APMG HEALTH

FOCUSED COUNTRY EVALUATIONS

GEORGIA TUBERCULOSIS EVALUATION

FIELD-BASED EVALUATION

July 2019

Introduction

As defined by the World Bank, Georgia is a lower middle income country (World Bank, 2019). The country consists of nine regions and the capital city of Tbilisi, and the regions are further divided into districts. The country's estimated Tuberculosis (TB) incidence is 86 per 100,000 with a treatment coverage of 77% (World Health Organization (WHO), 2018). The TB program has been funded by the Global Fund since 2005 and the current grant began on January 1st, 2017 and will end on 31st December 2019. According to the current eligibility list of the Global Fund, Georgia remains eligible to receive funding for TB in 2019 (Global Fund, 2019). Although the exact date for transition is not known, as a lower middle-income country with a low or moderate disease burden, transition planning should and has begun in 2017-2019 funding period.

The Global Fund Country Team identified the following priorities for this evaluation:

- Treatment outcomes
- Laboratories: switching methods of genotyping & implications for the national database
- Issues related to health system reforms, universal health coverage
    - Gaps in the ability to incentivize health care providers
    - Progress in the provider payment mechanism
    - Integration of TB in the primary care health system
- Review of national TB surveillance system
- HIV/TB co-infection management

Georgia was selected to receive a field-based evaluation in Quarter 2 2019. The field visit took place June 17 to 28, 2019 and included:

- An inception meeting, which had a participatory component with 38 participants of the following organizations: the principal recipient (PR) National Center for Disease Control and Public Health (NCDC); the sub-recipient (SR) National Center for TB and Lung Diseases (NCTLD); Ministry of Internally Displaced Persons from the Occupied Territories, Labor, Health and Social Affairs (MoIDP&LHSA); National Reference Laboratory (NRL); World Health Organization (WHO) Country Office Georgia; Non-Governmental Organization (NGO) Tanadgoma; NGO Patient union; and NGO New Vector;
- Key informant interviews with 56 representatives of the following organizations: MoIDP&LHSA (Deputy Minister, Regulatory Authority, Head of Policy Department, Chief TB specialist; Social Services Agency), Curatio Foundation, Pharmacy at NCTLD, NRL, WHO, NGO Tanadgoma, and NGO Patient union. At site visits the team had discussions/interviews with 61 doctors, nurses, compliance consultants, data managers, coordinators, and facility managers. Site visits included interviews with patients whose details were not taken for confidentiality reasons;
- Two focus group discussions with 13 former/current TB patients, one focus group discussion with Health Care Workers (HCW), and one group interview with 11 NGO workers;
- Site visit observations at all three TB clinics in Tbilisi and clinics in Batumi, Gori, Ksani Prison Hospital, and Zugdidi; and,
- A debrief meeting with 26 participants of the following organizations: the principal recipient NCDC, the sub-recipient NCTLD, MoIDP&LHSA, NRL, and WHO country office.

While there were few limitations to conducting this evaluation, it should be noted that patients for the focus group discussions were selected by the program and HCW. This may have resulted in selection bias and these patients may have given desirable answers or may have had better experiences in care than the average patient.

More detailed information on the evaluation methodology and agenda are available in the Supplementary Information Document.

Findings

Objective 1. To evaluate the extent to which – and how – the Global Fund grants have helped enable countries to achieve a) the goals and objectives described in their national disease strategic plans and overall health sector strategy, and b) the goals and objectives agreed in the grant agreements.

Domain 1.1. Strategic information, planning, and investment

Inputs: The previous Global Fund grant supported the development of a transition plan (Curatio International Foundation, 2017). Funding of a masterplan for infrastructure optimization and human resource planning for TB service integration was planned (CCM Georgia, 2019b). The budget includes 46 fully and 36 partially funded positions staff at the National Center for TB and Lung Disease (NCTLD) and at the regional level. Outputs of those positions will be included in the relevant domains.

Outputs: The transition plan was developed and approved by the Country Coordinating Mechanism (CCM) of Georgia (Curatio International Foundation, 2017). The above-mentioned masterplan, which would have included an assessment of future needs for TB services based on epidemiological projections and several possible scenarios with varying degrees of service integration was not prepared. This is reportedly due to another similar plan, *Technical Assistance for Development of Sustainable Financing Models for TB Control in Georgia,* that was developed and distributed (CCM Georgia, 2019b). The activity was considered complete based on a reported discussion between the PR and technical partners concluding that an additional document was not needed at the time, in 2018 (CCM Georgia, 2019b).

Outcomes: The funding request includes the levels of government expenditure for TB care in 2015-2017 (CCM Georgia, 2017). The expenditure was US$ 6.13 million (GEL 13,912,649), US$ 6.43 million (GEL 15,210,272) and US$ 5.02 million (GEL 12,603,049) respectively in these three years. During the field visit, the evaluation team received the expenditure for 2018, which was GEL 13,299,700 or US$ 4.6 million, an increase in terms of GEL of 6% compared to 2017, however, lower than the expenditure level in 2015. The expenditure was substantially higher in 2016 compared to 2015 due to renovations of the pediatric hospital. The National Strategic Plan (NSP) includes a list of interventions that the Government prioritizes in either taking over from external funding or increasing the government contribution.

The NSP for TB Control in Georgia 2019-2022 includes the scope and pace of the takeover of funding of priority interventions (CCM Georgia, 2017). Key informant interviewees stated that the costing of the transition plan was included in the NSP 2019-2022. The total costs are estimated at US$ 2.4 million for both HIV and TB (Curatio International Foundation, 2017). The budget for implementation of the NSP 2019-2022 is US$ 47.3 million, of which government covers 65%, external funding 21% and a funding gap of 13% exists (Government of Georgia, 2018b). This poses the risk that core functions in TB control are not covered by government funding.

Domain 1.2. Resilient and sustainable systems for health

Inputs: The Global Fund investment supported the establishment of peer support groups in TB institutions and advocacy efforts by the program and NGOs to have ambulatory services deliver TB treatment (CCM Georgia, 2018). Furthermore, activities to strengthen the role of religious leaders and faith based organizations in TB control and prevention were planned (CCM Georgia, 2019b) as well as to strengthen core health system functions for TB control, engagement of civil society and advocacy, communication, social mobilization (ACSM), enhancing integration of TB and HIV services into the wider health system and across the continuum of care (The Global Fund, 2016). Non-governmental organization projects for case detection, case management of prevention among key populations, as well as innovative approaches in adherence support were planned (CCM Georgia, 2015). Activities around drug management and quality assurance of TB medicines are planned for later in 2019 (CCM Georgia, 2019a).

Outputs: Four peer support groups were established, each with three trained peer educators (CCM Georgia, 2018). Two high-level consensus building meetings were held with high-level hierarchy from the Georgian Orthodox church, stakeholders, and decision-makers from the ministries (CCM Georgia, 2019b).

Staff positions funded partially (the extent not shared with the evaluation team) by the Global Fund include a medicines manager, a pharmacy storage specialist, and two people responsible for the medicines inventory. These staff members assist NCTLD with quantification and forecasting and maintain the warehouse for the country for TB medicines. The Program Implementation Unit (PIU) of the PR conducts procurement through the Global Drug Facility (GDF), which ensures that the country has access to high quality TB medicines. Regions order medicines routinely on a quarterly basis, but emergency requests are possible.

Outcomes: As a result of the advocacy efforts, 35% of patients with all forms of TB received their entire treatment as outpatients at the end of 2018 (CCM Georgia, 2019b). The country has no data on previous years. Outcomes from the peer support are discussed in Domain 2.4.

The procurement and supply chain system work well due to the Global Fund funded positions. Interviews with pharmacy staff and HCW at various levels, as well as with patients, revealed that stockouts did not occur in recent years. Stock checks conducted during the evaluation at both central and regional levels revealed stocks 100% in line with the systems quantity. The process of quantification and forecasting is challenging because there is no real-time system that tracks the regimen that especially drug resistant (DR)-TB patients receive, including changes that have been made through the Extension for Community Healthcare Outcomes (ECHO) consilium. A pharmacy staff member sits in on the ECHO consilium meetings and manually keeps track of the regimen changes. More detail on this process is included under Objective 3. Furthermore, the system includes many steps, both on paper and electronically, which could be simplified; however, a full assessment of the procurement and supply chain management system is beyond the scope of this evaluation. A simpler system would be especially relevant after full transition from the Global Fund funding.

Domain 1.3. Supportive and sustainable legal, policy, and financial environments

Inputs: A training in legal/ethical issues for healthcare managers and medical and non-medical staff took place In 2018 (CCM Georgia, 2017).

The Global Fund funding also supported the improvement of financing mechanisms to support the integration and increase in coverage, effectiveness, and quality of the TB and HIV services (The Global

Fund, 2016). This includes technical assistance for health financing, human resource planning, and expansion of outpatient service delivery models (CCM Georgia, 2015). The concept note included pilots of performance-based service delivery contracts for private providers, results-based financing (RBF) for outpatient service providers, and new mechanisms for inpatient TB services. Plans included as well the engagement of primary care providers through performance appraisals (CCM Georgia, 2015).

Outputs: In May 2019, the Government approved a resolution allowing an RBF pilot to take place. This pilot is part of a randomized controlled trial, where in ten intervention facilities, both specialized TB facilities and primary health care (PHC) facilities will receive incentives based on the level of adherence of their TB patients in ambulatory care. The level of incentives and the payment schemes were arrived at through a consultative process involving all stakeholders. Since the government approval came into force in June 2019, data have not been collected and incentives have not been paid yet. The Global Fund provides the incentives under the current grant, and the expectation is that this will continue under the new grant starting from January 1st, 2020.

With support of the Global Fund, a special training program was developed for physicians from so-called 'borderline'' specialties, such as family physicians and internal medicine physicians. These specialists can then serve as TB doctors in districts where no TB doctors is currently working (eight districts at the time of the visit). This course is three months, and after passing an exam, the doctors are accredited.

Curatio International Foundation (CIF) has been contracted with the Global Fund funds to conduct an analysis of the costs incurred by health care facilities for delivery of TB services. Curatio International Foundation has finished data collection and analysis and presented these findings to stakeholders at the time of the country visit. This occurred in the last week of June 2019, when the evaluation visit took place.

Outcomes: The results of the RBF pilot are expected in November 2020, though preliminary results may be available in July 2020. The cost analysis presented to the stakeholders should lead to decisions on TB interventions with the intention to influence budget decisions for 2020. Direct outcomes for both outputs are thus not available to be included in this evaluation.

Several actions have been taken to address financial and programmatic sustainability. Rural doctors have been trained to detect TB and can refer people with symptoms directly for GeneXpert® MTB/RIF (hereafter, Xpert) testing, while previously they had to refer such people to the TB clinics. To address the threatening human resource shortage of a retiring TB medical workforce and few new incoming doctors, several measures have been taken: starting from September 2019, post graduate training (residency) in phthisiatry-pulmonology will be free for medical graduates (residents usually have to pay for their post-graduate specialist residency); the phthisiatry and pulmonology programs are now combined into certification for TB care and other Lung Conditions; and the three month-course for borderline specialists has been developed. In 2018, three doctors completed this course and were accredited as TB doctors. In addition, TB doctors can do additional training to be recognized as pulmonologists, to broaden their scope of work and generate income from treating other pulmonary diseases.

The issue of stigma and discrimination does not present a homogeneous picture. A TB knowledge, attitude, and practice (KAP) study in 2018 showed improved knowledge and practices on TB, and none of the patients consulted mentioned being discriminated against because of the diagnosis. However, several TB HCW revealed that other non-TB HCW would send (former) TB patients to the TB clinic,

often called the clinic for lung diseases to avoid the word TB, even for non-TB related health problems as they preferred not to take care of (former) TB patients themselves.

> *"Some people don't want to shake hands with me, they don't even say hello, also, they are covering their mouths. They think I have "Tchleki*[1]*" so they can't be around me."* - TB patient, focus group discussion.

Patients may opt to receive treatment in a facility not close to their place of residence because of stigma. One patient, admitted to a TB facility, denied he had TB. This patient's physician thought this was due to stigma.

> *"I don't have TB but some oncological problem, or something like that"*- TB patient, hospitalized.

By law, all Georgians have the right to access to high quality TB services (Government of Georgia, 2018a), so there do not seem to be legal issues in access to care.

[1] "Tchleki" is a historical name for tuberculosis and offensive to some patients and also causes stigma in people.

Dashboard of Core Indicators: Objective 1

Dashboard Key	
1	Very poor
2	Poor
3	Moderate
4	Good

Indicator	Score	Justification	Source of Data
Strategic planning: Availability of National Strategic Plan	**4**	National Strategic Plan for Tuberculosis control in Georgia 2019-2022 is available and costed.	(Government of Georgia, 2018b)
Strategic investment: Appropriateness of goals and objectives for epidemic context	**3**	Goals, objectives and investments in National Strategic Plan mirror recommendations from available analyses; however, there are significant funding gaps across all objectives in the plan: 12% for objective 1 (To provide universal access to early and quality diagnosis of all forms of TB including M/XDR-TB); 13% for objective 2 (To provide universal access to quality treatment of all forms of TB including M/XDR-TB with appropriate patient support); and 17% for objective 3 (To enable supportive environment and systems for effective TB control). The plan does not state clearly for all objectives where funding comes from.	(Government of Georgia, 2018b)
Performance: Achievement of targets set in grant agreement[2]	**4**	The rating was **A2** for both 2017 (CCM Georgia, 2018) and 2018 and there was no evidence of significant regress.	(CCM Georgia, 2019b)
Resilient and sustainable systems for health: Stockouts of key commodities[3]	**4**	No stockouts of key commodities reported.	Key informant interviews

[2] Refers to most recent grant agreement except when the grant was signed less than 12 months before evaluation: in these cases, this refers to previous grant agreement

[3] TB: first line medicines (HRZE, RH, RHE), child friendly formulations ((HRZ, RH; second line medicines and ancillary drugs, consumables for smear microscopy, Xpert cartridges, consumables for culture, consumables for DST for first- and second-line medicines.

Resilient and sustainable systems for health: Recognition and realization of role of community response and systems in the national response	**3**	National Strategic Plan for Tuberculosis 2019-2022 recognizes the role of community organizations and all interventions carried out by community organizations are funded by donors.	(Government of Georgia, 2018b). Key informant interviews.
Supportive and sustainable legal, policy and financial environments[4]: Identification and address of rights, legal, and gender barriers to health outcomes for individuals and populations	**3**	By TB Control Law 2015, patients have unlimited access to high quality service and the current strategic plan places emphasis on implementation of this right. Training on legal/ethical issues for relevant health staff including managers is planned for later in 2019, but no other activities funded or planned. Despite better knowledge found in a KAP study, stigma and discrimination is still an issue. In conclusion, a partial assessment carried out and minimal funding available for these activities.	(Government of Georgia, 2018b). Key informant interviews.
Composite across all relevant (6) components	**3.5**		

[4] Supportive environments may vary considerably by population. Details on rationale for scoring this indicator will be provided with scoring. In some cases, this indicator may be subdivided and scored for different populations. In this case, an average score will be calculated for the indicator overall. In some cases, it is possible that funding may be available for and implementation may occur for activities in this track, without an assessment having been conducted. If this is the case, the evaluator may use their judgment to assign a score of 3 even in the absence of an assessment having been conducted; however, this deviation and rationale for scoring should be clearly noted in the justification column.

Objective 2. To evaluate the extent to which service delivery systems (health facility and community) deliver quality services.

Several inputs and outputs may belong to more than one domain in this objective. The information has been included in the most appropriate domain and does not repeat in other domains.

Domain 2.1. Prevention

Inputs: The Global Fund funding supports contacts investigation, screening and active case finding (ACF) for TB among high-risk groups including people living with HIV (PLHIV), management of latent TB infection (LTBI), and TB infection control in health care facilities (The Global Fund, 2016).

Key populations consist of, in addition to PLHIV: people in penitentiary institutions, people with certain medical conditions such as diabetes mellitus, and subpopulations with higher risk for TB or less access to care such as homeless people

Management of LTBI includes diagnostics, treatment, guideline development, and training (Government of Georgia, 2015).

TB infection control includes national consultants revising and updating standards and developing an action plan, upper-room ultraviolet germicidal irradiation (UVGI) in certain TB facilities and particulate respirators for individual protection (Government of Georgia, 2015), and ventilation systems for the reference laboratories (CCM Georgia, 2015).

Outputs: In March 2019, the most recent version of the Georgian TB Management guidelines were approved (Government of Georgia, 2019). This guideline expands the criteria for contact investigation: all children below the age of 18 years should be tested for LTBI and those diagnosed with LTBI should receive treatment. The country will use the shorter regimen of three months of Isoniazid and Rifapentine for LTBI treatment. Adult contacts 18 years and older are to be offered LTBI testing and treatment, once active TB disease is excluded.

The updated guidelines also include more groups considered at risk for TB: prisoners, migrants, miners, homeless persons, people who use drugs, and high-risk health workers. In addition, people with clinical conditions such as patients initiating anti-tumor necrosis factor (TNF) treatment, patients receiving dialysis, and patients preparing for an organ transplant are to be screened for TB and tested and treated for LTBI. Training on the new guidelines is ongoing.

Active case finding in the prison is ongoing upon entrance and exit of the prison as well as through mass campaigns for those residing in prison long term. The Ministry of Health provides TB diagnostics and medicines and the Ministry of Justice provides the prison health staff. The Global Fund supports a TB coordinator and a TB supervisor in the prison.

The grant also provided mobile vans and training for the integrated screening as part of the zero TB initiative in Adjara region. The screening is integrated with screening for HIV and hepatitis C; the latter is part of a hepatitis C elimination campaign by the government. The HCW are funded by local government. See Domain 2.2 for further information.

The NCTLD and the National AIDS Program (NAP) initiated collaborative activities in 2005. The NTP and NAP provide technical consultations, collaborate and coordinate activities related to provision of HIV counselling and testing for TB patients, screening for active TB among PLHIV, and administration of antiretroviral therapy (ART).

For rapid identification of TB among PLHIV, one Xpert machine was installed in 2017 at the Infectious Disease, AIDS and Clinical Immunology Scientific Practical Center in Tbilisi.

Outcomes: There are no results available yet for the new LTBI diagnosis and treatment. Data for 2016-2018 suggest that there is room for improvement of LTBI treatment among TB contacts due to the small numbers that initiate LTBI treatment: 109 in 2016, 84 in 2017, and 111 in 2018. Although the denominator is unknown, it seems unlikely that that there are so few children below five years that could benefit from LTBI treatment. Contact investigation was rather successful in diagnosing TB patients: in 2018, 54 TB patients were diagnosed among 5,441 TB contacts; a rate of 992 per 100,000 contacts screened. The country does not analyze the pathway of care indicators for contact investigation systematically such as number of contacts, number of contacts screened for TB, number of contacts eligible for LTBI treatment, etc.; hence the coverage among all contacts is unknown.

Interviewees stated that PLHIV are systematically screened at each visit, however, there is no recording system available for PLHIV tested for TB nor for PLHIV receiving prophylactic treatment. The NSP states that 17.5% of the newly diagnosed PLHIV cohort in 2011-2013 had active TB (Government of Georgia, 2018a).

In prisons, ACF has been successfully carried out since several years resulting in 58 prisoners diagnosed with TB in 2016 and 37 in 2018 (data obtained from country), corresponding to 125/100,000 screened prisoners in the former and 82/100,000 screened prisoners in the latter year. The denominator is unknown, so exact coverage is not available, but the reduction in TB is likely due to a substantial reduction in prisoners. However, all staff interviewed stated that prisoners undergo entrance and exit screening; and twice a year there are mass screenings for those residing in prison. All screening is oral symptom screening with further investigations for those with symptoms.

In November 2018, WHO EURO funded a mission for on-the-job training for ultraviolet germicidal irradiation (UVGI) installation and maintenance. A subsequent assessment throughout the country revealed that most UVGI appliances were only partially shielded, which are inadequate for use while others are present in the room, as the shield only partially covers the UV lamp (WHO Euro, 2018). The assessment also found that several appliances were in rooms with low risk where other infection control measures would suffice. The assessment resulted in identifying almost 700 UVGI appliances that need replacement by louvered fixtures, which the country intends to do under the current grant.

Health facilities visited only included TB facilities where separation or fast tracking of patients is not relevant. In hospitals, drug resistant (DR) TB patients are admitted separately from drug susceptible (DS) TB patients, and those with positive sputum smears are separated from those without positive smears. Staff had N95 or N99 respirators available, though observed use was not always in line with recommendations of the manufacturer. Patients wore surgical masks in some facilities but not in the visited hospitals, not even when outside their rooms.

Health care workers do not undergo systematic screening for TB. In recent trainings, NCTBLD had taken the opportunity to test staff with interferon gamma release assay (IGRA). Some HCW did annual checks with consultations, chest X-rays (CXR), or sputum tests, while some staff thought that they did not need systematic screening as they did not experience symptoms.

"I don't need testing for TB, I think we [the staff] should be immune by now"- TB doctor

Domain 2.2. Screening/testing and diagnosis/knowledge of status

Inputs: The Global Fund funded several activities to improve and expand TB diagnosis: rollout of Xpert

and TB diagnostic investigations at the regional and national level; diagnostic investigations at regional level including LED microscopy equipment, training for laboratory staff, equipment and supplies for the reference laboratory including for MGIT and LPA; and procurement of diagnostic equipment such as a CT-scan and a bronchoscope has been requested for the national TB center for improved diagnosis in patients with respiratory symptoms (The Global Fund, 2016; CCM Georgia, 2015).

Outputs: The grant funded Xpert equipment and cartridges, including maintenance contracts for the Xpert machines. The grant further funded training for clinicians and laboratory technicians on Xpert usage as well as supervision on Xpert implementation. Medical equipment, including a CT-scan was procured for the NCTBLD (CCM Georgia, 2018; CCM Georgia, 2019).

Outcomes: The notification rate has substantially reduced in recent years, from 73 per 100,000 in 2016 to 63 in 2017 to 56 in 2018 (data received from country). The target for 2018 was 82 (CCM Georgia, 2019b), and as such the achievement of 56 is rather low.

Ninety-six percent of patients were tested with a WHO-approved rapid test in 2018 against a target of 80% (CCM Georgia, 2019b). The proportion of bacteriologically confirmed cases is above 85% of all notified cases (data received from country) and Xpert has contributed to earlier diagnosis (WHO Euro, 2019).

Treatment initiation rate for MDR-TB has improved from 88% in 2016 to 92% in 2018. For XDR-TB, this improved from 91% to 100%.

Table 1a and 1b show the results of several active case finding activities. The results of contact investigation were discussed in Domain 2.1.

Table 1a. Results of integrated screening activities

Active Case Finding activity (2019 data, Adjara region)	**Screened for TB**	**TB screen +ve**	**TB screen +ve %**
Integrated with HIV and HCV screening			
Mobile team	3,112	289	9%
Facility	19,007	144	1%
Rural doctors	14,690	15	0%

HCV = Hepatitis C Virus

Table 1b. Results of key population TB screening activities

Key Population (2018 data)	**Screened for TB**	**TB screen +ve**	**Treated for TB (%)**
PWID (2018 data)	11,837	205 (2%)	16 (8%)
Sex partners of PWID (2018 data)	934	12 (1%)	0 (0%)

PWID = People who inject drugs

The integrated screening results in fewer people with TB symptoms than anticipated. Since the start in August 2018, integrated screening with the mobile team resulted in 10% of people screened expressing symptoms and being referred to the TB clinic for further evaluation. Only one third of

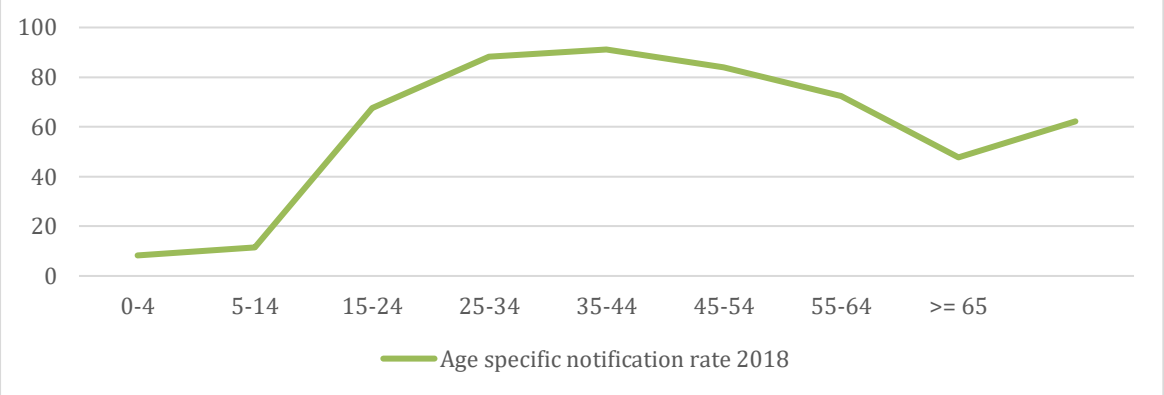
people did indeed go to the clinic for further investigation even with active follow up by the staff of the mobile team. Referrals resulted in 2 TB patients diagnosed, or 28/100,000 people screened. Even if all people with symptoms would have reported for investigation, and assuming a similar diagnostic rate, it would only result in 84 per 100,000 screened, which is similar to the estimated incidence. This suggests that this ACF modality is not cost-effective. As long as this is combined with the HIV and HCV, the resources are probably acceptable, however as a standalone ACF activity, it is doubtful whether it would contribute significantly to case finding in the country.

Although the number of TB patients who are PWID is low, the rate is quite high suggesting this is indeed a key population that warrants ACF.

Although the coverage of specialized TB staff and TB diagnostics across the country is good, there is potential for under-diagnosis of TB. The data in Table 1a and 1b suggest a rather low level of TB suspicion among rural doctors and facility doctors compared to the mobile team in which a TB doctor conducts the screening. The available data do not include how many of those referred did attend the clinic and what diagnosis resulted from the screening, if any.

Further arguments for some level of under-diagnosis in the country are that the notification rate is similar to the WHO's lower level incidence estimate, and the age-specific notification rates. Figure 1. **Age-specific notification rates for 2018** shows that the peak of the notification rate is in the 25-44-year age group, which does not indicate a maturing epidemic where notification rates are higher in the older age groups. Also, the proportion of TB patients notified in children below the age of 15 years was 4% in 2016 and 2017, and 3% in 2018 against a benchmark of 5-15% (WHO, 2014). This suggests under-diagnosis of TB in children.

Figure 1. Age-specific notification rates for 2018



Source of age data: https://www.geostat.ge/ka/modules/categories/41/mosakhleoba - accessed July 3rd, 2019. Source notification data: obtained in country from NCTLD.

Domain 2.3 Linkage to treatment and care

There are no TB services such as community-based activities that would require linkage to care and treatment. The ACF activities described in the previous domain refer people with symptoms directly to TB clinics, and if diagnosed, treatment is initiated immediately.

Domain 2.4 Treatment, clinical care, and monitoring

Inputs: Global Fund funding supports the supply of second line TB medicines, patient support, and monitoring and management of adverse drug reactions and comorbidities (The Global Fund, 2016).

Patient support includes incentives and enablers for patients, enablers for health staff visiting patients at home, psychosocial support to patients, and mobile technologies to support adherence (Government of Georgia, 2015). Monitoring and management of adverse reactions which include laboratory and clinical tests for treatment and side effect monitoring and treatment, rapid HIV tests for TB institutions, training of HCW in HIV counseling and testing, and in TB and diabetes co-management as well as the medicines to treat adverse reactions and comorbidities (Government of Georgia, 2015).

Outputs: The Global Fund grant contributed 50% of the expenditure of second line TB medicines, with the aim that the Government will cover all costs in the near future. The grant further funded training on co-management of TB and diabetes and for epidemiologists in case management (CM).

Patients on ambulatory care have several treatment options available to them: Directly Observed Therapy (DOT) at the health facility or in the community (so-called walking nurses) and Video Observed Therapy (VOT). For patients who do not have a phone, the grant procured mobile phones and airtime to allow them to use VOT. The phones have to be given back to the program, even though for MDR-TB patients, the phones are of less use because the phones are considered old after two years. Further support was paid for the development of the VOT application and the VOT nurses as well as their outreach activities. All regions received a car through the grant, and a driver and supervisor in each region is paid by the Global Fund.

The grant also covers payment of incentives to staff (see Domain 1.3 for the discussion of RBF study) and patients, as well as enablers for the latter. Patients receive their incentives and enablers only while on ambulatory treatment. Drug susceptible (DS) TB patients receive a total of GEL 160[5]: 60 after the intensive phase (if fully adherent) and 100 at treatment completion, if there are no more than five non-consecutive missed days. The money is paid directly into the patients' account. Drug resistant (DR) TB patients receive GEL 25 per week throughout the ambulatory phase of treatment if fully adherent, which is meant as support for food costs.

As part of management of TB patients, the grant supports the introduction of the ECHO consilium, focusing on DR-TB patients and the more complicated DS-TB patients, as well as the ECHO discussion with case managers in Adjara region as part of the Zero TB Initiative in that region. Previously, there was the mobile consilium, where a central team visited regions to discuss patients face-to-face and the ECHO consilium has now taken over the function of the mobile consilium. Extension for Community Healthcare Outcomes is a platform that allows for discussion among participants while monitoring the length of the session and the number of participants.

All regions have an adherence consultant, who actively engages with patients during both the in- and out-patient phase of treatment to encourage remaining on treatment through completion.

Lastly, the grant included funding for peer support provided by NGOs in the form of peer support groups in four medical institutions: Batumi, Kutaisi, NCTLD Tbilisi, and Zugdidi. In the groups, former TB patients and their relatives conduct educational and adherence support activities among TB patients on treatment. The funding further covered training-of-trainers for peer educator work; design and distribution of information, education, and communication (IEC) materials; information sessions for hospitalized TB patients and their relatives; psychological support activities; adherence counselling prior to discharge from hospital; defaulter risk assessment; and assistance in referral to relevant medical and other service providers after completion of inpatient treatment phase.

[5] GEL 160 = 57.01 USD, GEL 25 = 8.9 USD as of July 5th, 2019 (National Bank of Georgia Exchange Rate)

Outcomes: VOT started a few years ago as a demonstration project for mainly DR-TB patients in the ambulatory phase. Due to its success, it is now available for all patients who want and can use the technology. However, in one of the regions visited staff indicated that they could not use it because the technology was only available in Tbilisi. Patients are usually enthusiastic because it allows them to continue their lives with less interruption with regard to work and social life. Anecdotal evidence from key informant interviews revealed that patients who were not adherent to DOT at the facility became adherent to VOT.

None of the interviewed patients mentioned peer support groups. Different NGOs, such as Tanadgoma, work with key populations and have supported TB patients from 2008. In March 2019, Tanadgoma started implementation of a community support project for TB patients. Eleven Multidisciplinary Support Groups (MG) are active in the nine regions of Georgia. Multidisciplinary support groups are meant to support patients with DR-TB and ambulatory patients with DS-TB if expected treatment adherence is low. Patient supporting activities are performed in accordance with Standard Operating Procedures (SOP) by a skilled Tanadgoma case manager. Treatment support staff are trained with a focus on communication, referral skills, and learning support actions for the elderly and family members. The case manager makes a plan of approach and a treatment plan with activities supporting treatment adherence. Activities of MGs are supervised by a psychologist and a social worker monthly and will be reported to NCDC twice a year. Due to the recent start, no outcome data are available yet.

Although the country has made a move towards the ambulatory care model rather than the hospital care model, many patients start their treatment in hospital: 25% of susceptible patients and 80% of DR-TB patients. This proportion has been stable over recent years. While there are clear clinical reasons to justify hospitalization, it was not always clear to the evaluation team why certain patients were being hospitalized. Drug sensitive-TB patients who were admitted, mentioned they had to stay for two months in hospital, even those with negative sputum smears, which did not appear to be in line with their clinical condition. The evaluation team did not have all the details on which hospitalization had been decided.

The ECHO meetings for case management in Adjara region and ECHO consilium for DR-TB or complicated DS-TB patients are considered a good method to support staff in the regions, replacing the need for mobile consilium completely in 2018 (WHO Euro, 2019).

In general patients were very satisfied with the care and treatment they received both in and out of hospital. However, they felt their freedom of movement was limited while in hospital. Even when smear results were negative, they had to apply in writing to be allowed to leave the hospital premises even for a few hours.

Georgia has changed the TB treatment guidelines including all oral regimens for DR-TB, both the short and the long regimen. This allows also for full ambulatory treatment for DR-TB patients.

Most patients receive DOT at the health facility, though coverage for DOT modality is not reported. While for DR-TB patients there is an enabler covering the costs of transportation to the clinic for daily DOT, this is not the case for DS-TB patients. To what extent the GEL 160 serves as a motivator for patients, is not clear. One patient mentioned that although the money was appreciated, it was not much and felt that health was a more important motivator. Several patients stated that the money does eventually arrive, though payment was received only after several months. The adherence criteria are strict. For DR-TB patients, non-adherence is defined as missing one dose in a week, which may adversely result in patients not coming for the whole week. This was mentioned for one patient who reportedly said that having missed one dose already and the incentive as a result, he could as

well miss the whole week. For DS-TB patients, during the intensive phase, non-adherence is defined as missing one dose a week, while in continuation phase, the patient can have no more than 5 non-consecutive doses missed to qualify for the incentive.

Case management has the potential to improve TB treatment outcomes (ECDC, 2016). The approach currently used in Georgia is rather standardized with calls to all patients each week, with several aspects of care covered in each call and others only based on needs. Results in terms of improved treatment outcomes are not yet available.

Table 2 shows the treatment outcomes for DS- and DR-TB. The country has made some progress in improving treatment outcomes for DS-TB and substantial progress for DR-TB. However, lost to follow up rates remain high. The WHO data indicate a lost to follow up rate of 28% for the 2016 cohort of retreatment patients (WHO, 2018). Retreatment patient lost to follow up may form the basis for MDR-TB and those MDR-TB lost to follow up may form the basis for XDR-TB.

Table 2. Treatment outcomes for 2015-2017 (DS-TB) and 2014-2016 (DR-TB)

Susceptible TB	**2014**	**2015**	**2016**	**2017**
Treatment success rate		82%	81%	84%
Death rate		4%	4%	4%
Lost to follow up rate		9%	10%	7%
Failure rate		2%	2%	3%
All confirmed RR-TB/MDR-TB cases	**2014**	**2015**	**2016**	**2017**
Treatment success rate	49%	56%	65%	
Death rate	8%	6%	6%	
Lost to follow up rate	29%	25%	19%	
Failure rate	7%	10%	6%	
All confirmed XDR-TB cases	**2014**	**2015**	**2016**	**2017**
Treatment success rate	32%	56%	59%	
Death rate	11%	10%	8%	
Lost to follow up rate	25%	15%	16%	
Failure rate	13%	16%	14%	

Note: the category not evaluated is not included and therefore proportions may not total to 100%.

Domain 2.5 Approach and methods for quality assurance

Inputs: The Global Fund grant supports strengthening of the quality management system at the national reference laboratory to enable accreditation according to ISO-15189. It also supports capacity building of laboratory staff including on quality management, consisting of national training as well as international training at the supranational laboratory in Antwerp (CCM Georgia, 2015).

Outputs: National consultants are available to strengthen the quality management system at the national reference laboratory as well as support the process of ISO-certification (CCM Georgia, 2018).

Outcomes: It is unclear when ISO certification will be achieved. The evaluation team reviewed the External Quality Assessment reports for smear microscopy, which showed good agreement for smear microscopy. However, there were no reports available at the regional laboratories. Laboratory registers were in place at all visited regional laboratories.

Dashboard of Core Indicators: Objective 2

Dashboard Key	
1	Very poor
2	Poor
3	Moderate
4	Good

Indicator	Score	Justification	Source of Data
Treatment coverage: % of notified cases of all forms of TB - bacteriologically confirmed plus clinically diagnosed, new and relapses among all estimated cases (all forms)	**4**	Treatment coverage varied between 73% and 82% in the 2013-2017 period, with 77% in 2017.	(WHO, 2018)
Treatment success rate: % of TB cases, all forms, bacteriologically confirmed plus clinically diagnosed, successfully treated (cured plus treatment completed) among all notified TB cases (drug susceptible)	**3**	Treatment success rate varied between 80% and 85% for the 2012-2016 cohorts of new and relapse patients. Treatment success rate for the 2017 cohort was 84%.	(WHO, 2018) Data obtained during country visit.
Treatment success rate: RR/MDR-TB: % of bacteriologically-confirmed RR and/or MDR-TB cases successfully treated (cured plus completed treatment) among those enrolled on second-line anti TB treatment	**3**	Treatment success rate varied between 43% and 56% for the 2012-2015 cohorts of MDR-TB patients, with 56% in 2015. The Progress Update and Disbursement Request (PUDR) includes a verified treatment success rate of 67% for 2016, on which the score of 3 for this indicator is based.	(WHO, 2018); (CCM Georgia, 2019b)
ART for TB/HIV: % of HIV-positive registered TB patients (new and relapse) given anti-retroviral therapy during TB treatment	**4**	ART coverage has been above 80% since 2013 Art coverage was 100% in 2018.	(WHO, 2018) Data obtained during country visit.
Composite across all relevant (4) components	**3.5**		

Objective 3. To evaluate the extent to which country data systems generate, report, and use quality data

Several inputs and outputs may belong to more than one domain in this objective. The information has been included in the most appropriate domain and does not repeat in other domains.

Domain 3.1 Epidemiology, surveillance, and context data

Inputs: The Global Fund grant supported an upgrade of the national electronic TB database, as well as supervisory visits to all regions from central and regional level to district level (CCM Georgia, 2019a). It also supports supervisory visits to the prison; these visits serve to validate the data as well as the quality of the diagnostic process.

Outputs: Supervisory visits to all regions and the prisons from central level occur twice a year and from regional level to district level quarterly (CCM Georgia, 2019a). The national TB web-based database is not updatable by country staff and would require involvement of the organization that developed the database about 10 years ago. This occurred a few times in the past for free, but now a fee is required.

Regional coordinators receive additional payment through the Global Fund grant to supervise the districts in their region. Vehicles and drivers are also funded through the grant.

Outcomes: The evaluation team considered the TB data in the country as excellent. In one of the sites visited, observation revealed that a medical doctor of the national center had assessed the quality of diagnosis during supervision, which resulted in rejection of several of the TB diagnoses, for reasons such as the culture had shown atypical mycobacteria. This resulted in improved diagnosis the subsequent year.

Feedback from supervisory visits is provided verbally and no reports are made. Although both supervisor and supervisee keep notes, formal reports may help to keep track of actions over time and mitigate risk should the staff member move to another program or retire from service.

Although the surveillance data collection results in excellent data, the process is rather cumbersome. The facilities maintain several registers such as a contact register, a suspect register, and a TB register. To obtain data on the yield of contact investigation, one has to go through all three registers to construct the pathway of care indicators (screened, identified with symptoms, tested for TB, diagnosed with TB, and initiated on TB treatment). This is time-consuming work and is not done routinely. Also, data entry into the electronic TB database occurs at the regional level, while it would be more efficient to enter the data at the service provision level.

Domain 3.2 Service use and program data and reporting

Inputs: National program coordination meetings are held biannually. (CCM Georgia, 2015).

Outputs: National program review meetings allow regional coordinators to discuss progress in TB services with the NCDC and NCTLD. Although it is said that during these meetings, data are analyzed for decision making, there are no meeting reports or minutes to support this.

Outcomes: The NCTLD prepares an annual report of the center's activities but does not include a detailed analysis of the epidemiological situation in the country or in the regions. Interviews revealed that limited data analysis occurs at the regional level, though out of personal interest some regional

coordinators or data managers undertake efforts to analyze their data. This is rather limited and is not used for decision making at the regional level.

Domain 3.3 Using data to drive service design and practice

Inputs: A TB KAP study (CCM Georgia, 2015) was conducted.

Outputs: Outputs include operational research support related to the introduction of the shorter MDR-TB treatment regimen (CCM Georgia, 2018). The KAP study was conducted in 2018 and is discussed under Objective 1.

Outcomes: The evaluation did not identify outcomes related to this domain.

Dashboard of Core Indicators: Objective 3[6]

Dashboard Key	
1	Very poor
2	Poor
3	Moderate
4	Good

Indicator	Score	Justification	Source of Data
Data availability: HMIS deployment	**1**	The country has a fully functional TB HMIS to which more than 80% of the facilities that are expected to report, do so quarterly. In fact, 100% of the facilities that are expected to report do this quarterly.	Key informant interviews with MoH, NCDC and NCTLD staff
Data availability: availability of disease reporting in the national HMIS	**0**	Aggregate disease data are not integrated into the national HMIS because there is no national HMIS.	Key informant interviews with MoH, NCDC and NCTLD staff
Data quality: completeness	**1**	100% of reports from all reporting units expected to submit to the TB specific electronic system are received.	Key informant interviews with MoH, NCDC and NCTLD staff
Data quality: timeliness	**1**	100% of reports from reporting units are submitted timely to the TB specific electronic system.	Key informant interviews with MoH, NCDC and NCTLD staff
Composite[7] across all relevant (4) components	**3**		

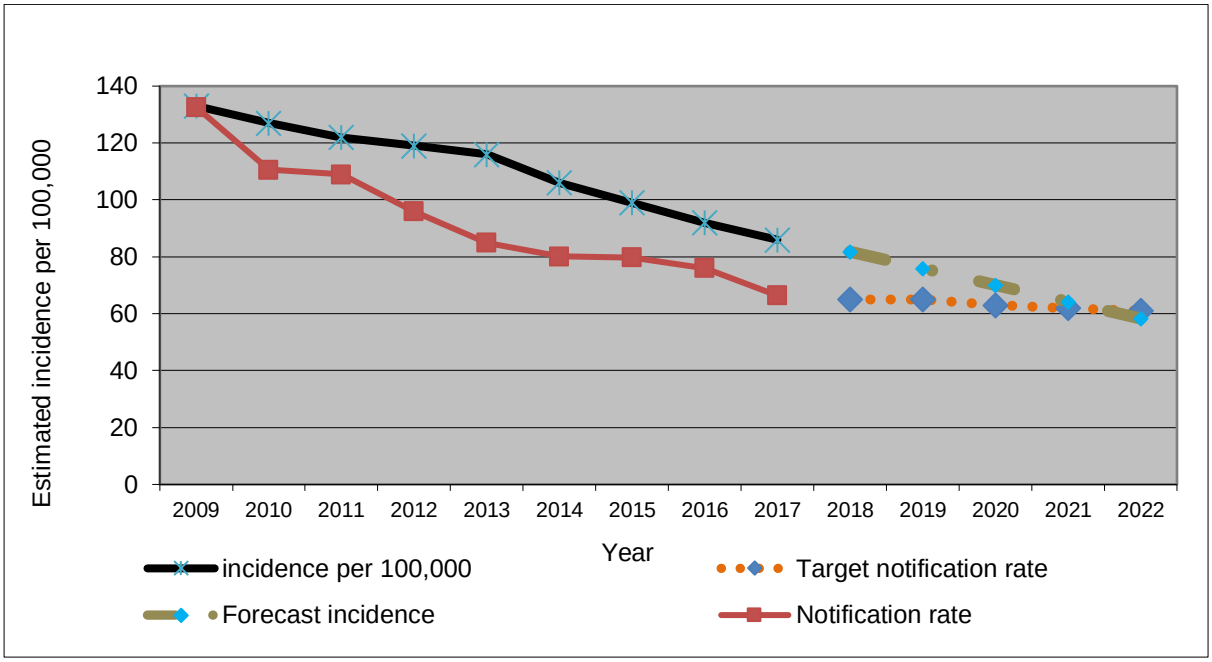
[6] *The Dashboard key for this objective applies to only the composite score. For the component score, see Basic Protocol for scoring guidance.*
[7] Composite Score for Objective 3 is a summation across all four component indicators, not an average.

Analysis

Impact

The Global Fund investments helped Georgia achieve impact in the response to TB due to investments in countrywide diagnosis and treatment for both susceptible and resistant TB. Both estimated incidence and notification rates have reduced considerably over the last decade (Figure 2). The forecasted incidence for 2018-2022 together with the target notification rates of the NSP show that the country's target notification rate coincides with the forecast incidence in 2022.

Figure 2. Incidence and notification rate 2009-2017, forecasted incidence and notification targets - NSP 2018-2022



MDR-TB treatment initiation rates have improved from 88% in 2016 to 92% in 2018, and the achievements for XDR-TB are even better: from 91% in 2016 to 100% in 2018.

Treatment outcomes have improved for all categories of TB in recent years as well. Treatment success rate for drug susceptible TB was 84% for the 2017 cohort (from 82% in 2016); for confirmed RR/MDR-TB, it was 65% for the 2016 cohort compared to 49% for the 2014 cohort; and for confirmed XDR-TB patients, the 2016 cohort achieved a 59% treatment success rate where the 2014 cohort had only a 32% success rate. Lost to follow up of TB patients remains a challenge and recently implemented interventions such as the all oral regimen for DR-TB and VOT for all patients should be closely monitored to see if those interventions achieve the expected results.

The investments have targeted all regions in the country, and a reduction in notification rates is seen in all regions.

Effective Strategic Investment

Findings from Objective 1 of this evaluation show that investments of the Global Fund have contributed to the development of the strategic plan and have funded the transition plan, which is partly reflected in the most recent NSP 2019-2022.

Investments and support from the Global Fund have achieved an effective procurement and supply chain systems with no reported stockouts of essential TB commodities.

Findings from Objective 2 of this evaluation show that the Global Fund's investments have substantially contributed to increasing the capacity of HCW to deliver quality TB services throughout the country. In addition, rapid molecular diagnostics are available in all districts and in two prisons; the NRL is about to move to a state of the art building where almost all modern TB diagnostics would occur, with another laboratory embarking on TB genome sequencing; a variety of treatment modalities are available to patients together with incentives and enablers for patients and HCW; and peer support from former TB patients in available in some places in the country.

Findings from Objective 3 of this evaluation show that the Global Fund investments have contributed to maintaining a TB electronic database through staff input, meetings with regional coordinators, and supervisory visits. The data capture registers at facility level are well kept and are of good quality.

Sustainability

Findings from this evaluation show that the Global Fund investments contributed to helping Georgia build up in-country systems and mechanisms for a response to TB that can be sustained over time. Programmatically, this is clear from capable staff and services, both diagnostic and treatment, which are available throughout the country. There is a strong laboratory network offering rapid molecular tests in all districts with most modern TB diagnostics of high quality available in the country. Treatment modalities including VOT and patient support is available to all patients, even though criteria are quite strict.

Financial sustainability is more challenging with many essential functions such as PSM staff still largely funded by the Global Fund. A transition plan has been developed and included in the NSP 2019-2022, even though the evaluation team could not ascertain full inclusion of core functions such as aforementioned PSM staff. Furthermore, a funding gap of this NSP of 13% exists (Government of Georgia, 2018b). The Government expenditure for 2018, which was GEL 13,299,700, an increase of 6% compared to 2017, however, was lower than the expenditure level in 2015. The funding necessary will depend on the development of the epidemiology, as continued increases in the funding may not be needed with a reduced incidence. Financing of TB services through private hospitals still has its challenges because the level of funding may not be considered sufficient to maintain TB services, especially if the incidence reduces further. Under the current grant costing analysis have been made and are expected to influence budget decisions for 2020. Even though there is no date set for transitioning from the Global Fund funding, Georgia is among the countries that are in preparation (The Global Fund, 2018).

Factors most critical to address in helping ensure that improvements in systems and outcomes are likely to be sustained by Georgia over time in its ongoing response to TB include:

- Prepare for continued reduction in incidence which will require a continuous adaptation of the health care system in its provision of TB services. In addition to the reduced incidence, the shift from a hospital care model to an ambulatory care model, which the country has

successfully introduced and is expanding continuously, will require health care staff working in the community rather than from health facilities, which requires different skills. With the ambulatory care model, fewer TB beds in hospitals are needed, and the use of VOT will require fewer resources as well. The development of a masterplan, as was included in the current grant, including an assessment of future needs for TB services based on epidemiological projections and several possible scenarios with varying degrees of service integration, would assist the country with long term planning.

- Adequate financing for TB care will be crucial to sustain the response. Currently, TB is financed as a Vertical State Program and not under the Universal Health Care Program (UHCP) package. Doctors form a substantial proportion of the TB professionals, in some facilities even in roles that would not necessarily require a medical degree such as DOT supervisors. Although HCW including doctors are not well paid in Georgia, some form of task shifting to non-doctors may increase financial sustainability of the program. Many of the doctors working in TB are of or beyond retirement age, with few new doctors entering the specialty, which jeopardizes continuation of care on the long term.
- The treatment provision is still largely health care system focused, even though a shift to a more people centered care approach has been made. Further expansion of ambulatory care is necessary, with more focus on supporting the patient to finish their treatment according to the needs of the individual. This would require a case management approach starting with a needs assessment and offering to the extent possible services to address these needs; it may require a flexible incentive scheme, and enablers for patients who can't cover their transport costs or need assistance with food. Also, where possible patients should have some flexibility in DOT: self-administration of the medicine on weekends and tailored care so that they can work, if the clinical condition allows.
- Close monitoring of interventions is crucial to assess which intervention results in expected outcomes. Analysis of data is crucial for decision making and such analysis should also take place at regional and possibly at lower levels as well, to assess their performance and improve care where possible. A recent study suggested that the involvement of local staff in analyzing their own data, resulted into improved program performance (Heldal et al., 2019).
- Close monitoring requires a good electronic data system, preferably real-time, which is flexible to some extent to the needs of the country. Although the current system provides good quality data, it is not adaptable at all by the country and does not cover all the needs of the country. Because it is not adaptable, new data fields can't be added which reduces the possibility of routinely monitoring new interventions. It can also not be linked to the laboratory information system and therefore relevant laboratory data are entered manually.

Analysis relative to the Global Fund's Blueprint for Country Portfolio Priorities Analysis (v1.0) is provided below.

Table 3. Global Fund's Blueprint for Country Portfolio Priorities Analysis

Dimension	Critical Activities
Find and effectively treat more cases	- Diagnosis and testing have improved with a high bacteriological confirmation rate of TB. The proportion of bacteriologically confirmed cases is above 85% of all notified cases (country data) and Xpert has contributed to earlier diagnosis (WHO Euro, 2019). - Treatment coverage, however, varied in the last five years from 73% (2013) to 77% (2017). It reached 82% in 2016 (WHO, 2018).

Dimension	Critical Activities
	- The country introduced all oral regimens for DR-TB for both the short and the long regimen. - Treatment is available throughout the country at TB clinics and private facilities.
Prevention of new cases	- In 2019 the country has updated its guidelines on ACF and LTBI diagnosis and treatment. Although at the time of the evaluation there was no evidence yet that this contributed to increased prevention, such results are to be expected. - Health is considered a human right and access to TB services is defined in the TB Law of 2015.
Increase funding available for TB	- Political commitment of government has been strong as reflected in available legislation. - The government has embarked upon an HCV elimination campaign, which includes many people who inject/injected drugs and has added TB and HIV screening to this campaign. - CSOs can be contracted by government to provide health services, however, that is currently not happening. Some CSOs express concern that government procurement mechanisms (based on tenders) will not allow inclusion of small, low-resource organizations. - Domestic financing of the TB response has remained more or less at the same level over recent years. - There is no evidence of mobilization of resources beyond GF and the government. Several projects funded through other donors/organizations (the Joint United Nations Programme for HIV/AIDS (USAID) and Médecins Sans Frontières (MSF)) have ended.
Reduce cost of fighting TB	- There have been no price reductions of programmatic inputs through improved PSM, and these are not expected to occur for TB medicines and commodities. Georgia poses a small market, and procurement through GDF is probably the most cost-effective method of procuring quality assured TB medicines. - Treatment protocols are optimized, with all oral regimens recently introduced. - There is hardly any task shifting, which is also not an aim of the program and neither feasible as Georgia has a large number of doctors and few nurses (Richardson & Berdzuli, 2017). - There is some evidence of integration of TB interventions into the work of rural doctors, who did not diagnose or treat TB before, however, no results in terms of numbers and outcomes are available currently.

Recommendations

#	Major Recommendations	Priority	Who to implement?	By when?	Implications for Global Fund funding
1	Include in the routine data analysis interventions recently implemented and use the findings for decision making. Interventions that should be included in the routine data analysis include but are not limited to: – LTBI diagnosis and treatment in children; – Uptake and outcomes of LTBI treatment in adults; – Peer support; – VOT; – Results based financing; – Active case finding interventions; and, - Patient incentives for treatment adherence.	High	NCDC, NCTLD	Continuous	None
2	Offer TB care based on needs of the patient: ambulatory care for those who don't need hospitalization; ambulatory care can be supported with: - Incentives and enablers where necessary; the country may wish to evaluate the current system to assess how to best implement; and, - Change the current case management approach from mostly standardized to mostly needs based	High	NCDC, NCTLD	2020, with later adaptation if necessary	None

	- peer support.				
3	Assess the need for an electronic information system and develop system or use an existing system (e.g. DHIS2). See for more information annex 1.	Medium to High	MoIDP&LHSA in collaboration with NCDC and NCTLD,	Mid 2020	TA for assessing the needs of Georgia. A possible source of finding TA may be The Global Fund's M&E roster.
#	**Minor Recommendations**	**Priority**	**Who to implement?**	**By when?**	**Implications for Global Fund funding**
4	Establish recording and reporting for TB collaborative activities (screening for TB among PLHIV and uptake and coverage of TB preventive therapy for PLHIV) in the HIV program as part of routine data collection and analysis.	Medium	HIV program	End 2019	No implications for funding, however, the TB evaluation team recommends that the HIV evaluation scheduled for 2020 pays attention to this aspect too
5	Assess the possibility of under-diagnosis, for example through weaknesses in case finding, and take appropriate action.	Medium	NCTBLD	2020	TA may be needed to select a method; a possibility is the MATCH approach (KIT RTI, 2017).

References

Country Coordinating Mechanism Georgia. (2015). *Concept note Tuberculosis Georgia*.

Country Coordinating Mechanism Georgia. (2017). *Funding Request for program continuation Georgia Tuberculosis.*

Country Coordinating Mechanism Georgia. (2018). *PUDR GEO-T-NCDC PUDR Dec 31, 2017 LFA verified final final*.

Country Coordinating Mechanism Georgia. (2019a). *GEO-T-NCDC_Budget_Reprog_24052019*.

Country Coordinating Mechanism Georgia. (2019b). *PUDR GEO-T-NCDC PUDR 31 Dec 2018 LFA Reviewed*.

Curatio International Foundation. (2017). *Georgia transition plan.*

European Centre for Disease Control and Prevention. (2016). *Guidance on tuberculosis control in vulnerable and hard-to-reach populations.*

Government of Georgia. (2018a). *National Strategic Plan for Tuberculosis Control in Georgia 2019-2022*.

Government of Georgia. (2018b). *National Strategy for Tuberculosis Control in Georgia 2019-2022*.

Government of Georgia. (2019). *National (Georgian) Guideline for TB Management; Updated version 2019; Short English version*.

Heldal, E., Dlodlo, R. A., Mlilo, N., Nyathi, B. B., Zishiri, C., Ncube, R. T., Siziba, N., & Sandy, C. (2019). Local staff making sense of their tuberculosis data: Key to quality care and ending tuberculosis. *The International Journal of Tuberculosis and Lung Disease: The Official Journal of the International Union Against Tuberculosis and Lung Disease*, *23*(5), 612–618. Retrieved from https://doi.org/10.5588/ijtld.18.0549

KIT Royal Tropical Institute. (2017, October). *MATCH: mapping and analysis for tailored disease control and health system strengthening*.

Richardson, E., & Berdzuli, N. (2017). *Georgia: Health system review. 19*(4).

The Global Fund. (2016). *Grant confirmation letter signed (GEO-T-NCDC)*.

The Global Fund. (2018). *Projected Transitions from Global Fund support by 2025 – projections by component*.

The Global Fund. (2019). *Global Fund. Eligibility list 2019*. Retrieved from https://www.theglobalfund.org/media/7214/core_eligiblecountries2018_list_en.pdf?u=636737408030000000

World Health Organization. (2014). *Standards and benchmarks for tuberculosis surveillance and vital registration systems*.

World Health Organization. (2018). *Global tuberculosis report.*

World Health Organization Regional Office for Europe. (2018). *TB Infection Control Assessment (TB ICA) tool laboratory part pre-piloting mission and on-the-job training for UVGI installation and maintenance.*

World Health Organization Regional Office for Europe. (2019). *Compendium of good practices in the implementation of the Tuberculosis Action Plan for the WHO European Region 2016–2020*.

World Bank. (2019). World Bank Country and Lending Groups – World Bank Data Help Desk. Retrieved April 16, 2019, from https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-WHO

Supplemental Information

Please see the following document for information regarding additional project background, specific methodology, and limitations of this evaluation.

Annexes

Annex 1: Additional information on recommendation 3

Recommendation 3: Assess need for an electronic information system and develop system or use an existing system (e.g. DHIS2).

The first step in this recommendation is to agree on the needs that the system should respond to. Several needs mentioned and observed during the country evaluation were surveillance, medicines management, patient management, and a combination of those. It may be that one system cannot fulfill all the needs, and that existing systems could already fulfill some of the needs.

Once the country has agreed on the needs of the system, the system can be selected (if existing) or developed. The potential system would also depend on the available resources for development, implementation, and maintenance.

Factors to take into account when selecting or developing the system:

- Ensure system is adaptable for and by the country;
- Linkage with other information systems such as the laboratory and pharmaceutical systems maybe beneficial;
- Data entry should be feasible at service level; and,
- Ensure system allows pathway of care indicators assessment, such as people screened, people tested, people diagnosed, etc., with disaggregation (gender, age, KP).