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TUBERCULOSIS FOUNDATION

CHALLENGE TB

CHALLENGE TB

PERFORMANCE MONITORING REPORT

YEAR 4 APRIL - JUNE 2018

Challenge TB is USAID's flagship TB care and prevention project. It is implemented by a unique coalition of nine international organizations:

LED AND MANAGED BY:
KNCV Tuberculosis Foundation

COALITION PARTNERS:
American Thoracic Society (ATS)
FHI 360
Interactive Research & Development (IRD)
International Union Against Tuberculosis and Lung Disease (The Union)
Japan Anti-Tuberculosis Association (JATA)
Management Sciences for Health (MSH)
PATH
World Health Organization (WHO)

COVER PHOTO:
Movement of Youth Against Poverty, Ignorance and Diseases (MYAPID) outreach work in Hai district, Tanzania - Photo: PATH

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CONTENTS

ABBREVIATIONS

ACF	Active Case Finding
aDSM	Active Drug Safety Monitoring
BDQ	Bedaquiline
CB-DOTS	Community-Based DOTS
C/DST	Culture & Drug Susceptibility Testing
CI	Contact Investigation
CP	Community Pharmacist
CTB	Challenge TB
DLM	Delamanid
DOTS	Directly Observed Treatment Shortcourse
DPPM	District Public Private Mix
DR	Drug-Resistant
DSMB	Data Safety and Monitoring Board
DST	Drug-Susceptibility Testing
EPHI	The Ethiopian Public Health Institute
GF	Global Fund
HCW	Healthcare Worker
HIV	Human Immunodeficiency Virus
ICF	Intensified Case Finding
IGRA	Interferon-gamma Release Assays
IPT	Isoniazid Preventive Therapy
MDR	Multidrug-resistant
MoH	Ministry of Health
MTB	Mycobacterium Tuberculosis
ND&R	New Drugs & Regimens
NTP	National TB Program
PLHIV	People Living with HIV
PMDT	Programmatic Management of Drug Resistant TB
PMV	Patent Medicine Vendor
PPM	Public Private Mix
PTE	Pre-treatment Evaluation
RR	Rifampicin Resistant
SAE	Severe Adverse Event
SL-DST	Second-Line Drug Susceptibility Testing
SL-LPA	Line Probe Assay for Second-Line Drugs
SNRL	Supranational Reference Laboratory
STR	Shorter Treatment Regimen
STTA	Short-term Technical Assistance
TB	Tuberculosis
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

Challenge TB (CTB) is the flagship global mechanism of the United States Agency for International Development (USAID) to prevent and control tuberculosis (TB). This performance monitoring report summarizes project progress and achievements for the third quarter of Year 4, April - June 2018, across projects in 22 countries, the East Africa Regional project, and three core projects.

PROGRESS ON KEY PERFORMANCE INDICATORS

In this quarter TB case notification continued to increase in CTB supported areas: in total, 51,821 TB cases (all forms) were notified across ten countries. This was achieved by increasing case detection through active case-finding (2,704 cases were reported which amounts to 4% of overall case notification in Q2 and Q3), investment in community referrals (a total of 9,668 patients were reported in Q3 in five countries), and by engaging the private sector providers (a total of 4,888 TB cases in two countries). Significant successes were achieved through systematic health facility-based screening (including PLHIV): in Q3 1,382 cases in Bangladesh and 2,259 cases in Tanzania were notified through ICF at health facilities which contributed to 39% and 31% of their overall case notification respectively. Contact investigation contributed 5% (2,822 patients in 12 countries) to overall case notification in Q3. Contact investigation also contributed to the diagnosis of TB in children (in seven countries 4,942 children were diagnosed: 15% of their overall case notification). Exclusion of active TB among contacts served as the entry point for the treatment of latent TB infection (LTBI) - LTBI treatment is currently provided to 10,298 children (eight countries) and people living with HIV (PLHIV).

CTB contributed to increased case detection and notification through expansion of effective specimen transportation mechanisms leading to 66,558 specimens being transported in Q3 with the following countries reporting the highest increases: Zimbabwe (from 9,548 in Q2 to 13,271 in Q3), Nigeria (from 12,424 in Q2 to 14,688 in Q3), and Kazakhstan from 6,590 in Q2 to 11,506 in Q3). In addition, diagnostic networks were further strengthened by the scale-up of rapid and sensitive diagnostic laboratory tests (Xpert) and the use of "Double-X" for active case-finding (chest X-ray as a screening tool followed by Xpert testing for confirmation).

Diagnostic connectivity, especially for Xpert testing is taking shape. Eight countries have >85% of GeneXpert machines connected, five countries just started their scale-up phase, and one country is piloting connectivity solutions with CTB support. In two of the remaining countries CTB is preparing the implementation of Xpert connectivity, and in three countries, Xpert connectivity is supported through the Global Fund.

Expansion of HIV testing in TB patients is nearing completion, especially in countries with the highest HIV prevalence: in 17 CTB countries, 80%-100% of TB patients know their HIV status. Five countries are still below 80% and scaling up. Despite efforts to increase LTBI treatment in PLHIV (using the usual 6-9 month treatment regimen) progress is slow. CTB is involved in studying a new shorter regimen for the treatment of LTBI, for which experience is still limited (3HP). This shorter and easier treatment is expected to catalyze increased uptake of LTBI treatment among PLHIV and all TB contacts.

As of the end of June 2018, all 22 countries are implementing and scaling-up the triage approach for the treatment of multidrug-resistant TB (MDR-TB), which involves the programmatic use of shorter treatment regimens (STR) and individualized regimens containing new drugs (NDRs). This quarter 570 patients (excluding India) started on the new drug bedaquiline (BDQ), a substantial increase compared with 2017. Thirty-eight Patients started on DLM, and 15 patients started on a combined regimen of BDQ and DLM. In CTB countries 2,606 MDR-TB patients were enrolled on the STR in the first half of 2018, already more than the number of patients starting on the STR in the whole of 2017 (2,257). Kyrgyzstan is the first country to offer the full MDR-TB treatment triage approach nationwide.

The pioneering role of CTB has not only saved the lives of many patients with drug-resistant TB but also contributed to global policy development, with WHO now (June 2018) recommending BDQ as a key drug for the treatment of MDR-TB and extensively-drug resistant TB (XDR-TB).

The NDR core project plays a pivotal coordinating and facilitating role in this progress through development and publication of practical guidance based on the countries' needs by releasing a comprehensive package of training modules (this quarter), monthly calls with country teams and international partners for monitoring of progress and identification of bottlenecks, and ensuring cross-learning between countries.

Apart from the implementation of CTB project activities, CTB has been advocating for the uptake of CTB-mediated innovations in domestic budgets (such as through district planning for TB control in Indonesia, Ethiopia, and Nigeria) and is supporting the scale-up of CTB innovations through Global Fund (GF) resources, especially regarding Xpert expansion, the management of MDR-TB and private sector engagement.

In all countries, CTB engaged in advocacy and in-country preparation for the UN High-Level meeting in September. CTB also supported countries to develop abstracts, presentations, and symposia to showcase and promote the project's achievements, methods, and tools during the 2018 Union World Conference on Lung Health, resulting in a record number of accepted symposia and abstracts.

MAJOR CHALLENGES

In several countries, progress also comes with challenges. For instance, during the scale-up of interventions with GF resources, some countries faced delays in the procurement of essential commodities for the functioning of the National TB Program, such as laboratory supplies, including Xpert cartridges. This has affected CTB supported activities, such as Xpert scale-up. In general, due to the close collaboration between CTB and the GF projects in countries, delayed GF (and domestic) disbursement and procurement delays can seriously affect CTB project implementation.

Another example is the potential mismatch between the capacity to diagnose and the capacity to treat MDR-TB and XDR-TB. Despite efforts to fully align diagnosis and treatment capacities, treatment capacity building cannot always keep pace with the even more rapid scale-up of Xpert testing and subsequent diagnosis of MDR-TB. This is resulting in the early dropout of patients before treatment initiation, such as in Indonesia.

ACTIONS

Anticipating the challenges related to countries transitioning out of GF support or between grants, CTB is supporting countries in related planning and supply chain management and promoting the timely uptake of essential TB program elements into domestic budget lines, thus increasing both flexibility and self-reliance.

A well-functioning GeneXpert network is crucial for the scale-up of MDR-TB diagnosis and increased case-finding. Therefore, CTB is supporting countries to introduce digital connectivity for Xpert machines and the use of related data for optimal supply chain management, maintenance, and PMDT planning. This will assist countries to optimally benefit from existing Xpert capacity for intensified case-detection and MDR-TB management.

With new drugs and regimens introduced in all CTB countries, the project is now focusing on expanding and strengthening MDR/XDR-TB treatment capacity to ensure full alignment with increased diagnostic capacity and the forthcoming new WHO guidelines. The latter will come with major changes in procurement, clinical challenges, the need for increased second-line drug-susceptibility testing, and the expansion of robust pharmacovigilance. CTB country funds and the support of the BDQ Core project mean CTB is in an excellent position to assist countries to quickly and responsibly respond to the new guidance.

REPORT DEVELOPMENT PROCESS

The organization of this report is based on the CTB Monitoring & Evaluation (M&E) framework, mandatory indicators, and some key process indicators. For each of the thematic areas/indicators, the number of countries is a subset of the 22 countries data (data are not yet reported from Turkmenistan) based on the interventions approved in the country work plan and the availability of data for the reporting period. The completeness of the most recent quarter data still remains a challenge as many NTPs need a few months for data validation before releasing it to partners. In Cambodia, Ethiopia, Kyrgyzstan, Malawi, Nigeria, Ukraine, Uzbekistan, and Zimbabwe it is especially difficult for the CTB teams to report complete quarterly data in line with the CTB reporting timelines. This quarter more complete data became available from the previous quarters, therefore, in this report, we analyze and present quarterly results and trends for most of the indicators, by country.

With the emphasis in work plans differing per quarter, different reporting timelines and changing geographical areas in some countries, no overall CTB trends can be presented.

Country-specific explanations and country highlights are provided in each of the thematic areas to illustrate the achievements, lessons learned, and challenges.

WHAT IS CHALLENGE TB?

Challenge TB (CTB) is USAID's flagship global mechanism for implementing the United States Government (USG) TB strategy as well as contributing to TB/HIV activities under the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). Launched on October 1, 2014, this five-year cooperative agreement (2014-2019) builds and expands upon previous USAID global programs, namely TB CARE I (2010-2015), the Tuberculosis Control Assistance Program (TB CAP, 2005-2010) and Tuberculosis Control Technical Assistance (TBCTA, 2000-2005). KNCV Tuberculosis Foundation (KNCV), which also led the aforementioned programs, leads a unique and experienced coalition of nine partners implementing CTB. The coalition partners are: American Thoracic Society (ATS), FHI 360, Interactive Research and Development (IRD), International Union Against Tuberculosis and Lung Disease (The Union), Japan Anti-Tuberculosis Association (JATA), Management Sciences for Health (MSH), PATH, and the World Health Organization (WHO).

Working closely with Ministries of Health, USAID, Global Fund, the STOP TB Partnership and other key stakeholders at a global, regional, national and community level, CTB contributes to the WHO End TB Strategy targets:

Vision: A world free of TB
Goal: To end the global TB epidemic
By 2025: A 75% reduction in TB deaths (compared with 2015) and less than 50 cases per 100,000 population.

CTB is aligned with the USG strategy to prevent and control TB, and has three objectives, each with several focus areas for interventions:

Objective 1: Improved access to high-quality patient-centered TB, DR-TB & TB/HIV services by:
Improving the enabling environment
Ensuring a comprehensive, high quality diagnostic network
Strengthening patient-centered care and treatment

Objective 2: Prevent transmission and disease progression by:
Targeted screening for active TB
Implementing infection control measures
Managing latent TB infection

Objective 3: Strengthen TB service delivery platforms by:
Enhancing political commitment and leadership
Strengthening drug and commodity management systems
Ensuring quality data, surveillance and monitoring & evaluation
Supporting human resource development
Building comprehensive partnerships and informed community engagement.

Challenge TB implements projects at the country, regional, and international/global level, with the majority of the project's work being done through country-specific projects. As of June 30, 2018, 23 countries were implementing, two new countries (Kazakhstan and Turkmenistan) began implementation, and South Sudan closed.

At the regional level, CTB continued the implementation of the East African Region project, and also continued implementation of three core projects (see page 40).

CHALLENGE TB COUNTRIES

Apart from the implementation of project activities, CTB is advocating for the uptake of CTB mediated innovations in domestic budgets (such as through district planning for TB control in Indonesia, Ethiopia, and Nigeria), and is supporting the scale-up of CTB innovations through GF resources.

CTB engaged in advocacy for the UN High-Level meeting in September through high-level advocacy by the UN Special Envoy and in-country advocacy and preparation, ranging from awareness raising at the NTP and Ministry of Health (MoH) to supporting the development of briefing materials for parliamentarians and senior level government.

Preparations also took place for showcasing and promoting the USAID funded CTB achievements, methods and tools during the 2018 Union Conference. During Quarter 3, CTB project countries and partners received feedback from The Union that many abstracts, symposia, workshops, and seminars were accepted. CTB funding is available for three accepted symposia on public-private mix (PPM), new drugs and regimens, and GeneXpert networks.

TRENDS PER THEMATIC AREA

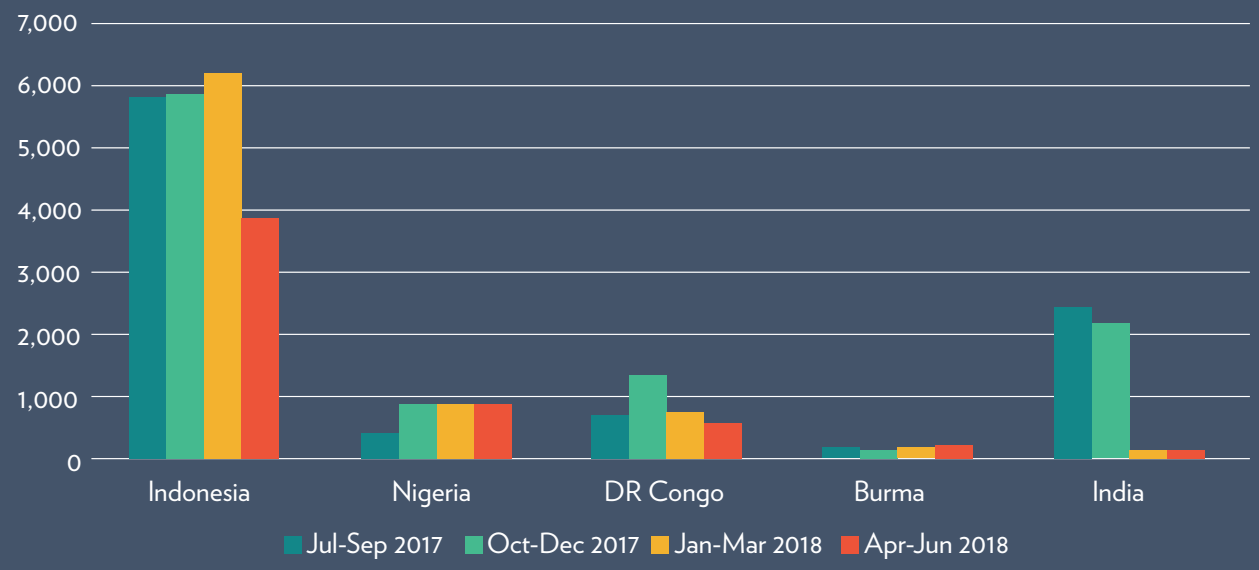
Objective 1: Improved access to high-quality patient-centered TB, DR-TB & TB/HIV services

Sub-objective 1. Improving the enabling environment

Enhancing private/non-NTP sector contribution

The engagement of private providers and unlinked public providers are key interventions to improve the reporting of TB patients and increase the quality of care. All six countries with CTB investment/activities in this area (Burma, DR Congo, India, Indonesia, Namibia, and Nigeria) reported data on this indicator for this quarter.

THE NUMBER OF CASES (ALL FORMS) NOTIFIED BY PRIVATE PROVIDERS IN CTB AREAS (CTB DATA JAN-MAR AND APR-JUN 2018*)



Country Highlights

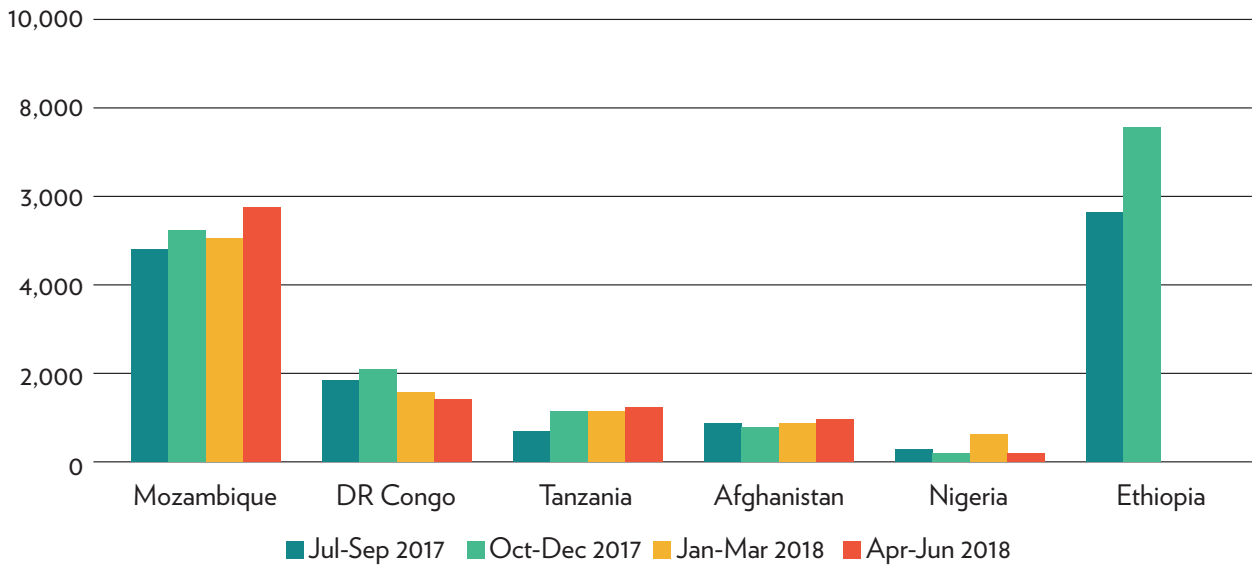
Nigeria - Using Patent Medicine Vendors (PMVs) and Community Pharmacists (CP), 902 TB patients were diagnosed among 12,811 presumptive TB cases identified and referred for diagnosis this quarter. The 902 TB cases diagnosed represent a one percent increase through this intervention compared to the previous quarter. To ensure access to quality TB care, engagement of PMVs/CPs will continue across the 112 CTB-supported local government areas in 14 states. In order to expand the PMV platform for identification of more TB cases, CTB trained an additional 28 PMVs/CPs on the identification of people with presumptive TB and referral for diagnosis and treatment during the quarter.

Indonesia - CTB supported District Health Offices (DHOs) with the establishment of PPM networks in 68 additional sub-district health centers (puskesmas), bringing the total to 90 out of the 280 sub-districts to be covered by this intervention in Year 4 (up from 22 in Quarter 2). In these 90 puskesmas internal networks between the departments were established, and in 24 puskesmas external networking has started, engaging GPs and private clinics in the diagnosis and treatment of TB patients. CTB technical officers supported establishing secondary care networks with the help of KOPI TB (a national coalition of professional organizations) in eight districts. KOPI TB has released a circular to all professional organizations to respond to the request to strengthen the PPM network. In response, 11 professional organizations had already released a circular to their branches in the provinces and districts in support of district PPM, by the end of June 2018. KOPI TB was been established in four provinces (Kepulauan Riau, Bangka Belitung, DKI Jakarta, and South Kalimantan), in six CTB districts, and two districts in other provinces, showing the impact of CTB work beyond its focus areas.

CB-DOTS/Community Referrals

CTB continues to invest in activities in this area in six countries Afghanistan, DR Congo, Ethiopia, Mozambique, Nigeria, and Tanzania. Five countries reported on this indicator for this quarter. Ethiopia, while investing in community referral systems, is not yet able to report on the total number of patients referred by the community for the last two quarters.

THE NUMBER AND PERCENTAGE OF CASES (ALL FORMS) NOTIFIED THROUGH CB-DOTS IN CTB AREAS (CTB DATA APR-JUN 2018)*



* Nigeria data is for April only due to termination of community-based organization sub-awards. DR Congo went down from 8 to 5 areas in Apr-Jun 2018.

Mozambique reports the highest contribution (40%) to case-finding/notifications by CB-DOTS, followed by Tanzania (17%), and Afghanistan (11%), which is consistent with previous quarterly reports. These three countries also show an increasing number of cases notified from community referrals across the last two quarters.

Country Highlights

Mozambique - Through its community activities, CTB contributed about 40% of the total NTP notifications in CTB provinces against the NTP set target of 20% for community contribution. Patients are mainly found during house-to-house visits and on monthly cough days. The percentage contributed increased by one percent from the previous quarter. With CTB support, the NTP reinforced some key activities such as contact investigation (CI) and screening in all sectors. CTB will intensify efforts in four additional districts in the Zambézia province that initiated CB-DOTS in Year 4.

Afghanistan - CTB maintained the implementation of CB-DOTS in the 15 provinces and expanded to an additional 101 public health facilities (HFs). As a result, CB-DOTS coverage rose by 17% this quarter, with 715 (76%) HFs currently covered by CB-DOTS in 15 provinces. From Apr-Jun 2018, CTB assisted the NTP to conduct supervisory visits in 613 HFs, 612 community health supervisors, and 14,655 community health workers (CHWs). As a result, CHWs identified 10,212 presumptive TB patients, and of them, 972 (9%) were diagnosed as TB (all forms) and were put on treatment. The treatment success rate remained at 95% in CB-DOTS supported HFs.

Sub-objective 2: Ensuring a Comprehensive, High-quality Diagnostic Network

Improved Performance on RR/MDR-TB Testing

Expanding and optimizing the diagnostic network continues to be a priority for CTB. The rollout of GeneXpert and the increasing of its utilization rate as well the implementation of diagnostic algorithms that include resistance testing in the first step are areas where CTB has invested resources in order to improve the performance on Rifampicin-Resistant (RR)/MDR-TB testing. All CTB supported countries are investing in this area.

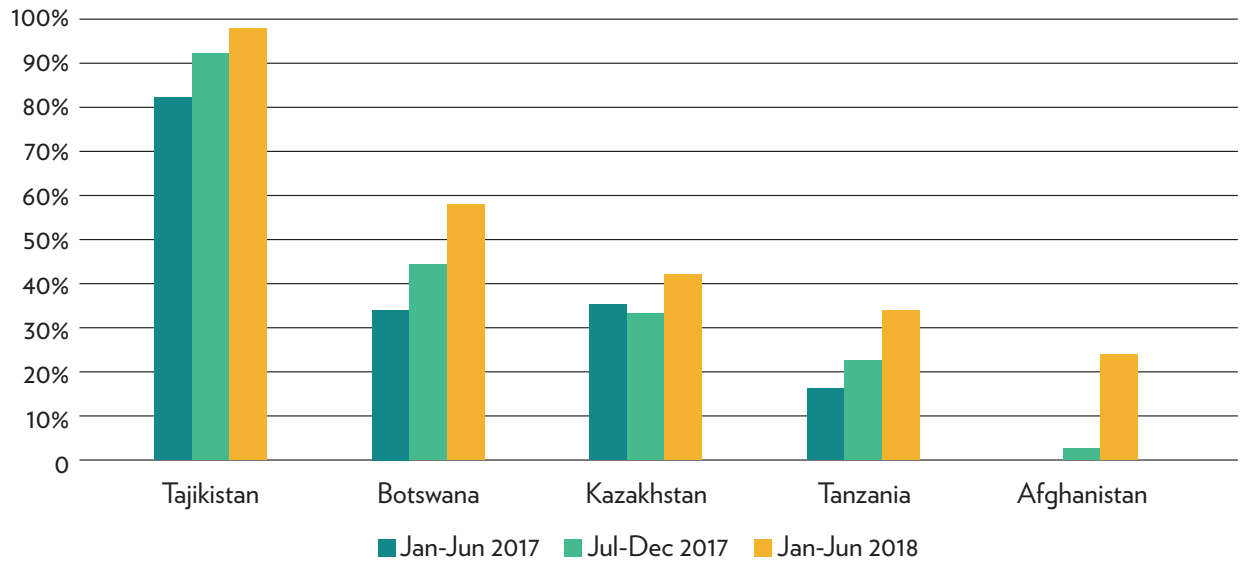
RR/MDR-TB Testing in New Patients

All CTB countries invest in the operationalization of RR/MDR-TB testing. Afghanistan, Bangladesh, Botswana, Burma, Cambodia, DR Congo, Ethiopia, Kazakhstan, Kyrgyzstan, Mozambique, Nigeria, Tajikistan, Tanzania, Ukraine, and Uzbekistan provided data disaggregated between new and previously treated patients. While some countries still mainly concentrate the use of GeneXpert on MDR-TB high-risk populations, people living with HIV (PLHIV), and children, eight countries already achieved good results by expanding to all patients.

The highest proportions of new patients tested for RR-TB in the last six months were reported in Tajikistan, Botswana, and Kazakhstan (97%, 58%, and 42% respectively), with increasing trends in all five countries.

Mozambique and Burma also reported results, but data validation is still ongoing in collaboration with the NTPs. In DR Congo notification data for the third quarter were incomplete and the percentage tested could not be determined.

RR-/MDR-TB TESTING COVERAGE FOR NEW CASES IN CTB AREAS
(CTB DATA, JUL-DEC 2017 AND JAN-JUN 2018)



FROM PATIENT TO ADVOCATE

Stigma is a mark of disgrace, and TB, HIV, and sex work carry some of the deepest levels of social stigma imaginable. Stigma not only leads to social isolation it negatively affects the health and well-being of all those who must endure it.

Benita Manda is an HIV-positive sex worker in the Mzimba district of northern Malawi. People living with HIV not only suffer from stigma, they also have a much higher risk of developing TB than those without HIV infection. If we are to win the fight against TB, we must first win the fight against the stigma surrounding both terrible diseases.

In January 2018, Benita was at the Ekwendeni Mission hospital taking care of her friend and fellow sex worker Aisha, who was suffering from a high fever and rapid weight loss. This was the third time in a month that Aisha had been to the hospital. The first time she visited doctors thought she had pneumonia, and she was given medication and sent home. When things did not improve, she came back and even though the doctor was sure she had TB, they failed to diagnose her because they were using microscopy which often fails to detect TB in people who are HIV-positive, like Aisha.

It was only during the third admission that TB clinician, Admiral Chatsika tested her with GeneXpert, a more accurate test for people with HIV. The result showed that Aisha had TB. Aisha was asked to bring her family and friends for screening, so she brought four other sex-worker friends including Benita. They were all tested, and all four had TB, as did one of their sons. They were all put on TB treatment, and Benita's young daughter was put on treatment to prevent her getting TB.

Despite being a sex worker herself, Benita initially exhibited classic stigmatizing behavior towards Aisha, she was disappointed in herself for hanging out with her and said:

"I couldn't believe that I had caught TB from her."

She received counseling from a health worker who explained, the symptoms, how the disease is

transmitted, and how people who get the disease are stigmatized. At the end of their session, she asked if Benita was interested in helping to persuade her fellow sex workers to go for TB screening, and Benita agreed.

"Using the knowledge, I have on TB, I am now encouraging my friends to go for TB screening. So far, I have managed to help six people by encouraging them to go for TB screening when I saw they had TB symptoms."

Both she and her friends are expected to finish their TB treatment by September 2018.

The TB officer at Ekwendeni Mission hospital, Mr. Christopher Mkandawire is one of the 267 healthcare workers trained by Challenge TB to visit the homes of people diagnosed with TB and to check the occupants for signs of infection, known as 'contact investigation'.

"I was trained in contact investigation in August 2017. Since then the number of TB cases identified through this approach has been increasing. We use community support group volunteers to identify contacts of TB patients for screening."

Since the training, the homes of 109 people with TB have been visited and a total of 654 people screened. Twenty-seven people with TB have been found, up from nine during the same period before the training. Benita has joined a group called Pakachere, a Malawian organization which mobilizes people to fight HIV and AIDS. The organization is formed of groups of people who are HIV positive, they provide support to each other, and encourage others to get tested for HIV.

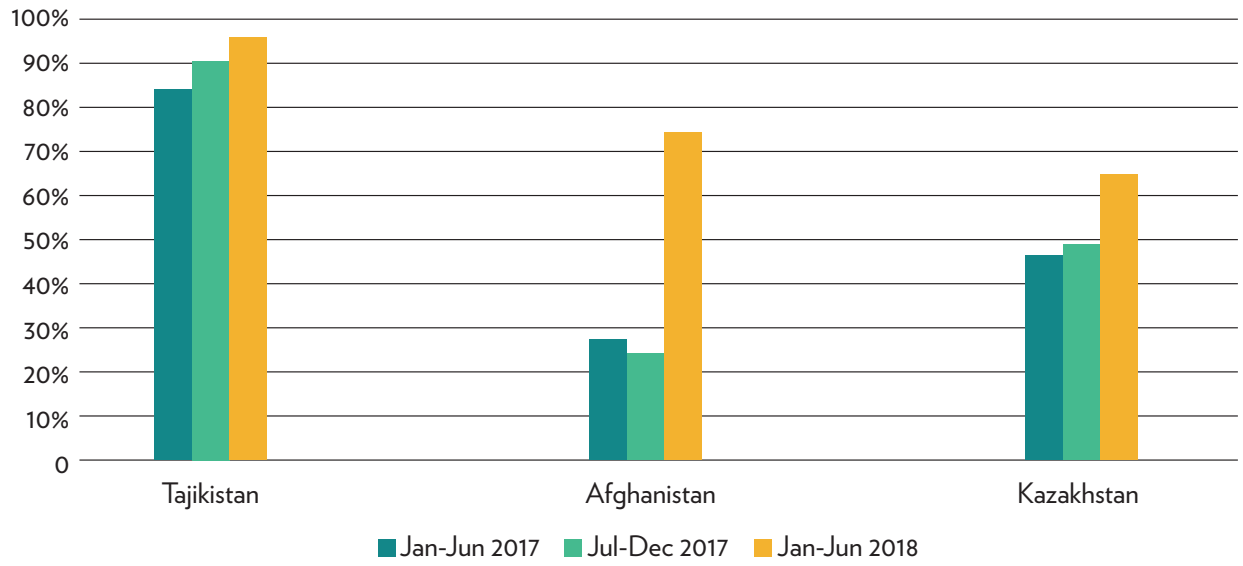
Her treatment is progressing well, and she continues to look out for her fellow sex workers and to make sure that they all stay healthy and free from TB.

RR/MDR-TB Testing Coverage for Previously Treated Patients

Afghanistan, Kazakhstan, and Tajikistan have complete data for the past three quarters and show an increase in the proportion of previously treated cases tested for RR/MDR-TB.

DR Congo, Ethiopia, and Mozambique also reported increasing percentages, which rise above 100%, a problem that is also occurring in Indonesia. This is caused by the use of different databases for reporting on previously treated patients tested, highlighting underreporting of previously treated patients in national notification systems or other data management problems. This issue has been recognized by the CTB country offices and will be addressed once patient-based reporting is fully realized.

RR/MDR-TB TESTING COVERAGE FOR PREVIOUSLY TREATED CASES IN CTB COUNTRIES (CTB AREAS COMBINED, CTB DATA JUL-DEC 2017 – JAN-JUN 2018)



Country Highlights

Indonesia - CTB has contributing to the further expansion and utilization of RR-/MDR-TB testing by assisting the NTP in producing guidelines and standard operating procedures (SOPs) and Training of Trainers (ToT) training. The implementation of the new diagnostic algorithm, with Xpert testing as the primary diagnostic test for TB, resulted in 184,927 Xpert tests done during the first six months of 2018 (a 90% increase compared to the last two quarters of 2017). In this quarter, CTB provinces contributed nearly 71% of Xpert testing, with an average utilization rate of 43% (May 2018). In addition, the proportion of dysfunctional Xpert modules and error rates were low at less than 4% and 3%, respectively.

Ethiopia - CTB supported the improvement of access to universal Drug Sensitivity Testing (DST) in Ethiopia through the installation of an additional 143 new GeneXpert machines across all regions. There are currently 315 GeneXpert machines that are functional at 301 health facilities.

Afghanistan - CTB provided 27 GeneXpert machines to improve quality TB service delivery and to increase the notification of both drug-susceptible and DR-TB. The machines were handed over to the NTP/MoH Afghanistan during a ceremony attended by 140 participants from the MoH, NTP, USAID, international TB partners such as WHO, JICA, GF, and MSF. There were also 20 representatives from local and international media, including BBC World News.

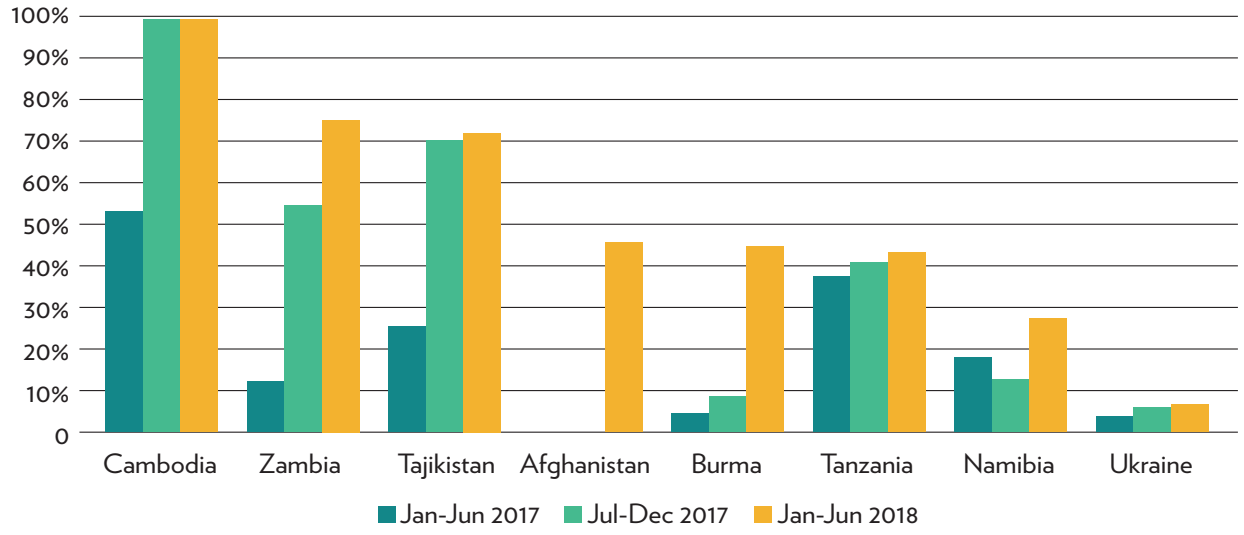
DR Congo - The number of notified DR-TB patients increased from 47 in Quarter 1 to 72 in Quarter 2 in eight CTB-supported provinces. In Quarter 3, 52 DR-TB patients were notified in five CTB-supported provinces. The main challenges for DR-TB detection were: (i) the high turnover of trained TB health care workers; (ii) an insufficient stock of Xpert MTB/Rif cartridges nationwide due to an underestimation by the NTP; and (iii) power failures in some GeneXpert sites.

Expanding Capacity for Second-line Drug Sensitivity Testing

From January-June 2018, CTB supported the procurement, installation, and operationalization of second-line LPA testing (SL-LPA) in support of the implementation of the patient triage approach for MDR-TB. In total 22 CTB countries now have operational SL-LPA capacity from 116 laboratories; Zambia refers samples to the SNRL in Uganda and plans to have SL-LPA in 2018 with CTB support.

Turkmenistan already has functional SL-LPA established through GF/WHO support. Uzbekistan (seven labs) in 2016 reported 70% SL-LPA testing of patients with RR/MDR-TB, but no reports are available for 2017 and 2018. Data from eight countries with complete data regarding SL-LPA coverage are shown in the figure below.

SL-LPA NATIONAL COVERAGE (CTB-REPORTED NATIONAL DATA, JUL-DEC 2017 AND JAN-JUN 2018)



Country Highlights

Zambia - With support from CTB, the MoH conducted training for clinical and laboratory staff from all ten provinces (including all ten MDR-TB treatment sites) to improve knowledge and enhance skills in the diagnosis and management of DR-TB. The training focused on drug-susceptible TB (DS-TB), drug-resistant TB (DR-TB), and ND&R. Furthermore, mentoring visits were conducted to two STR sites (Ndola Teaching and Kabwe Central Hospitals). Between Jul-Dec 2017 and Jan-Jun 2018, the proportion of RR-TB samples being tested on SL-LPA increased from 55% to 76% at the national level.

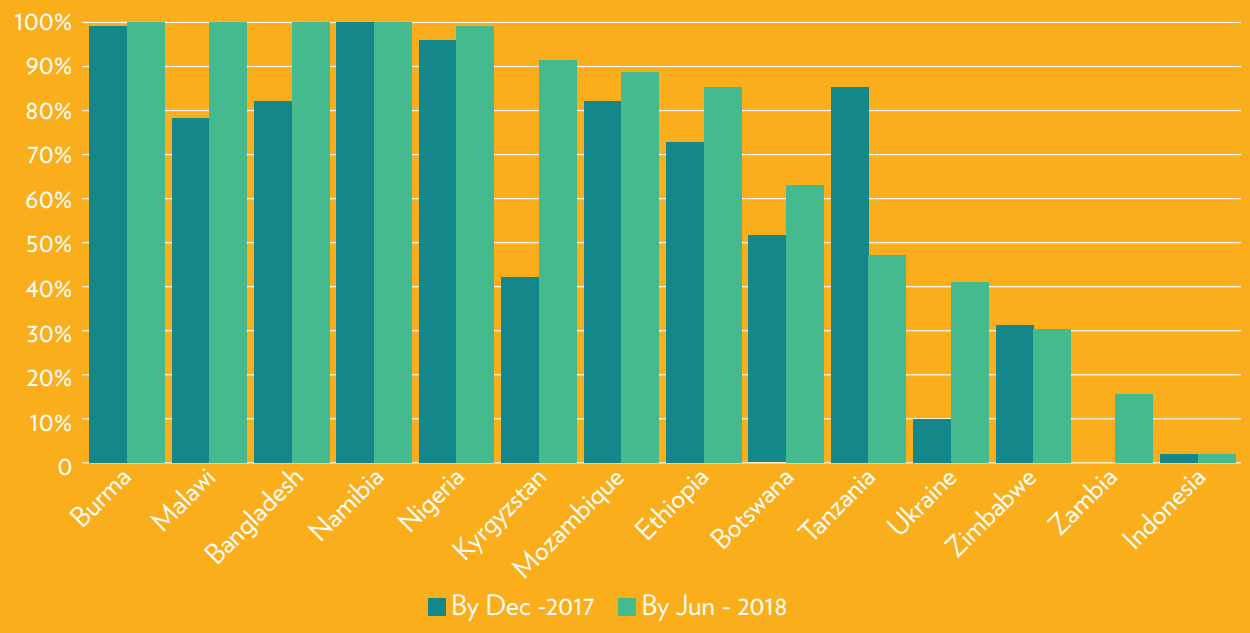
Tanzania - CTB supported zonal TB laboratories equipped with LPA in monitoring TB drug resistance for both first- and second-line drugs by mentoring and maintaining machines. This led to an increase in the number of RR specimens being tested with SL-LPA, from 157 last quarter to 208 this quarter. In the next quarter, CTB will engage motorcyclists who will be responsible for transporting RR specimens to the nearest LPA laboratory and delivering the results back. CTB will work to ensure that 100% of RR specimens are tested with SL-LPA.

GeneXpert and Connectivity Systems

By the end of June 2018, 13 CTB countries had operational national connectivity systems, a pilot project was still ongoing in Indonesia, pending MoH decision making on scale-up. Nearly all CTB countries invested in connectivity, 16 of which through the CTB project. Eight countries (Burma, Malawi, Bangladesh, Ethiopia, Kyrgyzstan, Mozambique, Namibia, and Nigeria) already reported over 85% of the GeneXpert machines are connected. In Tanzania the number of GeneXpert machines increased from 93 in the previous six months to 195 this quarter, resulting in an equivalent decrease in diagnostic connectivity, due to a delay in the installation of a connectivity system. Scale-up is also supported in Botswana, Ukraine (GxAlert), Zambia (DataToCare), and Zimbabwe (GxAlert), showing increasing coverage of Xpert machines of 64%, 41%, 16%, and 30% respectively by the end of this quarter. In Tajikistan and India CTB is preparing for the implementation of Xpert connectivity solutions over the fourth quarter through Year 5; in DR Congo, Cambodia, and Vietnam the introduction of Xpert connectivity is planned under GF funding.

This shows important progress towards targets of Indicator 4 for laboratory strengthening under the End TB Strategy (*by 2020 in 100% of testing sites that use rapid diagnostics a data system has been established that transmits results electronically to clinicians and to an information management system*); the establishment of the digital health team at KNCV has given a boost to these developments, through support to planning, budgeting, and the development of a generic RFP document for local adaptation allowing for effective procurement.

THE PERCENTAGE OF GENEXPERT MACHINES CONNECTED TO A CONNECTIVITY SYSTEM IN CTB COUNTRIES (BY DEC 2017 AND BY JUN 2018)



Country Highlights

A "deep dive" data assessment was done in **Bangladesh** on the functioning of the GeneXpert network using data collected by the diagnostic connectivity system by CTB partners and SystemOne (this was published as a case study in June 2018). The assessment showed the significant benefits of the diagnostic connectivity system for monitoring the performance and managing the GeneXpert platforms (https://www.slideshare.net/SystemOneUS/gx-alert-casestudy-bangladesh-062618).

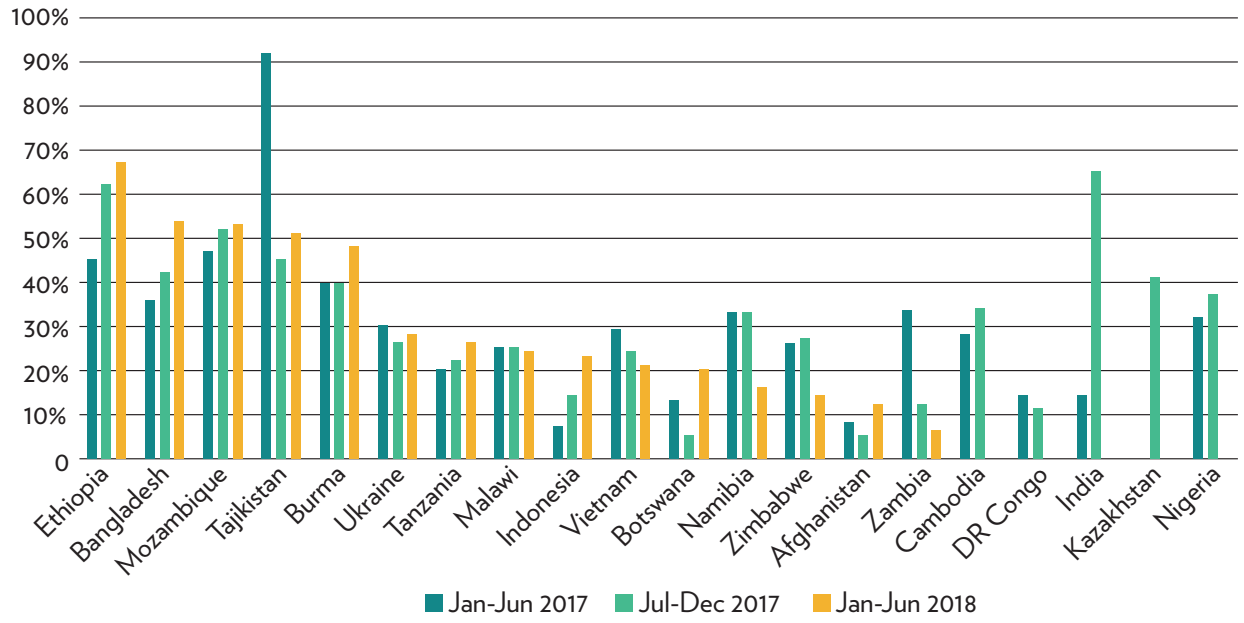
During the quarter the CTB Diagnostic Connectivity project further refined the Request for Proposals (RFP) document that lists (i) technical, (ii) business, (iii) implementation, (iv) organizational and (v) budget requirements for proposed connectivity systems. Support was provided to teams in **Afghanistan** and **Tajikistan** to use this RFP document with requirements and assumptions of a data connectivity system in order to solicit bids from different candidates and support a transparent selection process. In both countries, a vendor has been selected and the implementation of a connectivity system will start in Quarter 4.

At the **global level**, CTB is sharing experiences and learnings with the GLI TB Diagnostics Connectivity Task Force and WHO which are currently conducting a survey to help national staff and implementing partners to select diagnostic connectivity solutions according to country needs and existing information systems.

Utilization of GeneXpert

All CTB countries invest in the operationalization of Xpert testing. Complete data for Xpert utilization rates for Jan-Jun 2018 are reported by 15 CTB countries. The highest rates were reported in Ethiopia (68%), Bangladesh (55%), and Mozambique (54%).

UTILIZATION RATE OF XPERT IN CTB COUNTRIES (CTB DATA JUL-DEC 2017 AND JAN-JUN 2018)



Strengthening Specimen Transport Systems

CTB continues to play a significant role in supporting and strengthening specimen transport systems (STS) with an increasing trend in the number of specimens transported. The largest increases between Quarter 2 and Quarter 3 were seen in Kazakhstan (from 6,590 to 11,506), Zimbabwe (9,548 to 13,271), and Nigeria (from 12,424 to 14,688).

For this quarter, CTB received data from 12 countries (Afghanistan, Burma, DR Congo, Ethiopia, Indonesia, Kazakhstan, Mozambique, Nigeria, Tajikistan, Tanzania, Ukraine, and Zimbabwe).

In **Zimbabwe**, an existing integrated specimen transportation system through which 30,000 specimens were transported in Quarter 3 compared to 25,000 in Quarter 2. In Quarter 3, 15% (13,271) of the samples were TB specimens compared to 13% (9,548) in Quarter 2.

In **Nigeria** a total of 14,688 specimens were transported in Quarter 3, using two models (local courier and "hub & spoke").

Indonesia has established specimen transportation networks which are used with mixed success, but the monitoring of the specimen transportation system is not well established. To improve this, the NTP, with GF funding, developed an app-based information system for the tracking of transported specimens (called SITRUST), which was introduced in all CTB districts in May 2018, the effect will be reported in the next quarter.

In **DR Congo** the number of CTB supported areas dropped from eight to five, reducing the number of specimens transported in CTB areas. India reported 6,531 specimens transported in Quarter 2, and in March 2018, CTB India completed the handover of all sites to the NTP and therefore this indicator is no longer reported.

Country Highlights

Zimbabwe - CTB continues to support a dedicated STS to improve access to TB diagnostic and patient treatment follow-up. A total of 90,332 samples were transported from April-June 2018, translating to 30,000 samples transported per month, compared to 25,085 per month in the previous quarter. Of the total samples transported, 13,271 (15%) were TB specimens, an improvement from the 9,548 (13%) transported in the previous quarter.

Nigeria - CTB continues to implement sample movement for Xpert testing across supported states using two models. The courier model for sample transport was carried out by *Riders for Health* in nine of the 14 CTB supported states, while the "hub and spokes" model of sample transport through health care workers was operationalized in the remaining five states. Of the 14,688 sputum samples transported for Xpert testing during this quarter, 10,222 were through the courier model and 4,466 via "hub and spoke". In all, 14,606 (99.4%) samples transported were tested by the Xpert assay.

Tajikistan - Effective STS that expanded to new CTB sites, as well as improved referral of presumptive TB patients, contributed to an increased number of samples transported to laboratories for testing. The number of transported samples nearly tripled in Year 4 Quarter 3 in comparison with Quarter 1. In the reporting period, 3,826 samples were delivered to TB laboratories and tested, 34% of the national coverage. There was also an increase in the absolute number of cases with laboratory-confirmed TB (n=712) and DR-TB (n=126). All 712 TB patients were diagnosed with rapid testing methods, such as Xpert MTB/RIF and LPA.

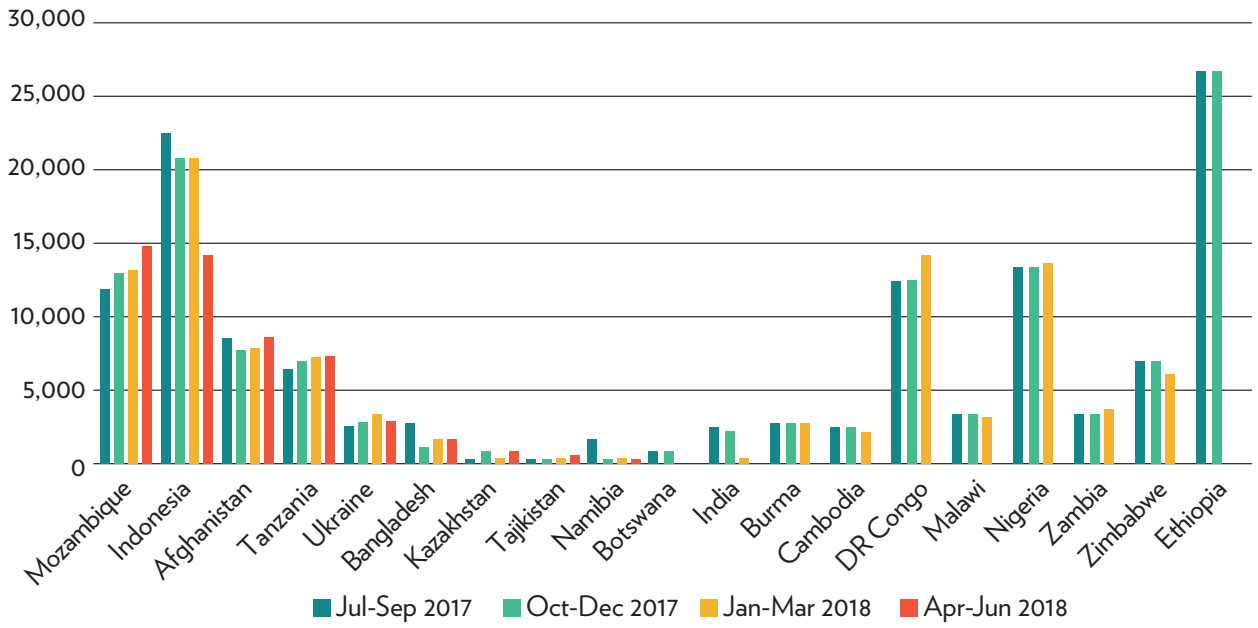
Sub-objective 3: Strengthening Patient-centered Care and Treatment

Case Notification – Improved Access to high-quality TB, MDR-TB and TB/HIV Services

As case notification is the basis of TB elimination, much of CTB's efforts are focused here. The results of the first three quarters of Year 4 are shown below, with all CTB countries investing in this intervention.

The overall notification for the most recent quarter is still incomplete, especially in Indonesia where 40% of the reporting units had yet to report by the deadline.

THE NUMBER OF TB CASES (ALL FORMS) NOTIFIED IN CTB AREAS (CTB DATA JAN-MAR AND APR-JUN 2018*)



*Indonesia has incomplete data for April-June 2018.

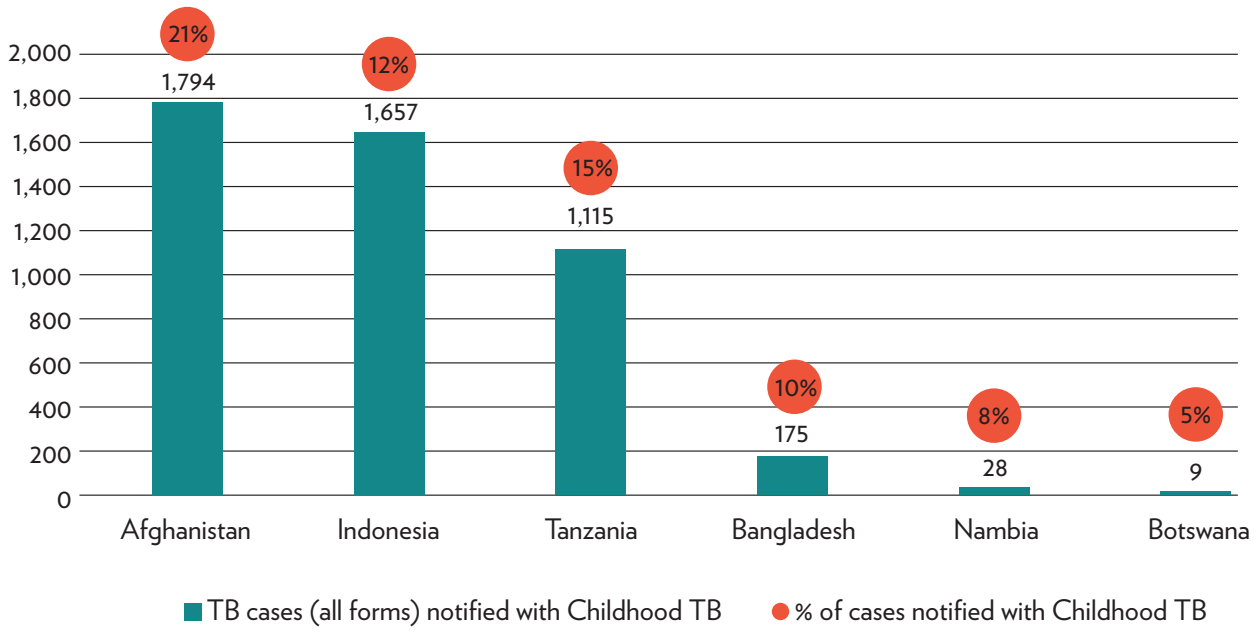

HERO

Increasing Case Notification Among Children

CTB continues specific investments in this area in 13 countries: Afghanistan, Bangladesh, Botswana, Cambodia, DR Congo, India, Indonesia, Malawi, Namibia, Nigeria, Tanzania, Ukraine, and Zimbabwe. Seven countries (Afghanistan, Bangladesh, Botswana, Burma, Indonesia, Namibia, and Tanzania) already reported results this quarter.

Afghanistan has the highest percentage with 21%, as in Quarter 2. In Afghanistan, CTB drafted the protocol for an operations research study that will look at the effectiveness of TB case-finding among malnourished children and children with pneumonia admitted to hospital in seven cities. The study will be launched in August 2018.

THE NUMBER AND PERCENTAGE OF CASES (ALL FORMS) NOTIFIED AMONG CHILDREN IN CTB AREAS (CTB DATA APR-JUN 2018)



Country Highlights

Bangladesh - CTB continued active child TB screening in pediatric outpatient departments (OPDs) of six tertiary health facilities. During the quarter, CTB organized orientation sessions on child TB diagnosis for the OPD physicians at three facilities. From April to June 2018, the CTB project supported the screening of 80,753 children and identified 2,200 (3%) children with TB symptoms who were clinically evaluated by physicians at the OPDs. Based on the confirmation of physicians, 1,914 (87%) children with TB symptoms were tested, and 163 (9%) children with TB were identified and started on treatment.

Nigeria - 681 children were diagnosed with TB from the 41,028 children screened for TB across CTB-supported local government areas. Compared to previous quarter results, the 681 cases diagnosed represent a 16% (585 vs. 681) increase in TB notification through systematic screening among children. The project continued to improve access to chest X-ray services through institutional arrangements with X-ray centers as well as by strengthening the linkages of pooled child TB presumptive patients with pediatrician-led review clinics.

Afghanistan - CTB addressed TB among children in five pediatric hospitals in Kabul, Herat, and Kandahar and at primary health care facilities. As a result, health care staff notified 1,794 TB cases among children – a 9% increase (144 cases) compared to the previous quarter.

TB/HIV Collaborative Activities

TB/HIV activities are supported in all CTB countries. Important interventions are HIV testing in TB patients and the uptake of LTBI treatment in newly diagnosed HIV patients. Data reporting is done annually, so no updates are currently available.

At the start of Year 4, the expansion of HIV testing in TB patients was nearing completion, especially in the countries with the highest HIV prevalence. In 17 CTB countries 80%-100% of TB patients know their HIV status, five countries are still below 80% and are scaling-up.

Despite efforts to increase LTBI treatment in PLHIV (with 6-9 months of isoniazid), progress is slow. CTB is involved in studying a new shorter regimen for the treatment of LTBI (3HP) for which experience is still limited. This shorter and easier treatment is expected to catalyze increased uptake of LTBI treatment among PLHIV and all TB contacts. Five countries: Botswana, Namibia, Tanzania, Ukraine, and Vietnam, receive PEPFAR funding.

Country Highlights

Botswana - CTB is closely supporting the full cycle of GF grant implementation. The in-country NTP long-term technical assistance participated in the finalization of HIV/AIDS National Strategic Framework (NSF) III, which is required for grant-making process 2019-2021, and participated in several meetings organized by NACA to complete the grant-making documents. The in-country CTB staff participated in the finalization of HIV/AIDS NSF III.

Namibia - CTB focuses on seven high-burden districts through above-site support. All PLHIV are screened for TB and 53% of eligible PLHIV were started on TB preventive therapy (TPT) this quarter, with 83% of PLHIV completing a 9-month course of TPT. Ninety-six percent of notified TB patients had a documented HIV status, of whom 32% were HIV positive, of whom 97% were on antiretroviral therapy (ART).

Tanzania - CTB initiated and supported a meeting with key stakeholders (NTLP, National AIDS Control Program, TB and ART partners, CDC, and USAID) agreed to form a task force and develop a comprehensive plan to introduce and scale-up GeneXpert HIV VL/EID in the country. The task force will support the development of guidelines, SOPs, training materials, and a recording and reporting system. Based on the "hub and spokes" model, a GeneXpert TB/HIV implementation rollout plan and integrated specimen referral mechanism including both TB and HIV were developed.

Ukraine - CTB reports that thanks to the project's advocacy activities, which involved all stakeholders and the leadership of the Kherson Oblast Health Department, 100% of patients with TB/HIV co-infection in the oblast now have access to ART. In March 2018, the availability of ART drugs was only 30% of what was needed, but thanks to CTB this issue was addressed and a sustainable solution has been developed at the oblast level.

Vietnam - Since Year 4, CTB has been fully aligned with the country's HIV 90-90-90 targets and focuses on quality-assured joint TB/HIV service provision in high HIV prevalent populations, in close collaboration with the USAID-funded SHIFT project implemented by FHI 360, which focuses on HIV care and prevention. Good results are reported on the monitoring, evaluation, and reporting (MER) indicators for cumulative data from Quarter 1-3: In Dien Bien and Nghe An provinces respectively: TB_STAT 97% and 94.3%; TB_ART 100% and 90%.

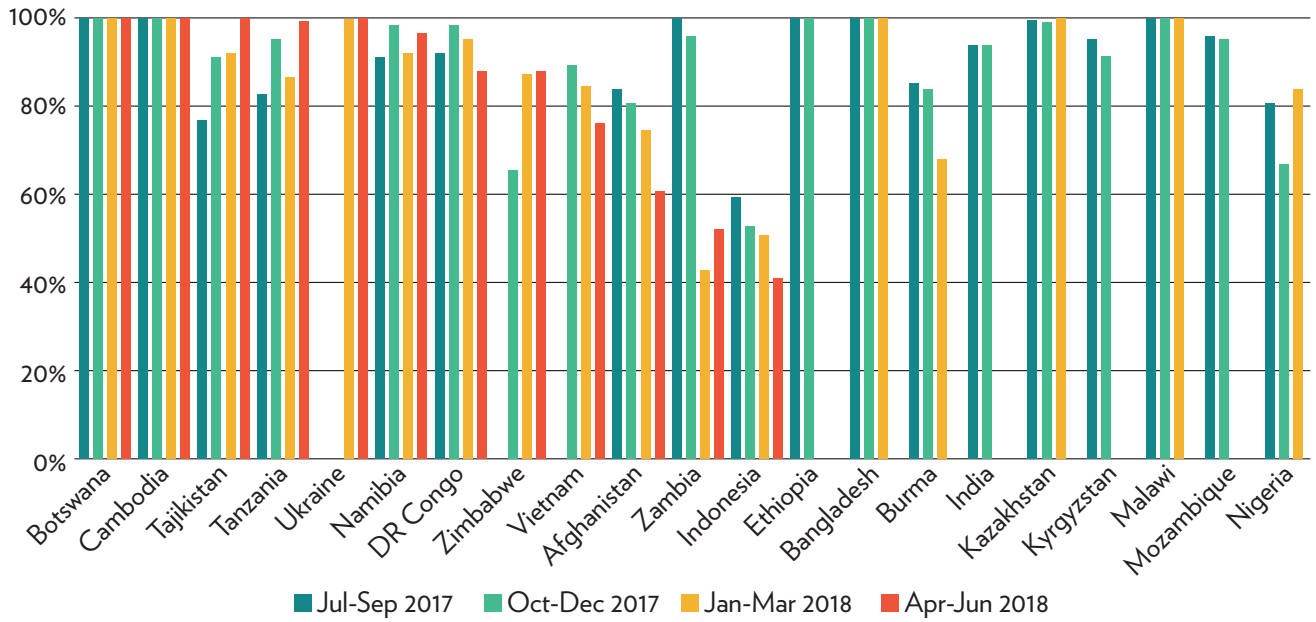
Notifying and Treating MDR-TB Patients

Expanding MDR-TB treatment to keep up with increasing diagnosis is one of the greatest challenges in the programmatic management of DR-TB, and therefore an important focus of the CTB project. The diagnosis-treatment gap in CTB countries is shown below.

While Tajikistan, Tanzania, Namibia, Botswana, and Ukraine have succeeded in enrolling nearly all their MDR-TB patients, in other countries, the diagnostic capacity through rapid Xpert expansion is overtaking treatment capacity, resulting in an increasing diagnostic–treatment gap, as seen in Vietnam, Afghanistan, Zambia, and Indonesia. In Indonesia, part of the effect may be due to the double reporting of diagnosed RR-TB patients, which will continue to happen until full case-based reporting is realized, which is now a priority for the NTP.

The MDR-TB data for India comes from CTB-targeted private providers in Mumbai, where patients diagnosed in the private sector are linked to the public sector DR-TB centers for treatment.

MDR-TB TREATMENT COVERAGE PER COUNTRY (CTB-REPORTED NATIONAL DATA 2017-2018, 12 COUNTRIES*)



* Botswana and Cambodia report a 100% treatment coverage for all four quarters

Country Highlight

Indonesia - Since 2017, CTB has been implementing a Monthly Interim Cohort Analysis (MICA) in 13 CTB districts. This quarter saw an increase in the enrollment rate from 71 to 75%. The rollout of MICA to all districts in CTB supported provinces and beyond, is expected to contribute to increased enrollment. The NTP has taken up this methodology and organized national training.

Expanding the Programmatic Use of New Drugs and Regimens, Bedaquiline, Delamanid, and the Shorter Treatment Regimen

CTB has been actively helping countries to plan, implement, and introduce new TB drugs (BDQ, DLM) and the STR, with the aim of improving the treatment outcomes of patients. By the end of this reporting quarter, BDQ had been introduced in 22 CTB countries. The number of treatment sites increased to 139 sites, 22 more than in the previous quarter. The total number of patients benefiting from BDQ continues to increase, with 570 patients started on treatment with a BDQ containing regimen in this quarter, the highest number yet. Following the WHO recommendations on active Drug Safety Monitoring and Management (aDSM), any serious adverse event (SAE) that a patient presents is reported to the relevant authorities, 61 SAEs were reported this quarter and 22 deaths have been attributed to the use of BDQ after a causality assessment was performed (20 of which occurred in India).

BDQ INTRODUCTION IN ALL CTB COUNTRIES

	2014	2015	2016	2017	2018 Jan-Mar	2018 Apr-Jun	2018
Number of BDQ Treatment Initiation Sites in 21 CTB countries (excluding India)	2	12	24	67	93	115	115
- in India	0	0	6	24	24	24	24
Number of patients started on BDQ 21 CTB countries (excluding India)	2	31	311	863	301	270	571
- in India	0	0	225	655	183	300	483

BDQ SAES IN ALL CTB COUNTRIES

	2014	2015	2016	2017	2018 Jan-Mar	2018 Apr-Jun	2018
Number of patients starting BDQ in 10 CTB countries (excluding India)	0	25	303	1,013	348	484	832
- in India	0	0	62	219	89	35	124
Number of reported BDQ SAEs in 10 CTB countries (excluding India)	0	9	44	96	30	26	56
- in India	0	0	62	219	89	35	124
Number of reported BDQ SAEs which led to a death in 10 CTB countries (excluding India)	0	1	7	29	4	2	6
- in India	0	0	5	50	25	20	45

DLM has been introduced in 14 CTB supported countries. The number of treatment sites offering DLM continues to increase, with a current total of 60 treatment sites, 10 more than the previous quarter. The number of patients started on DLM inclusive treatment decreased in comparison with Jan-Mar 2018 despite Indonesia and Malawi introducing DLM this quarter. Following the WHO recommendations on aDSM, any SAE that a patient presents is reported to the relevant authorities, four SAEs were reported this quarter and no deaths were attributed to DLM.

DLM INTRODUCTION IN CTB COUNTRIES

	2014	2015	2016	2017	2018 Jan-Mar	2018 Apr-Jun	2018
Number of DLM Treatment Initiation Sites	0	0	11	36	50	60	60
Number of patients started on DLM	0	0	20	207	63	38	101
Number of reported DLM SAEs	0	0	1	4	6	4	10
Number of reported DLM SAEs which led to a death	0	0	0	1	0	0	0

Due to presenting an extensive pattern of drug-resistance and with the authorization of the national authorities, 15 patients started concomitant treatment with BDQ and DLM this quarter. Four SAEs have so far been reported among these patients and no deaths have been reported in patients receiving both BDQ and DLM.

BDQ+DLM INITIATION IN CTB COUNTRIES

	2014	2015	2016	2017	2018 Jan-Mar	2018 Apr-Jun	2018
Number of BDQ+DLM Treatment Initiation Sites							
Number of patients started on the BDQ+DLM (at the same time)	0	0	0	7	52	15	67
Number of reported BDQ+DLM SAEs	0	0	0	0	2	4	6
Number of reported BDQ+DLM SAEs which led to a death	0	0	0	0	0	0	0

By the end of this reporting quarter, the STR had been introduced in 19 CTB supported countries, three more than in the previous quarter. The number of sites offering STR has increased to a total of 689, 52 more than in the previous quarter. Despite the expansion of countries and sites offering the STR, 1,143 patients started treatment with the STR in Apr-Jun 2018 quarter, a smaller number than in the previous quarter (1,463). However, in the first six months of 2018, 2,606 patients have started the STR, more than the total who started the STR in the whole of 2017. Following the WHO recommendations on aDSM, any SAE that a patient presents is reported to the relevant authorities, 61 SAEs were reported this quarter; 22 deaths were reported this quarter; however, it is important to note that these deaths cannot be attributed exclusively to the STR as some of the reported deaths still need to undergo a causality assessment.

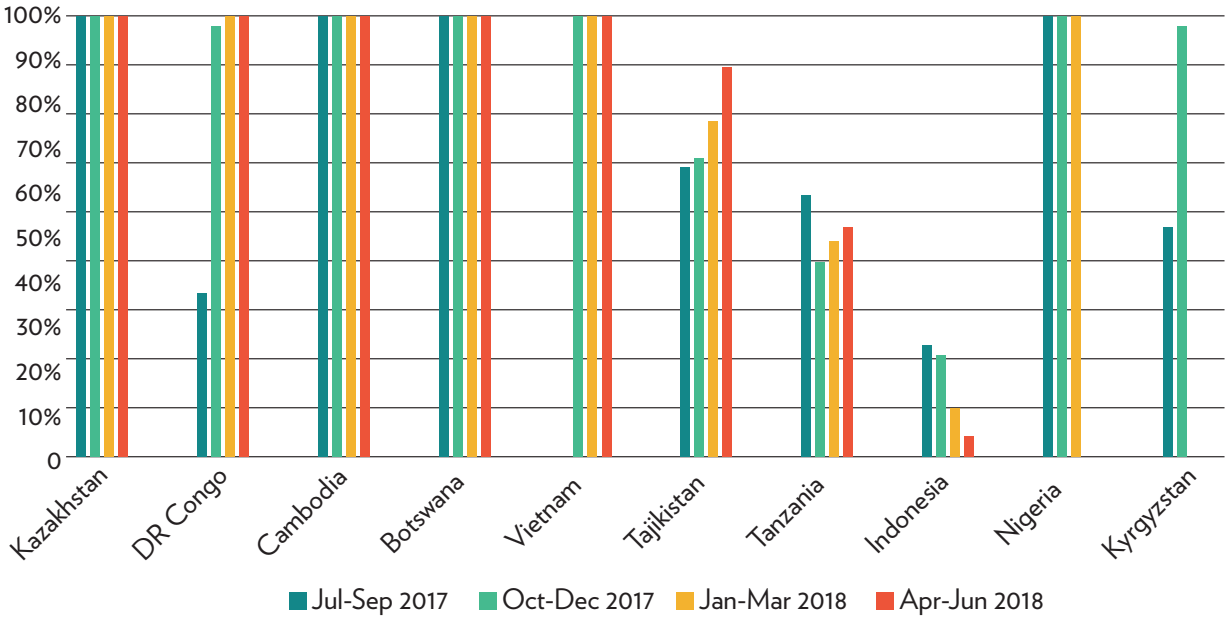
STR INTRODUCTION IN CTB COUNTRIES

	2014	2015	2016	2017	2018 Jan-Mar	2018 Apr-Jun	2018
Number of STR Treatment Initiation Sites	36	36	132	556	637	689	689
Number of patients started on the STR	555	441	683	2,257	1,463	1,143	2,606
Number of reported STR SAEs	0	0	0	27	37	61	98
Number of reported STR SAEs which led to a death	0	0	0	20	15	22	37

More MDR-TB Patients Receiving Social or Economic Support

Eighteen countries are investing in this area, namely Bangladesh, Botswana, Burma, Cambodia, DR Congo, Ethiopia, Indonesia, Kazakhstan, Kyrgyzstan, Namibia, Nigeria, Tajikistan, Tanzania, Ukraine, Uzbekistan, Vietnam, Zambia, and Zimbabwe. In Kazakhstan and Tajikistan, the number of MDR-TB patients receiving benefits increased from 320 to 366 and from 78 to 111, respectively. This quarter, India did not report on any patients receiving benefits compared to 97 cases in the previous quarter due to the fact that no new patients were linked to social schemes. Nigeria reported 196 MDR-TB patients on social/economic support the previous quarter; the data for the current quarter, which have to be provided by the NTP, are not yet available. Indonesia Quarter 2 and 3 data was incomplete. As the definition of this indicator is very precise, some countries were not able to report, CTB is working to address this reporting issue.

THE PERCENTAGE OF MDR-TB PATIENTS WHO RECEIVE ANY SOCIAL OR ECONOMIC BENEFITS DURING THE FIRST MONTH OF SLD TREATMENT (CTB DATA JUL-SEP 2017 AND APR-JUN 2018*)



* Apr-Jun 2018 – DR Congo went from 8 to 5 areas; Indonesia has incomplete data; Nigeria data is not yet available; India did not report on any patients receiving benefits due to the fact that no new patients were linked to social schemes.

Country Highlights

Botswana - All MDR/XDR-TB patients in Botswana are eligible for food baskets for the duration of treatment (including non-citizens). All MDR/XDR-TB patients are also eligible for available social services (this applies only to citizens).

Tajikistan - Last year CTB initiated activities with local government authorities to provide social support to MDR-TB patients. As a result of these discussions, 111 patients from CTB pilots received various kind of social support (exemption from electricity and water charges and land taxes, monetary, and food support).

India - CTB has engaged Essar Oil, a corporate partner, on a Nutrition Support Program for TB patients of Devbhoomi Dwarka district in Gujarat in May 2018. The Regional Director (South East Asia) and The Union, attended the event along with district representatives. Under the program, around 300 MDR-TB patients, will each receive nutritional support worth INR1,000 per month for up to eight months of their treatment period.

TABITA'S STORY

Zimbabwe: Tabita Kwanga lost her husband to TB in November 2016, leaving her alone with six children to raise by herself. The loss of her husband was not only an emotional blow, it left the whole family destitute, with no source of income. To make matters worse, soon after her husband died, she was also diagnosed with the disease.

She was put on treatment, which she completed in May 2017, but she continued to suffer from swelling in her legs, chest pains, and a persistent cough. The staff at her local clinic advised her to have a chest X-ray, but this was an expense she could not afford.

In August 2017 she was listening to the radio and heard about a mobile TB screening team that was visiting the area. She also received a text message alerting her about the free service, that included a chest X-ray and a medical check-up.

When the Challenge TB screening team, consisting of a medical officer, radiographer, laboratory technician, nurses, and counselors, arrived in her area, she was one of the first people to be seen.
She opened up to the staff about her past battle with TB and told them she had been living with HIV since 2013 and was on anti-retroviral treatment.

They took a chest X-ray which showed cavities in her lungs, so they took a sputum sample that when tested confirmed she had TB. She was started on treatment all over again.

"I wasn't really surprised when I was told I had TB again, as my chest was still so painful."

Her mother and sister were very supportive when she told them, and her mother became her treatment "buddy" and would remind her when it was time to take her medication. She also helped to take care of the children.

The chest pains were gone in no time, her legs stopped swelling, and she felt better with each passing day. When she managed to carry a 20-liter bucket of water without difficulty, she knew she was really on the road to recovery. In February 2018 she finally got the news she had been waiting for, she was cured.

"I am feeling strong again. I am glad I can now go back to work and look after my children. I really thought TB was a death sentence, but now I know that it curable even if you have HIV. I am so grateful to the outreach team that visited our area and brought help to me and my community. I know we all benefited from the free service."

In 2017, the screening campaigns reached more than 60,000 people, 1,080 TB patients were diagnosed, including 14 with drug-resistant TB. These campaigns are ongoing and will expand to cover even more districts in 2018, bring care and treatment to even people who so desperately need it.

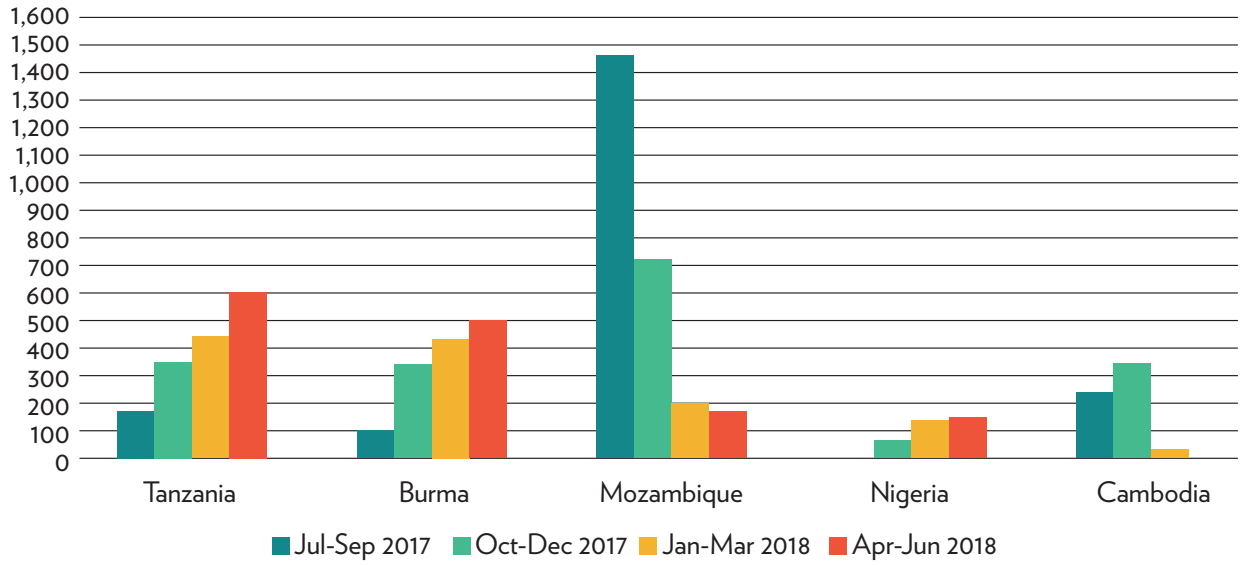
Objective 2: Prevent transmission and disease progression

Sub-objective 4: Targeted screening for active TB

Expanding Active Case-Finding (ACF)

CTB continues to invest in and implement activities in this area in seven countries (Burma, Cambodia, Mozambique, Nigeria, Tanzania, Uzbekistan, and Zambia). The results are shown below. Tanzania shows an increase in both the absolute number and the percentage - an increase to 8% this quarter up from 3% in the same quarter of Year 3. There is a decrease in the number and percentage of cases notified through ACF in Mozambique – now reported as 1% (14% in the same quarter in Year 3. The project is investigating the reason for this decrease in reporting, which may be explained by reporting these patients under notification through community-based DOTS under Sub-Objective 1).

THE NUMBER OF CASES (ALL FORMS) NOTIFIED THROUGH ACF IN CTB AREAS (CTB DATA JAN-MAR AND APR-JUN 2018)



Country Highlights

Nigeria - During this quarter, 151 TB patients were diagnosed and linked to TB treatment and care through the Wellness on Wheels (WoW) campaign, of whom seven (5%) were RR-TB. This represents a 7% increase in the number of TB patients diagnosed over Quarter 2 Year 4. The implementation of the WoW campaign for ACF commenced within communities in Kano and Lagos states, covering six local government areas across the two states. In total, 13,974 persons were screened, 1,293 presumptive TB cases were identified, and 1,218 tested for TB, resulting in 151 patients diagnosed with TB, representing 1% (151/13,974) of those screened. The 1% represents a bacteriologically confirmed (BC) TB prevalence of 1,100 per 100,000 population. This rate is about twice the adult BC prevalence in the general population reported in the 2012 National TB Prevalence Survey, and five times the 2016 incidence rate of all forms of TB in the general population (219 per 100,00 population), indicating significant yields from this intervention and showing that the strategy to target high-risk populations is working.

Tanzania - ACF accounted for 31% (2,259/7,372) of all cases notified in CTB regions in Quarter 3 of Year 4 (compared to a CTB target of 20% CTB). Childhood TB patients notified among children contributed to 15% (15% national target). Seven DR-TB patients were also diagnosed through ACF at HFs. Mentoring and engaging HCWs enhanced the finding of TB patients at HFs, yielding 150 TB cases. Through mentoring and enhanced TB screening at HFs, two RR-TB cases were diagnosed, while one additional DR-TB patient was diagnosed through CI of the family and other close contacts of these two index patients, all three started on the STR.

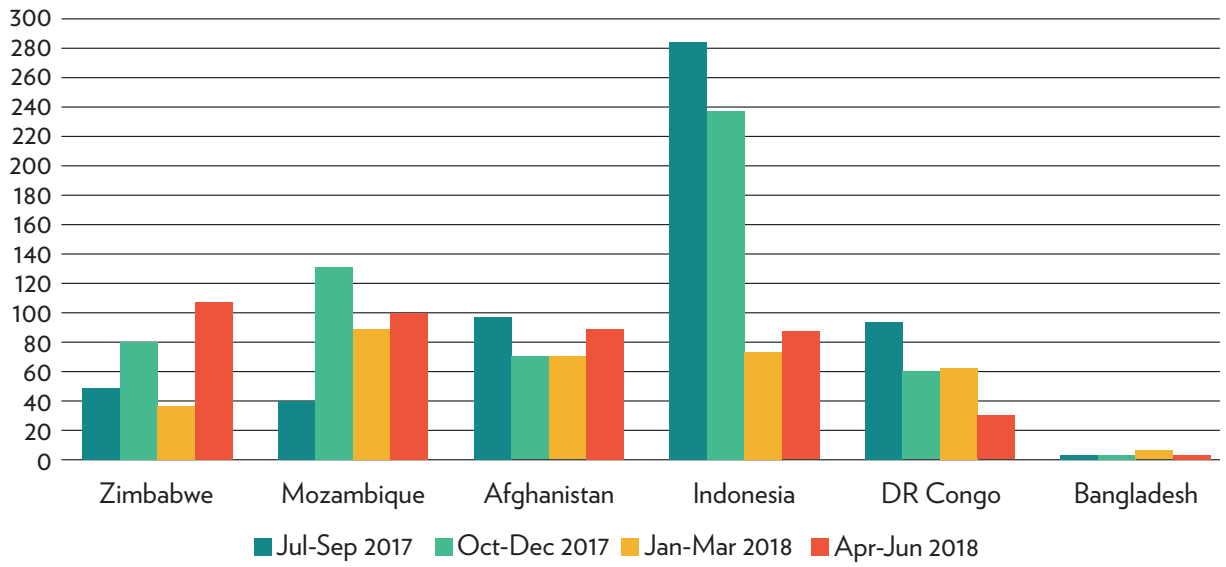
Improving Case Detection in Prisons

CTB invests in this area in Afghanistan, Bangladesh, Botswana, DR Congo, Indonesia, Malawi, Mozambique, and Zimbabwe. This quarter six countries (Afghanistan, Bangladesh, DR Congo, Indonesia, Mozambique, and Zimbabwe) reported data on this indicator.

The highest proportion of cases from prisons reported this quarter was in Zimbabwe (17%), this an overestimate as TB notifications (all forms) from the CTB areas that implement interventions in prisons is largely incomplete (10% of notifications in the previous quarter).

The reduction seen in Indonesia is partially due to under-reporting, but also due to the handover of screening to local prison authorities, who continue ACF, but mostly rely on symptom screening followed by sputum smear examination until funding becomes available for "Double-X" approaches (Chest X-ray screening followed by Xpert, as previously used with CTB support).

THE NUMBER OF CASES (ALL FORMS) NOTIFIED IN PRISONS (CTB DATA JULY-SEPTEMBER 2017 THROUGH APR-JUN 2018*)



*Apr-Jun 2018 – DR Congo went down from 8 to 5 areas.

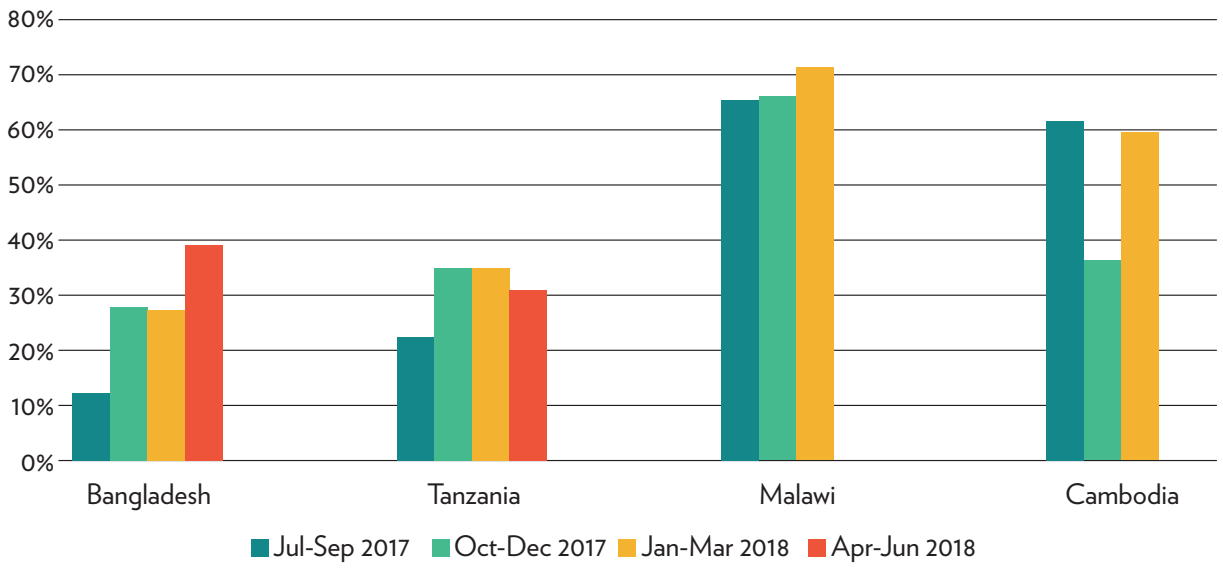
Country Highlights

DR Congo - In Quarter 3, 4,887 prisoners were educated on TB symptoms, 569 (12%) presumptive TB patients identified, 469 (82%) were clinically evaluated and 30 were bacteriologically confirmed, of whom one was a patient with DR-TB, all were started on treatment. This represents 63% (30/48) of TB patients in prisons per quarter. From Quarter 1 to Quarter 3, a total of 80% (155/193) of the annual target was reached. The responsibility of TB management in prisons was transferred to health zones/health facilities in April 2018, with CTB still being involved in monitoring and supervision.

Intensifying Case-Finding (ICF)

CTB is investing in the implementation of FAST, focused on finding and treating TB patients in health facilities in the five countries. In this quarter, Bangladesh and Tanzania reported data on this indicator, with 39% and 31% of notified cases diagnosed through FAST in the implementing areas. This included systematic health facility-based screening/ICF of various categories of high-risk/ vulnerable patients (diabetes, PLHIV, elderly, children and OPD visitors). In Quarter 2, Cambodia and Malawi reported a 59% and 71% contribution to case-finding under this indicator in implementing sites, and Nigeria achieved a 35% increase in notification, but they were unable to report data in this quarter.

THE PERCENTAGE OF CASES (ALL FORMS) NOTIFIED THROUGH ICF IN CTB AREAS
(CTB DATA JAN-MAR AND APR-JUN 2018)



* Nigeria did not yet report data on ICF and is therefore not included in the graph, progress is reported in the highlight below.

Country Highlights

Bangladesh - Since January 2018, CTB has established an active screening system in seven tertiary hospitals and seven NGO clinics in Dhaka city using the Finding, Actively, Separating, and Treating (FAST) approach. From Apr-Jun 2018, CTB screened 128,126 general patients from out/inpatient departments, identified 6,219 (5%) with presumptive TB, tested 5,130 (86%), and diagnosed 738 (bacteriologically confirmed - 293, clinically diagnosed – 128, extra-pulmonary – 317) TB patients, all of whom were started on treatment.

Tanzania - CTB supported the implementation of ICF among people who inject drugs currently residing in sober houses and/or in places where people inject drugs in the Arusha, Dar es Salaam, Kilimanjaro, Mwanza, and Pwani regions. In Quarter 3, a total of 594 people who inject drugs were screened in Kinondoni municipality in the Dar es Salaam region and the Ngarenaro area in Arusha city. Among them, 220 (37%) were identified as presumptive TB patients, and of these 91% were referred and tested for TB. Of those tested, 18 (9%) were diagnosed with TB (83% by GeneXpert, 17% by smear microscopy), all 18 (100%) were put on anti-TB medication. TB screening among PLHIV continued to facilitate early TB diagnosis and treatment among this group. The intervention yielded 449 TB cases among PLHIV and resulted in the detection of seven DR-TB cases during the quarter, who were all started on treatment.

Nigeria - In this reporting period, 2,617 TB patients were notified in HFs implementing FAST strategy across the 14 CTB-supported states representing a 35% increase over Year 4 Quarter 2 achievements. The implementation of the FAST strategy has demonstrated that a significant number of patients are eventually diagnosed with TB by this approach. CTB implemented a data-driven quality improvement plan and supported monthly data review meetings in FAST facilities. Health care workers (HCWs) from multiple service delivery points reviewed the intra-facility active-finding and linkages with diagnosis and treatment. One of the critical issues it resolved for most facilities was reducing the turnaround time for the Xpert testing, and this led to a significant improvement in the number of TB patients diagnosed across CTB-supported states.

Ethiopia - CTB targeted TB screening of key populations in selected areas of the Oromia region, which showed a higher yield and return on effort/investment. A total of 6,149 people from high-risk population were screened for TB (4,291 mining workers, 1,078 dwellers of 348 houses in the mining woreda, and 780 contacts of 236 TB index cases),

851 (14%) presumptive TB cases were identified and 88 (1%) TB cases were diagnosed and were put on treatment showing a high TB burden of 1,431 cases per 100,000 among mining workers.

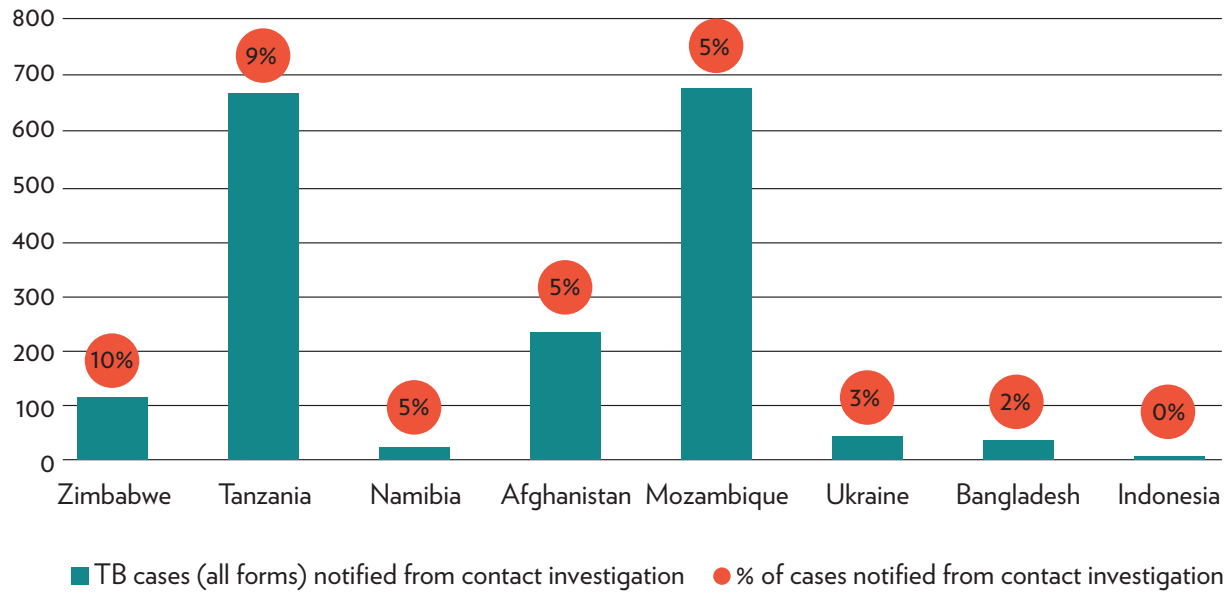
Nigeria - CTB continued to implement the Wellness on Wheels (WoW) campaign for TB ACF within communities in Ogun and Nasarawa states. During this reporting period, a total of 1,326 possible TB cases were identified, of which 141 (11%) were diagnosed and linked to care. Of the 141 TB patients diagnosed with TB, 5 (4%) were RR-TB cases. Compared to the previous quarter, there is 99% increase in the number of TB patients diagnosed. The WoW truck was utilized for TB outreach activities in Abuja's busiest motor park during the Nigeria TB Week and five TB cases were diagnosed and referred for treatment. The truck commenced activities in Lagos State during this quarter. During the next quarter, the WoW truck will be deployed to the urban slums of Kano and Lagos as well as being stationed in tertiary and secondary health institutions to provide a one-stop service at the various service delivery points, including HIV clinics. Next steps will include a review of the target population so that more presumptive cases can be screened, and more TB patients can be diagnosed.

Zimbabwe - CTB conducted active screening for TB among the participants of the World TB Day commemorations in Harare on March 24, 2018. A total of 239 people were screened using a TB symptom screening tool. Among these, 211 (89%) were also screened using a chest X-ray. This resulted in 32 presumptive TB cases all of whom had a spot specimen collected and sent to the nearest laboratory for Xpert MTB/Rif testing; two people were diagnosed with TB and linked to care at their local clinic. In addition, HIV and Diabetes Mellitus (DM) screening were offered on-site. A total of 12 people were screened for DM and 59 for HIV. Among these, one was diagnosed with DM and one with HIV, both of which were linked to care.

Scaling-up Contact Investigation

Contact investigation is an effective method of identifying TB patients early and nearly all CTB countries are implementing this approach. In the third quarter, 12 countries reported data on this indicator, shown in below. Eight countries reported complete data showing a 5% (2-10%) contribution from CI to case notification; Mozambique and Tanzania report considerable numbers of patients (670 and 661, respectively) detected by CI this quarter. Similarly, DR Congo and Nigeria report considerable numbers of patients (435 and 602, respectively) detected by CI this quarter, but are unable to report overall notification data, so the percentage contribution cannot be calculated.

THE NUMBER AND PERCENTAGE OF CASES (ALL FORMS) NOTIFIED THROUGH CI IN CTB AREAS
(CTB DATA APR-JUN 2017)



Country Highlights

Mozambique - CTB, jointly with the NTP, conducted a targeted and specific MDR-TB contact screening campaign in Morrumbala district of Zambézia province, given the high number of MDR-TB cases (15) notified in the district between Jan-Mar 2018. All MDR-TB patients received a home visit for CI, and education for all family members on MDR-TB awareness and treatment adherence. During the campaign, 1,160 contacts of MDR-TB patients were reached with education awareness and were screened for TB; 226 (19%) contacts were identified as presumptive TB cases, and out of these, 18 (8%) TB cases and five (2%) MDR-TB cases were diagnosed (two of whom were children), all of whom were started treatment.

Zimbabwe - In Quarter 3, all 21 CTB-supported districts were implementing CI. A total of 585 index cases were identified, among whom 2,658 contacts were screened. Among the contacts screened, 1,555 (59%) were presumptive TB cases and 1,479 (95%) had specimens sent to the laboratory. Among those, 1,310 (89%) had laboratory results and 108 (88%) were diagnosed with TB, with 79 (73%) bacteriologically confirmed (Updated data is expected in the next quarter, as by the end of the quarter only 17 districts had submitted reports).

Afghanistan - The household contacts of 2,324 (85%) of index TB cases were evaluated for TB. The total estimated household contacts of the index TB cases was 13,944, and HCWs screened 13,160 (94%) of them. Of those, 2,628 (20%) were presumptive TB cases and their sputum was tested. As a result, 93 (4%) BC and 225 as all forms of TB were diagnosed. The yield of BC TB case notification is 707 cases in 100,000 household contacts, while all forms TB cases, is 1,710 in 100,000 household contacts. The estimated number of children under the age of five in contact with index TB cases was 2,632 (20% of household contacts), out of which 2,252 (85%) of children under five were put on IPT by the NTP.

Bangladesh - During this quarter, CTB continued CI in selected sites of Dhaka South City Corporation and conducted a single day orientation session and several health awareness campaigns on CI and preventive treatment for NGO health staff. A total of 475 pulmonary index-TB cases were identified by CTB and 1,726 household contacts enumerated. Treatment counselors contacted 1,010 (59%) household contacts and advised them to visit their nearest HFs. Of these contacts, a total of 869 (86%) completed verbal screening, and clinical evaluation and investigation were conducted among 645 (74%). Of those tested, CTB identified 32 contacts (5%) with active TB disease, all of whom started on anti-TB treatment. Case yield was 3,168/100,000.

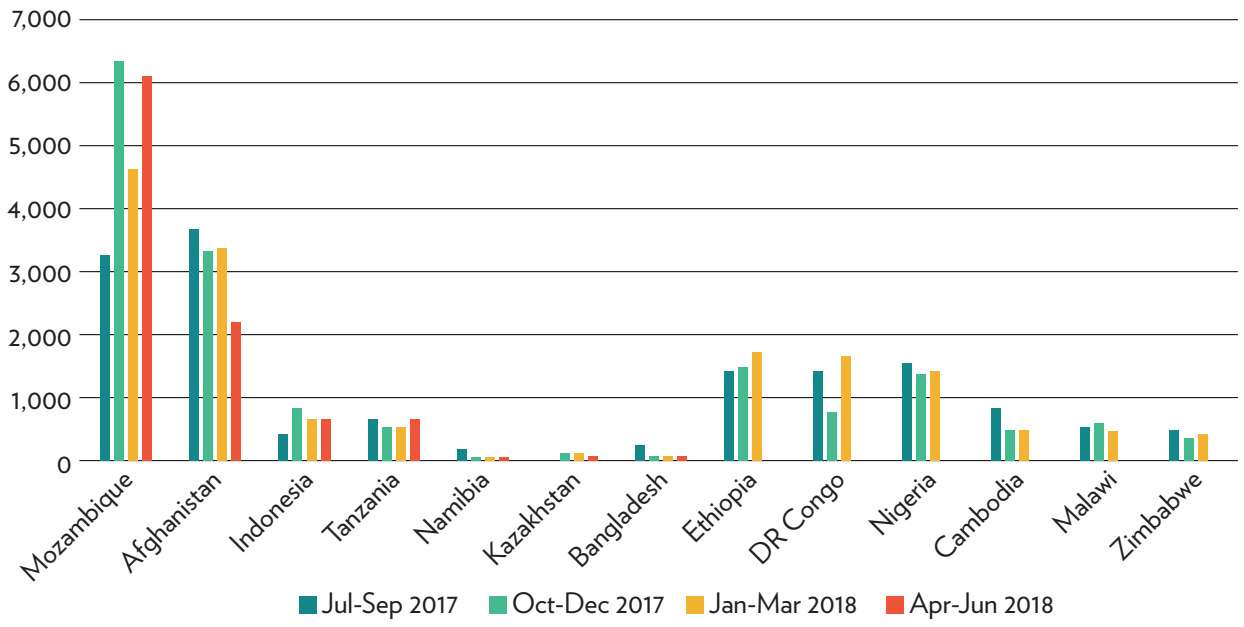
Namibia - CTB supported the MoH to adapt the sputum registers to include information on the HIV testing of close contacts of bacteriologically confirmed TB patients. Sputum registers were also adapted at the eight main ART sites to ensure improved monitoring and reporting the results of screening and investigation for TB. This is part of TB/HIV integration and contributed to the 345 TB cases (all forms) notified between April and June 2018.

Sub-objective 6: Managing Latent TB Infection

Increasing the Uptake of LTBI Treatment Among Eligible Children

In combination with contact investigation, countries are implementing LTBI treatment, especially among children. Eight country projects were able to report on the number of children started on IPT with project support in CTB areas in this quarter. The numbers reported each quarter by country projects is quite variable with the highest numbers reported in Mozambique and Afghanistan. Three CTB country projects do not invest separately in this intervention (Kyrgyzstan, Ukraine, and Vietnam).

THE NUMBER OF CHILDREN UNDER THE AGE OF 5 WHO INITIATED IPT IN CTB AREAS (CTB DATA JAN-MAR AND APR-JUN 2018)



East Africa Project

The CTB East Africa Regional project continued to engage with the Intergovernmental Authority on Development. This quarter a review was done of TB guidelines for harmonization, assessment on cross-border and mobile populations, and TB health services; the TB supply chain portal was handed over to the Eastern Central Southern Africa Health Community (ECSA-HC) and will be rolled out in three countries (Tanzania, Rwanda, and Uganda). Technical assistance was provided to the Supra-National Reference Laboratory, in Kampala, Uganda to develop their staff capacity to provide technical assistance to NRLs.

CORE Projects

Core – UN Special Envoy

In March, the UN special envoy (UNSE) participated in the combined events in New Delhi including the India TB Summit, the SEARO Call to Action on Tuberculosis, the Stop TB Partnership Board Meeting, and the Lancet Commission on Tuberculosis. A dialogue has been maintained with the Indian TB leadership and the mission in New York in coordination with other TB actors – particularly the Stop TB Partnership.

In addition, below is the list of speaking events for Dr. Goosby/Ms. Coyne:

- March 1-2 – WHO Geneva – Accountability Framework workshop
- March 11-17 – New Delhi TB Summit, Stop TB Board Meeting, Lancet Commission Meeting
- March 21 – New York City World TB Day Luncheon at the UN
- April 25-27 – London – IACG AMR Governance discussion
- April 24-26 – New York – Parliamentary Consultation
- June 4 – UN Interactive Civil Society Hearing
- June 27-29 – UNAIDS – PCB discussion on TB

Core – Prevention

Enrollment of the 3HP Prevention study is complete and the 4,027 participants are being actively followed-up at the eight participating sites in Ethiopia, Mozambique, and South Africa. As of the end of June 2018, the first participants have been followed up for 20 months while the last participants to enroll in the study have been in the study for eight months.

Core – Bedaquiline Coordination

As of June 2018, all 22 CTB supported countries have introduced ITRs containing BDQ. Twenty countries have introduced the STR, with Botswana and Ukraine planning to introduce the STR in the coming months. Fourteen countries have introduced an ITR containing DLM, with Botswana, India, and Zambia planning to introduce the ITR-DLM in the coming months. Since April 2018, Malawi has introduced the STR, ITR-BDQ, and ITR-DLM, and Afghanistan has introduced the ITR-BDQ. In the reporting period, 1,766 patients were enrolled on ND&Rs.

An updated version of the *"Generic programmatic and clinical guide for the introduction of new drugs and regimens for the treatment of multi/extensively drug-resistant TB"*, the *"Case Management Quality Improvement Checklist"* and *"Generic Training Modules for New Drugs and Regimens"* were finalized and disseminated via the CTB website.

KNCV PMDT consultants were actively involved in two Regional PV/aDSM workshops organized by USAID for African countries in May 2018 and CAR countries in June 2018 respectively.

Global Fund

During the third reporting quarter of this year, the majority of countries reported the implementation of their 2018–2020 grants, and most countries signed their grants until 2020.

Botswana is still implementing their 2016–2018 grant, but the country received approval for their funding request for a TB/HIV program continuation for 2019–2021 during the second quarter. As of this quarter, the country has been allocated funds for TB/HIV activities for the 2019–2021 funding cycle.

The resubmission of **Nigeria's** TB/HIV funding request was initiated during the second quarter. This quarter, CTB used the remaining funds from the GF Hub Core project for the new funding request; a first draft was developed in April 2018.

Turkmenistan's last grant finished in June 2018, and as the country is no longer eligible for GF TB funding as an upper-middle-income country, therefore GF support will stop in 2021. However, the country has received transition funding to support the takeover of activities through full domestic financing that are currently financed by the GF and other donors. Supply of TB reagents and medicines were already taken over by the Turkmenistan government in 2016.

In **Indonesia**, the government has taken on part of the procurement for Xpert machines and cartridges to accelerate Xpert scale-up, alongside the global fund. The catalytic funding is used to scale-up the District PPM approach, which was developed and piloted through CTB collaboration. District TB Action planning is also continuing beyond CTB districts and provinces, increasing the sustainability of TB programming in support of the country's National Strategic Plan.

DR Congo reported that CTB activities in the country will be complementary to and supportive of GF catalytic funding activities to find missing TB patients in five provinces. It is planned that 11 priority provinces that are supported by GF, will be covered by the CTB model of finding missing patients.

In **Uzbekistan**, the last grant under the New Funding Mechanism started in July 2016 and ran until June 2018 (The grant is currently closing). The Principal Recipient is the Republican DOTS Centre of the Government of the Republic of Uzbekistan. In 2017 the country applied for the next Global Fund TB grant ("Program continuation" as application modality) for 2018-2020. Uzbekistan has been classified by the World Bank as a lower-middle-income country and the allocated amount is US$ 16,736,572. A positive answer to the application was received by the country in May 2017.

New Publications

TUBERCULOSIS PATIENT COST SURVEYS: A HANDBOOK

The "Quality Improvement Tool" (QI Tool) was developed under the "Core Bedaquiline Coordination Project" for Challenge TB. The checklist (available in English, Russian and Ukrainian) was adapted from earlier tools developed by the European Respiratory Society (ERS), European Centre for Disease Control (ECDC), and Challenge TB Indonesia on the clinical management of TB patients, and upgraded for use by a new target group, namely: supervisors and monitoring specialists working at the NTPs and partner organizations. The tool was pilot-tested in countries in Central Asia Region, Eastern Europe, South East Asia and Africa, at the district and facility levels. Electronic versions of the checklist will be available in the near future. The Authors acknowledge the contributions of the ERS and the ECDC in designing this tool (as part of the ESTC document development and European audit).

https://www.challengetb.org/publications/tools/pmdt/QI_Checklist.zip

GENERIC ND&R TRAINING MODULES

The curricula for "New Drugs and the Shorter Treatment Regimen" training was developed under the "Core Bedaquiline Coordination Project" for Challenge TB. The materials, including PPTs and Facilitators guides (available currently in English only) was adapted from earlier materials developed by the KNCV on the programmatic management of drug resistant TB, including diagnostics, treatment and care, supply chain, monitoring and evaluation, and interim cohort analysis, and upgraded for use of all staff at the NTPs and other organizations. The materials are developed as "pick and choose" options depending on each country's need for competency development of staff working at all levels of health facilities.

https://www.challengetb.org/publications/tools/pmdt/Generic_NDandR_Training_Modules.zip

GENERIC PROGRAMMATIC AND CLINICAL GUIDE FOR THE INTRODUCTION OF NEW DRUGS AND SHORTER REGIMENS FOR THE TREATMENT OF MULTI/EXTENSIVELY DRUG-RESISTANT TB

This updated document describes the steps necessary to implement the shorter regimen and the new drugs for drug-resistant TB treatment including diagnosis and bacterial confirmation of drug resistance, treatment regimen design, monitoring of treatment efficacy and safety, and programmatic evaluation.

http://www.challengetb.org/publications/tools/pmdt/Generic_programmatic_and_clinical_guide_for_the_introduction_of_new_drugs_and_shorter_regimens.pdf

Photos

Miners, Ethiopia - Berhan Teklehaimanot
Aisha, child with MDR-TB, Dhaka, Bangladesh - Tristan Bayly
Woman attending TB Screening, Cambodia - Tristan Bayly
Contact Investigation, Afghanistan - MSH
Benita and family, Malawi - Akuzike Tasowana
Benita, Malawi - Akuzike Tasowana
GeneXpert, Bangladesh - MSH
Specimen Transportation by bicycle, Mozambique - FHI 360
Jamilya and son, Tajikistan - Sayora Ziyoyeva
Tabita Kwanga, Zimbabwe - Paidamoyo Magaya
TB Screening, Cambodia - Tristan Bayly
Screening Truck Zimbabwe - The Union
Backcover - MYAPID outreach work in Hai district, Tanzania - PATH

CHALLENGE TB

We would like to acknowledge all the people across the world who make Challenge TB possible; our gratitude and thanks go out to all our partners and everyone in the field.

Design and layout - Tristan Bayly

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