



## TB CARE II in Malawi

### Context

In the 1980s, Malawi's strong tuberculosis (TB) control program was devastated by the emerging HIV epidemic. People living with HIV (PLHIV) are 15-22 times more likely to develop TB than persons without and TB is the major cause of HIV-related deaths. TB case notifications spiraled out of control, slowed only by the advent of antiretroviral therapy (ART) in 2004, which reduces the chances of developing active TB. By 2010, the incidence rate for TB had declined to 310 per 100,000 population. However, less than half of the estimated 45,000 cases of TB cases were being detected. Furthermore, the HIV epidemic was still raging: Malawi had an HIV prevalence rate of 10% with over 900,000 people were infected with HIV. The rates of TB/HIV co-infection were high: of TB patients tested with HIV, 63% were co-infected with HIV,<sup>1</sup> resulting in worse treatment outcomes and higher mortality. Yet the services for the two diseases were provided separately, making access for patients more difficult.

In support of Malawi's National TB Program (NTP), USAID launched the TB CARE II Project to help improve TB control and expand access to high-quality TB and TB/HIV services in the public sector. During 2011-2015, TB CARE II worked at the national level to strengthen the laboratory network, build capacity of the NTP centrally, and pilot novel diagnostics. At the district level, the project implemented a comprehensive set of interventions, including integration of antiretroviral therapy (ART) into the TB program, training community health workers in TB/HIV intervention, expanding the smear microscopy

### The USAID TB CARE II Project (2010-2020)

- ▶ Provided global leadership and technical support to National TB Programs and other stakeholders to accelerate the implementation of TB, TB-HIV co-infection, and multi-drug resistant TB services.
- ▶ Particular emphasis on innovative technological approaches to improve TB case detection and treatment, and interventions related to infection control and programmatic management of drug-resistant TB.
- ▶ Strengthened TB program capacity and fostered commitment to ending TB by empowering government partners, civil society, communities, and the private sector to develop local solutions to address bottlenecks and strengthen health systems for TB control.

network, and upgrading infrastructure in selected facilities to support increased HIV testing and counseling and ART for TB patients.

### Key interventions and results

#### Engaging communities in TB control

As part of the decentralization of TB services, the NTP established community sputum collection points (CSCP), staffed by volunteer teams that identified people with symptoms or signs suggesting TB, collected sputum,

1. Data from UNAIDS AIDS Info (<https://aidsinfo.unaids.org>) and the WHO Global Health Observatory data repository (<https://apps.who.int/gho/data/node.main.1315?lang=en>). Accessed 17 July 2020.

### AUGUST 2020

TB CARE II is funded by United States Agency for International Development (USAID) under Cooperative Agreement Number AID-OAA-A-10-0021. The project team includes prime recipient, University Research Co., LLC (URC), and sub-recipient organizations Jhpiego, Partners In Health, Project HOPE along with BEA Enterprises; Brigham and Women's Hospital; the Canadian Lung Association; Clinical and Laboratory Standards Institute; Dartmouth Medical School: The Section of Infectious Disease and International Health; Euro Health Group; McGill University; and The New Jersey Medical School Global Tuberculosis Institute.

transported the sample to health facilities, and supported TB treatment adherence. TB CARE II worked with district health management teams (DHMTs) in project-supported districts to identify where new CSCPs were needed and strengthen existing points through training and supplies. The volunteers at also led community campaigns, for example on World TB Day. During the five years of the project, volunteers at 219 CSCPs identified over 18,200 of presumptive TB cases, of whom 919 were diagnosed with TB.

### Expanded TB case finding at health facilities

TB CARE II used a multi-pronged approach to increase case finding at health facilities. The project worked with health facilities to establish “cough corners” in out-patient and HIV departments at high-volume facilities, manned by a “cough officer” who requested all clients with a cough to register and submit a sputum sample for testing using Xpert MTB/RIF. TB CARE II also collaborated with the NTP and other health programs to support and intensify TB case finding in HIV settings as well as antenatal care clinics, outpatient departments, diabetic clinics, and child wellness clinics. This resulted in a four-fold increase in the number of HIV positive clients tested for TB in project-supported facilities. The proportion of HIV positive clients screened for TB was steadily above 90% in the project supported districts. This was also the case for registered TB patients with a recorded HIV test result.

### Strengthening the laboratory network to support TB diagnosis

TB CARE II worked closely with the NTP and the National TB Reference Laboratory to increase access to TB diagnostic services. A key tool was the new GeneXpert molecular test, which simultaneously detects TB and drug-resistant TB in less than 2 hours, and is also better at detecting TB in PLHIV. In 2011, TB CARE II hosted a national GeneXpert meeting to formulate the first draft of the national GeneXpert diagnostic algorithm, building consensus around testing algorithms, protocols and reporting and recording tools. By the end of the project, 11 Xpert machines were placed by the project in target districts. Between 2012 and 2015, 26,974 Xpert tests were performed in the 12 districts supported by TB CARE II, detecting over 2,000 TB cases and 75 drug-resistant TB cases.



*A laboratory assistant prepares samples for Xpert, 2014.*

### Decentralizing TB registration and treatment initiation

In 2010, DOTS registration was highly centralized, requiring patients, even those found to be sputum smear-positive at peripheral microscopy sites, to travel to the district hospital for registration and hospitalization. TB CARE II worked with the NTP and DHMTs to expand the number of TB initiation and registration sites from 59 to 177 in project-supported districts. The project supported the NTP to revise the policy for decentralization of TB registration sites, train health care workers on TB registration and treatment initiation, and equip the sites with registers, treatment cards, and first-line drugs. It also worked with DHMTs to provide continuous monitoring, supervision and mentoring of staff in the new sites to ensure that quality of services.

In all new TB initiation and registration sites, an integrated package of services was promoted. This included establishment of links to CSCPs, establishment of cough corners and cough officers, and provision of HIV care and treatment services. As a result of the TB CARE II efforts, the total number of registration centers in Malawi increased from 59 in 2010 to 277 in 2015. Of the total 277 TB registration sites in Malawi in 2015, 64% of these sites (177) were in 12 TB CARE II supported districts.

Decentralization and integration of services has multiple benefits for TB and TB/HIV patients. Patients and presumptive TB clients are able to access TB testing, treatment and care in less time and at a lower cost, thus contributing to better case detection, treatment adherence and treatment success

## TB CARE II's focus on results

Outcome Indicators	2011	2012	2013	2014	2015 *	Total
# TB cases notified (all forms)	3,115	3,056	13,455	6,827	3,412	29,8675
# MDR-TB cases diagnosed and initiated to treatment	38	14	34	7	0	55
TB treatment success rate	—	86%	85%	86%	85%	
MDR-TB treatment success rate	—	67%	79%	79%	57%	

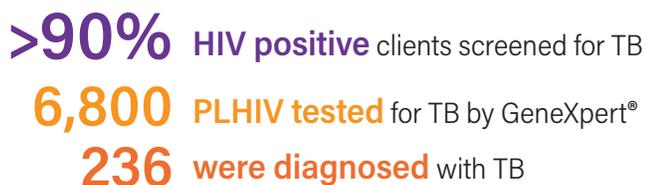
Data from the TB CARE II project information system for project-supported districts, \* 9 months

## TB/MDR-TB



Over 4,000 health care workers and laboratory technicians trained in TB and MDR-TB

## TB/HIV



**CPT uptake** increased from **78% in 2011 to 95% in 2015**



**ART uptake** by TB/HIV patients increased from **81% in 2011 to 93% in 2015**

## Laboratories



Number of functional smear microscopy sites: **109 sites have light microscopy services**, up from 49 in the beginning, and 59 sites now have light emitting diode (LED) fluorescent microscopes, where none had any in the beginning.



**126 laboratories** were enrolled on the national external quality assurance (EQA) program



Procured and installed **11 GeneXpert® machines** and accessories



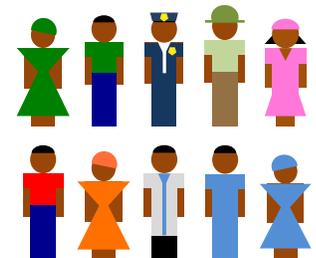
**26,974 Xpert tests** were performed in the 12 districts supported by TB CARE II, detecting 2,368 TB and 75 MDR-TB cases

**13.2%**

The overall contribution of Xpert to the total cases notified was **13.2% in Project Year (PY) 5**.

## TB Partnerships

The project has collaborated with **more than 45 CBOs or HIV support groups** to strengthen TB case finding





Facility staff review data on infection control indicators

## Promoting integrated TB/HIV services

TB CARE II worked intensively with both the national TB and HIV programs to increase integrated delivery of TB and HIV services, with an emphasis on improving the availability of TB screening and diagnostic services at HIV care and treatment sites. The project established one-stop-shops in Mangochi district hospital, and Ntcheu and Neno health centres, where TB/HIV patients could access a full package of services at one location, managed by one healthcare worker or health care team. Significant achievement was observed in uptake of co-trimoxazole preventive therapy (CPT) which decreases risk of TB and ART: CPT uptake increased from 78% to 95%, and the ART uptake increased from 81% to 93% during the project life.

## Addressing multi-drug resistant TB

TB CARE II worked as a prime partner to advance decentralized systems of care and treatment for MDR-TB patients in order to facilitate access and adherence to treatment. This included assisting the NTP to develop and adopt a national programmatic management of drug-resistant TB (PMDT) policy and community based MDR-TB guidelines, improving the electronic recording and reporting system for MDR-TB, and working with the World

Health Organization to identify and collate all necessary materials and tools for the system. Support was also provided for the establishment of the first national Centre of Excellence for PMDT at Bwaila Hospital in Lilongwe and the development and adaptation of training materials for district MDR-TB management teams established by the project. During the life of the project, the treatment success rate for MDR-TB patients was steadily around 69% nationwide while the mortality decreased from 33% to 25% for the cohorts of 2009 and 2011.

## Conclusions

During the five years of project implementation, TB CARE II worked to expand and solidify achievements, especially around increased case finding, decentralization of TB and MDR-TB services and improvements in TB/HIV integration. The strong partnership with the NTP, developed over several years of close collaboration and responsive leadership, provided for a fruitful exchange and allowed the project to support increased access to TB diagnosis and treatment through the establishment of new diagnostic facilities, roll out of new technologies and the opening of new TB registration and initiation sites. TB case detection was enhanced through the introduction of Xpert platforms and intensified case finding strategies at HIV care, support and treatment sites. Consequently, there has been a noticeable increase in the contribution of Xpert to overall TB case detection. TB CARE II support contributed to building stronger overall systems of care by developing the capacity of HCWs to better manage co-infected patients; supporting improvements in referral systems and diagnostic networks; and contributing to improved provision of integrated TB/HIV services. Active and ongoing coordination with the departments of HIV and TB at all levels was critical to this success, as the project worked to support a culture of patient-centered care.

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