



TB CARE II in Bangladesh

Context

In 2010, and still today, tuberculosis (TB) was a significant health problem in Bangladesh, with an estimated 326,000 new TB cases. However, only 47% of cases were being detected; those with undiagnosed TB continued to spread TB. Approximately 4,000 of TB cases had multi-drug resistant TB (MDR-TB), which is more difficult to diagnose, treat, and cure.

TB CARE II (2011-2015) provided focused technical assistance to support the National TB Control Programme (NTP) address the burgeoning burden of TB. Working at the national level and in 39 districts, the project piloted and scaled-up innovative models for community-level TB service delivery; engaged non-governmental organizations (NGO) and the private sector to accelerate TB case-finding; supported the integration of TB services with diabetes, HIV, and maternal and child health (MCH); and strengthened the overall health system for aid TB service delivery.

Key interventions and results

Understanding barriers to diagnosis and treatment: from research to practice

TB CARE II conducted a study to quantify the factors that were causing delays in TB diagnosis and treatment initiation. The study found that most of the delay was due to patient-level factors—such as misunderstanding symptoms, distance to facilities, transport costs, fear of diagnosis, and social stigma—which could be better addressed at the community level. As a result, in addition to interventions to improve facility-level TB services, TB CARE II focused on community-level strategies for case

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.

finding and management of TB and MDR-TB. **As a result, the median number of days between diagnosis and treatment initiation was decreased from 69 days in 2011 to 6 days in 2014.**

Community engagement in TB case finding

Given the potential of communities to improve the reach and sustainability, TB CARE II engaged 15 non-NGOs to increase detection and management of TB cases. The NGOs received support to collect, analyze and report data and to improve financial management, procurement, and financial reporting, preparing them to access funds from other sources in the future. NGO

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community workers conducted systematic contact tracing of index smear positive patients and community-based screening, assisted poor patients with transportation and testing costs; referred presumptive cases to microscopy centers; and supported treatment initiation and directly observed therapy (DOTS). **Through their community health workers, the NGOs helped detect more than 35,000 additional TB cases, including 2,620 cases with MDR-TB.**

Active case finding and infection control at health facilities: *FAST*

FAST is a novel infection control strategy to stop the spread of TB in congregate settings such as hospitals, clinics, and prisons. The approach, which stands for **Finding TB cases Actively, Separating safely, and Treating effectively**, is a simple, cost-effective administrative intervention to detect unsuspected TB cases and quickly and safely separate and treat those patients (*see the technical brief on infection prevention and control for more information*). TB CARE II implemented the *FAST* approach in three hospital wards at the National Institute for Disease of the Chest and Hospitals (NIDCH) in 2013 and after reviewing the promising results, scaled up to all non-TB wards of NIDCH, the BIRDEM diabetic hospital in Dhaka, and the Chittagong Chest Disease Hospital in 2014. ***FAST* implementation contributed to the detection of 1,402 unsuspected TB cases and 177 unsuspected MTB+RIF cases between 2013 and 2014.**

Building health provider capacity for diagnosis and treatment

TB CARE II worked with NTP to address gaps in TB detection and treatment by updating and developing guidelines and standard operating procedures (SOPs). Training and dissemination events built understanding and skills related to the updated content. During five years, TB CARE II trained over 13,000 healthcare workers.

One of the gaps was **pediatric TB**. TB CARE II worked with the NTP and the Bangladesh Pediatric Association to develop national guidelines and training modules on screening and referral of presumptive child TB cases, contact tracing, diagnosis and treatment of childhood TB, and provision of isoniazid preventive therapy to child contacts of TB index patients. As a result of training activities, **the childhood TB case detection increased by 30% compared to the baseline.**



A health provider counseling a TB patient using job aids developed by TB CARE II.

Strengthening laboratory networks

To increase the use of bacteriological diagnosis, TB CARE II worked with the NTP to develop training modules on microscopy and train over 850 technicians on microscopy. High-volume laboratories were improved through the procurement and installation of 400 light microscopes. To enhance NTP's capacity to conduct certified laboratory training, TB CARE II upgraded the two existing regional TB reference laboratories and helped establish two new labs.

TB CARE II also expanded access to new and effective diagnostic technologies. Between 2012 and 2015, the project introduced 39 GeneXpert® machines, which can simultaneously diagnose TB and detect drug-resistance, in 34 districts and 5 city corporation areas, achieving coverage for over 102 million people. The project worked with NTP to develop SOPs and training modules for Xpert MTB/RIF and train 128 laboratory technicians on their operation and maintenance. It also established a referral network and sputum collection and transportation system linking the Xpert sites with peripheral sputum microscopy centers. The Xpert helped triple the level of detection in three years and is now the first-line method for diagnosis of MDR-TB.

Improving adherence to MDR-TB treatment




The long duration of MDR-TB treatment often results in high default rates and low treatment success rates. TB CARE II fostered a patient-centered approach by improving the quality of counseling by health workers to MDR-TB patients as well as three new interventions to support treatment adherence:



TB CARE II's focus on results

Outcome Indicators	2011	2012	2013	2014	2015 *	Total
# TB cases notified (all forms)	152,865	161,697	181,436	186,925	51,400	734,323
# MDR-TB cases diagnosed and initiated to treatment	390	508	685	953	479**	3,015
TB treatment success rate	92%	92%	93%	94%	94%	
MDR-TB treatment success rate	65%	67%	69%	75%	73%	

Data from the NTP data management system, * January through March, ** January through June

TB/MDR-TB

Detection of **smear negative pulmonary TB** increased by **98%** 
EPTB by **59%** 
Child TB by **49%** 
 compared to baseline (2010)


3,309 MDR-TB cases detected 
2,749 detected through the use of GeneXpert®
1,296 MDR-TB patients managed through cPMDT 
84% of patients in cPMDT were cured

53,000  

Over 53,000 health care workers trained in TB and MDR-TB

TB/Diabetes

Over **50,000** people with diabetes counseled on TB prevention

13,633 people with diabetes with TB symptoms tested for TB 

Laboratories

100% of laboratories participate in external quality assurance  

Procured, installed and supported operation of    

39 Xpert MTBRIF



Between 2012 and June 2015, GeneXpert® detected:

3,039 MDR-TB cases
6,583 smear negative pulmonary TB
406 extra-pulmonary TB
37 TB including...
2 MTB RIF from among PLHIVs

TB Partnerships



12,249 Private providers oriented on TB activities

14 NGOs involved in TB control activities

35,000 TB cases detected between April 2012 and June 2015 as a result of project sub-grants

Community-based programmatic management of MDR-TB (cPMDT): TB Care II worked with NTP to introduce and scale up community-based programmatic management of MDR-TB (cPMDT), the decentralized management of MDR-TB patients at the community level (see technical brief on community engagement). The daily support of a community health worker reduced patient travel time and costs, while also ensuring that the patient took their medicine as prescribed for the entire 9-12 months. **As a result of cPMDT, 84% of patients in cPMDT were cured, higher than ever reported in Bangladesh.** The program also included a monthly financial allowance for MDR-TB patients to purchase food and to cover costs of transportation to health facilities and diagnostic centers, transferred through mCash/mobile banking.

mHealth treatment support: TB CARE II developed and introduced a mobile phone-based mHealth tool, ConnecTB, in early 2013 to improve DOT for the MDR-TB patients receiving treatment at the community level. The system monitors and captures real-time data on patient visits by DOT providers and status on DOT administration. DOT providers used the application to assist the provider with administering correct doses of drugs, checking side effects and patient's status, contact tracing and recording other relevant information (see technical brief on digital solutions).

Vocational training: As MDR-TB patients are unable to earn an income during their treatment, TB CARE II facilitated vocational training for MDR-TB patients so they could work from home. Over 500 patients learned income generating skills such as sewing, embroidery, and making protective masks for use by TB patients and hospital staff. After completing treatment, some found new jobs as seamstresses.

Integrating TB with HIV and diabetes services

TB is the leading cause of death for people living with HIV (PLHIV). TB CARE II facilitated the adoption of an NTP policy requiring TB screening for all HIV patients with

Xpert by supporting existing NGOs to refer HIV patients for TB screening. Sub-grants were also awarded to NGOs to increase TB screening among PLHIV.

People with diabetes have three times the risk for developing active TB than people without diabetes. TB CARE II worked with the NTP to develop the National Guidelines for the Management of TB-Diabetes Co-morbidity and partnered with the Bangladesh Diabetes Association to provide integrated screening, diagnosis and management of TB among diabetes patients. Over two years, more than 13,000 DM patients were tested for TB and over 50,000 DM patients were counselled on TB risks and prevention. **Detection of TB among diabetes patients increased eight-fold compared to baseline.**

Strengthening health systems

TB CARE II provided technical assistance under each component of the health system. The project strengthened the service delivery and laboratory network, built health workforce capacity in TB and MDR-TB, and worked at the policy level to ensure national guidelines and SOPs reflected evidence-based guidelines. The project also strengthened the supply chain, particularly during GeneXpert roll-out, and improved data management and use through training, updated TB reporting forms, and data quality assessments.

Conclusions

TB CARE II strategies and interventions brought significant improvement in the management of TB control activities in Bangladesh. While some improvements were related to strengthening skills and TB service delivery processes, it was also important to shift to a model of patient-centered care that leveraged the contributions of NGOs and the private sector. The lessons learned through the TB CARE II project provide a solid platform to build on and sustain the momentum toward achieving the national TB control goals.

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