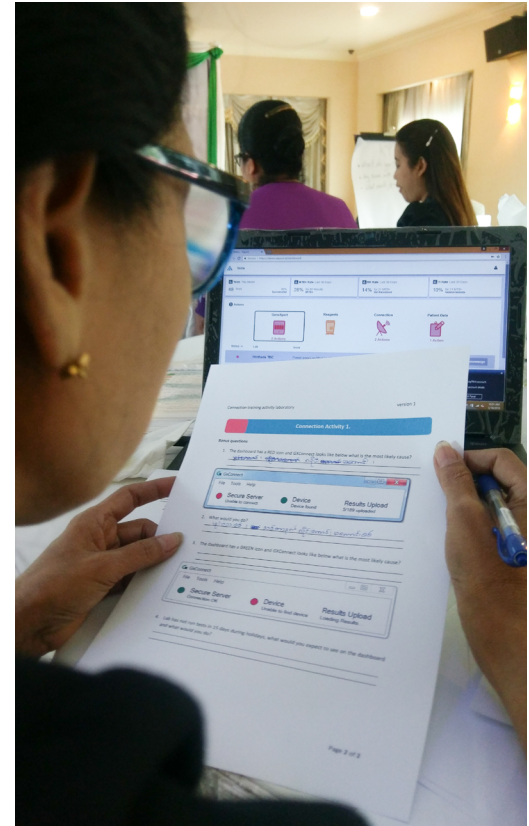
The team included local staff to ensure a full understanding of the context in which the end-users were operating. FIND also sought input from [CHAI](#), [The United States Agency for International Development \(USAID\)](#), [WHO](#), [The Global Fund](#), [Challenge TB](#), and [Family Health International \(FHI\)](#), to assess how the data that were collected could be used to guide programme changes.

Despite the established infrastructure, as anticipated, data utilization was found to be inadequate. Issues including unreliable connectivity and lack of a user-friendly dashboard design meant that data were often being collected on paper only. There was also a limited appreciation of the potential impact that could be achieved from [data usage](#).

Design & Development

FIND took a [user-centered approach](#) to improve the existing technology and restructured the current dashboard to compile GeneXpert data into more manageable visualizations that could be easily interpreted by end-users.

Customized dashboards were created at laboratory and regional levels, so that the right people could access the data easily, at the right time. The laboratory dashboard was tailored to focus on local issues such as service delivery and machine maintenance, while the regional dashboard was designed to show progress against clinical targets and identify diagnostic gaps, to inform high-level decision-making processes. Healthcare staff reviewed and provided input into the dashboard to ensure the new design was intuitive and communicated the information they needed. Broader user feedback was collected after rollout to inform further updates to the visual interface and the addition of new reporting features.



FIND is running/has run regular training sessions on the new dashboard for practitioners and policymakers throughout Myanmar to support decision-making using data from GeneXpert

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Deployment & Implementation

Project implementation focused on capacity building and mentoring, to empower healthcare staff to make [data-driven](#) decisions. Training was provided on end-to-end procedures, how to access and interpret the data from the dashboards, and potential actions that could be taken as a result.

Monitoring & Evaluation

Following the rollout of the new dashboards, ease of use, change requests, and reporting were all monitored. The dashboards were also examined monthly to assess usage by looking at factors such as the number of logins. A quality monitoring system was built to determine how long it took for problems to be resolved, and for actions to be taken by the staff. To obtain a more holistic perspective of dashboard usage and issues, follow up calls were made by a local monitoring and evaluation team. [Understanding the local challenges, system, and culture](#), resulted in robust feedback and a thorough understanding of the [end-user's perspective](#).

Results

Simplifying the GeneXpert dashboards, and providing mentorship and training on data utilization, empowered healthcare staff and equipped them to make [data-driven](#) decisions and optimize machine usage. Failing modules could be detected early, reducing test errors and the loss of reagents. The long-term impact of the initiative included improved patient service delivery, quicker time to care, and reduced programme costs. Greater system usage led to higher data record numbers, which improved the quality of data. Users cited the machine dashboard as clear and easy to use, indicating high acceptance. There was also greater visibility of the diagnostic profiles of the patients.

Formal evaluation found:

- 89% of users found it easier to determine machine errors using the new dashboard
- 72% of users found it easier to check stock balance using the new dashboard
- 4x increase in timely stock updates was measured
- 50% of laboratories regularly filled stock



Example of redesigned dashboard

“Users cited the machine dashboard as clear and easy to use, indicating high acceptance. There was also greater visibility of the diagnostic profiles of the patients.”

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Challenges

Building an appreciation of the potential value of data utilization was fundamental to the success of the project. It was not enough to train staff on integrating data utilization into their work; time had to be dedicated to increasing local, regional, and national stakeholder knowledge and awareness of what it is, and how it can inform decision-making.

Further, a mistrust of the use of the data had to be overcome: some data were viewed as reflecting “poorly” on individuals or laboratories. Mentoring was crucial to support the recognition of the potential for [data to guide decisions](#) and enable advocacy for funding and increased technical support.

Lessons Learned:

- » **Design with the user** [<https://digitalprinciples.org/principle/design-with-the-user/>]. FIND conducted a series of interviews, on-site visits, and engaged key stakeholders to better understand user characteristics, needs, and challenges, as well as the purpose of the data being collected. Furthermore, the on-site team consisted of staff from the local area to ensure local context, including an understanding of the system, and culture influencing end-users. Taking a user-centered approach ensured that the technology would address the specific concerns of staff directly interacting with it. Future technology must be simple and user-friendly from the outset, to motivate users and facilitate ease of use.
- » **Reuse and improve** [<https://digitalprinciples.org/principle/reuse-and-improve/>]. Building on existing tools and resources rather than developing entirely new systems can drastically help to reduce the time required for development and testing and decrease project costs. By assessing data that was generated by existing technology in Myanmar, FIND was able to enhance quality, applicability, and impact.
- » **Be data-driven** [<https://digitalprinciples.org/principle/be-data-driven/>]. Collecting data is only part of the picture; data utilization is critical for accelerated impact. FIND recognized that in Myanmar, the existing GeneXpert network – previously focused on data collection rather than utilization – was an opportunity to be seized. Ensuring that stakeholders could appreciate the value of data utilization and how all forms of data, good or bad, benefit service delivery, was crucial for informed decision-making – including improving test service delivery, identifying local challenges, decentralizing stock and maintenance issues, identifying diagnostic gaps, developing interventions, and informing national strategic plans.
- » **Understand the existing ecosystem and mentor users for long-term success** [<https://digitalprinciples.org/principle/understand-the-existing-ecosystem/>]. Staff in Myanmar were engaged through CHAI as mentors, consistently making follow-up and check-in phone calls to programme and hospital staff. This was ultimately essential to the success of the initiative, as it ensured user accountability. Furthermore, local staff understood the systems and culture within which users were operating, and were, therefore, able to provide holistic and contextually relevant guidance for future system changes and improvements.