

# CHALLENGE TB

PERFORMANCE MONITORING REPORT

YEAR 5 - OCT-DEC 2018



**USAID**  
FROM THE AMERICAN PEOPLE



**KNCV**  
TUBERCULOSIS FOUNDATION

**CHALLENGE TB**





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:  
Woman with TB symptoms waits for her X-ray results, Cambodia - Photo: Tristan Bayly

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# ABBREVIATIONS

|         |   |        |  |
|---------|---|--------|--|
| ACF     | Active Case Finding                     | IPT    | Isoniazid Preventive Therapy                       |
| aDSM    | Active Drug Safety Monitoring           | MDR    | Multidrug-resistant                                |
| BDQ     | Bedaquiline                             | MoH    | Ministry of Health                                 |
| CB-DOTS | Community-Based DOTS                    | MTB    | Mycobacterium Tuberculosis                         |
| C/DST   | Culture & Drug Susceptibility Testing   | ND&Rs  | New Drugs & Regimens                               |
| CI      | Contact Investigation                   | NTP    | National TB Program                                |
| CP      | Community Pharmacist                    | PLHIV  | People Living with HIV                             |
| CTB     | Challenge TB                            | PMDT   | Programmatic Management of Drug Resistant TB       |
| DLM     | Delamanid                               | PMV    | Patent Medicine Vendor                             |
| DOTS    | Directly Observed Treatment Shortcourse | PPM    | Public Private Mix                                 |
| DPPM    | District Public Private Mix             | PTE    | Pre-treatment Evaluation                           |
| DR      | Drug-Resistant                          | RR     | Rifampicin Resistant                               |
| DSMB    | Data Safety and Monitoring Board        | SAE    | Severe Adverse Event                               |
| DST     | Drug-Susceptibility Testing             | SL-DST | Second-Line Drug Susceptibility Testing            |
| EPHI    | The Ethiopian Public Health Institute   | SL-LPA | Line Probe Assay for Second-Line Drugs             |
| GF      | Global Fund                             | SNRL   | Supranational Reference Laboratory                 |
| HCW     | Healthcare Worker                       | STR    | Shorter Treatment Regimen                          |
| HIV     | Human Immunodeficiency Virus            | STTA   | Short-term Technical Assistance                    |
| ICF     | Intensified Case Finding                | TB     | Tuberculosis                                       |
| IGRA    | Interferon-gamma Release Assays         | 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 first quarter of Year 5, October – December 2018, across projects in 23 countries, the East Africa Regional project, and four core projects.

## PROGRESS ON KEY PERFORMANCE INDICATORS

### CASE-FINDING

TB case notifications from Challenge TB-supported areas show an increasing trend (complete data for 19 Challenge TB countries: 105,300 cases in Jan-Mar 2018; 147,723 cases in Apr-Jun 2018; and 125,958 cases in Jul-Sep 2018). The following interventions show the highest yield: intensified case-finding through hospital engagement/FAST, community interventions, childhood TB, public private mix, and contact investigation.

### GENEXPERT

By the end of December 2018 a total of 4,322 GeneXpert machines were installed in 23 supported countries compared to 3,842 in the previous reporting period. Out of 19 countries reporting complete data on functional modules, 14 reported a functionality higher than 90 percent. In total 1,044,509 MTB/RIF tests were conducted between July and December 2018 in 14 countries. Tajikistan and Nigeria reported a utilization higher than 50 percent (63% and 53% respectively). For both countries this was a 9-10 percent increase over the previous reporting period. In total eight countries showed an increase in utilization.

### PROGRAMMATIC MANAGEMENT OF DRUG-RESISTANT TB (PMDT)

A total of 3,330 patients were diagnosed with RR-/MDR-TB in Challenge TB supported areas across 13 countries. Since 2017, there has been a considerable increase in the proportion of bacteriologically confirmed new TB cases tested for RR-/MDR-TB in ten countries, and a similar increase is observed for bacteriologically confirmed previously treated cases in seven countries. In this reporting quarter, Afghanistan tested 86 percent of all previously treated patients for RR-/MDR-TB compared to 25 percent in Jul-Sep 2017. The expansion of the

second-line line probe assay (SL-LPA) network is also showing results, with 14 out of 15 countries with available data reporting an increase in the proportion of notified RR-TB patients tested with SL-LPA.

In this quarter, 1,260 patients started treatment with bedaquiline (BDQ) in all Challenge TB countries. In total 3,278 patients started treatment with BDQ in 2018, more than double the number that started in 2017 (1,520). In addition 68 patients started treatment with delamanid (DLM). In this quarter 50 patients started treatment with both BDQ and DLM due to an extensive pattern of resistance. The number of patients that started BDQ and DLM together in 2018 has increased more than eightfold compared to 2017 (195 vs. 24). Finally, 1,613 patients started on the shorter treatment regimen (STR) this reporting quarter. This is a significant increase compared to 2017 (7,283 vs. 2,384). The top five countries in enrollment on the STR this quarter are Indonesia (617), Vietnam (469), Burma (91), Tanzania (60), and Kazakhstan (58).

### TB/HIV

During this reporting quarter, six countries receiving PEPFAR funding were able to report on one or more TB/HIV MER indicators. All countries reached close to 100 percent of registered new and relapse TB patient with documented HIV test results in Challenge TB areas up to September 2018. The performance in Malawi and Namibia exceeded the national targets of 97 and 96 percent respectively. Tanzania and Ukraine showed a slight improvement this quarter (Oct-Dec 2018) compared to the previous quarter (both exceeding the 99%). Tanzania, Namibia, and Ukraine were able to report results on the TB\_ART indicator (i.e. the percentage of registered TB cases with a documented HIV-positive status who started or continued antiretroviral therapy) for Oct-Dec 2018: 99, 92, and 85 percent respectively.

## SHORT-TERM TECHNICAL ASSISTANCE AND SUB-AWARDS

Out of 42 short-term technical assistance (STTA) visits planned for this quarter, 20 (40%) visits were implemented across all Challenge TB countries with approved workplans for this reporting period. The majority of STTAs (13 out of 20) were implemented as part of the 'patient-centered care and treatment'

technical area as well as 'quality data, surveillance and monitoring and evaluation' (M&E).

Out of 53 planned sub-awards among Year 5 approved workplans, 47 (89%) sub-awards have been committed to 13 countries.

## MAJOR CHALLENGES

Some countries faced delays in the procurement of essential commodities for the functioning of the National TB Program (NTP), such as laboratory supplies (MTB/RIF cartridges) and first/second drugs. This has affected Challenge TB supported activities in countries like Namibia (decrease MTB/RIF tests done) and DR Congo (threatening stockouts of first/second-line drugs).

In the quarter, WHO presented the prefinal guidelines for multidrug- and rifampicin-resistant TB (2018), and countries are waiting for the final guidelines to be released. At the same time, the WHO expects them to prepare for the changes: revision of country level guidelines, adjustment of forecasting/procurement plans, and training of staff at all levels.

## ACTIONS

Challenge TB coordinates with different stakeholders at country and global level (NTPs, Principal Global Fund Recipients, USAID Missions, Challenge TB Country Offices, Global Drug Facility, and USAID Washington.

based on the recently released WHO prefinal guidelines Challenge TB has engaged with relevant stakeholders at country level to streamline the implementation process. Challenge TB will continue this process the coming quarters when countries will develop a roadmap for implementation.

In order to support countries with the changes

## REPORT DEVELOPMENT PROCESS

The main focus of this report is on the quarterly trends of the achievements of Challenge TB key priority interventions in all supported countries, including case-finding, Xpert scale-up, PMDT, new drugs and regimens (ND&Rs), TB/HIV, the Challenge TB contribution to Global Fund requests/implementation, and the transition of Challenge TB activities to national/international stakeholders.

The organization of this report is based on the Challenge TB (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 23 countries data 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 – e.g., many NTPs need a few months for data validation before releasing it to partners. It is especially difficult for the Challenge TB teams in Botswana, Burma, DR Congo, Ethiopia, India, Indonesia, Malawi, Nigeria, Uzbekistan, Turkmenistan, and Zambia to report Oct-Dec 2018 data. In this report, we analyze and present quarterly results and trends for all the indicators based on complete data (i.e., in some cases up to Jul-Sep 2018 quarter only), by country.



## 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 Challenge TB. 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, Challenge TB 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 percent reduction in TB deaths (compared with 2015) and less than 50 cases per 100,000 population.

Challenge TB 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 December 31 2018, 23 countries were implementing Challenge TB.

At the regional level, Challenge TB continued the implementation of the East African Region project, and also continued the implementation of four core projects (see page 38).





## CHALLENGE TB COUNTRIES

- |             |               |                  |                |               |
|-------------|---------------|------------------|----------------|---------------|
| 1. Nigeria  | 6. Malawi     | 11. Ukraine      | 16. Kazakhstan | 21. Cambodia  |
| 2. DR Congo | 7. Zimbabwe   | 12. Turkmenistan | 17. India      | 22. Indonesia |
| 3. Namibia  | 8. Mozambique | 13. Uzbekistan   | 18. Kyrgyzstan | 23. Vietnam   |
| 4. Botswana | 9. Tanzania   | 14. Afghanistan  | 19. Bangladesh |               |
| 5. Zambia   | 10. Ethiopia  | 15. Tajikistan   | 20. Burma      |               |

## KEY ACHIEVEMENTS

### CASE-FINDING

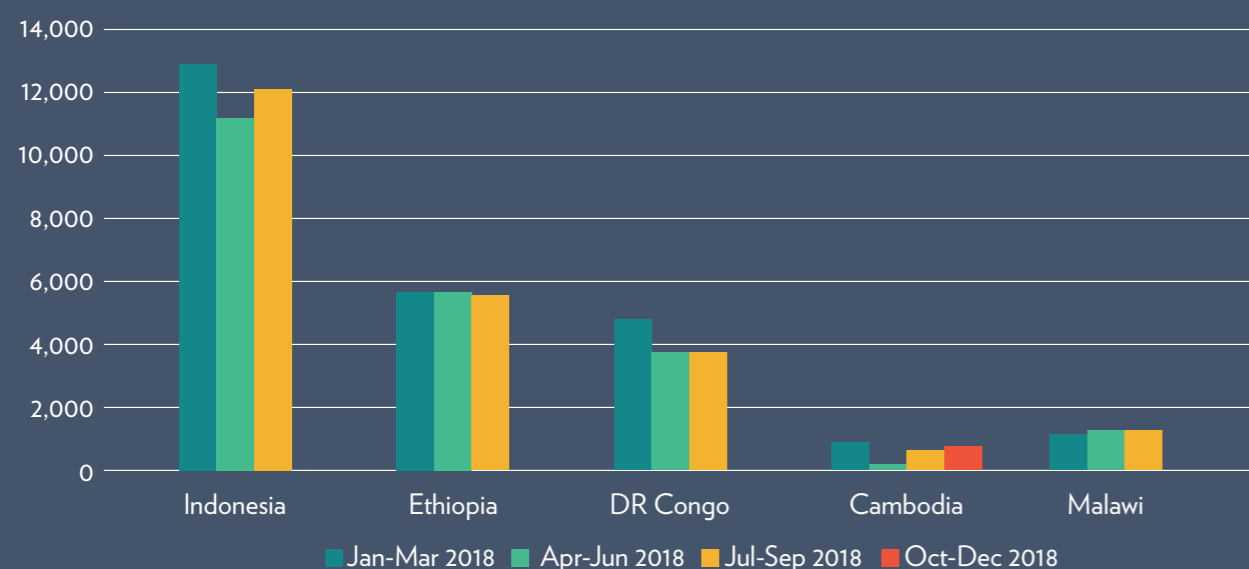
This section presents the quarterly trends and key activities in Challenge TB countries on case-finding, grouped by priority interventions. TB case notifications from Challenge TB-supported areas show an increasing trend in Challenge TB countries (complete data for 19 countries: 105,300 cases in Jan-Mar 2018; 147,723 cases in Apr-Jun 2018; and 125,958 cases in Jul-Sep 2018). The following

interventions show the highest yields: intensified case-finding (ICF) through hospital engagement/FAST, community interventions, childhood TB, public private mix, and contact investigation (CI). In this reporting quarter, 12 countries reported that a total of 52,379 cases (all forms) were notified in Challenge TB areas.

### HOSPITAL ENGAGEMENT

Hospital engagement contributes to case notification in countries like Indonesia, Ethiopia, DR Congo, Malawi, and Cambodia.

THE NUMBER OF CASES (ALL FORMS) NOTIFIED THROUGH HOSPITAL ENGAGEMENT IN CHALLENGE TB AREAS



### COUNTRY HIGHLIGHTS

**Ethiopia** - Challenge TB monitored the TB screening in the adult and pediatric outpatient clinics of 176 hospitals, and maternal and non-communicable disease (NCD) clinics (e.g. Diabetes Mellitus). From a total of 959,502 hospital outpatient attendees, of whom 899,047 (94%) were documented as having been screened for TB, 29,784 (3.3%) presumptive TB patients were identified, and 5,402 (0.6%, 601 per 100,000) patients with all forms of TB were diagnosed.

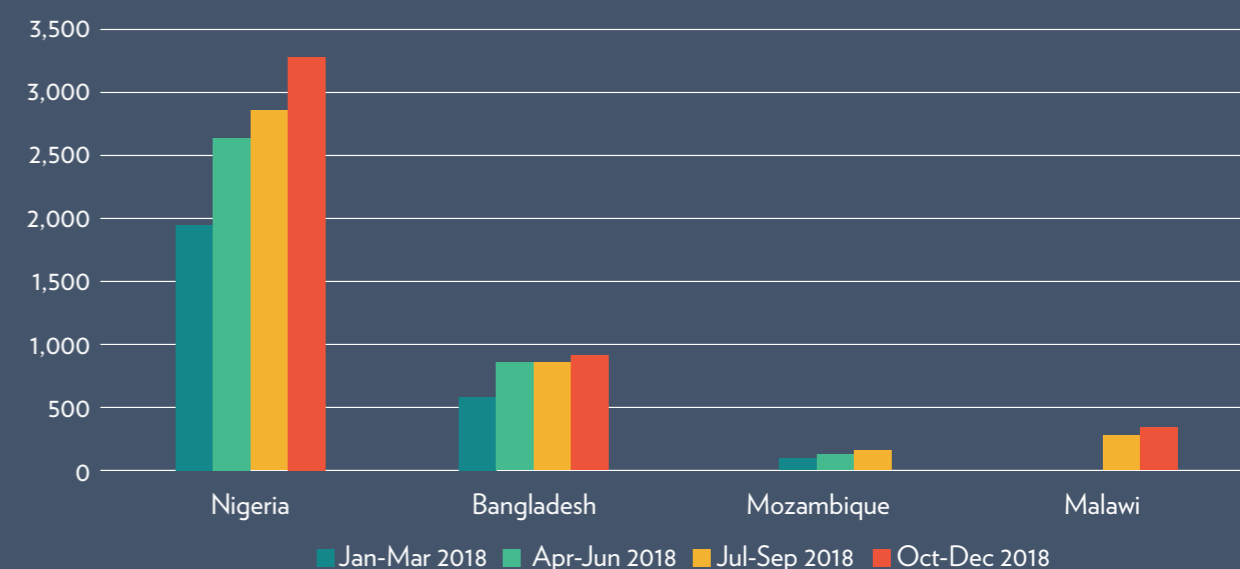
**Indonesia** - Most major public and private hospitals are engaged with the NTP in Challenge TB areas, resulting in the number of notifications more than doubling from the private sector over the course of 2018 (now reaching around 12,000 cases in Challenge TB areas per quarter compared to around 7,000 patients per quarter in 2015-2016).

### FAST (ICF)

At the facility level the FAST strategy is meant to prevent transmission and increase early diagnosis of (undiagnosed) TB patients coming to facilities.

The strategy is implemented in Challenge TB-supported areas in Nigeria, Bangladesh, Mozambique, and Malawi.

THE NUMBER OF CASES (ALL FORMS) NOTIFIED THROUGH FAST IN CTB AREAS



### COUNTRY HIGHLIGHTS

**Nigeria** - The FAST strategy resulted in the early identification of over 30,000 people with presumptive TB and the subsequent fast-tracked diagnosis of TB in 3,270 patients, representing a 15 percent increase in notifications in these areas compared to previous quarters. An expedited diagnostic pathway in health facilities also contributes to the effectiveness of community referrals.

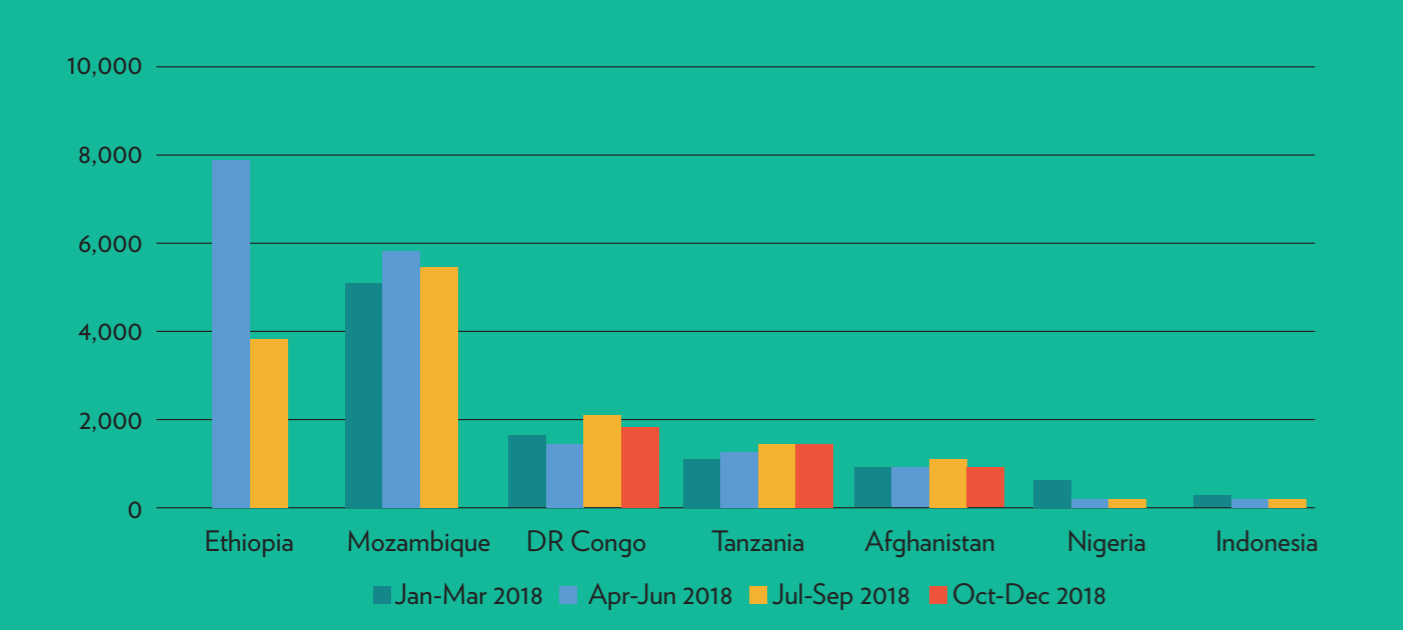
**Malawi** - In the four high TB burden districts, where Challenge TB supports the implementation of the FAST strategy, TB case notification increased by 19 percent. Unfortunately one site experienced a shortage of cartridges for MTB/RIF testing, resulting in a decrease in notification.

### COMMUNITY REFERRAL

Challenge TB continues to assist countries to develop and implement locally appropriate models to strengthen the role of communities in identifying presumptive TB patients and ensuring effective referral to facilities where a diagnosis can be made. In most countries the first screening steps in contact investigation are implemented by community volunteers or community-based organizations.

The resulting notification is further detailed in the section on contact investigation. Quarterly trends on TB cases notified through community referrals are presented for six countries, which implement the respective interventions and reported complete data.

THE NUMBER OF CASES (ALL FORMS) NOTIFIED THROUGH COMMUNITY REFERRAL IN CTB AREAS\*



\*Ethiopia Apr-Jun 2018 data is for a six month period (i.e., Jan-Jun 2018)

COUNTRY HIGHLIGHTS

**Tanzania/Mozambique** - Community case-finding is responsible for 20-23 percent of notification, in combination with linkage to testing and treatment. In Tanzania, community activities were conducted in 42/47 districts and contributed to 20 percent (1,455/7,357) of overall TB case notification, among them 29 patients were found to have drug-resistant TB (DR-TB) and put on treatment. Of the total number of TB patients identified via community activities, CBOs contributed 31 percent (439/1,426).

**DR Congo** - 129,239 people were screened, of those, 12,631 presumptive TB patients were identified and 12,593 (99%) were tested; 1,800 TB cases all forms (14%) were notified through active case-finding by local non-governmental organizations: 1,406 (78%) were TB bacteriologically confirmed, 218 (12%) were TB clinically diagnosed, and 176 (10%) were extra-pulmonary TB, all of them were put on treatment.

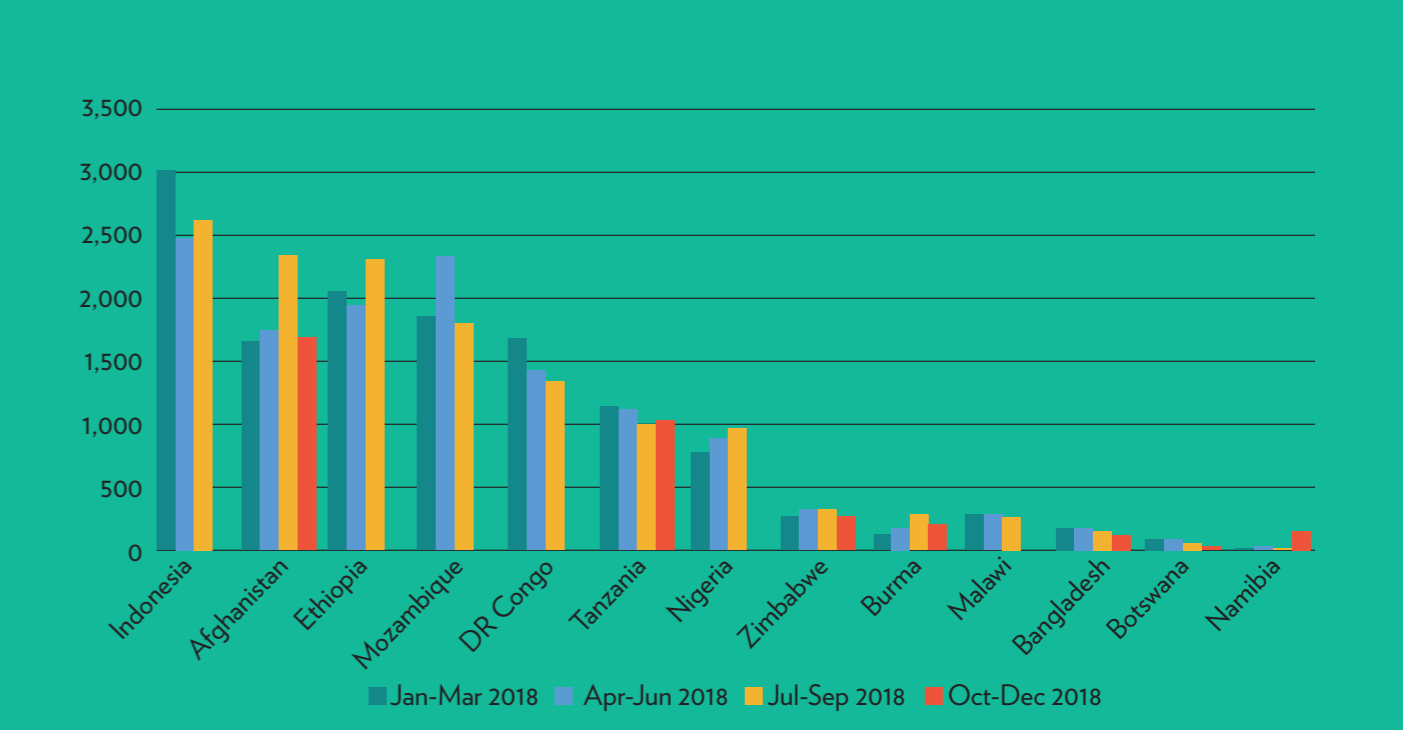


CHILDHOOD TB

The notification of childhood TB is kept in focus in all Challenge TB countries, through a variety of approaches. Quarterly trends on TB cases notified

among children in Challenge TB areas are presented for 13 countries, which implement the respective interventions and reported complete data.

THE NUMBER OF CASES (ALL FORMS) NOTIFIED AMONG CHILDREN IN CTB AREAS



COUNTRY HIGHLIGHTS

**Nigeria/Afghanistan** - Over the second half of 2018 good progress was made in training healthcare workers on childhood TB in major health facilities, and increasing access to diagnostics as well as contact investigation. Increasing numbers of children were diagnosed and started TB treatment. In Afghanistan, the interventions stretched over five urban areas, where a total of 900 children were diagnosed with TB, 21 percent of the total TB notification in these areas. In Nigeria, a total of 592 (12%) children (0-14 years) were diagnosed with TB out of 4,919 through active screening of children in the pediatric outpatient departments across Challenge TB-supported local government areas in 14 states. The project continues to mentor healthcare workers in pediatric service delivery points on identifying presumptive children and to improve access to chest X-ray services through institutional arrangements with X-ray centers.

**Bangladesh** - Active TB screening of over 100,000 children in health facilities yielded 143 (0.13%) with TB, who all started TB treatment. In the first quarter

of Year 5, Challenge TB established the first ever child-friendly specialized facility for the diagnosis and treatment of childhood TB in Dhaka Shishu (Children's) Hospital. This quarter, 80 children with TB symptoms were investigated by gastric lavage or sputum induction. GeneXpert tests confirmed six to be bacteriologically positive for TB and seven were diagnosed clinically and started on treatment.

**Ethiopia** - The diagnosis of active TB in children is mainly improved through contact investigation combined with the provision of latent TB infection (LTBI) treatment for children testing negative for active TB. Among the 2,422 child contacts under 5, 13 (0.5%) were diagnosed with active TB and linked to treatment.

**Burma** - The reported rate of TB in children in 2017 was implausibly high (34% of all notified TB patients in some townships). A reduction to 27 percent was observed in the first quarter of Year 5 due to more accurate diagnosis through intensive monitoring and support from Challenge TB.

# THE CARPENTER'S STORY

Msonga Ahemba owns a carpentry shop on the busy Mkar road in downtown Gboko, north-central Nigeria. Together with his five employees, he produces bespoke furniture. Each piece is handmade and carefully crafted, the final result is always detailed and unique. Msonga loves his work, it not only allows him to provide for his family, but he finds it rewarding to see his creations in peoples' homes and having sentimental value for his customers.

Things were going well for Msonga, but then in 2016, he fell ill, and everything started to unravel. At first, he took over the counter drugs to ease his symptoms, but despite the fact that they didn't work, he never sought the right medical help. As his health declined he was forced to stop working and even though his employees kept the business going, his customers gradually stopped coming as they missed his particular skill and craftsmanship. It wasn't long before the business was forced to close.

Just when things couldn't get any worse, Kazan Jam arrived on his doorstep. She works as part of an outreach program funded by USAID's Challenge TB project. The team goes door-to-door educating people about TB and keeping an eye out for people with TB symptoms. When Kazan met Msonga, she noticed his symptoms and immediately tried to convince him to get tested for TB, and she never gave up.

*"Kazan kept visiting me at my house and the shop, insisting I get screened. At first, I was very reluctant, because I hate going to see doctors. I didn't want to be forced to go to the hospital, but my health kept deteriorating, and the other treatments weren't working. I'm so glad I followed her advice. Otherwise, it could have ended very differently for me."*

Msonga was diagnosed with multidrug-resistant TB or MDR-TB, which meant that he would have to go on a 20-month course of treatment consisting of painful injections and numerous pills. His condition was so serious, he would have to spend the first four months of his treatment in the hospital.



*"When I started my treatment, I was too weak to even raise the glass of water I needed to take all the pills. At times the pain was unbearable, and I thought about stopping, but the support and encouraging words of the medical staff helped me to get through."*

Before he got sick, the money from the shop went on taking care of the whole household which included him, his wife, and even his four younger brothers and sisters. With the business closed, Msonga could no longer provide for his family, and when he was finally released from the hospital, his wife Erdoo took it upon herself to care for him, but that meant she had to stop working too, putting even more pressure on his family. Throughout this difficult period Challenge TB continued to support Msonga and his family by providing both food and medication to help manage the side effects of the TB drugs.



Msonga has now finished treatment and is cured of TB, and he is back at work doing what he loves. He is active and healthy, and his life is finally back on track. His family and colleagues were also screened for TB, but luckily none of them had the disease. Msonga remains eternally grateful to Kazan, who never gave up on him. She remembers the day she first encountered Msonga:

*"The first time I saw Msonga I noticed his persistent cough. After that, his condition got worse by the day. I knew I had to be unwavering in convincing him to seek help. There is often a lot of stigma surrounding TB, in the past TB patients were shunned by those around them, and people believed it was incurable, so it's important to make sure that people have the necessary information and get the help they need."*

Every year around 418,000 people in Nigeria get sick with TB, and 24,000 get MDR-TB. By going door-to-door targeting high-risk people such as those in slums, crowded areas, and people who find it hard to access medical services, Challenge TB has already found and diagnosed 1,078 TB patients, 868 of whom are on lifesaving treatment.

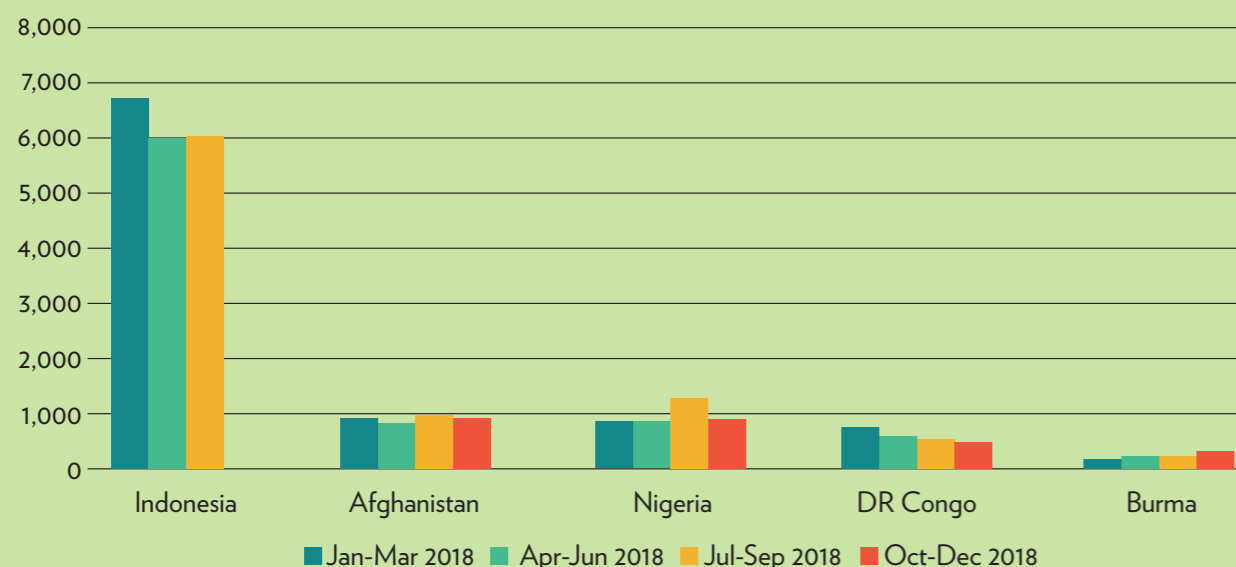
The team still frequent the Mkar road, a densely populated area, where TB can spread easily among its residents. Thanks to their commitment and diligence the tide is slowly starting to turn against TB in Nigeria, and not a moment too soon.

## PRIVATE PROVIDERS

In Indonesia, Afghanistan, Nigeria, DR Congo, and Burma private provider engagement forms an

important strategy to increase case-finding and notification.

THE NUMBER OF CASES (ALL FORMS) NOTIFIED BY PRIVATE PROVIDERS IN CTB AREAS



## COUNTRY HIGHLIGHTS

**Indonesia** - The development of sub-district health networks is increasing notifications from private general practitioners (GPs); the full extent of their contribution will be evaluated separately over the coming quarters. Currently, through subawards in the 15 districts, 276 out of the 280 targeted sub-district health centers were sensitized and trained, and started developing their primary care networking with GPs and private clinics, and with laboratories, pharmacies, and civil society organizations.

**Afghanistan** - An increasing number of providers are engaging in TB control and are linked with the NTP. In Year 5, Quarter 1, Challenge TB in Kabul reached 53 percent of the public and 33 percent of the private facilities, with further expansion planned.

**Nigeria** - Challenge TB continues to provide on-the-job training to patent medicine vendors and community pharmacists, on the identification of people with presumptive TB and on referral for diagnosis and treatment, in order to expand the

patent medicine vendor/community pharmacist platform for identification of more TB cases. Using patent medicine vendors and community pharmacists to strengthen the linkage of community TB care interventions with health facilities, 916 TB patients were diagnosed and linked to TB care amongst 13,122 presumptive patients identified and referred for TB diagnosis during the reporting period, indicating significant yields (7%) from this intervention.

**DR Congo** - Engagement of healthcare workers from 21 private facilities resulted in the notification of over 500 patients this quarter. The NTP target for this year is to engage 75 private health facilities, 67 of which are in Challenge TB supported areas.

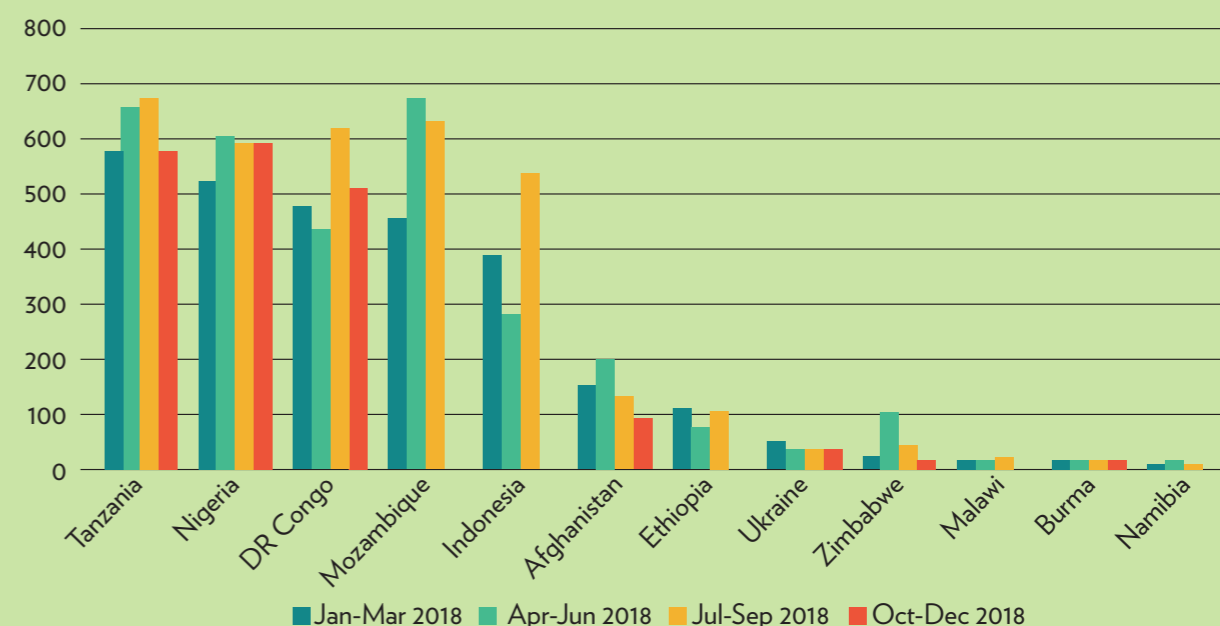
**Burma** - In the last quarter of 2018, a Challenge TB supported pilot passed legislation for mandatory notification of TB by health providers in both the public and private sectors.

## CONTACT INVESTIGATION

In most Challenge TB countries, the project supports the roll-out of contact investigation as a means to increase early case-finding and as an entry-point for LTBI treatment. In most countries household contact listing and screening is implemented in collaboration with community volunteers or CBOs, with referral of

symptomatic contacts for diagnostic follow-up and LTBI treatment for those eligible. Quarterly trends on TB cases notified through contact investigation in Challenge TB areas are presented for 12 countries, which implement the respective interventions and reported complete data.

THE NUMBER OF CASES (ALL FORMS) NOTIFIED THROUGH CONTACT INVESTIGATION IN CTB AREAS



## COUNTRY HIGHLIGHT

**Tanzania** - During the reporting period 2,939 bacteriologically-confirmed TB patients in 42 Challenge TB districts were notified. Community volunteers found 17,615 close contacts of TB patients in the households (6 per index case), of whom 16,502 (94%) persons were screened for TB symptoms. Of those screened, 6,921 (42%) were identified as presumptive TB patients. Diagnostic procedures were facilitated by sputum fixers and sputum transportation. In total 580 (11%) were diagnosed with TB; 40 percent by GeneXpert, 32 percent by smear microscopy, and the remaining by chest X-ray and pediatric score charts. All 580 patients started anti-TB medication. Of the patients confirmed with TB through contact investigation, seven were found to have DR-TB.

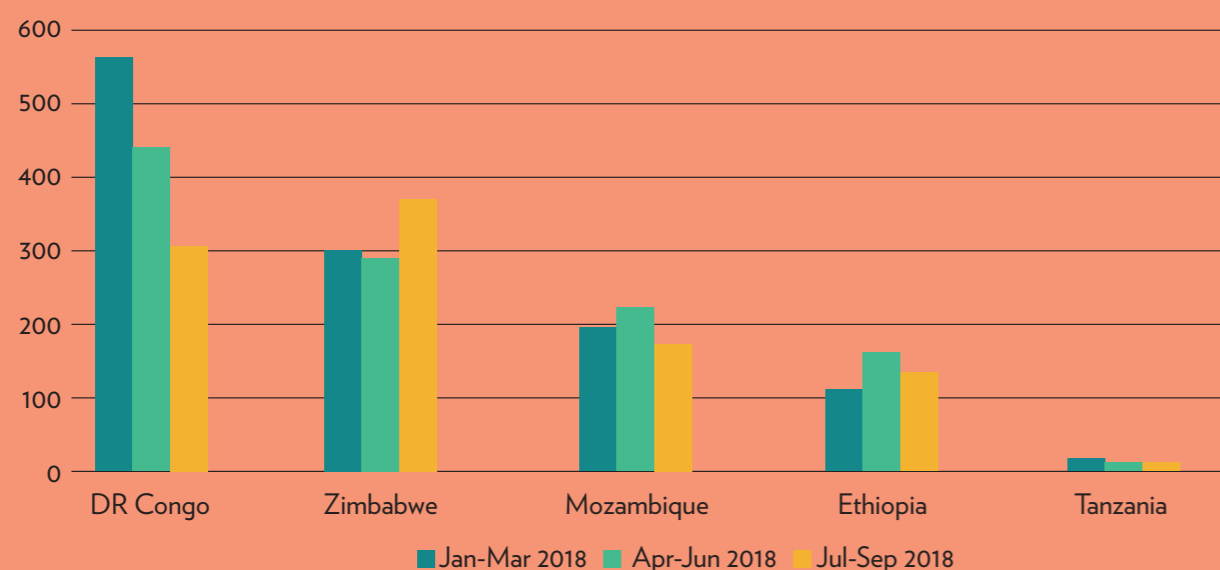


## ACTIVE/INTENSIFIED CASE-FINDING MINERS

In DR Congo, Zimbabwe, Mozambique, Ethiopia, and Tanzania Challenge TB supports active case-

finding among miners who experience some of the highest rates of the disease across any population.

THE NUMBER OF CASES (ALL FORMS) NOTIFIED AMONG MINERS IN CTB AREAS



## COUNTRY HIGHLIGHTS

**DR Congo** - Active case-finding among miners increased from 2016 to 2017. However, the proportion of cases notified in 2018 decreased each quarter due to the security situation in the mining areas (Kasai Central and Sud Kivu). In the second quarter of Year 5, Challenge TB will advocate with the three local NGOs (ALTB, FFP, and LNAC) for the involvement of community members in their TB detection activities among miners.

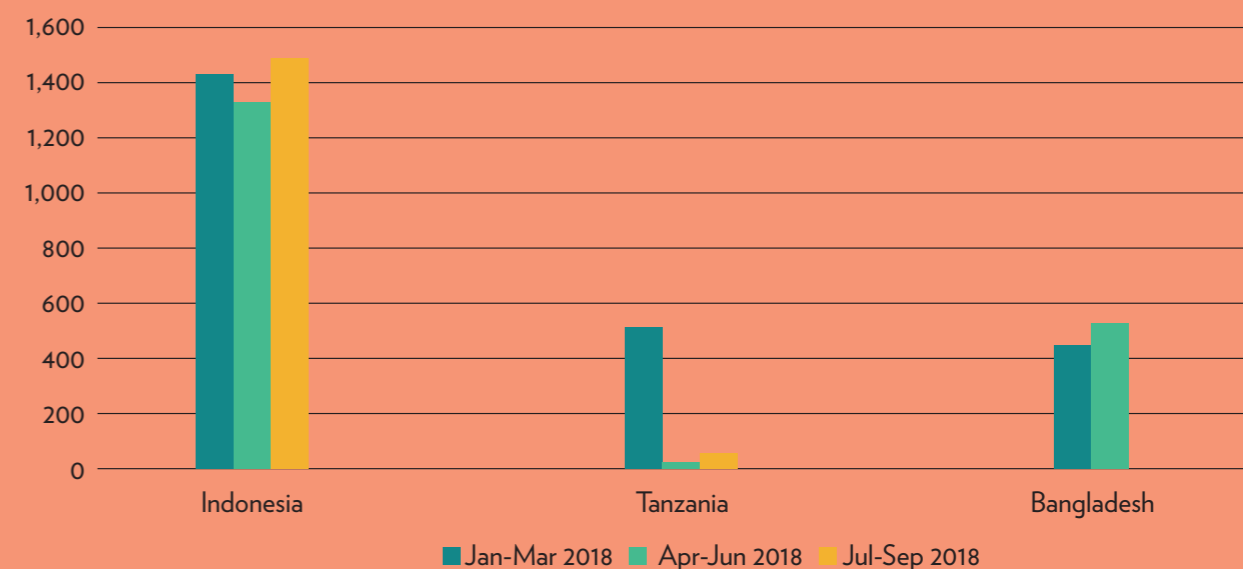
**Tanzania** - Since Year 3, Challenge TB has focused on the formal and informal gold mining sector in the Mwanza and Geita regions. There are 17 informal mining sectors (15 in Geita and 2 in Mwanza). Active case-finding was conducted every quarter in selected mining communities; it is recommended that miners be screened for TB every six months. A total of 36 (12%) patients were notified among the presumptive patients further investigated for TB.

## ACTIVE/INTENSIFIED CASE-FINDING DIABETES MELLITUS

In the framework of the search for additional undiagnosed and unreported TB patients, Challenge TB in Indonesia, Bangladesh, and Tanzania, supports

active/intensified case-finding among diabetes patients, who are at increased risk of developing active TB.

THE NUMBER OF CASES (ALL FORMS) NOTIFIED DIABETES PATIENTS IN CTB AREAS



## COUNTRY HIGHLIGHT

**Ethiopia** - Through integrated TB screening at maternal and child health (IMNCI), antenatal clinics and family planning and diabetes clinics in 24 health facilities, 19,890 (35%) out of 57,492 attendees were screened for TB, 231 (1.2%) presumptive TB cases were identified, out of whom four TB patients were diagnosed (three from diabetes clinics and one from an antenatal clinics ; 0.02%, 20 per 100,000). Due to the low yield of TB screening at the antenatal and family planning clinics, this is not currently taken as a priority intervention area.

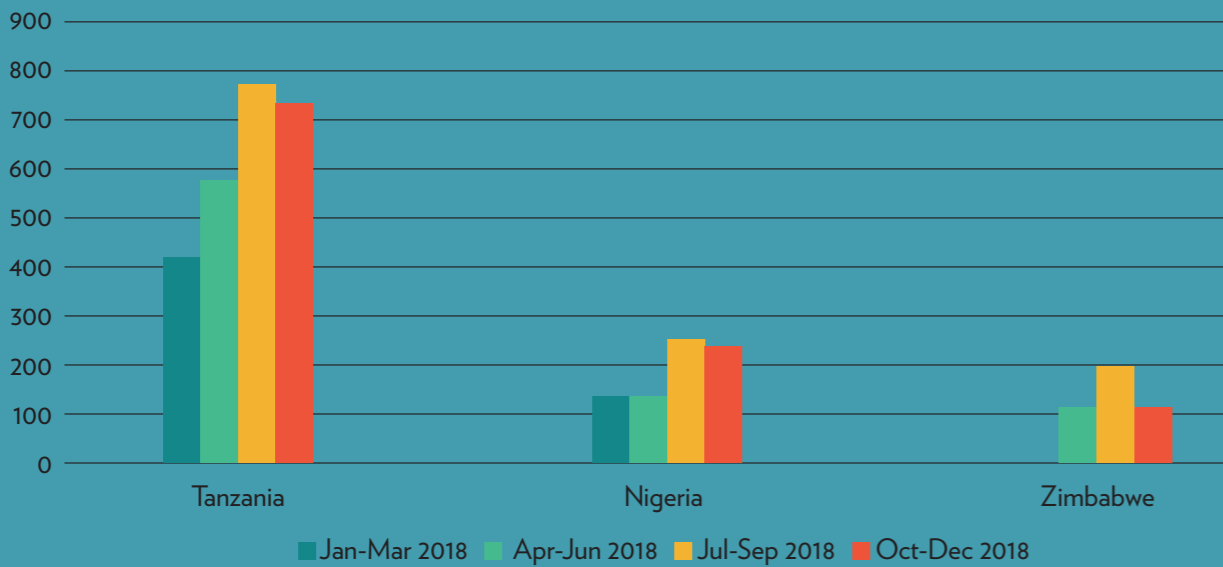


## ACTIVE/INTENSIFIED CASE-FINDING OTHER APPROACHES

Challenge TB supports contexts specific outreach approaches for TB case finding and care, especially in urban slums and other populations with limited

access to health care in Nigeria, Tanzania, and Zimbabwe.

THE NUMBER OF CASES (ALL FORMS) NOTIFIED THROUGH OTHER ACF/ICF ACTIVITIES IN CTB AREAS



## COUNTRY HIGHLIGHTS

**Nigeria** - In Lagos and Kano states, Challenge TB funded Wellness on Wheels (WoW) trucks (with digital chest X-ray, CAD4TB and GeneXpert) which were deployed to high volume health facilities, resulting in significant yields in number of TB patients diagnosed weekly. This quarter a total of 13,462 persons were screened; 1,282 presumptive TB patients were identified and 1,221 tested for TB, resulting in 245 patients (20%) diagnosed with TB, indicating how Computer Aided Diagnosis for TB (CAD4TB) effectively identified a group with a high likelihood of bacteriologically positive TB (B+ TB). This resulted in a case detection rate of B+ TB of 1.8%, which is about twice the adult B+ prevalence in the general population reported in the 2012 National TB Prevalence Survey, suggesting that the population targeted for screening had a relatively high prevalence of TB disease.

**Zimbabwe/Malawi** - Targeted screening for active TB is also using mobile trucks equipped with X-ray and GeneXpert instruments. In Zimbabwe, a total of 203 TB patients were identified through targeted screening for active TB using mobile trucks.

In Malawi, initial results have shown that out of 54 presumptive patients X-rayed at mobile units, 12 had been clinically diagnosed with TB and were put on treatment. It is expected that this intervention will improve case finding during next quarters.

**Botswana** - National active case-finding strategies were updated, including optimization of the utilization of GeneXpert and (digital) chest X-ray capacity with CAD4TB, followed by action planning for active case-finding in Challenge TB supported districts.

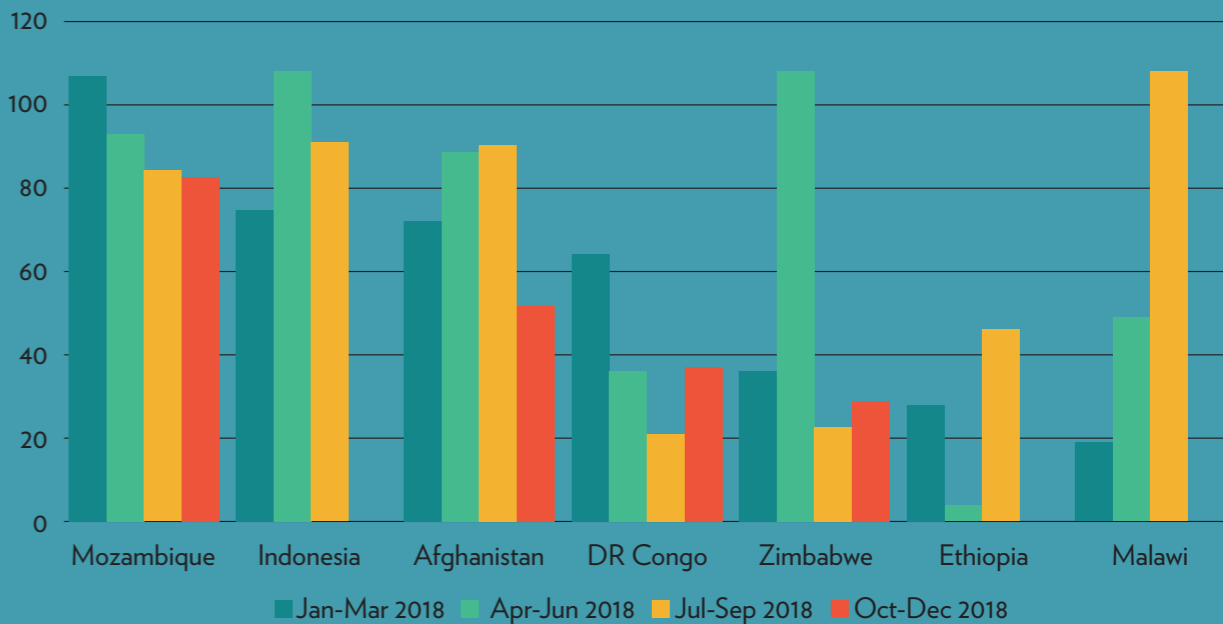
**Tanzania** - Active case-finding is organized among fishermen and the elderly, as well as in slums and market areas. A total of 10,378 people were identified as presumptive TB patients, and 8,419 (92%) referred were tested for TB. Of those tested, 846 (10%) were diagnosed with TB (46% by GeneXpert, 25 percent by smear microscopy); 835 (99%) were put on anti-TB medication. Among the total notified TB patients through active case-finding, fishermen contributed 1 percent, miners 4 percent, people who inject drugs 9 percent, and market and slum areas 87 percent.

## PRISONS

Challenge TB continued support to the implementation of TB control in prisons, consisting of entry screening and periodic screening of inmates. Overall screening participation, and treatment uptake

are high. Quarterly trends on TB cases notified from prisons in Challenge TB areas are presented for six countries, which implement the respective interventions and reported complete data.

THE NUMBER OF CASES (ALL FORMS) NOTIFIED FROM PRISONS IN CTB AREAS



## COUNTRY HIGHLIGHTS

**Afghanistan** - Six prisons (Pul-i-Charkhi/Kabul; Bagram/Parwan; Kandahar; Balkh/Mazar-i-Sharif; Herat; and Nangarhar/Jalalabad) implemented routine TB activities and 52 TB patients (all forms) were diagnosed (430/100,000 prison population). In comparison to the other urban health facilities, the treatment success rate is higher and maintained at 95 percent because patients are taking their anti-TB medicine without interruption under direct observation of medical staff.

**DR Congo** - A total of 4,801 (96%) prisoners out of an inmate population of 5,003, were educated and screened, 496 presumptive TB cases were

identified (10%: 496/4,801), 487 (98%:487/496) were investigated, a total of 37 TB cases all forms were identified (8%: 37/487), of which 35 were bacteriologically confirmed (95%: 35/37), of which two were RR-TB, and two were clinically diagnosed (5%: 2/37). TB detection in prisons represented 116 percent(37/32) of the Year 5, Quarter 1 target and 39 percent(37/96) of the nine months target for the year. The SL-LPA test was performed for the two RR-TB cases and susceptibility to fluoroquinolones and second-line injectables was confirmed. All patients were started on treatment. In the next reporting period the first results on exit screening will be known.

# MANAGING XPERT SCALE-UP

Challenge TB provides technical assistance towards the expansion in the number of GeneXpert machines across Challenge TB countries, improving functionality, increasing the utilization of existing machines, and ensuring that the machines are linked

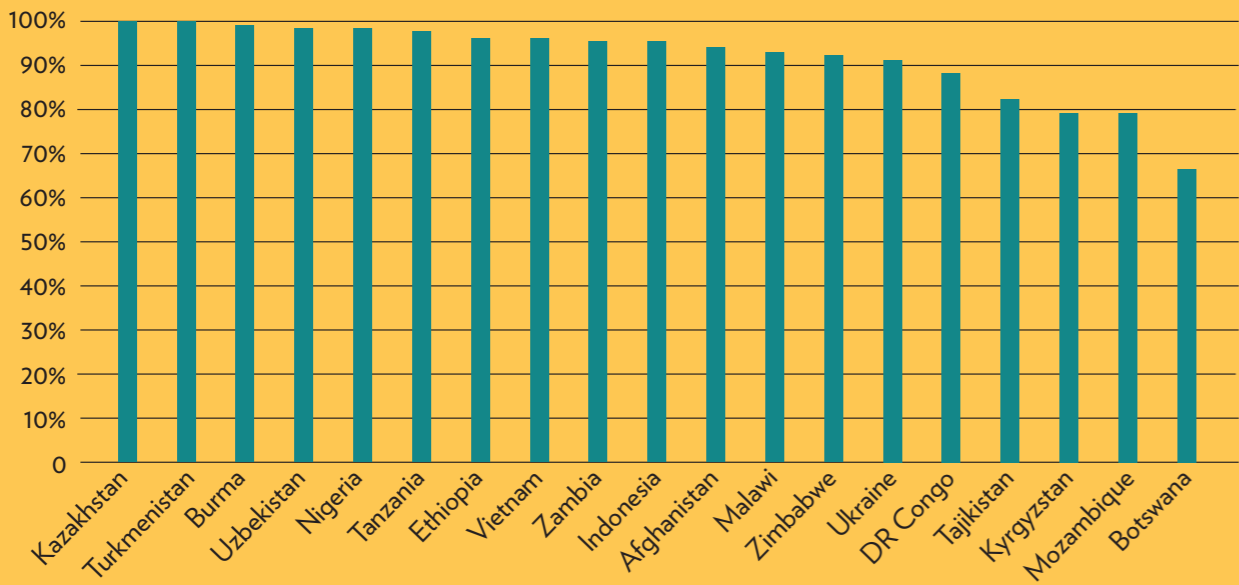
to a connectivity system. The scale-up is closely linked to the existence of a well-organized specimen transportation system (STS). The overall aim is to ensure that Xpert MTB/RIF becomes universally available and functions as the primary test.

## NUMBER OF GENEXPERT MACHINES AND FUNCTIONALITY

By the end of December 2018, a total of 4,322 GeneXpert machines were installed across all countries compared to 3,842 in the previous

reporting period. Out of 19 countries reporting complete data on functional modules, 14 reported a functionality higher than 90%.

PERCENTAGE OF GENEXPERT MODULES FUNCTIONING, JUL-DEC 2018\*



\* Kyrgyzstan data is for 2017, 2018 data is unknown. Bangladesh, Cambodia, and India are excluded due to incomplete data

## COUNTRY HIGHLIGHTS

**Afghanistan** - Challenge TB assisted the NTP in sustaining access to high quality TB care delivery between October and December 2018. Challenge TB assisted the NTP with the provision of three sets of GeneXpert machines for facilities in Kabul City. The machines were installed and handed over to the Kabul provincial health office. The total number of GeneXpert machines provided by the Challenge TB project is 27 and they are all fully functional, providing access to over one million people in Kabul city. In addition, Challenge TB procured 37,800 cartridges in order to ensure adherence to the changed diagnostic

algorithm which uses MTB/RIF as the primary diagnostic tool.

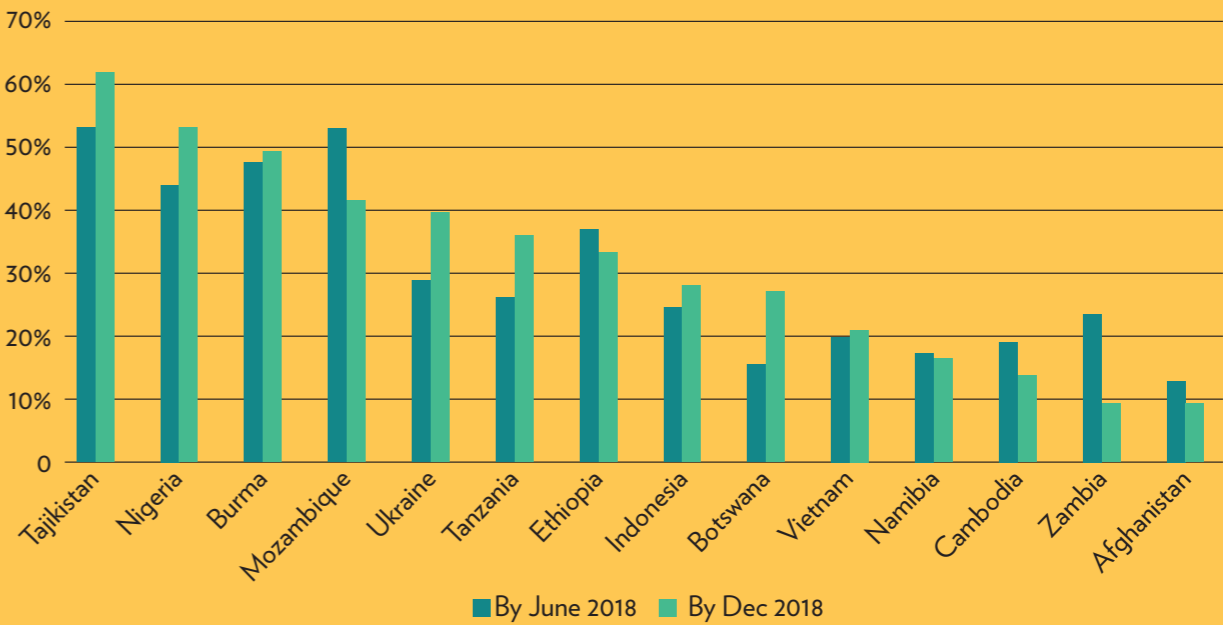
**Bangladesh** - 193 GeneXpert machines were installed by the end of December 2018, of which 39 are connected with GxAlert. On October 18 2017, Challenge TB handed over a Biosafety Level 3 Laboratory in Sylhet to NTP. The laboratory also provides confirmatory solid culture and drug-susceptibility testing for first and second line anti TB drugs, and GeneXpert machines for the rapid diagnosis of RR-TB.

# GENEXPERT UTILIZATION

In line with World Health Organization (WHO) recommendations, the maximum utilization is calculated as the number of modules multiplied by three tests per day multiplied by 240 days per year. In the process of scale-up of the GeneXpert system, utilization rates may vary, especially between existing and new sites.

In total, 1,044,509 MTB/RIF tests were conducted between July and December 2018 in 14 countries. Tajikistan and Nigeria reported a utilization higher than 50 percent (63% and 53% respectively). For both countries this was a 9-10 percent increase from the previous reporting period. In total eight countries showed an increase in utilization.

GENEXPERT UTILIZATION RATE, 2018\*



\* Burma, Cambodia, Ethiopia only report data over Jul-Sep 2018; Ethiopia and Zambia data is incomplete (# of tests performed are from a subset of modules)

## COUNTRY HIGHLIGHTS

**Indonesia** - The implementation of SITRUST to facilitate specimen transportation in 12 Challenge TB districts resulted in a 73 percent utilization rate, with five Challenge TB districts reaching more than 90%. Access to high quality diagnostics for presumptive TB has expanding significantly.

**Burma** - Challenge TB supports maximizing GeneXpert utilization in Yangon region by advocating to the NTP and supporting MDR-TB case-finding interventions. Based on national data from June-December 2018, a total of 87 GeneXpert machines with 384 modules had been installed and connected to GxAlert. Of the 384 GeneXpert modules, 380 were functional. A total of 34,309 tests were conducted between July - September 2018, which amounts to a utilization rate of 50%.

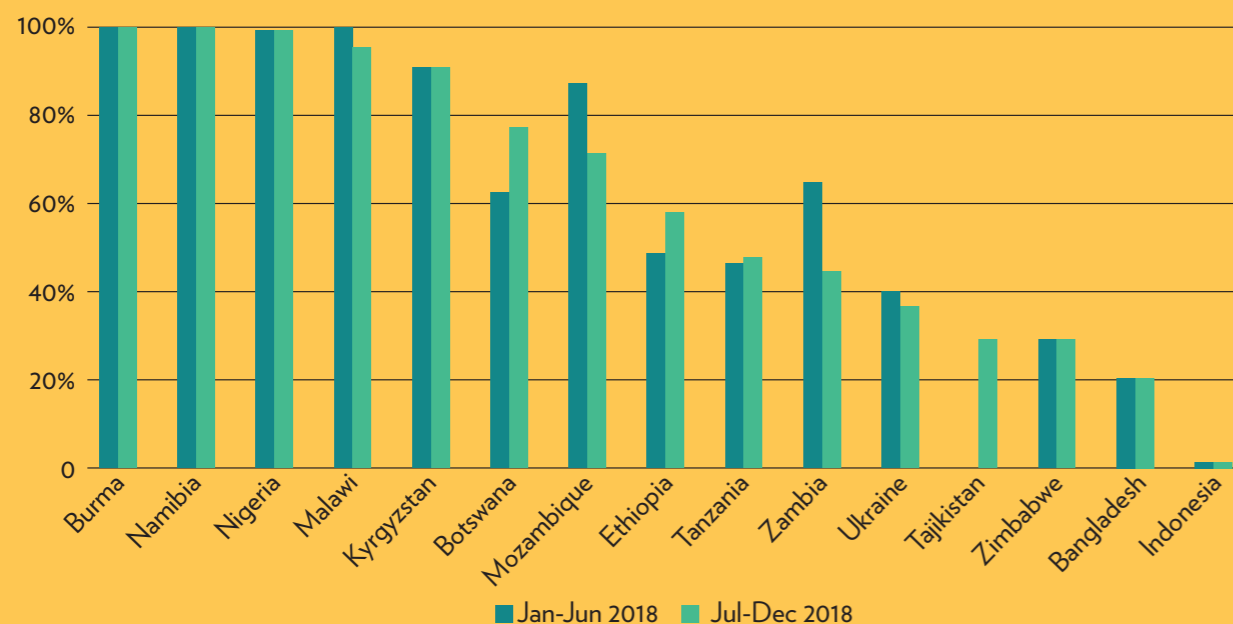


## DATA CONNECTIVITY SYSTEMS

Out of the 4,322 machines, 1,259 (29%) are connected to a connectivity system in 15 Challenge TB countries. Four countries reported a connectivity

rate higher than 95%: Burma (100%), Namibia (100%), Nigeria (99%), and Malawi (96%).

PERCENTAGE OF GENEXPERT MACHINES CONNECTED TO DATA CONNECTIVITY SYSTEMS, 2015-2018\*



\*In Kyrgyzstan and Zimbabwe the Jul-Dec 2018 data is unknown and the graph reflects Jan-Jun 2018 data

In September 2018, 13 Challenge TB countries participated in an online diagnostic connectivity survey which was developed by the project management unit to better understand the current implementation status, level of utilization (with regard to network, patient and program management), and to identify successes and lessons learned in Challenge TB countries. The results of the survey are currently being used as the foundation for a project monitoring dashboard and to guide country conversations in order to target specific technical assistance. Selected survey results are presented below:

- A majority (10/13) of countries implemented GxAlert (SystemOne) as diagnostic connectivity solution.
- Almost half of the countries (six) implemented mobile internet via router as the main means of connecting the GeneXpert device to the diagnostic connectivity solution. Existing internet access is used in Botswana and Namibia.
- Challenges ensuring an internet connection

from the GeneXpert device to the diagnostic connectivity solution were reported in 11 out of 13 countries. Only Bangladesh did not report any challenges.

- Almost all countries (except Namibia) responded that a report with all GeneXpert machines in country is available on the system.
- Monitoring the utilization rates of the machines is an important feature of diagnostic connectivity solutions which is performed in 12 out of 13 countries.
- Test results for all GeneXpert tests are sent back to the referring clinician in three countries, five countries opted to only send MTB/Rif+ results. However, only two countries inform patients that their test results are ready via the diagnostic connectivity solution.
- While the diagnostic connectivity solution is linked to a Laboratory Information System in three countries, the large majority of countries (>85%) did not report other integrations with either patient management systems or DHIS2.

As part of further development of Challenge TB diagnostic connectivity data management and utilization in specific countries, a draft Connectivity Data Approach document was developed which identifies a minimum set of data elements/indicators

## COUNTRY HIGHLIGHT

**Botswana** - 34/36 GeneXpert devices in country are linked to the Government Data Network: 28/34 (82%) are connected to GxAlert and actively transmitting data to the national server compared

that can help support the monitoring of diagnostic connectivity implementation and the GeneXpert diagnostic network both in-country and at project level. The approach will be piloted in a few selected Challenge TB countries in the next quarter.

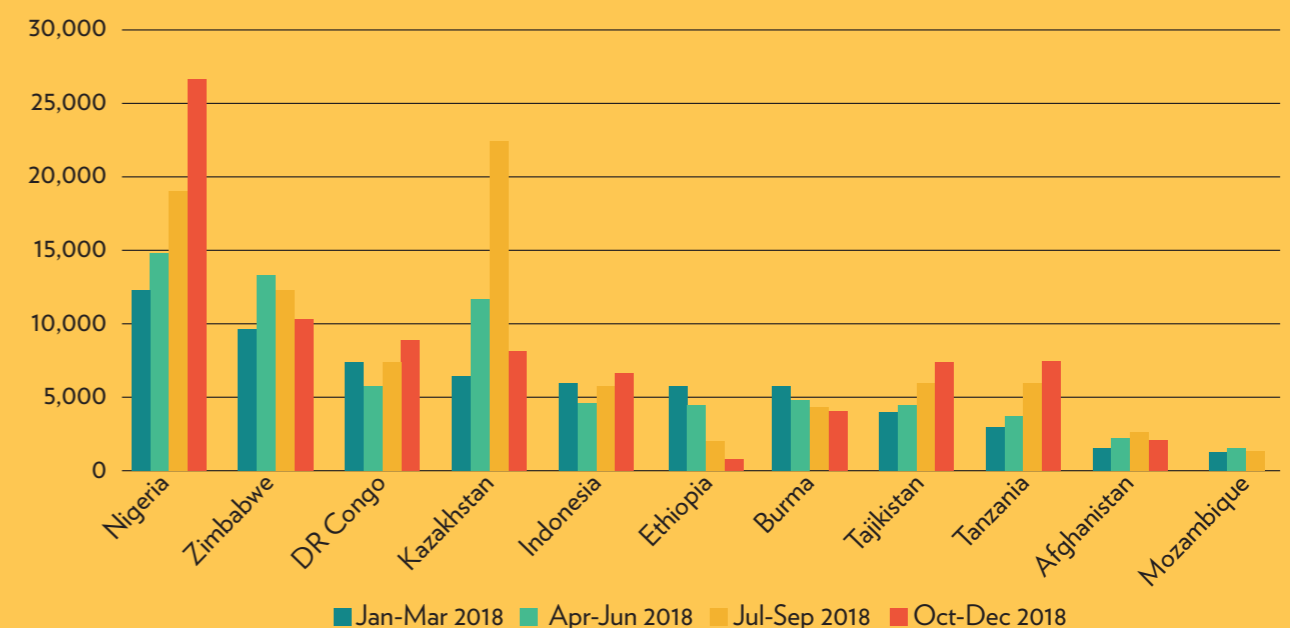
to 21/31 (68%) devices at the end of Year 4. Monthly reports/updates are generated from the GxAlert application by the in-country data scientist. These reports are discussed at the weekly NTP meetings.

## SPECIMEN TRANSPORTATION

The transportation of TB specimens in a reliable and efficient manner is essential for effective TB patient care, allowing for faster diagnosis, initiation of treatment, and patient follow-up. Challenge TB continues to play a significant role in supporting and strengthening effective and efficient specimen transportation systems in order to ensure universal

access to TB diagnosis. During this quarter, 11 countries supported the transportation of 82,993 specimens in Challenge TB areas. Over the last four quarters, Nigeria, DR Congo, Indonesia, Tajikistan, and Tanzania show an increasing trend in the number of specimens transported.

NUMBER OF SPECIMENS TRANSPORTED FOR TB DIAGNOSTIC SERVICES, CTB AREAS, 2018



## COUNTRY HIGHLIGHT

**Nigeria** - 26,624 samples were transported for GeneXpert testing during the quarter compared to 19,040 samples last quarter: 18,942 (71%) were transported through the courier model and 7,682 (29%) via the 'hub and spoke' system. The project is progressively linking into the USG-funded national integrated sample referral Mechanism to ensure

sustainability after the project ends. Challenge TB laboratory staff performed continuous quality improvement initiatives to enhance performance and ensure optimal quality of laboratory services across its supported areas which resulted in a significant reduction in the error rate from 6 percent in the previous quarter to 4 percent in the current quarter.

# PROGRAMMATIC MANAGEMENT OF DRUG RESISTANT TB (PMDT)

## DR-TB NOTIFICATION AND TREATMENT

The notification of patients with DR-TB has continuously increased since the start of the project thanks to the increased diagnostic capacity created in countries. In this reporting quarter, 13 countries reported that 3,330 patients were diagnosed with RR-/MDR-TB in Challenge TB areas; whereas, 5,788

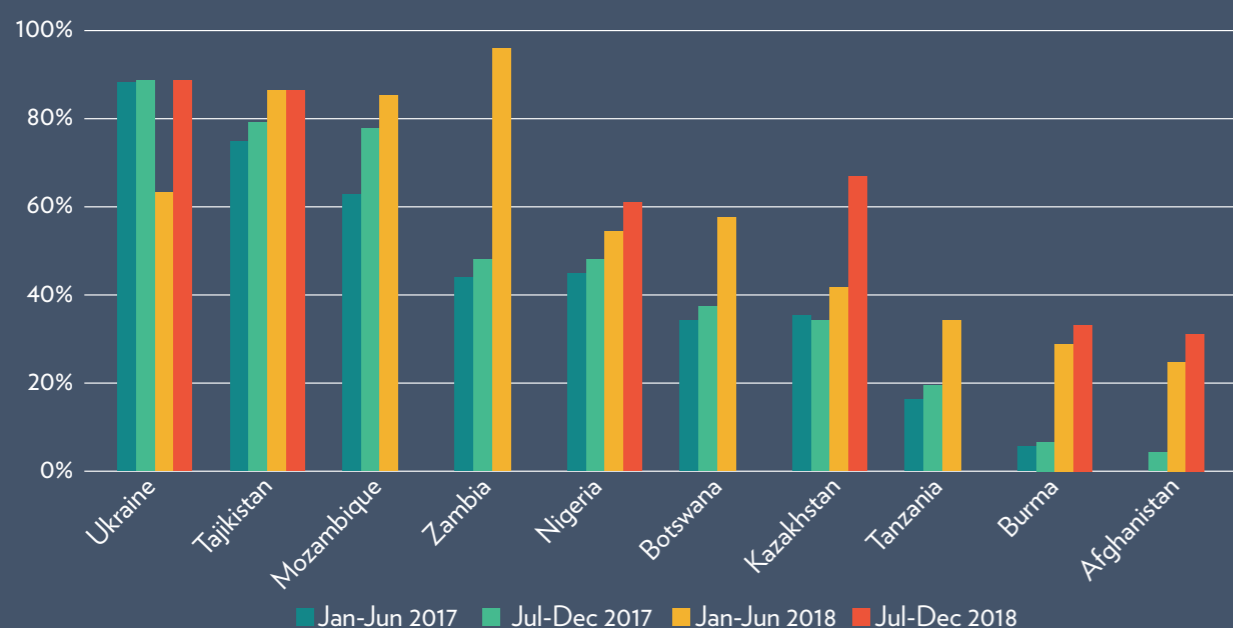
patients were diagnosed nationwide in 11 countries in the same quarter. Analyzing the available data for 2018, and despite the increase in notified RR-/MDR-TB cases, 89 percent of those diagnosed in 2018 started treatment.

## DIAGNOSIS OF RR-/MDR-TB

Since the beginning of the project, Challenge TB has invested in improving the diagnosis of RR-/MDR-TB. There has been a meaningful increase in the proportion of bacteriologically confirmed new TB cases tested for RR-/MDR-TB in all ten countries

that have available data since 2017. Notable cases are Afghanistan, that went from 4 percent of new TB cases tested for RR-/MDR-TB in Jul-Dec 2017 to 31 percent in the reporting period, and Burma, that went from 6 to 33 percent in the same period.

PERCENTAGE OF NEW TB CASES TESTED FOR RR-/MDR-TB, CTB AREAS, 2017-2018\*

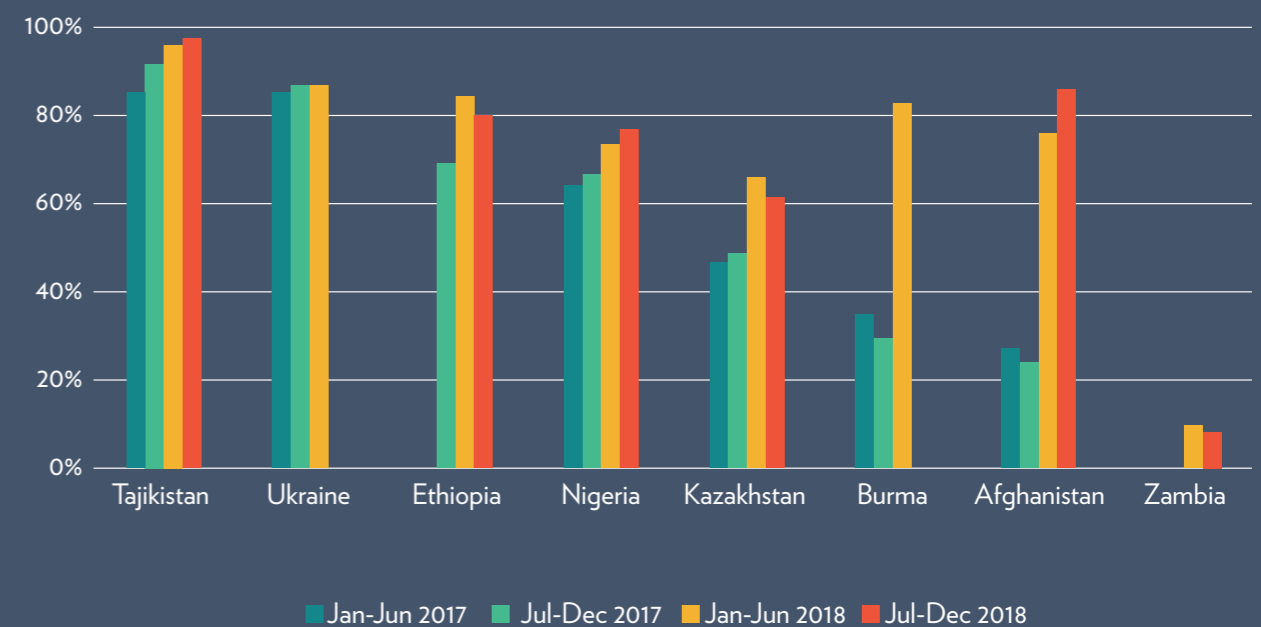


\* Oct-Dec 2018 data not shown due to incompleteness and quality issues for Botswana, Mozambique, Tanzania, Ukraine, and Zambia

There has also been a meaningful increase in the proportion of bacteriologically confirmed previously treated cases tested for RR-/MDR-TB. In this reporting quarter Tajikistan has tested for RR-/MDR-TB 97 percent of all previously treated patients

and Afghanistan 86 percent. An important success, especially for Afghanistan as in Jul-Sep 2017 only 4 percent of previously treated patients were tested for RR-/MDR-TB.

PERCENTAGE OF PREVIOUSLY TB CASES TESTED FOR RR-/MDR-TB, CTB AREAS, 2017-2018\*

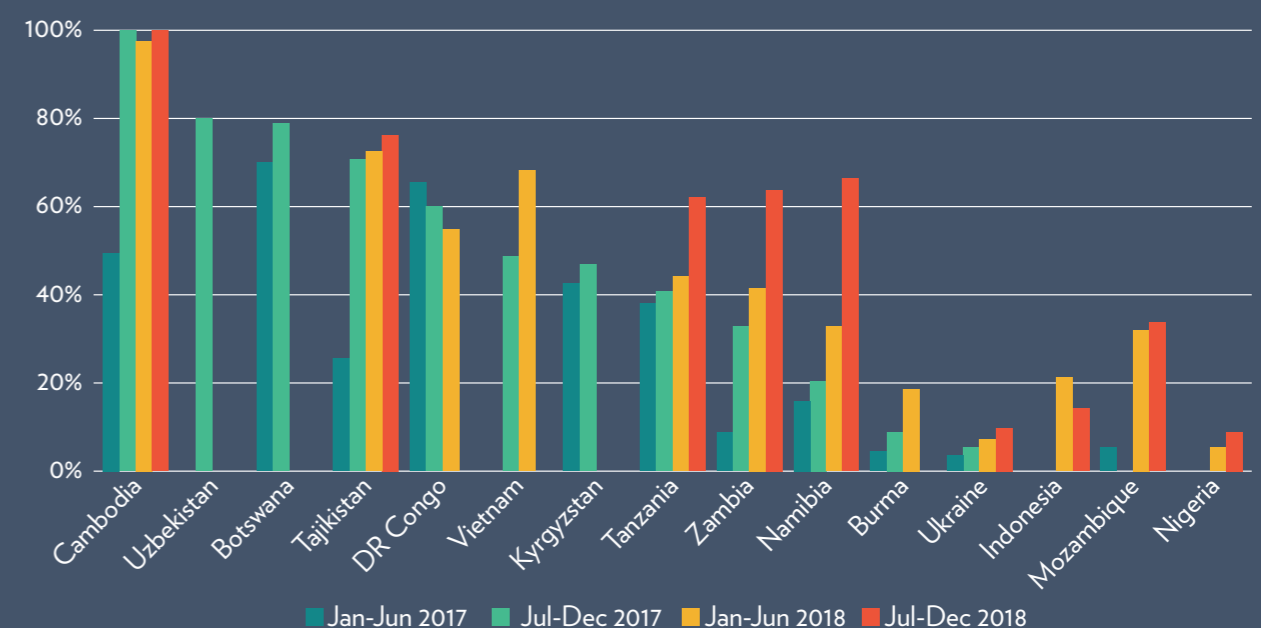


\* Burma reported incomplete data for Jul-Dec 2018 and is therefore not shown in the graph, Ethiopia Jul-Sep 2018 data, Kyrgyzstan 2018 data not available yet, Zambia Jul-Dec 2018 is incomplete (The number of tests performed is from a subset of modules)

The expansion of the SL-LPA network is also showing results, with 14 out of 15 countries with available data reporting an increase in the proportion of notified RR-TB patients tested with SL-LPA. Cambodia has reached universal testing for these

patients this quarter and Tajikistan, Namibia, and Zambia have had meaningful improvements reaching 76, 67, and 63 percent, respectively.

PERCENTAGE OF RR-TB CASES TESTED WITH SL-LPA NATIONALLY, 2017-2018\*



\* Uzbekistan reports annual data (2017); Botswana 2018 data is excluded; Burma, DR Congo, Kyrgyzstan, and Vietnam data from Jul-Dec 2018 are not known

COUNTRY HIGHLIGHTS

**Ukraine** - The patient-centered care model for MDR-TB patients developed by Challenge TB was included as the main model to support patients in the Global Fund grant. Challenge TB continued assisting the primary recipient in planning to scale-up the model to all oblasts of Ukraine, advising specifically on the operational aspects of building sustainable, patient-centered TB services based on outpatient case management and appropriate patient support. During the reporting quarter, Challenge TB team members participated as experts in the selection of the local implementation partners to implement patient support activities.

**Tanzania** - Challenge TB continues to support the decentralization of DR-TB services started in Year 2. This quarter three new sites were added reaching 83 sites in 29 out of the 31 regions countrywide. Challenge TB is also supporting the renovation of two MDR-TB wards, including the Ukonga prison

health center and Muhimbili national hospital in Dar es Salaam, to improve access to quality DR-TB services.

**Indonesia** - Challenge TB assists in the set-up of a specimen network from GeneXpert sites to the respective culture and SL-LPA labs in Challenge TB supported provinces. In this quarter, four additional SL-LPA labs have passed EQA in December 2018 and are ready to provide services in January 2019 which brings a total of seven SL-LPA laboratories that are ready to support the implementation of STR.

**Uzbekistan** - There has been a sharp rise in the number of patients diagnosed with XDR-TB. The reason for such a sharp rise is improved diagnostics using SL-LPA, after the delivery of testing strips for all TB laboratories. All XDR-TB patients started treatment with bedaquiline containing regimens.



NEW DRUGS AND REGIMENS (ND&Rs)

In order to improve treatment success of RR-/MDR-TB patients Challenge TB has been actively helping countries to plan, implement, and introduce ND&Rs.

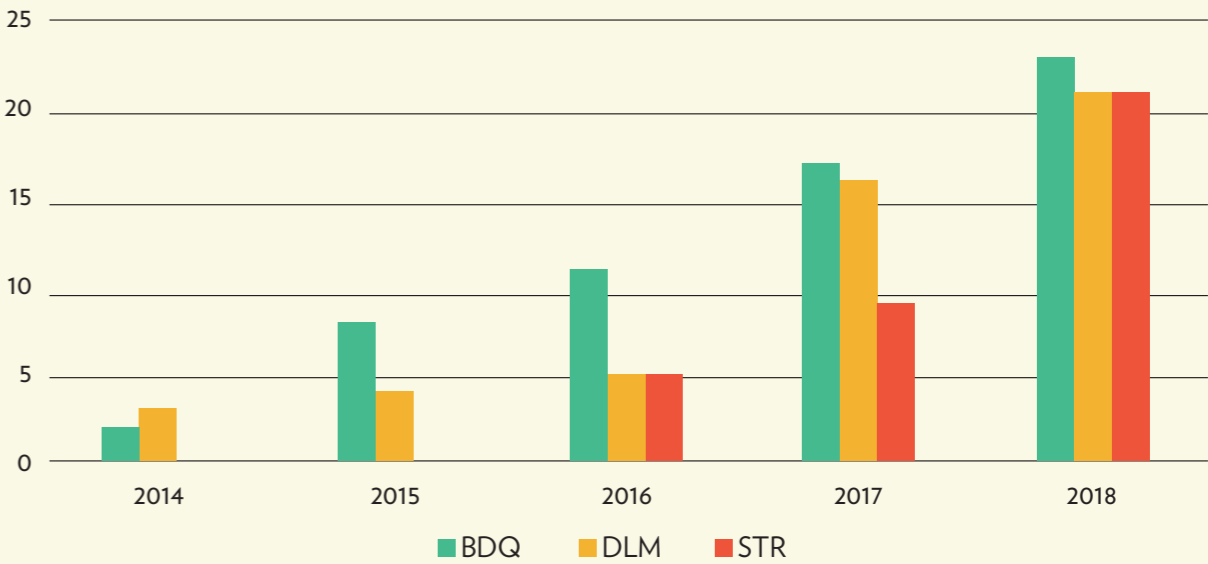
At the end of 2018, bedaquiline (BDQ) has been introduced in all Challenge TB-supported countries. The number of sites providing treatment with BDQ continues to increase, with 24 new sites in the reporting quarter. In total, 352 sites are able to prescribe BDQ. In 2018, the number of sites providing treatment with BDQ has more than tripled compared to 2017.

At the end of 2018, delamanid (DLM) has been introduced in 21 countries, with India introducing

DLM in this reporting quarter. The number of sites where DLM can be prescribed has also increased this quarter, with 37 new sites giving a total of 157 sites able to prescribe DLM. The number of sites able to provide DLM has more than quadrupled in comparison to the same quarter in 2017 (157 vs. 37).

At the end of 2018, the shorter treatment regimen (STR) had been introduced in 21 countries. The number of sites offering the STR has increased this quarter with 31 new sites. In total, 854 sites are able to prescribe the STR. The rapid expansion of treatment sites means that more patients had access to ND&Rs.

NUMBER OF COUNTRIES INTRODUCING ND&Rs, 2014-2018



This quarter a total of 1,260 patients started treatment with BDQ - 727 of the patients initiated in India; the other countries completing the top five for the highest enrollment are Uzbekistan (111), Indonesia (82), Kyrgyzstan (78), and Burma (54). This is the highest number of patients started on BDQ since the beginning of the project. In total, 3,278 patients started treatment with BDQ in 2018, more than double the number that started in 2017 (3,278 vs. 1,520).

A total of 68 patients started treatment with DLM, the highest number per quarter in 2018, 38

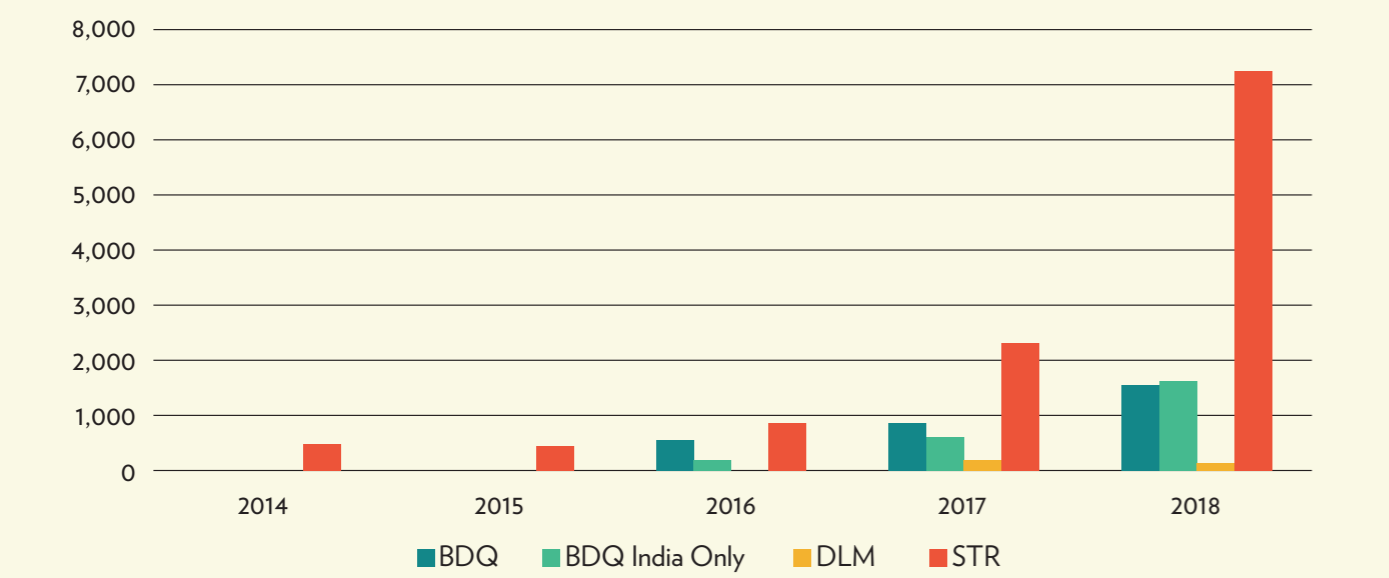
of those of who were initiated this quarter were in India; the other countries completing the top five for the highest enrollment are Bangladesh (23), Mozambique (18), Kyrgyzstan (17), and Tajikistan (15).

The number of patients that started BDQ and DLM together due to an extensive pattern of resistance has increased eightfold in 2018, with 195 patients starting treatment vs. 24 in 2017. In this quarter 50 patients started treatment with both BDQ and DLM. The top three countries are Ukraine (17), Kazakhstan (15), and Mozambique (8).

Finally, 1,613 patients started on the STR this reporting quarter, this also led to a significant increase in the number of patients started on the STR in 2018 vs. 2017 (7,283 vs. 2,384). Although India has started the STR, there is no data available on how

many patients started the STR since the regimen was introduced in the country. The top five countries in enrollment on the STR this quarter are Indonesia (617), Vietnam (469), Burma (91), Tanzania (60), and Kazakhstan (58).

CUMULATIVE NUMBER OF PATIENTS ENROLLED ON ND&Rs IN 23 CTB COUNTRIES, 2014-2018\*



\* The number of patients started on BDQ in India is presented separately (In India, the STR is not yet reported)



# ACTIVE TB DRUG-SAFETY MONITORING AND MANAGEMENT

Challenge TB has implemented active TB drug-safety monitoring and management (aDSM) in every country where ND&Rs have been introduced. aDSM is a fundamental component of PMDT, providing active and systematic clinical and laboratory assessment of patients on treatment with ND&Rs and helps detect, manage, and report suspected or confirmed drug toxicities. Serious adverse events

(SAEs) reporting is the basis of aDSM as well as the timely management of adverse drug reactions. In the countries where ND&Rs have been introduced, 94 SAEs have been reported for patients receiving BDQ, 62 for patients receiving DLM, 16 for the patients receiving BDQ and DLM concomitantly, and 58 for patients receiving the STR.

## COUNTRY HIGHLIGHTS

**Ethiopia** - Challenge TB successfully supported the NTP to adopt the WHO’s 2018 ‘Rapid communication: Key changes to treatment of multidrug- and rifampicin-resistant TB (MDR/RR-TB)’ which aims to improve the management of DR-TB patients in the country. Challenge TB provided technical support to the NTP through technical assistance from KNCV HQ and to the drafting of the national transition plan and operations research protocol for a modified shorter DR-TB treatment regimen. The tentative date for transition is April-July 2019 - a drug procurement order has been submitted to the Global Drug Facility and PMDT training material revision is planned as soon as the final WHO guideline is released.

**Zimbabwe** - A draft implementation plan for ND&Rs, including an aDSM system, was developed with technical assistance from Challenge TB. Key components of the plan are based on a standardized framework developed by Challenge TB which addresses the following key thematic areas: operationalization issues (awareness and political engagement and updating the PMDT strategy), monitoring and evaluation, laboratory infrastructure and capacity, clinical management, as well as aDSM and drug management.

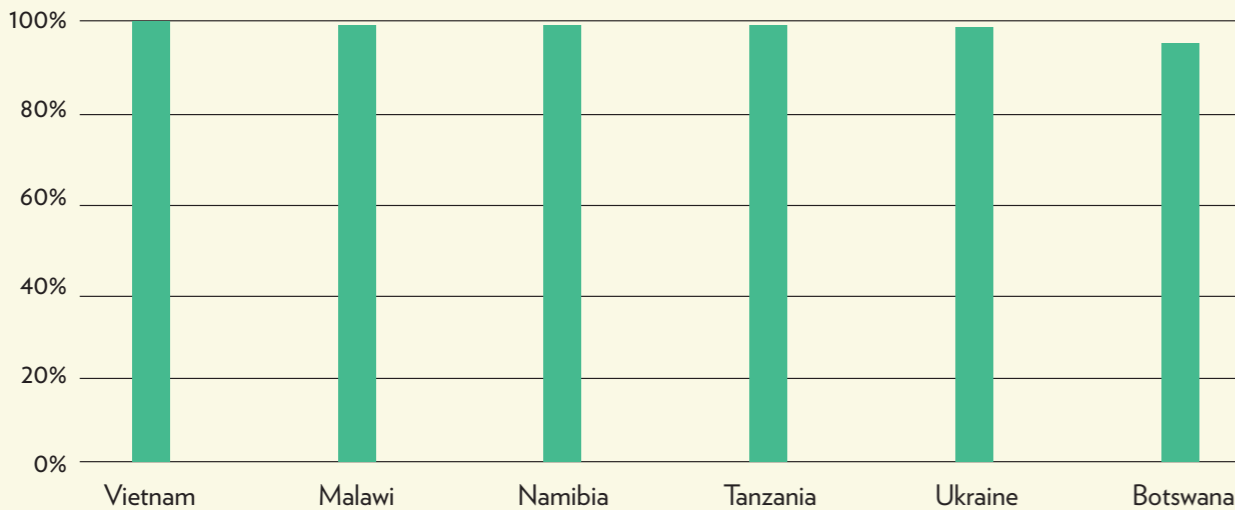
**Burma** - Challenge TB continued to strengthen the aDSM network to better facilitate the transition from the conventional treatment regimen to the recommended DR-TB regimens containing new drugs and the STR. The project held a National Core Committee for aDSM meeting to review all SAEs reported this quarter. These increased from 22 in the previous quarter to 82 in the current reporting quarter.



Of the 23 Challenge TB countries, six received PEPFAR funding and were able to report on one or more TB/HIV MER indicators. In Botswana and Namibia, Challenge TB provides assistance to the NTP above the site level, whereas in Malawi, Tanzania, Ukraine, and Vietnam assistance is provided at site level.

All countries almost reached 100 percent of

PERCENTAGE OF REGISTERED NEW AND RELAPSE TB CASES WITH DOCUMENTED HIV TEST RESULTS (TB\_STAT) IN CTB AREAS JUN-SEP 2018



\* Botswana reports data for the period Jan-Sep 2018

Three countries (Namibia, Tanzania, and Ukraine) were able to report results for the TB\_ART indicator (i.e., the percentage of registered TB cases with a documented HIV-positive status who started or continued ART) for Oct-Dec 2018; five countries reported similar results achieved by Sep 2018 (Vietnam did not have complete data).

Between Oct-Dec 2018, 99 percent of the registered TB patient with a documented HIV-positive status were on ART in **Tanzania**, almost reaching their target of 100 percent.

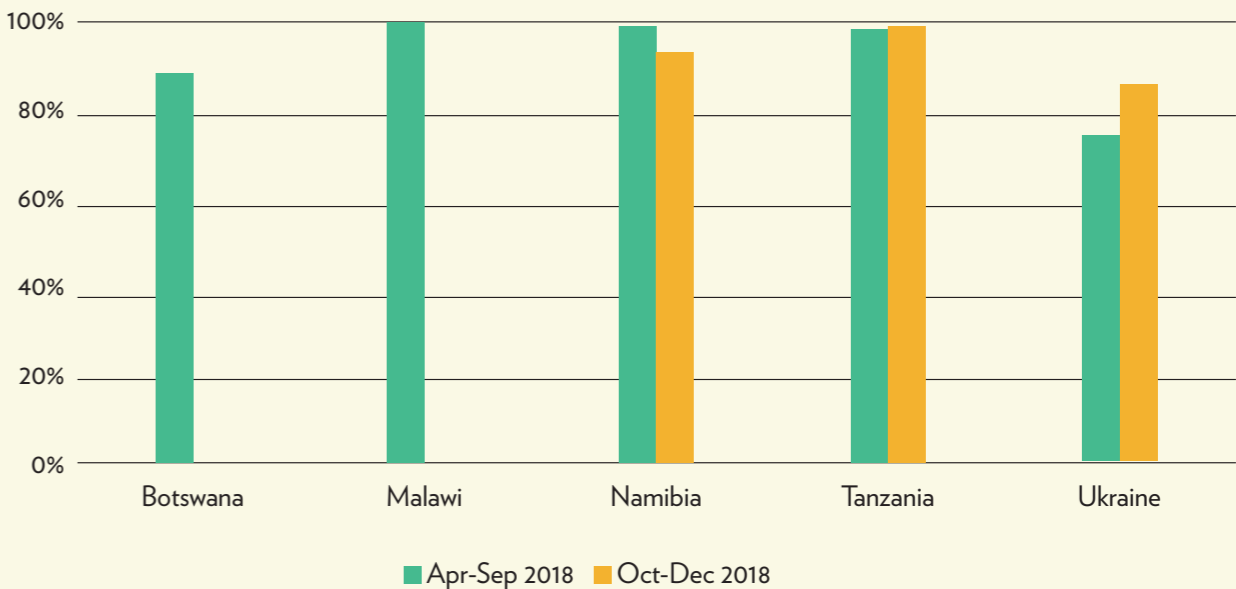
**Ukraine** continued to focus on ART coverage for TB/HIV patients, through monitoring visits and workshops, which resulted in a steady increase in ART coverage from 74 percent in Apr-Sep 2018 to 85 percent in Oct-Dec 2018.

registered new and relapse TB cases with a documented HIV test results in Challenge TB areas up to September 2018. The performance of Malawi and Namibia even exceeded the national targets of 97 percent and 96 percent respectively. During Oct-Dec 2018, Tanzania and Ukraine showed a slight improvement compared to the previous quarter (both exceeding the 99%).

In **Namibia**, 99 percent ART coverage was reached during Apr-Sep 2018; as of October 2018, their geographic areas changed from site level in eight districts to above site level; during this reporting quarter, 92 percent of registered TB cases with documented HIV-positive status started or continued ART.

Between Apr-Sep 2018, **Malawi** reached an ART coverage of 99.7 percent, exceeding their target of 96 percent. **Botswana** reported over the period Jan-Sep 2018 only, and recorded a coverage of 88 percent, this is a result of centralized HIV services in comparison with more decentralized TB services.

PERCENTAGE OF REGISTERED TB PATIENTS WITH DOCUMENTED HIV-POSITIVE STATUS WHO STARTED OR CONTINUED ART (TB\_ART) IN CTB AREAS\*



\* Malawi semi-annual data, Botswana data for Jan-Sep 2018

Malawi, Namibia, and Vietnam started 3,087 ART patients on TB treatment during Apr-Sep 2018. In Vietnam, 91 percent of ART patients completed a course of TB preventive therapy, substantially

exceeding their target of 85%; Namibia reported 1,311 (40%) ART patients who completed TB preventive therapy during Oct-Dec 2018.

COUNTRY HIGHLIGHTS

**Malawi** - Challenge TB collaborated with the NTP to provide mentoring to five sites using Urine TB LAM, in order to improve coordination, recording and reporting within facilities, and to stimulate information sharing.

**Botswana** - Together with the NTP, Challenge TB conducted mentoring and supportive supervision visits in two districts with the aim of ensuring quality TB and TB/HIV data. In total ten health facilities were visited for a review of the registers and for mentoring in recording and reporting.

**Namibia** - A draft 'Zero TB/HIV' training curriculum was developed for professional workers in collaboration with NTLP and other core stakeholders; including case studies and related guidance such as standard operating procedures.

**Tanzania** - Year 4 achievements were maintain by ensuring 99 percent (7,298/7,357) of TB patients know their HIV status and 99 percent (1,704/1,728) among those who are HIV positive were initiated

on ART. These results show that Challenge TB has nearly reached the project target of initiating 100 percent of HIV-infected TB patients on ART and integrating HIV services in 87 percent of health facilities providing TB care. Challenge TB provided technical assistance in updating the national TB/HIV policy guidelines so they are in line with WHO updates, including the management of LTBI, new HIV/AIDS indicator targets, community engagement in TB/HIV care and prevention, and the TB/HIV framework.

**Vietnam** - Training on TB, TB/HIV, and health education for healthcare workers (HCWs) was conducted at district and commune levels with the aim of ensuring quality detection and treatment provided to patients with TB/HIV co-infection. A total of 476 HCWs were trained.

# BACK TO NORMAL

Tuberculosis is the second leading cause of death in Zimbabwe. Many high-risk groups such as those living in rural areas do not get diagnosed because of the barriers people face accessing the right services. A lack of TB awareness, poverty, stigma, and the large distances to the nearest health facility are just some of the reasons.

Faustina lives in Chimanimani District, a mountainous area near the eastern border of Zimbabwe. Every day at the crack of dawn, she gets up to take care of her household. She starts by sweeping the yard and then she goes out to fetch water, walking for nearly two kilometers to the nearest well to get enough to last the whole day.

When she gets back she warms some water so her husband Aaron's can take a bath, before he leaves for his work as a laborer on one of the nearby farms. Then she tends to her nine-year-old daughter Mirriam and helps her get ready for school.

As her husband and daughter head out the door she smiles, with renewed strength.



awareness meeting, informed her about a free TB screening truck that was going to visit the district. When the truck arrived in the area Faustina made sure she was one of the first people to be screened. Faustina's X-ray showed the distinct shadows that TB leaves on the lungs, a sign of the damage being wrought by the disease.

The staff took a sputum sample for testing and results confirmed that she had TB, and not long after that she was started on treatment. The team also insisted that her husband and daughter were screened for the disease, and fortunately, both were found to be negative for TB.

*"I'm so happy and blessed to be cured of TB. My family is my life, but if it wasn't for the mobile screening truck, I would have never been diagnosed and treated for this terrible disease."*

When Faustina first became sick she mistook the cough and chest pains for the flu. She bought different cough mixtures, but nothing helped, and as time went on her condition got so bad she could barely stand, let alone look after her family. Faustina visited a local clinic that referred her to a local hospital for an X-ray, but at the hospital she was asked to pay \$20 which she did not have, and she was forced to return back home.

Over a year passed and Faustina's health continued to deteriorate. Just when she had given up all hope her neighbor, who had attended a community TB



*"During my treatment I received support from a village health worker who would visit and teach us about good hygiene and treatment adherence. In no time the coughing disappeared and I could again carry out my household work, albeit on a small scale."*

After six months of treatment, Faustina has fully recovered and beaten TB. She is thankful to everyone who played a part in saving her life.

*"I'm very grateful that Challenge TB provides free chest X-ray services to people who cannot afford one. I now have my life back! My husband and I are now planning on building a new house and life is back to normal."*

Chimanimani is among the 21 districts currently benefiting from TB screening. With the support of the USAID-funded Challenge TB project and the Global Fund, Zimbabwe has three mobile trucks equipped with digital X-ray machines. During the outreach, TB, as well as HIV and diabetes services are offered to the communities by a team of qualified health care workers. All identified patients are quickly linked to care at their nearest health facilities for treatment initiation and management.

In the last three months of 2018, the truck screened nearly 14,000 people, 22 were diagnosed with TB, and 1 with drug-resistant TB. Sixty-one people with HIV and 48 with diabetes were also found.

## CORE PROJECTS

### UN SPECIAL ENVOY

The UN High Level Meeting on TB this past September was without argument the largest and most critical meeting for everyone in the TB community. As Special Envoy, Dr. Goosby continued to deliver his education and awareness efforts on the ability to end TB – “TB is preventable, treatable and curable. Now let’s make it doable.” In addition to the work surrounding the UNHLM, the remaining Challenge TB funds were used to follow-up on engagements made in the diplomatic community, work on the Lancet Commission on Tuberculosis, and represent the Office of the UN Special Envoy on TB and speak at the Union Conference on Lung Health in The Hague. The Lancet Commission Report will be issued in time for World TB Day 2019.

Dr. Goosby participated in the Union Conference on Lung Health. The trip to The Hague included

delivery of the keynote speech for the Opening Ceremony, supporting key partners at their side events (WHO, Stop TB, FIND, etc.), and bilateral meetings with partners.

List of speaking events for Dr. Goosby/Ms. Coyne: Union Conference – The Hague – October 24-27, 2018

Press releases and public statements on TB: IAVI Acquires AERAS TB Vaccine Clinical Program and Assets – October 1, 2018

<https://www.biospace.com/article/releases/iavi-acquires-aeras-tb-vaccine-clinical-programs-and-assets/?TrackID=21>

### MEASURING STIGMA

The core project ‘Stigma Measurement’ funded TB Stigma Measurement Guidance was finalized and released during the last quarter of Year 4 and launched during the Union Conference during this reporting quarter.

Validation of the ‘code book of emerging stigma themes’, developed as part of the pilot of the measurement tool among healthcare workers in Ethiopia, has started and will need to be followed up on during the next quarter. Initial coding and back translation indicated issues with translation and potential conceptual understanding of phrasings, requiring further validation. It is recommended to consult with Ms. Lisa Redwood, who is currently performing a similar exercise in Vietnam, to

crosscheck the findings and conclusions as well as recommendations for next steps. Initial contact with Ms. Redwood indicates that the originally anticipated timeframe and budget allocation was too ambitious, especially since the implementation was hampered by concurrent key-staff turnover both in the country and at HQ. A feasibility analysis and mitigation plan will be developed and submitted in Quarter 2 of Year 5.

KNCV continued working on the development of a country assessment tool. The framework was agreed in November and the consultants are currently working on the draft tool. The next round of review is expected in January/February 2019.

## PREVENTION

The prevention project is designed to evaluate the efficacy of 3HP compared to cINH preventive therapy in HIV-infected and TB-infected individuals with regard to prevention of TB. This quarter, the following progress was made:

A total of 447 participants have completed the study. The remaining enrolled participants in the study are in active follow up at the eight participating sites.

The last participants to enroll have been in the study for just over 15 study months as of this report date.

As of the end of the quarter, there are 593 participants who are off the study, of which 447 have completed their participation. The remaining 146 participants have withdrawn from participation. Of these, 41 no longer wanted to participate, 30 are due to death, and the remainder are due to other reasons (e.g. study clinician decision, unable to locate, erroneously randomized).

Attendance rates at the Month 1, 2, and 3 visits are 95.3, 93.1, 91.1 percent respectively. Completion rates at the Month 4, 6, and 8 telephonic visits are 81.5, 83.4, and 82.4 percent, respectively.

### BEDAQUILINE COORDINATION

The BDQ core project monitors the implementation of ND&Rs at country level by using several tools, among them the monthly online ND&Rs questionnaire, which was revised to include components on the new 2018 WHO guidelines on the treatment of DR-TB. From the November 2018 country profiles, the monthly country specific profiles will be generated directly from the ND&Rs dashboard using the Tableau platform. A total of 20 country calls were held during the project period. Additional targeted STTA missions were conducted to Namibia (in Nov 2018) and are planned for Vietnam (ongoing currently in Jan 2019) under the core project.

The core project produced the following documents:

- Two technical documents (i. Introduction of active TB drug-safety monitoring and management for new drugs and regimens; and ii. Guide for QTc monitoring and management of drug-resistant TB patients with QT-prolonging agents).
- Seven job aids (i. Algorithm for the clinical

At the end of the quarter, the total number of SAEs is 153, of which 41 are study defined SAEs. The most common study defined SAE is drug induced liver injury (n=30). The most common non-study defined SAEs are trauma (n=13), gastroenteritis (n=9) and anemia and pneumonia (each with six reported cases). Please note that principal investigators are blinded to the number of TB endpoints, as such, it is possible that the TB endpoint is a more common non-study defined SAE than the four mentioned here.

A joint USAID/Challenge TB/KNCV monitoring mission was held from November 5–9, 2018 in South Africa. All five study sites in South Africa were visited and findings were shared in a separate short mission report (SMR). Findings include an update on retention, which was identified as a challenge during the last performance monitoring report. As per the SMR, problems in retention were recognized and addressed with flexible, innovative, context specific, and creative interventions (further details can be found in the report).

The Year 5 Work Plan was approved on November 28 2018.

management of DR-TB/HIV coinfecting patients;

- ii. Xpert Algorithm; iii. Diagnostic tests table; iv. QTcF Job Aid: Algorithms; v. QTcF Job Aid: List of QT Prolonging Agents; vi. QTcF Job Aid: Nomogram; and vii. QTcF Job Aid: Severity Grading and Management).
- One fact sheet (active TB drug safety monitoring and management).
- A scientific manuscript (Integration of drug safety monitoring in tuberculosis treatment programs: country experiences) has been submitted to the European Respiratory Review journal.

All documents are available, on the Challenge TB website (<https://www.challengetb.org/library/pmdt>).

– In this reporting period the following documents are drafts as they are currently being reviewed by members of the team and Challenge TB partners prior to finalization and dissemination: (1 technical document Guide in the detection

and management of hearing loss during the management of DR-TB), 1 job aid (Reporting of Drug-related Adverse Events during treatment of DR-TB) and 1 fact sheet (Introduction of Routine Audiometry) Other documents (e.g. the generic ND&Rs Training Package) developed under the core BDQ project are also being updated to align with WHO's 'Treatment guidelines for multidrug- and rifampicin-resistant TB' released in December 2018.

- Three webinars were held in October and December 2018. In October 2018, the Quality Improvement tool was presented to a global audience via 2 webinars (1 in English, 1 in Russian,

## GLOBAL FUND

During this reporting quarter, the majority of countries reported the implementation of their 2018–2020 grants; eight Challenge TB countries (Bangladesh, Burma, DR Congo, Indonesia,

## COUNTRY HIGHLIGHTS

**Bangladesh** - Challenge TB is working in close collaboration and coordination with the Global Fund and in partnership with the NTP, by providing technical support to strengthen the TB laboratory network. This quarter, Challenge TB supported the NTP to produce a one pager summarizing the results of all GeneXpert machines that have installed GxAlert showing the depth of analysis that can be conducted. This was done to facilitate Global Fund decision-making to procure GxAlert for 187 GeneXpert machines that are not yet connected to the system.

**Botswana** - Challenge TB supported the NTP in the application for the next funding cycle. The in-country NTP long-term technical assistant was a member of the proposal development committee for the next funding cycle. The finalization of costed national strategic plan (2018-2023) and accompanying M&E plan was an important requirement for the application of the next TB/HIV Global Fund request (2019-2021), which were accomplished through Challenge TB technical support. This quarter, Challenge TB also supported the grant-making process: development of performance framework, funding landscape and funding gap analysis, detail activity and budgeting. The grant-making document

with 31 phone-ins). In December 2018, a webinar on DR-TB patient cohort analyses was conducted (in Russian) with 22 participants calling in. The presentations and transcripts will be available to a global audience through the Challenge TB website.

- A pre-conference ND&Rs related workshop organized by USAID with KNCV involvement, and a joint KNCV/The Union symposia were held during the 2018 The Union World Lung Conference in The Hague in October 2018. In the workshop and symposia the work achieved under the Challenge TB project and KNCV's involvement were showcased.

Mozambique, Nigeria, Tanzania, and Ukraine) have been implementing 'Finding Missing TB Cases' interventions supported through Global Fund catalytic funding.

was successfully submitted to the Global Fund.

**East Africa Region** - ECSA-HC, the principal recipient of the grant for 'supporting the Uganda Supra-National Reference Laboratory and other countries to Improve TB diagnosis in the ECSA Region' has been pre-identified by the Global Fund to submit a concept for the 'Supranational labs in Eastern and Southern Africa'. The available funding for the application is \$ 4.5 million, and implementation will begin in April 2019.

**Ethiopia** - A major reprogramming was done to the Global Fund TB grant with the aim of mobilizing funds for the procurement of the needed new drugs and implementation of the recent recommendations of WHO on the management of MDR-TB. Accordingly, a transition plan was developed that addressed the changes in the management of MDR-TB patients. As part of the preparation for the transition of Challenge TB activities, there have been a series of meetings with the NTP to re-assess the Global Fund resources in enabling the continuation of some of the critical activities that Challenge TB is presently supporting.

**Indonesia** - Challenge TB assisted the NTP in reformulating and finalizing the sub-recipient

catalytic funding proposal, which was a multi-stakeholder exercise, led by the NTP and country coordinating mechanism representatives. Challenge TB invited representatives of the TB Technical Working Group (TWG) to participate in the District Public Private Mix (DPPM) monitoring and evaluation in six Challenge TB-supported districts. The aim was to sensitize the TB TWG members on how DPPM is implemented and supported by Challenge TB, learning the good practices and experience from district stakeholders. Thus they can get the benefit from these experiences for further use in catalytic funding activities, including the use of all available tools and materials related to DPPM.

**Namibia** - The country continued to experience a shortage of GeneXpert cartridges and an interruption in laboratory services, including GeneXpert MTB/RIF and line probe assay testing. Challenge TB supported the NTP to engage Ministry of Health senior management and stakeholders like PEPFAR and Global Fund to address shortages. The Ministry of Health requested funding through reprogramming the Global Fund budget to cover 25,000 cartridges (about six months' supply). Challenge TB will continue supporting the NTP to lobby for PEPFAR support through the COP19 planning process.

**Nigeria** - Challenge TB has articulated a transition plan in close consultations with the NTP. Key highlights of the transition plan include significant gaps in continued support for high yield intervention

areas such as patent medicine vendors/community pharmacists, contact investigation and childhood TB in the current Challenge TB-supported states. The exit of Challenge TB was not given due consideration during the country submission for Global Fund support and the 14 Challenge TB supported states were not budgeted for in the approved Global Fund grant.

**Tanzania** - Challenge TB provided technical support in training of HCWs on 'Collaborative care and Control of Tuberculosis and Diabetes' in nine regions to complement Global Fund support. Challenge TB also supported distribution of 3,192 copies of 'The National Guidelines for Collaborative Care and Control of TB and Diabetes' to 16 regions to facilitate TB screening among people with diabetes at health facilities.

**Ukraine** - The patient-centered care model for MDR-TB patients developed by Challenge TB was included as the main model to support patients in the Global Fund grant. During the reporting period, Challenge TB continued assisting principal recipients in planning to scale-up the model to all oblasts of Ukraine, advising specifically on the operational aspects of building sustainable, patient-centered TB services based on outpatient case management and appropriate patient support. During the reporting quarter, Challenge TB team members participated as experts in the selection of the local partners to implement patient support activities.



## TRANSITION PLANS

All countries were asked to develop transition plans during the process of workplan development. These plans are being discussed with NTPs, USAID Missions, and in country partners (such as the Global Fund) on a regular basis. During the regular country meetings the status of the transition plans, STTA visits, sub agreements, and monthly financial projections are followed-up.

In **Malawi**, Challenge TB and the NTP jointly organized a Transition Planning Workshop in order to be able to sustain the investments made in the past five years. A total of 11 KNCV/ Challenge TB Malawi staff, one KNCV/Challenge TB technical consultant and eight NTP staff participated in the workshop. Key activities as the support for the National Reference Laboratory, zonal and district level External Quality Assurance, GxAlert connectivity, the recruitment of MDR-TB DOT Supporters and Technical Assistance to the Drug Resistant TB Survey will be handed over to the NTP. Discussions

are ongoing on the possible handing over of active case finding activities (in communities and hospitals) to the NTP. This will be a point of focus during the upcoming national program review.

The Challenge TB team in **Ethiopia** had extensive discussions with the NTP and the Ethiopian Public Health Institute (EPHI) to develop a joint transition plan in which critical activities linked to GeneXpert expansion are covered; EPHI intends to support the activities with government funding from the next Ethiopian fiscal year.

In **Bangladesh**, the Challenge TB team made an overview in collaboration with the USAID Mission of activities and products to be handed over to the NTP. The list also included the activities, recipients, timing and final responsible party/location. The USAID Mission sent an official communication to the NTP to request for further discussions regarding the transition plan.

## NEW PUBLICATIONS

### TB STIGMA – MEASUREMENT GUIDANCE

This comprehensive manual is designed to help busy people generate enough information about stigma issues to design and monitor and evaluate stigma reduction efforts. This manual is not for academics or theorists, but for health workers, professional or management staff, people who advocate for those with TB, and all who need to understand and respond to TB stigma.

[https://www.challengeTB.org/publications/tools/ua/TB\\_Stigma\\_Measurement\\_Guidance.pdf](https://www.challengeTB.org/publications/tools/ua/TB_Stigma_Measurement_Guidance.pdf)

### STANDARD OPERATING PROCEDURE FOR TB PREVENTIVE THERAPY PERFORMANCE ASSESSMENT

This is a fillable form that can be used to assess and improve TB preventive therapy initiation and completion among eligible people living with HIV who have screened negative for TB.

[https://www.challengeTB.org/publications/tools/ic/TPT\\_SOP.pdf](https://www.challengeTB.org/publications/tools/ic/TPT_SOP.pdf)

### DRUG-RESISTANT TB/HIV ALGORITHM

This job aid is to guide healthcare workers in the management of DR-TB patients with HIV co-infection.

[https://www.challengeTB.org/publications/tools/pmdt/Job\\_Aid\\_DR-TB-HIV.pdf](https://www.challengeTB.org/publications/tools/pmdt/Job_Aid_DR-TB-HIV.pdf)

### INTRODUCTION OF ACTIVE TB DRUG-SAFETY MONITORING AND MANAGEMENT FOR NEW DRUGS AND REGIMENS

This is a technical guidance document on the introduction of active drug safety monitoring and management for new drugs and regimens used in the treatment of drug-resistant TB patients. This document outlines the definitions related to aDSM, the agreed essential activities, and key steps in implementing aDSM in patients on treatment for DR-TB.

[https://www.challengeTB.org/publications/tools/pmdt/Introduction\\_of\\_active\\_TB\\_drug-safety\\_monitoring\\_and\\_management\\_for\\_new\\_drugs\\_and\\_regimens.pdf](https://www.challengeTB.org/publications/tools/pmdt/Introduction_of_active_TB_drug-safety_monitoring_and_management_for_new_drugs_and_regimens.pdf)

### GUIDE FOR QTC MONITORING AND MANAGEMENT OF DRUG-RESISTANT TB PATIENTS WITH QT-PROLONGING AGENTS (VERSION 2)

This document describes the steps necessary to determine the corrected QT (QTc) interval in ECG monitoring of patients receiving QT-prolonging medicines for the treatment of DR-TB. It also provides guidance in the management of QTc prolongation.

[https://www.challengeTB.org/publications/tools/pmdt/Guidance\\_on\\_ECG\\_monitoring\\_in\\_NDR\\_v2.pdf](https://www.challengeTB.org/publications/tools/pmdt/Guidance_on_ECG_monitoring_in_NDR_v2.pdf)

## PHOTOS

Drug-resistant TB patient Bernadetta, Malawi - Akuzike Tasowana

Patient on the STR for drug-resistant TB, Kazakhstan - Nadira Osmanova

Patient with drug-resistant TB, Indonesia - Tristan Bayly

Cured TB Patient Nsangudia, Democratic Republic of the Congo - Jean Marie Kanik

Cured TB Patient Msonga Ahemba, Nigeria - Alu Azege

Contact Investigation, Cambodia - Tristan Bayly

Miners, Ethiopia - Daniel Gemechu

Woman with TB/Diabetes and her son, Bangladesh - Tristan Bayly

GeneXpert Testing, Nigeria - Tristan Bayly

TB Patient Saima, Kyrgyzstan - Marion Biremon

Cured TB Patient Zarifa, Tajikistan - Sayora Ziyoyeva

Drug-resistant TB medication, Indonesia - Tristan Bayly

Faustina, Zimbabwe - Paidamoyo Magaya

Cured TB Patient Abhay Singh, India - Siddhesh Khetale

Back cover - Child, Indonesia - Tristan Bayly



## 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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