Tanzania TB Diagnostic Network Assessment

Implementation overview

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Presentation coverage

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- ❑Overview of TB DNA
- ❑Methodology for TB DNA
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TUBERCULOSIS SITUATION IN 2020

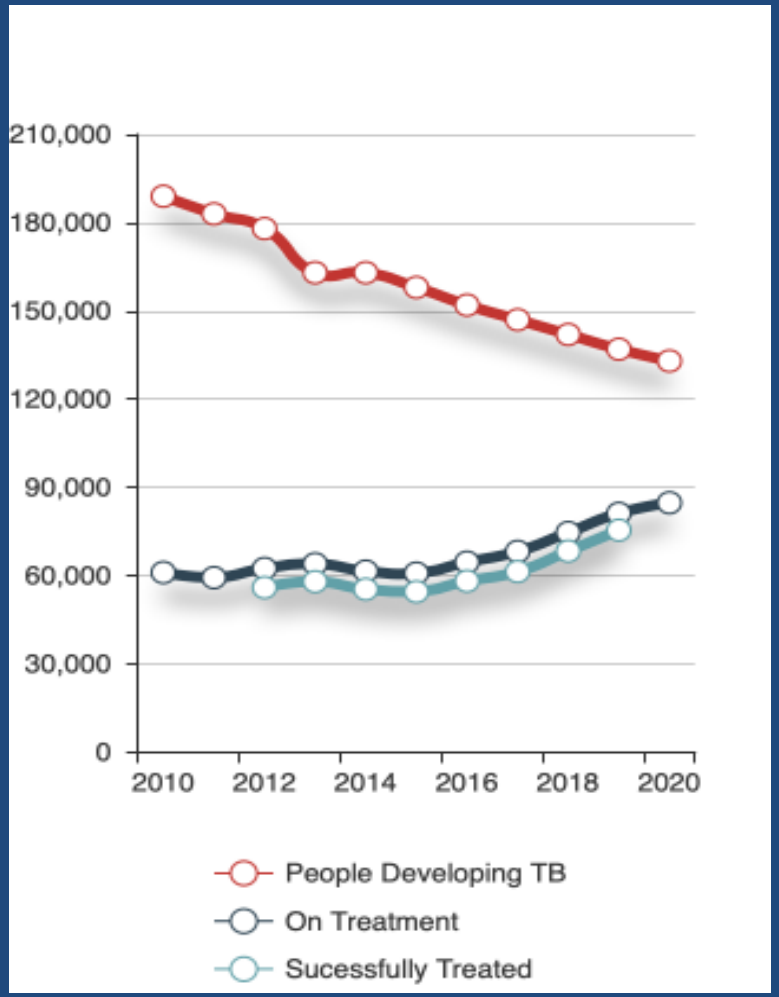
UNITED REPUBLIC OF TANZANIA

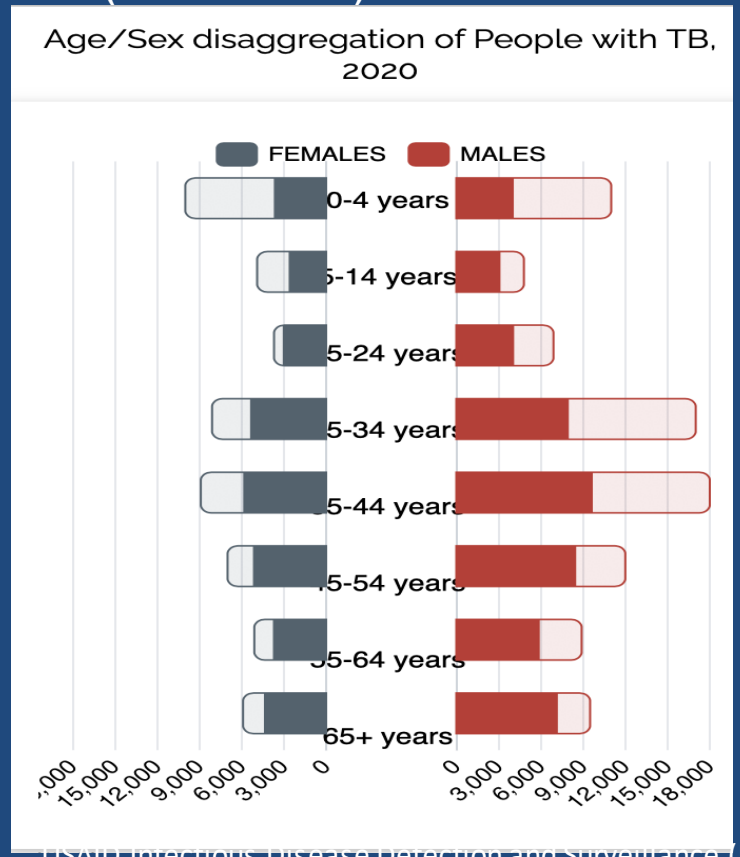
Population: 59,734,213
Lower middle-income

133,000 -3%

estimated people who developed TB. Among them **22,000** were Children

TB continues to be a major public health problem in the United Republic of Tanzania. The country is among the 6 high-burden TB countries in the world (WHO 2020).



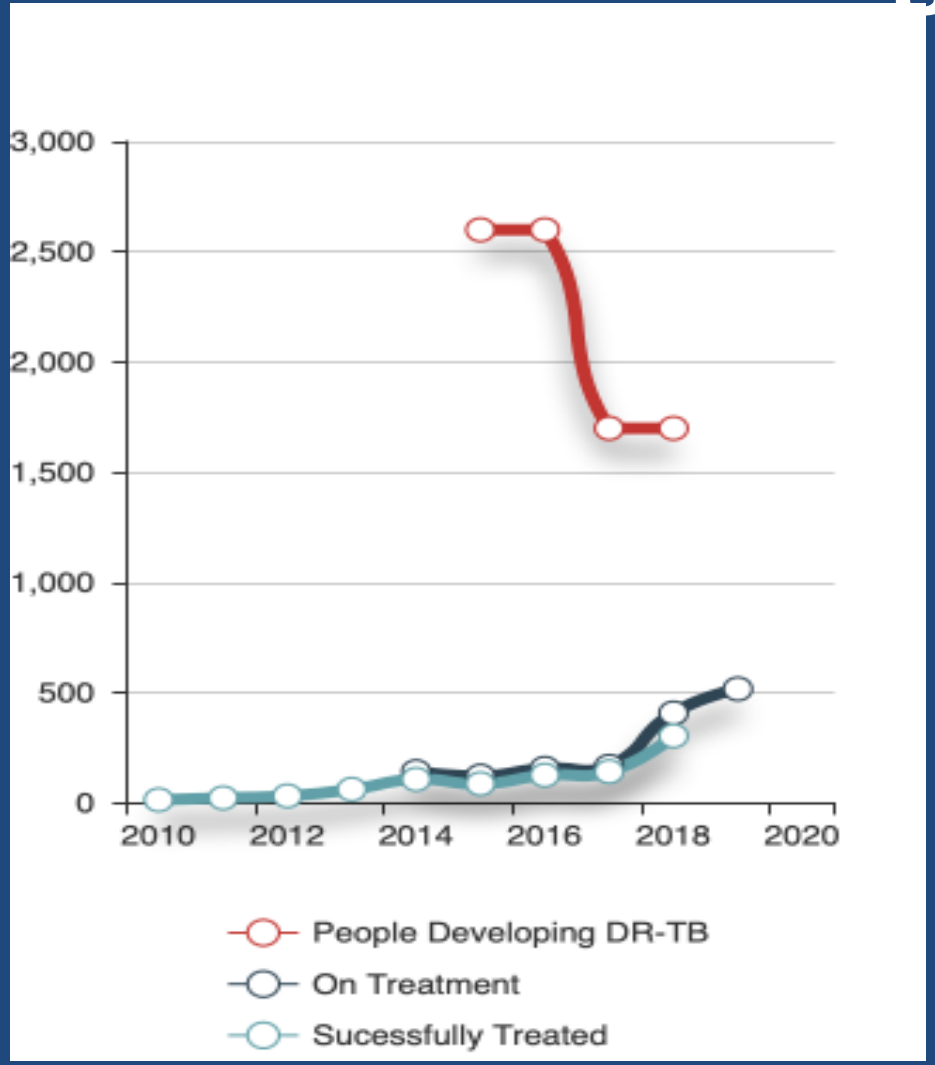


Yes(Y)/No(N)

Is High TB Burden?	Y
Is High DR-TB Burden?	N
Is High TB-HIV Burden?	Y
Eligible for Global Fund Funding (TB or TB/HIV)?	Y
Participates in GF Strategic Initiative to find missing people with TB?	Y
Active national TB MP Caucus?	Y
National StopTB Partnership?	Y

USAID Infectious Disease Detection and Surveillance (IDDS)
https://www.stoptb.org/static_pages/TZA_Dashboard.html

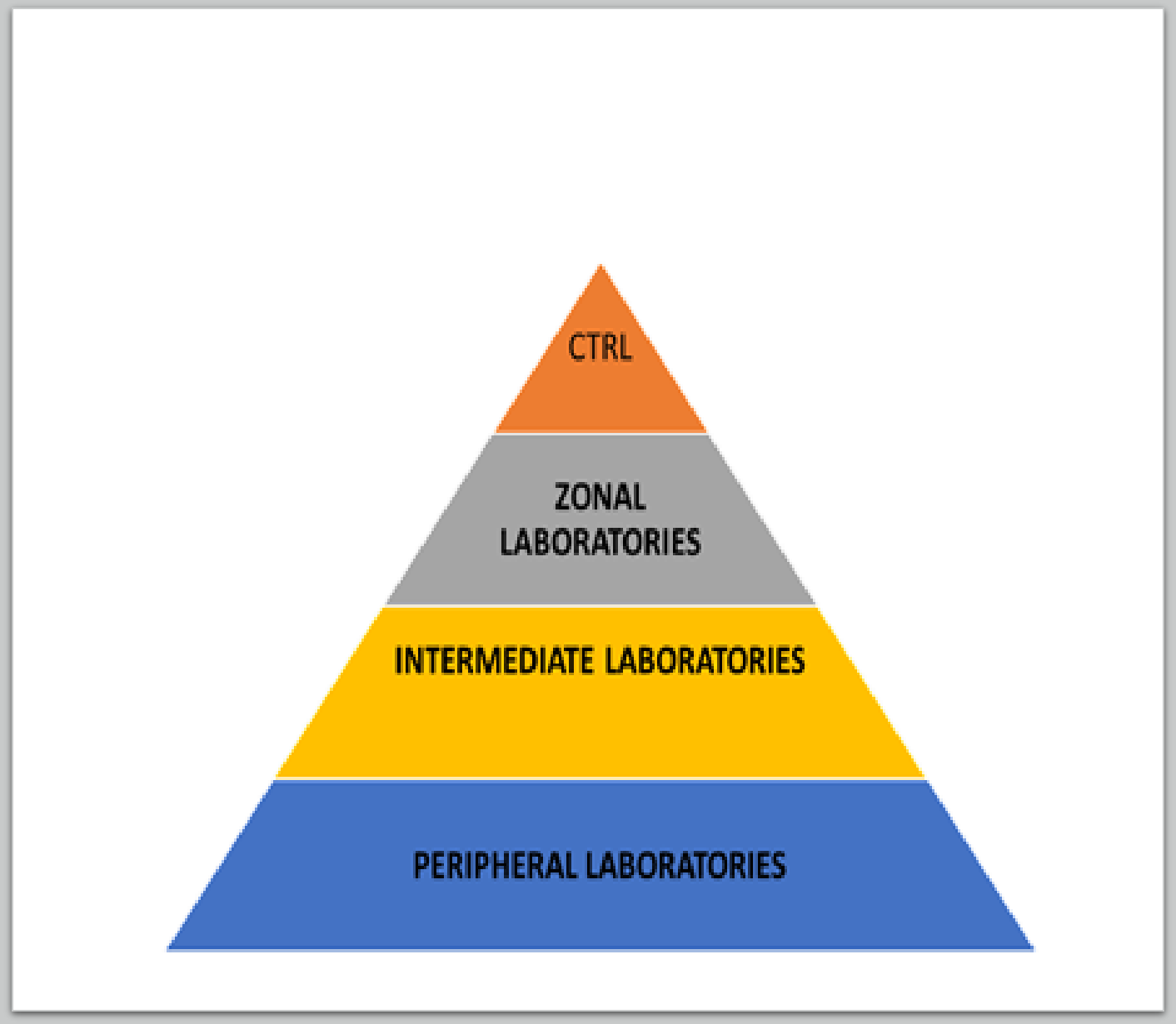
Limited access to diagnostics remains a challenge



- The country has adopted WHO-recommended diagnostics, including AFB smear Microscopy, Xpert Mycobacterium tuberculosis (MTB)/RIF, line probe assay (LPA), and culture.
- The main challenge to attaining universal access to drug susceptibility testing (DST) is the limited access to rapid diagnostic tests using Xpert MTB/RIF and underutilization of available GeneXpert machines

TB diagnostic Network

- A comprehensive, high-quality TB diagnostic network is essential to diagnose TB accurately and rapidly and to link confirmed TB patients to appropriate and timely treatment.
- TB laboratory services in Tanzania are managed through the Central TB Reference Laboratory (CTRL) that is under the NTLP of the MOH.



The TB diagnostic cascade

USAID Infectious Disease Detection and Surveillance (IDDS)

End term review of NSP V (2016- 2020) NTLP identified some major challenges

Low bacteriological confirmation rate among the notified pulmonary TB cases.

Limited number of TB tests accredited under ISO15189 standards to the CTRL and the zonal laboratories

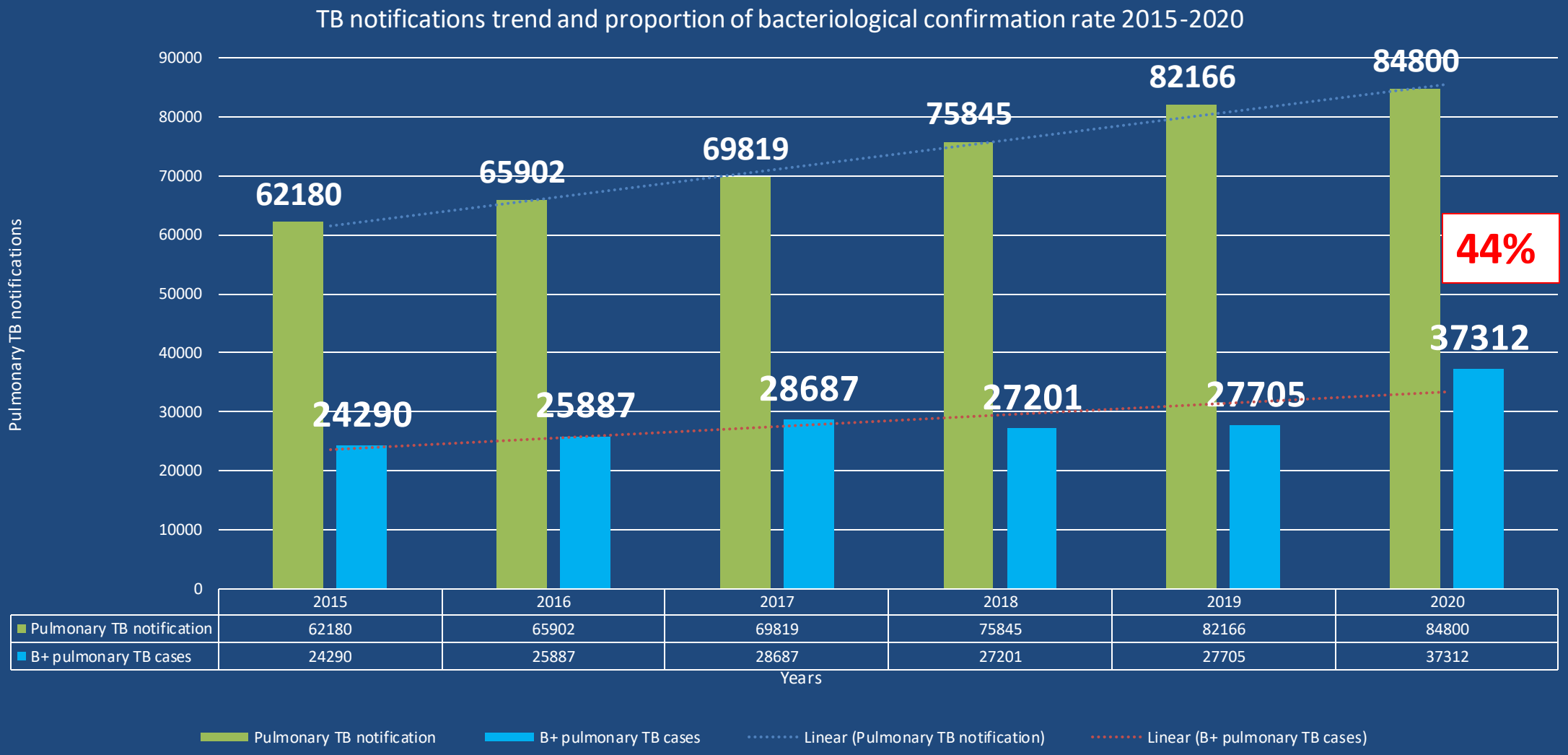
Meeting biosafety and biosecurity standards (specify gap)

Achieving universal access to WH-recommended TB diagnosis (specify gap)

Receiving timely diagnosis and results feedback due to a fragmented specimen transportation system

Only 23 % of the notified new and relapse TB were tested with rapid diagnostics at diagnosis.

Trends for TB notifications and proportional of Bacteriologically positive among Pulmonary cases



USAID Infectious Disease Detection and Surveillance (IDDS)

The challenges from the NSP -V performance review necessitated carrying out the TB Diagnostic Network Assessment .

Overview of Tuberculosis Diagnostic Network Assessment (TB DNA)

- Aims at comprehensively evaluating a country's TB diagnostic network to assess the functionality and performance of the national TB diagnostic network from the perspective of the ability to meet the needs of the country's NSP
- **Key Objectives:**
  - Evaluate the diagnostic network, current practices and algorithms
  - Identify challenges that prevent the overall diagnostic network from performing efficiently and effectively
  - Propose evidence-based short- and medium-term interventions to improve access, capacity and quality of the TB diagnostic network to increase detection of TB and MDR-TB as outlined in the NSP.

Methodology

- The assessment included consultations with the MOH, NTLP, Central TB Reference Laboratory (CTRL), and other stakeholders involved .A total of 35 TB diagnostic and clinical facilities in 12 geographical regions.

- Regions, districts, and facilities were randomly selected
- The assessment used an assessment tool (TB-Net Tool) that uses semi-quantitative scoring.
- The tool help to identify the stage of various aspects of the diagnostic network to describe current capabilities and identify key areas for improvement.

The assessment tool – Capacities and components

1. Political, legal, regulatory and financial framework	
Components	Legislation and policies
	National TB Policy and plans
	Governance
	Financing and budget

2. Structure and organization of the diagnostic network	
Components	Diagnostic network
	Coordination and management
	Programmatic and operational research

3. Coverage	
Components	Diagnostic network coverage
	Sample referral system
	Linkages
	Emergency preparedness

4. Diagnostic algorithm	
Components	Algorithms
	Detection of TB
	Detection of DR-TB

5. Biosafety	
Components	Facilities
	Biosafety and biosecurity manual
	Biosafety systems
	Specimen Storage
	Waste Management

6. Equipment and supplies	
Components	Supply chain management
	Equipment management

7. Workforce	
Components	Education and training
	Staffing
	Human resources development strategies and plans
	Competency-based job descriptions

8. Diagnostic data management	
Components	Data collection Forms
	Reporting
	Diagnostics connectivity and remote monitoring
	Data analysis and sharing
	Surveillance and Epidemiology
	Security and confidentiality of information

9. Quality of the diagnostic network	
Components	Documents and document control
	Quality Assurance
	Quality management System
	Certification and Accreditation

Methodology…

The assessment team reviewed the self-assessed staging conducted by the program, visited various facilities, and consulted numerous stakeholders to assess the functionality and performance of the national TB diagnostic network from the perspective of its ability to meet the needs of the country's NSP.

The entire assessment process…

Pre-assessment
data collection and analysis

(August to September 2019)

Self-assessment
of the TB diagnostic network core capacities by the country using the TB-Net Tool (May 2021)

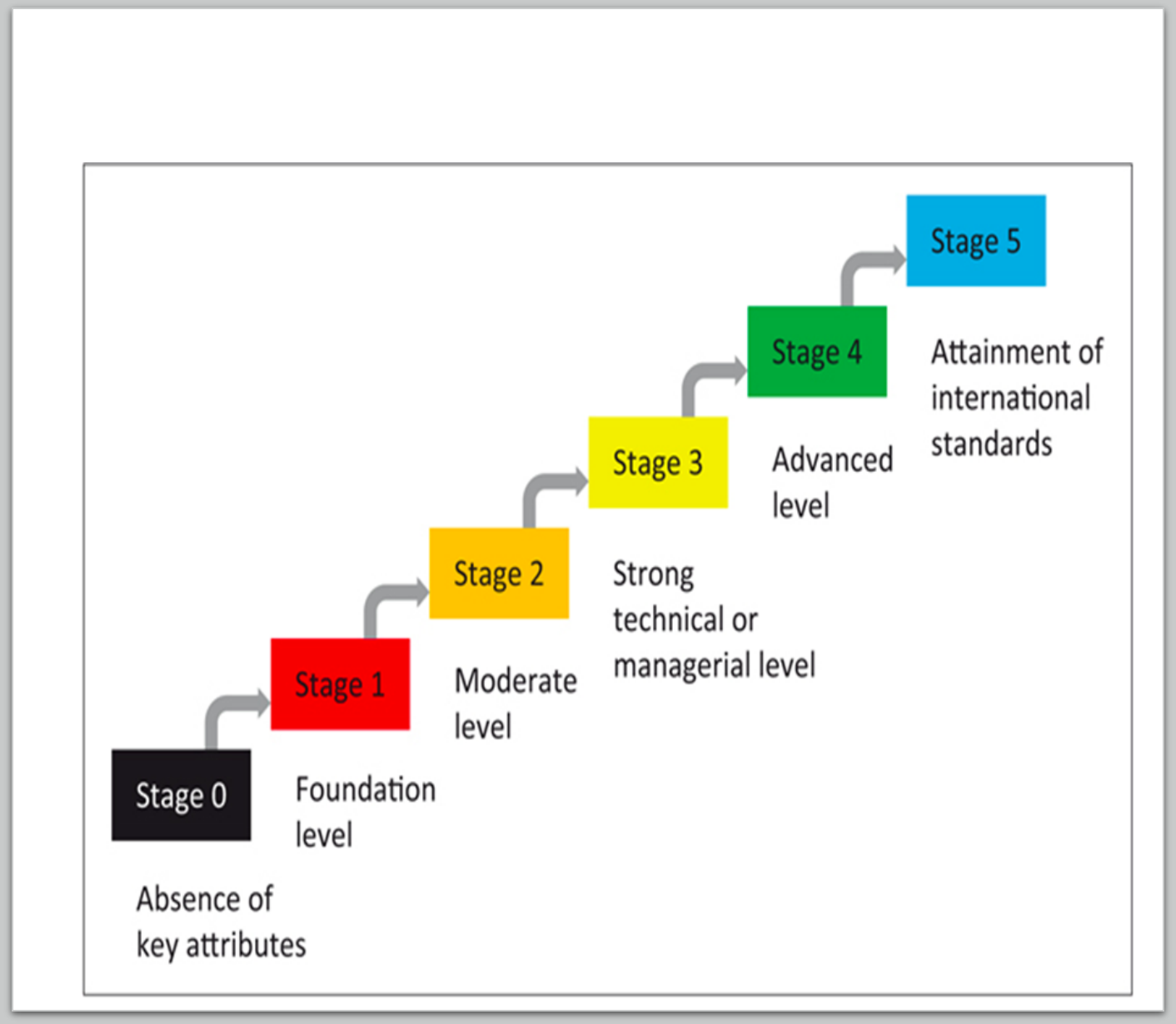
Review of self-assessment
by team and in-country verification by a team laboratory experts during site visits and other stakeholder meetings while in country (June and July 2021)

Review of overall findings
data gathered from parts 1–3 and development of recommendations and priority interventions (August 2021------)

The assessment team reviewed the self-assessed staging conducted by the program, visited various facilities, and consulted numerous stakeholders to assess the functionality and performance of the national TB diagnostic network from the perspective of its ability to meet the needs of the country's NSP.

TB DNA General findings

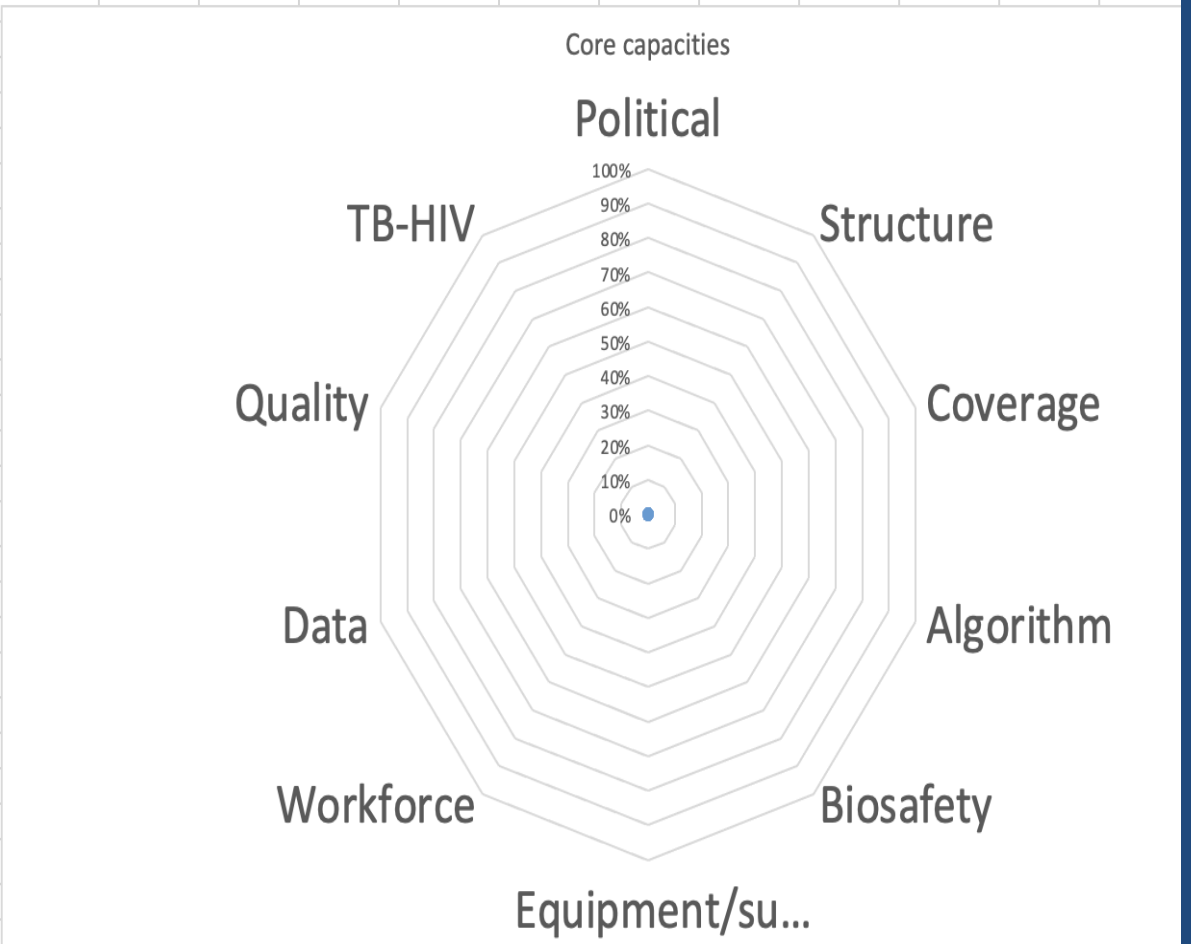
- The findings were based on the 10 core capacities, in each core capacity there were capabilities with stages from 0 to 5.
- Semi-quantitative scoring procedures were used to identify **capability stages** for each component and identify areas for improvement.



Scoring

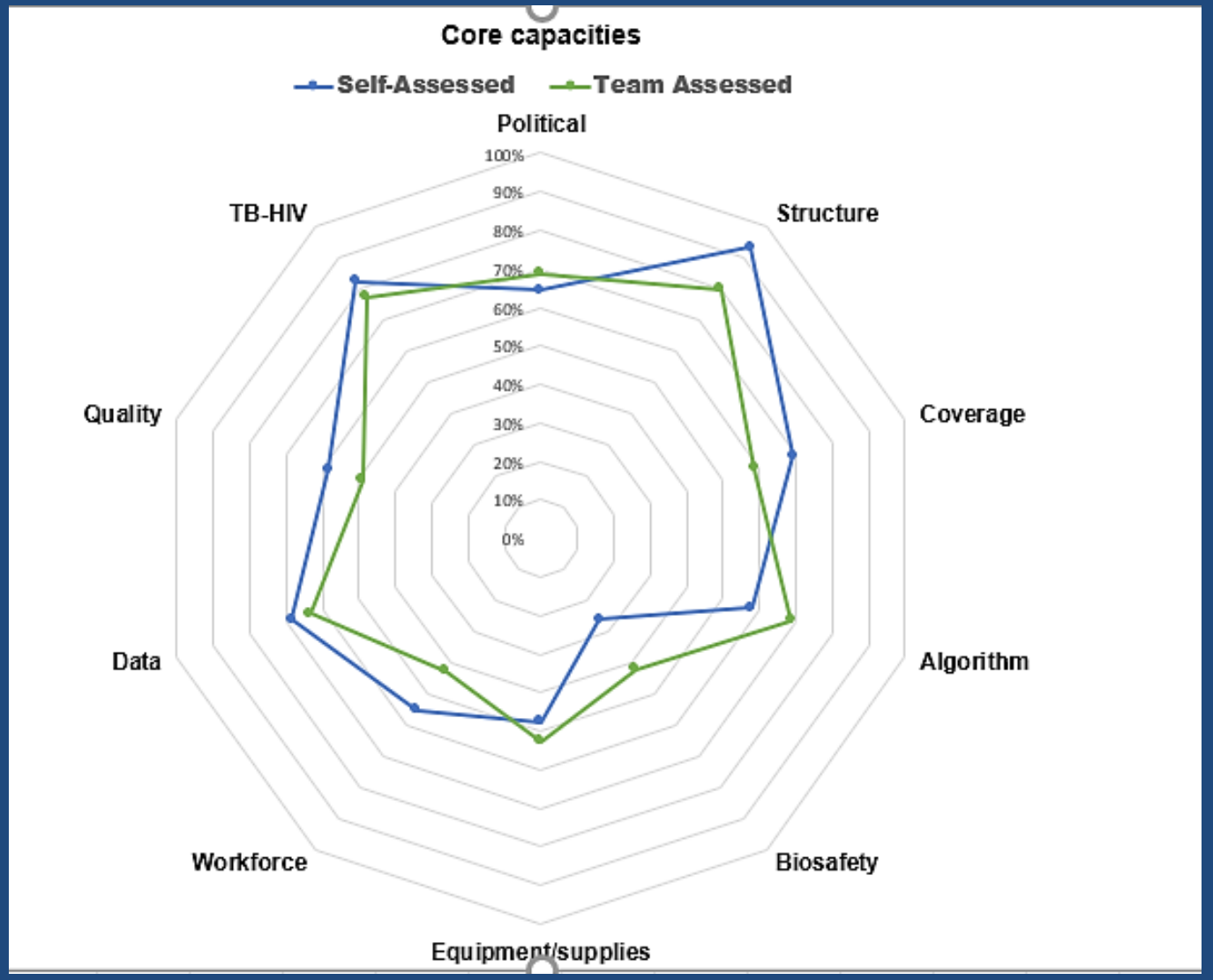
Core Diagnostic Network Capacities	Component Assigned Stage (0-5)	Capacity Average score (%)
The score reported below is for each component within a core capacity. Average percentage scores for each core capacity are provided on worksheet 11.		
1. Political, legal, regulatory and financial framework		0%
Legislation and policies		
National TB policies and plan		
Governance		
Financing and budgets		
2. Structure and organization of the diagnostic network		0%
Diagnostic network		
Coordination and management		
Programmatic and operational research		
3. Coverage		0%
Diagnostic network coverage		
Sample referral system		
Linkages		
Emergency preparedness		
4. Diagnostic algorithm		0%
Algorithms		
Detection of TB		
Detection of drug resistant TB		
5. Biosafety		0%
Facilities		
Biosafety and biosecurity manual		
Biosafety systems		
Waste management		
6. Equipment and Supplies		0%
Supply chain management		
Equipment management		
7. Workforce		0%

0	1	2	3	4	5



Summary of self and team assessment scores

Core Capacity	Capability Percentage	
	Self-assessed	Team-assessed
1. Political, legal, regulatory, and financial framework	64%	64%
2. Structure and organization of the diagnostic network	93%	80%
3. Coverage	69%	59%
4. Diagnostic algorithm	58%	69%
5. Biosafety	26%	42%
6. Equipment and supplies	48%	53%
7. Workforce	55%	45%
8. Diagnostic data management	58%	72%
9. Quality of the diagnostic network	58%	51%
10. TB-HIV	83%	79%



Summary …

Core Diagnostic Network Capacities	Component		Capacity		0	1	2	3	4	5
The score reported below is for each component within a core capacity. Average percentage scores for each core capacity are provided on worksheet 11.	Assigned Stage (0-5)		Average score (%)							
	SELF	TEAM	SELF	TEAM						
1. Political, legal, regulatory and financial framework			64%	64%						
Legislation and policies	4	3								
National TB policies and plan	1	2								
Governance	5	4								
Financing and budgets	2	2								
2. Structure and organization of the diagnostic network			93%	80%						
Diagnostic network	3	3								
Coordination and management	5	3								
Programmatic and operational research	5	3								
3. Coverage			69%	59%						
Diagnostic network coverage	2	2								
Sample referral system	2	2								
Linkages	4	3								
Emergency preparedness	0	1								
4. Diagnostic algorithm			58%	69%						
Algorithms	1	2								
Detection of TB	1	1								

General findings…

Strengths

- An organized and structured TB diagnostic network is in place with clearly defined tiers with specific roles and responsibilities and led by a strong CTRL, which performs essential clinical and public health functions.

- Collaboration between the HIV and TB programs is working very well and leading to excellent linkage to testing and care for patients. The detection of TB among people living with HIV could be improved by widespread use of the lateral flow lipoarabinomannan test.

Some key Gaps & Recommendations

Gaps	Recommendations	Responsible
Available policies and guidelines are not fully implemented at all levels of the diagnostic network.	Enforce dissemination and implementation of policies and guidelines at all levels of the network	The MOH, NTLP, and the CTRL
A national TB biosafety manual is not available, Biosafety cabinets at regional and local levels were out of repair or not recently certified. Biosafety officers at local facilities reported having minimal training.	should accelerate development and dissemination of a national TB biosafety manual and provide training for all biosafety officers throughout the network. A program should be conducting an annual screening of health care workers for signs and symptoms of TB.	The MOH, NTLP, and the CTRL
Many facilities did not have a program for routine screening (at least yearly) of workers for signs and symptoms of TB		

Gaps & Recommendations….

Gaps	Recommendations	Responsible
Diagnosis of pediatric TB was challenging in many settings because there was a lack of capacity for, and training in, collecting specimens from children	Mobilize resources to train and equip facilities to collect good specimens from children	The CTRL and the NTLP
There are different practices in handling specimen referral from one place to the other	Enforce implementation of integrated specimen referral system though out the diagnostic network	The CTRL and the NTLP

Gaps &Recommendations…

Most laboratories reported having an adequate number of staff; however, there is **no national staffing plan** supported by workforce projections.	**Ensure availability of well-trained, competent laboratory workers. Priority actions should include developing a national staffing plan for TB laboratories supported by workforce projections and developing a comprehensive program to provide refresher training to all laboratory workers and to assess and document staff competency.**	**The NTLP and the CTRL**
Many facilities reported a lack of refresher training for staff and that there was not a system in place to assess and document the competency of staff.		

Data from KPI at facility level are not routinely reviewed.	• **Build capacity to staff on data review and analysis** • **Rolling out use of electronic information management system.**	**CTRL and NTLP**
There was a lack of dedicated staff for data management, as well as a lack of training on data management for laboratory staff		
Stockouts of Laboratory regents as well as triple packaging materials.	Formalize reporting of stockouts and expiration and initiate corrective actions to identify the root cause of the challenges and determine whether they are regional or systemic. Need for proper forecasting and quantification	
Routinely verification to ensure the quality of reagents.		

Lessons learned

- Country led coordination and ownership plays a key role in successful implementation of TB DNA
- Once capacitated, staff can provide cooperation to perform the assessment virtually for some of the components.
  - There were unprecedented delays of process implementation due to COVID-19 pandemic
- Contract and deploy local consultants
- Use of electronic tool

Next Steps

- Carry out a dissemination meeting with MoH, NTLP , CTRL, WHO, CDC, USAID and other stakeholders.

- MOH, the NTLP, and the CTRL to lead and coordinate efforts among all stakeholders, including technical partners and donors.

- Routine follow up of the action items developed from the recommendations.

- The recommended key interventions and priority actions described in this report will assist Tanzania to reach its TB diagnostic goals with the ultimate goal to eliminating TB.

Acknowledgement

- Tanzania's Ministry of Health; the National Tuberculosis and Leprosy Program; the Central Tuberculosis Reference Laboratory; and the President's Office, Regional Administration and Local Government.
- Implementing partners and donors that provided critical input throughout the assessment, especially World Health Organization-Tanzania.
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