

TACKLING TUBERCULOSIS IN ETHIOPIA

Tuberculosis (TB) is the leading infectious disease killer in the world—each year claiming more lives than AIDS and malaria combined. TB doesn't just impact people's health. Loss of income and the cost of getting to frequent appointments places an enormous burden on families. The long treatment period also takes people out of the workforce for months at a time, affecting businesses and local economies. As a leading cause of illness, death, and lost productivity, TB poses a significant obstacle to Ethiopia's human and economic development.

To increase Ethiopian's access to high quality TB detection, treatment, and prevention, the Eliminate TB Project, funded by the U.S. Government (USG) and implemented by Management Sciences for Health (MSH), worked in close partnership with the Federal Ministry of Health, Regional Health Bureaus, and staff at the zone and woreda/district levels, with activities in four synergistic areas:

1. TB diagnostics and laboratory services
2. TB and drug resistant-TB treatment services
3. Finding TB patients and providing preventive treatment
4. TB program financing and system strengthening

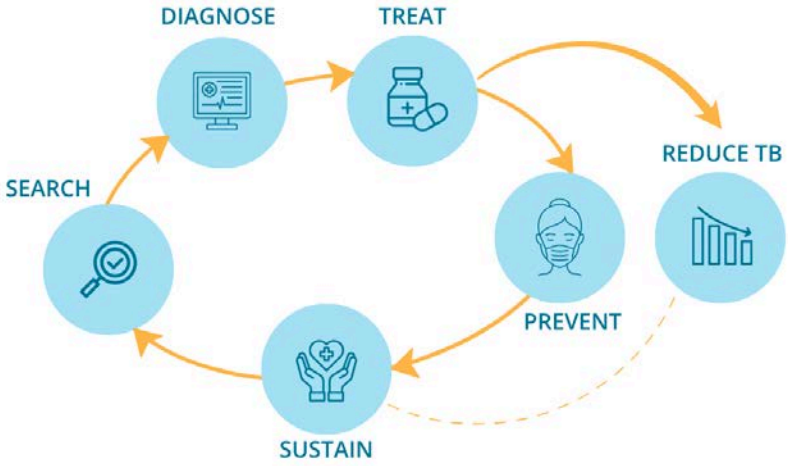
Consistent with the America First Global Health Strategy's emphasis on sustainability, efficiency, and country ownership, the project supported Ethiopia to strengthen its health system capacity to prevent, detect, and treat TB, reducing dependence on external assistance while protecting lives and livelihoods.

ELIMINATE TB PROJECT (2020-2026)



By training and mentoring health care workers, equipping health facilities, and integrating innovations, the Eliminate TB Project has saved lives and prevented the spread of disease across Ethiopia. Throughout the project, Management Sciences for Health (MSH) worked hand-in-hand with the Ethiopian Ministry of Health, regional health bureaus, and communities to lay the groundwork for Ethiopians to lead this work moving forward.

To help Ethiopia move towards TB elimination, Eliminate TB strengthened national TB program efforts in four key areas—**diagnose, treat, search and prevent**, and **sustain**—and implemented a large-scale TB elimination study to test the effectiveness of globally recommended services.



IMPROVING DIAGNOSIS WITH FASTER, BETTER TESTING

Rapid, accurate diagnoses are critical. Every missed or delayed diagnosis is a lost opportunity to save a life, stop the spread of disease, and prevent infections. Using modern testing, people can receive treatment more quickly. These tests also determine whether someone has drug-resistant TB, which is key to providing the right medications that will give them the best chance of recovery.

Eliminate TB strengthened diagnosis by scaling modern diagnostics like GeneXpert machines, bolstering systems to improve lab quality, and introducing new AI-enabled x-ray machines to overcome transportation barriers.

INNOVATION SPOTLIGHT

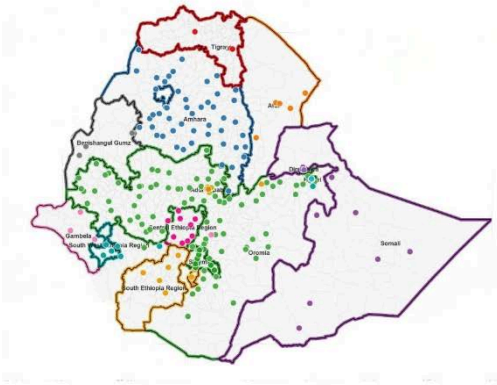
American technology provides easier, faster, more accurate testing

GeneXpert is an American made machine that is the gold standard for TB testing. The samples are easier to collect, results are in hours vs. weeks for other molecular tests, and GeneXpert identifies over 90% of cases vs. only half caught by microscopy.

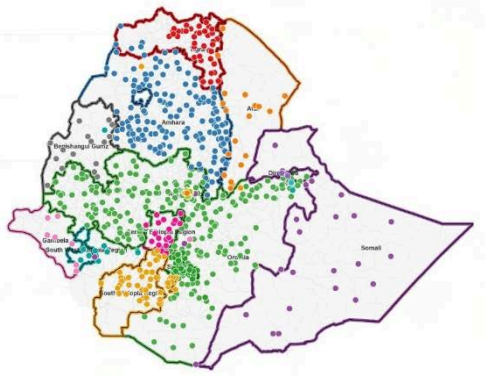
Eliminate TB supported the scaling of GeneXpert machines by identifying the most impactful locations for new machines, training health workers to use them, and strengthening Ethiopia's ability to manage and sustain the supplies and maintenance needed to power these life-saving machines.

Overall, there was a 57% increase per quarter in stool-based tests for children, 4.8 times the testing volume using modern diagnostics like GeneXpert, and a 206% increase in GeneXpert machines.

Year 1
313 machines



Year 6
972 machines



IMPROVING LAB QUALITY HELPS STOP SPREAD OF TB

Right diagnosis
Right medicine

84%
patients receive immediate testing

690,000
patients diagnosed

Good data
Good decisions

800+
labs with real-time data, data quality supervision & 96%+ accuracy rates

↓

ID hotspots to shift screening, staff & supplies

Faster results
Faster treatment

936
health facilities equipped with modern diagnostics

INNOVATION SPOTLIGHT

AI-based tools interpret x-rays quickly and without a specialist

In the last few years, Eliminate TB started using AI-enabled, mobile chest x-ray screening at large hospitals and TB hotspots like slums. Each machine can scan 100-200 people a day, and the AI picks up subtle things in the images that would be hard for a human to see. The scans can be done by frontline health workers without people traveling 30-40 miles to a facility with x-ray capabilities. AI analyzes the scans and provides results instantly, without waiting days for traditional x-rays to be sent and interpreted by a radiologist. Presumed cases are confirmed with GeneXpert testing, and patients can quickly start treatment.

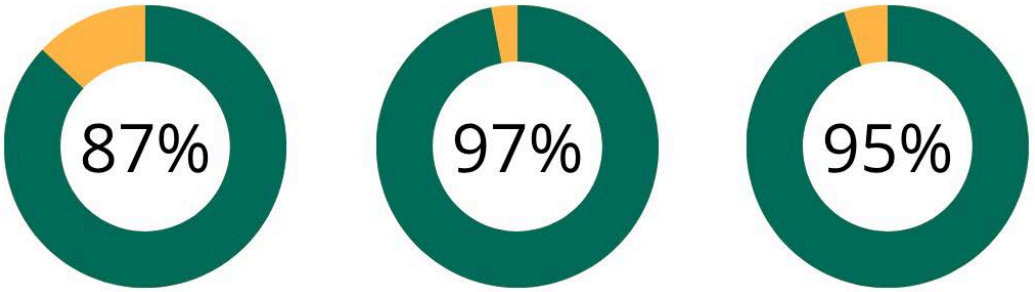


STRENGTHENING TREATMENT

Treating TB successfully is not just important for patients. High cure rates prevent drug-resistant TB and protect communities. But, convincing people to take the full course of medicines can be challenging. Many people experience side effects during the months-long treatment or stop taking medications if they start to feel better.

Eliminate TB bolstered health workers with training, mentoring, and guides to help them provide better treatment and support to patients; increased treatment options near patients to decrease travel costs and time away from family and work; and strengthened supply chains to ensure the right medicines are available.

691,000 people treated



INNOVATION SPOTLIGHT

Forming Survivor Clubs to help people stick with their treatment

Low-cost Survivor Clubs brought together people who are currently fighting TB with neighbors who have already recovered. In these groups, survivors spread awareness of symptoms, promote early testing, support patients during their lifesaving treatment, and help people reintegrate with their community.

Tekalign, a trader from East Oromia, is a member of his community's TB Survivors Club. When his TB symptoms went away, he ended his treatment early. Then he developed multidrug-resistant TB, which required two years of additional treatment where he was unable to support his family. He hopes that sharing his story will help others seek care and finish their treatment.

Thanks to **615 TB survivors** like Tekalign, more than **126,000 people** were referred for testing and **2,200 people** were supported through their treatment. Survivors also traced more than **142,000** contacts.

TAKING ON THE TOUGHEST CHALLENGE: DRUG-RESISTANT TB

Drug-resistant TB is more dangerous for people and communities because it is more difficult and expensive to treat. It also accounts for one third of global antimicrobial resistance deaths and undermines our modern medical system by diluting the effectiveness of antibiotics. The new oral treatment is quicker and more effective with fewer side effects, making it more likely that people will stick with the treatment.

Eliminate TB optimized treatment by moving from 18 months of treatment with daily injectables for the first several months to 6-9 months of a new all-oral medication. This new treatment was transitioned to local staff by training health workers and mentoring them through patient care.

WHAT HAS CHANGED

85% success rate in project regions **vs** **73%** in other parts of Ethiopia

Eliminate TB project are more successful at treating drug-resistant TB.

2021

Ethiopia was removed from the multi-drug resistant high-burden list.

81% of patients treated successfully **vs** **71%** global average

Ethiopia is one of the best countries in the world at treating drug-resistant TB.

SEARCHING FOR AND PREVENTING POSSIBLE TB CASES

Identifying TB cases can be challenging because the symptoms, like a persistent cough, can be similar to the flu or other illnesses. Many people spend months or years just dealing with symptoms or try to manage them with over-the-counter medications without ever being tested for TB.

Eliminate TB overcame these hurdles by screening people in places most likely to have TB cases, integrating screenings into existing programs, and **increasing contact investigation by 30%** to find people who may have been exposed to TB by someone they know.

SCREENING IN LIKELY TB HOTSPOTS

The Eliminate TB Project worked together with the Ethiopian government to target outreach screening toward people who were more likely to contract TB.



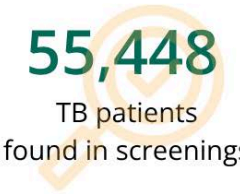
INTEGRATING SCREENING WITH EXISTING SERVICES

Using local organizations with deep roots in the community–like faith-based organizations–can be a cost-effective way to extend the TB program. Eliminate TB partner, the Amhara Development Association, conducted TB screenings during a measles campaign, finding 91 TB patients at almost no additional cost. Programs like these and working with community health workers to include screenings during home visits helped increase the number of patients identified in their communities by about 3.4 times.

INTEGRATING SCREENING IN LARGE HOSPITALS



~150
hospitals



55,448
TB patients
found in screenings



3.8 Million
patients screened
(98% of those admitted)



6X
what you would
expect in the general
population

INNOVATION SPOTLIGHT

Extending preventive treatment to adults

Preventive treatments were typically only given to children who have a higher risk of contracting TB. These treatments are lengthy and require ruling out active TB cases first. Ethiopia's stronger diagnostic capabilities make testing easier and faster.

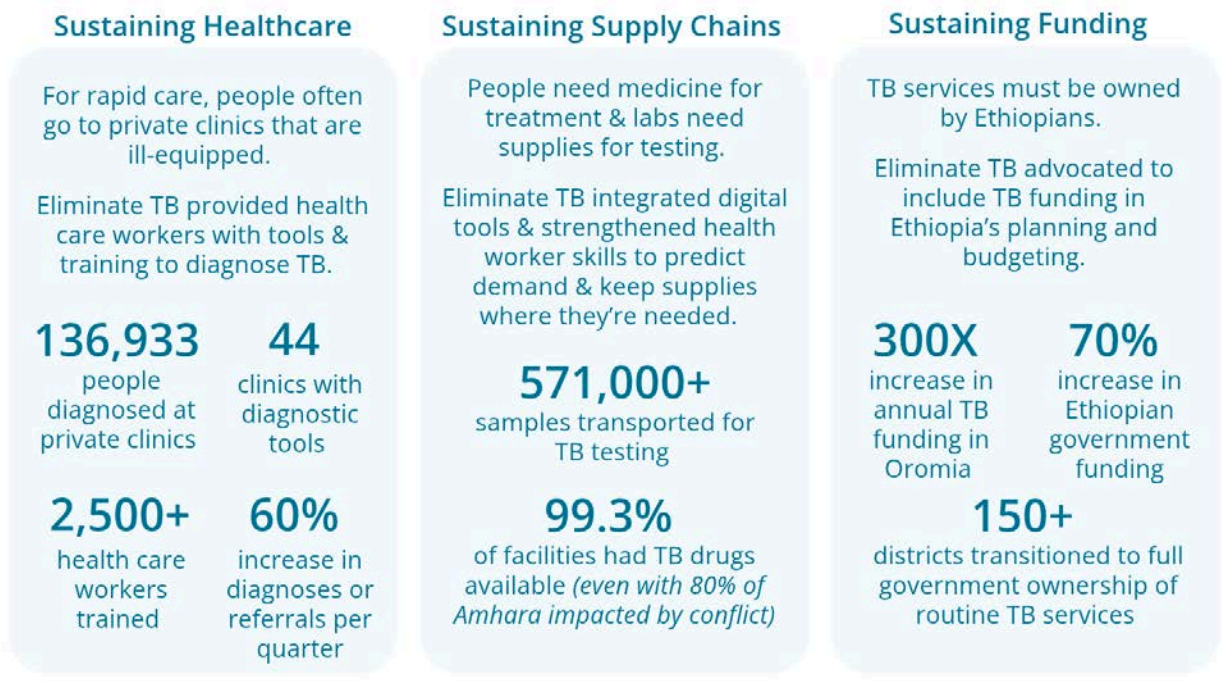
The Eliminate TB Project advocated for a policy change to provide preventive treatment to adults with HIV and those who live with someone who has TB, knowing that they are also at heightened risk.

Eliminate TB provided preventive treatment to **more than 486,300 people**.

SUSTAINING PROGRESS

Sustaining progress beyond the project means identifying the most impactful solutions, strengthening systems and people, and supporting government ownership to maintain and improve TB services – even through conflicts or health emergencies.

Eliminate TB worked hand in hand with government staff, always focusing on increasing their ability to run the full TB program—from the routine aspects of diagnosis, treatment, and reporting that they already manage to the project's innovations, such as regularly mentoring frontline health workers, maintaining modern diagnostics, and bringing diagnostics to vulnerable populations.



RESILIENT SYSTEMS DELIVER THROUGH CONFLICT

This project launched in June 2020 in the middle of the global COVID-19 pandemic, and operated through conflict, drought, and disease outbreaks. During conflict in Amhara, which impacted nearly 80% of the project area, Eliminate TB was able to maintain diagnosis and treatment by:

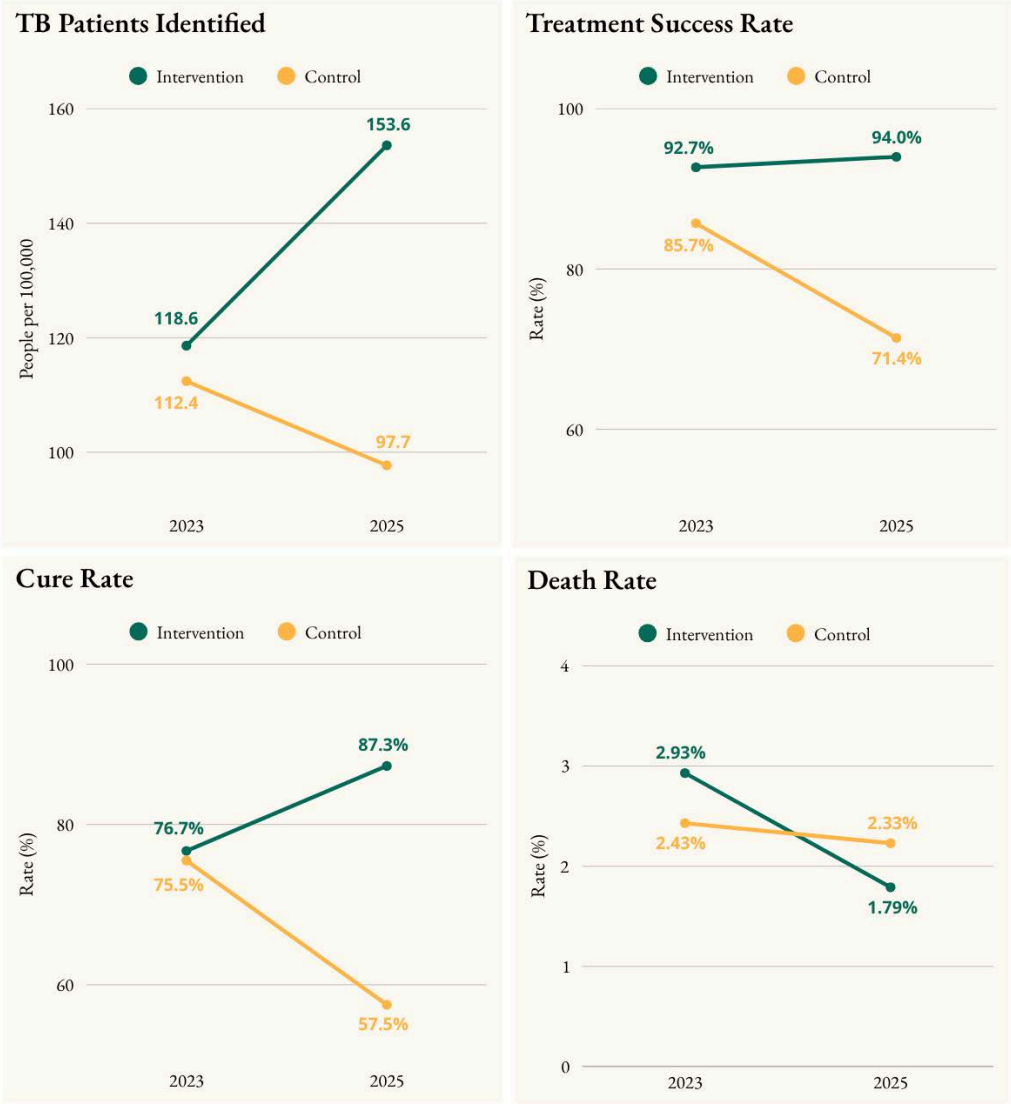
- Arranging for health facilities to send their GeneXpert machines to a larger town at the same time so that a trained technician can safely work on them and keep them online.
- Using private couriers or administrative health center staff to transport patients' samples for testing in areas where the postal service could not deliver them.
- Mentoring 1,000+ health workers remotely.
- Following-up with patients via telephone.
- Providing runaway kits with medicines for a full course of treatment so people could continue life-saving treatment without risking their safety or relying on a clinic that may be damaged, destroyed, or closed.
- Integrating TB screening with other health treatments in areas with an influx of people who have fled their homes.
- Procuring equipment and supplies for damaged health facilities.
- Providing short-term clinical services consultants while the government restaffed.

Eliminate TB also bolstered the resilience of communities by reducing the number of families facing catastrophic costs from 64% in 2022 to 23% in 2025. TB-related

expenses become catastrophic costs when they total more than 20% of income and drastically impact families' ability to meet their basic needs. Many of these expenses come from buying ineffective medicines without a diagnosis and transportation costs, which Eliminate TB mitigates by expanding screenings, improving diagnosis, and bringing treatment closer to patients.

IDENTIFYING HIGH IMPACT SOLUTIONS

Throughout the Eliminate TB Project, we conducted a study to determine the impact of globally-recommend innovations in moving Ethiopia from controlling TB to eliminating it. These strategies have not been put into practice in a low-resource, high-burden country like Ethiopia before. The study not only showed the success and challenges in Ethiopia but provides the whole world with evidence that a combined package of AI-assisted screenings, community-wide preventive treatment, community engagement, and optimized routine TB services can significantly increase case notification, improve cure rates, and reduce deaths.



CONTINUING THE PATH TO ELIMINATE TB

This project set out with an extraordinarily ambitious goal: not just to control TB, but to set Ethiopia on a path toward elimination. Ethiopia's TB program is stronger than ever before. The health system is better equipped to identify and respond to the disease with modern diagnostics closer to patients and health workers that are using data to continuously improve their work.

Further support should help Ethiopia adopt and scale innovative diagnostics and treatments to stay at the forefront of fighting TB. Coupled with continued implementation and strategic expansion of core Eliminate TB initiatives will put Ethiopia on track to meet the End TB goals, and accelerate progress toward a self-reliant, resilient national TB response.

Disclaimer

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