Dashboard and Data for Actions
UNITED REPUBLIC OF TANZANIA

""LabCoP M&E SubCoP ECHO session "

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23rd January 2025

Outline

- Overview
- Organization structure
- Assessments
- eSRS Dashboard
- CTC3 Macro Dashboard
- System Integration
- Transforming data into actions
- Challenges and Lessons Learnt

Abbreviations

CTC – Care and Treatment Clinic
CTC2 – Care and Treatment Clinic Version 2 Database
CTC3 – Central Database for CTC2 (national-level database)
DDR – Diagnostic Data Repository
DNO - Diagnostic Network Optimization
EMR – Electronic Medical Record
eSRS – Electronic Sample Referral System
GoTHoMIS - Government of Tanzania Health Operation Management Information System
HEID – HIV Early Infant Diagnosis
HFR - Health Facility Registry
HVL – HIV Viral Load
LIS – Laboratory Information System (e.g., Disalab)
POC – Point of Care
TAT – Turnaround Time

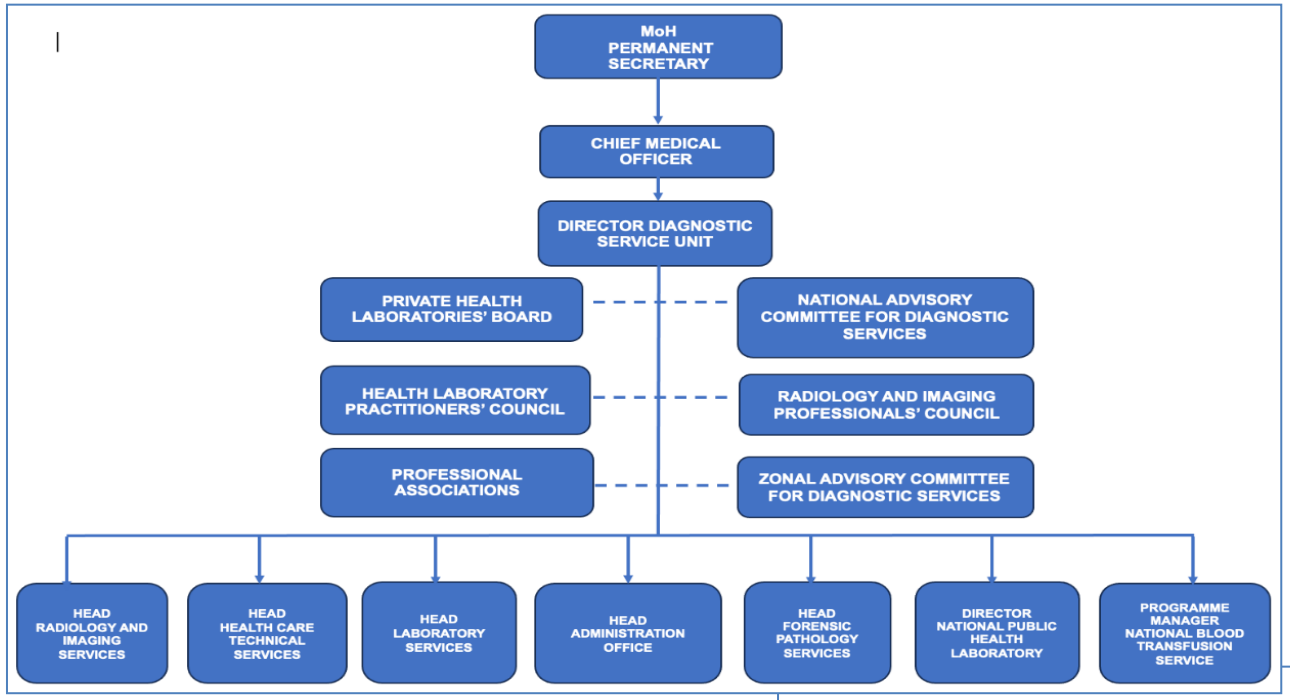
Tanzania

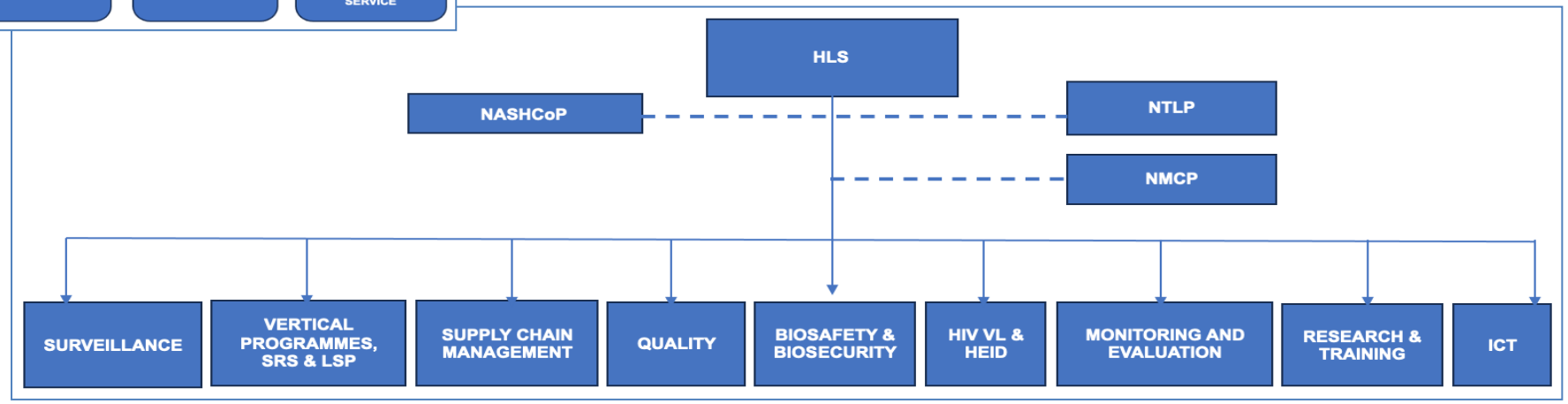
- Tanzania is implementing preventive, care, treatment, and support interventions

- With a population of 67.44 Million, it is striving to achieve the Global target of ending HIV epidemic by 2030

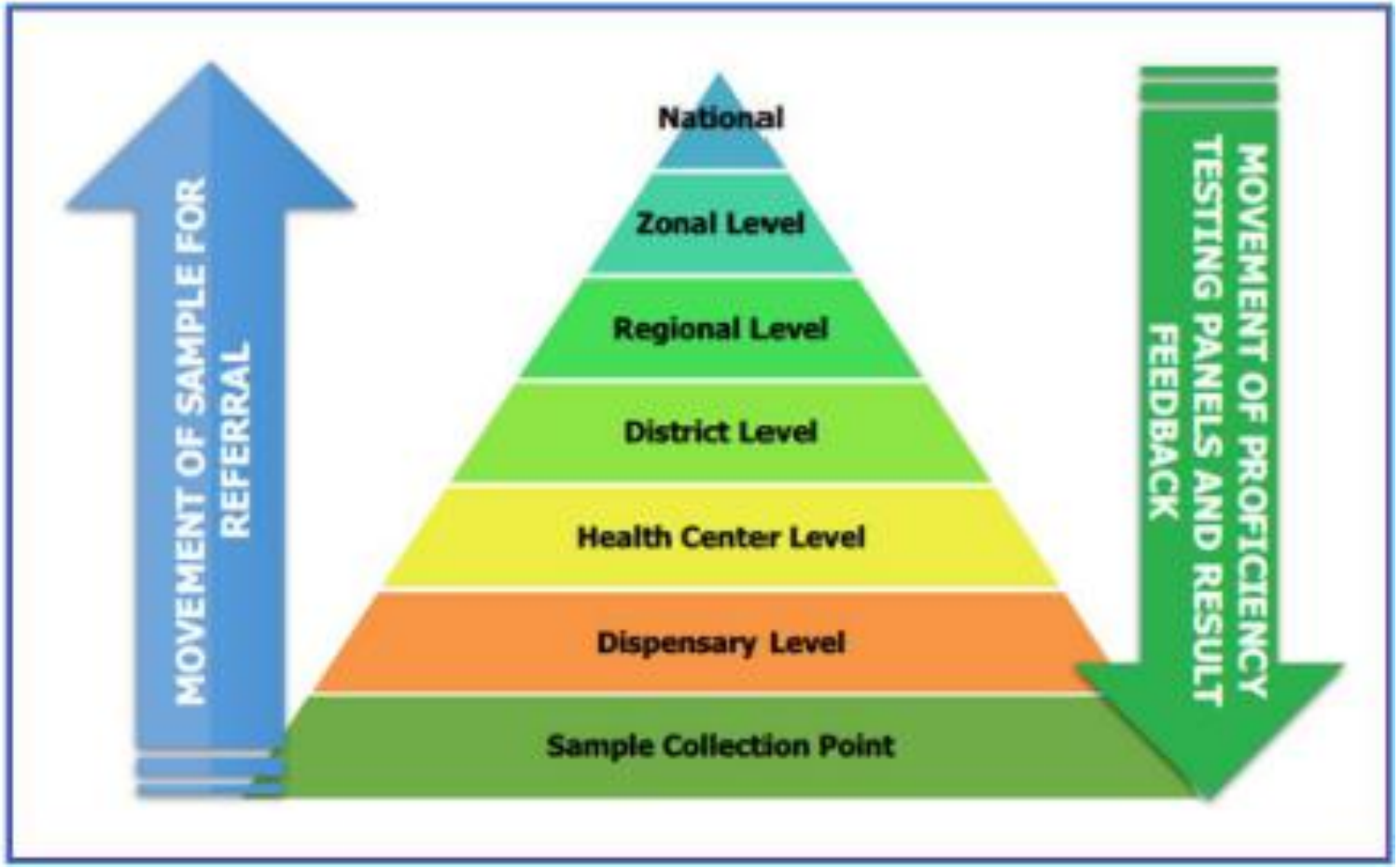
HIV Prevalence	
Adult General Population	4.4%
Adult Male (15 - 24 yrs)	1.0%
Adult Female (15 - 49 yrs)	3.8%
Number of People Living with HIV	
Total	1,548,000
Children (<15 yrs.)	73,610
New HIV Infections per year	
Total	60,000
Children (0-14 yrs)	4,621
AIDS-related Deaths	
Total	21,697
Children (<15 yrs.)	2,921
Mother to Child Transmission of HIV	
MTCT Rate at 6 wks	2.6%
Final MTCT Rate (Total)	6.5%

Laboratory Network Governance





Laboratory Tier System



LabCoP participation and assessments

- Tanzania is one of the founder member countries of the LabCoP since 2019
- The country has been participating in assessments (WHO and ASLM score cards) for improvement
- Tanzania has consistently been strong in utilization of assessment results/feedback to improve laboratory services

Domains	2019	2024
Demand creation for HIV Testing		
Specimen collection and processing		
Sample transportation		
HIV VL Testing		
Waste Management and Biosafety		
Supply Chain and Equipment Maintenance		
Result utilization		
Leadership & management		

Data availability at national level for VL cascade

Country	Tanzania			
Indicator	2021	2022	2023	2024
Number of VL Labs	✓	✗	✓	✓
Number of VL Machines	✓	✗	✓	✓
Testing capacity	✓	✗	✓	✓
Number of tests last 12 months	✓	✗	✓	✓
National reagent rental agreemet available	✓	✗	✓	✓
Estimated number of people living with HIV	✓	✗	✓	✓
PLHIV Current on ART	✓	✗	✓	✓
PLHIV on ART on 1st line	✓	✗	✓	✓
PLHIV on ART eligible for VL	✓	✗	✓	✓
PLHIV on ART received routine VL test	✓	✗	✓	✓
PLHIV on ART virally suppressed	✓	✗	✓	✓
Virally suppressed PLHIV on less intense model of care	✓	✗	✓	✓
PLHIV with >=1000 RNA who received EAC	✓	✗	✓	✓
PLHIV with >=1000 RNA who received a followup VL testing within 3-6 months of EAC	✓	✗	✓	✓
PLHIV with >=1000 copies/ml who were suppressed	✓	✗	▬	✓
PLHIV with 2 consecutive VL tests >=1000 who switched to 2nd or 3rd line regimen	✓	✗	▬	✓

Currently, all data is available at the National level through the CTC2 Database visualized by Macro3 (CTC3) Dashboard

✓	Data available at national level
▬	Data **somewhat** available at national level (some regions)
✗	Data not available at national level.

Lab CoP

ASLM

JEE results

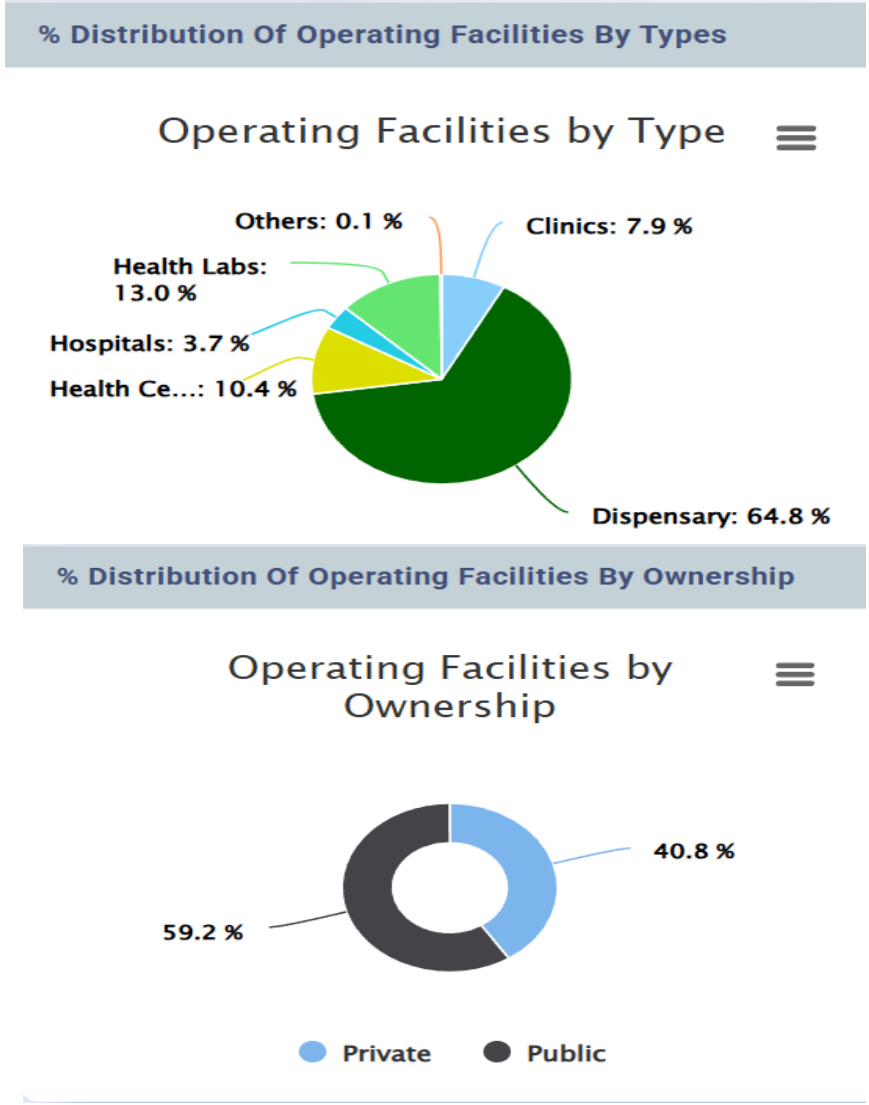
- Tanzania participated twice in JEE (Feb-2016 and Aug-2023)
- Significant improvement has been noted in
  - Sample referral system;
  - Laboratory Testing Capacity Modalities
  - Effective National Diagnostic Network
- LIMS contributed to the significant improvement of the indicators

Indicator	2016	2023
D.1.1 Laboratory testing for detection of priority diseases/ Effective National Diagnostic Network	3	4
D.1.2 Specimen referral and transport system	2	4
D.1.3 Effective modern point-of-care and laboratory-based diagnostics/ Laboratory Testing Capacity Modalities	3	4
D.1.4 Laboratory quality system	3	3

HFR Portal

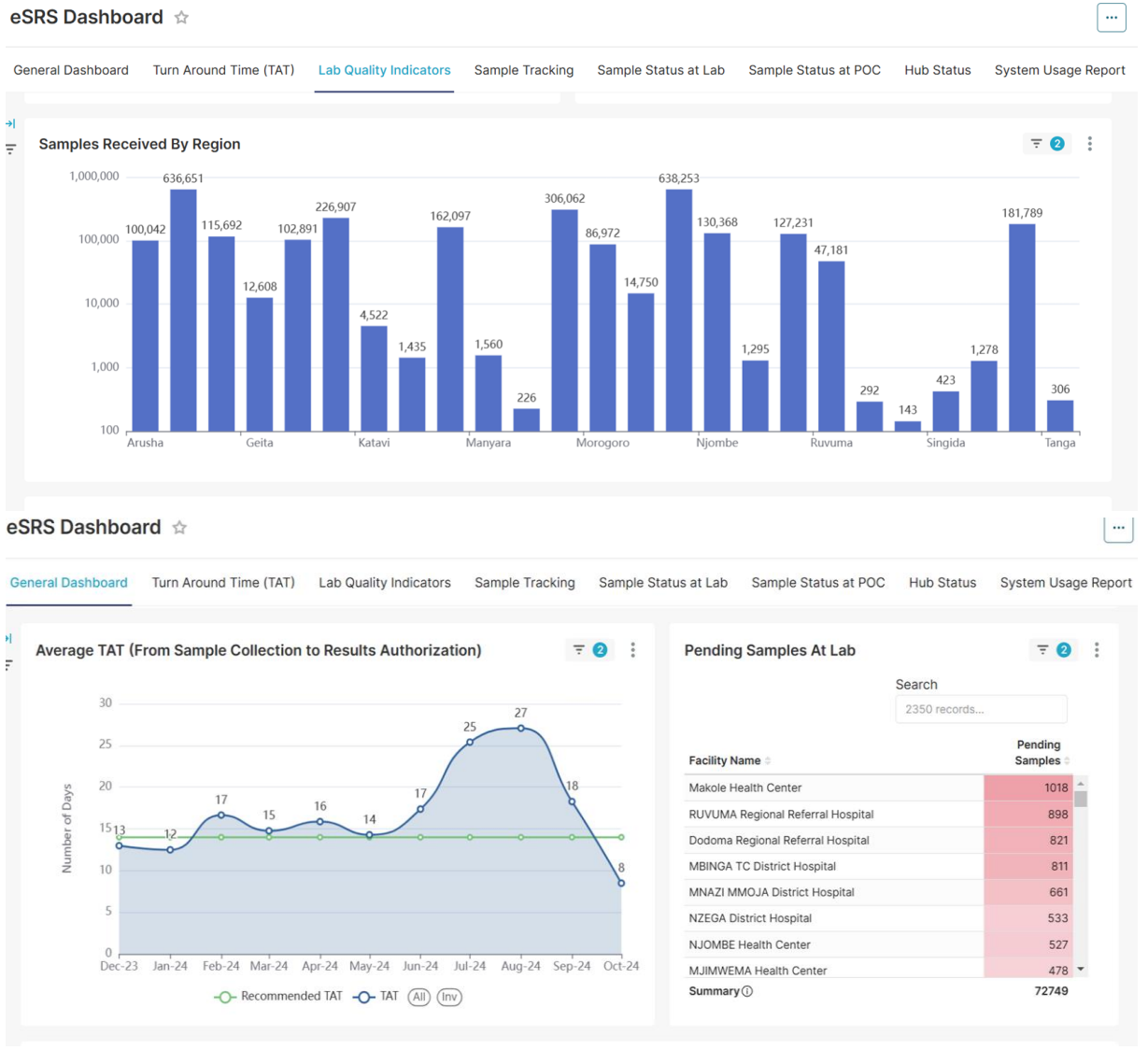
- System for registration of both Public and Private Health Facilities in Tanzania Mainland
- System helps to visualize number of HF's with their capacities
- The system has enabled MOH for mapping sample referral and Diagnostic networks
- **12861** HF's registered

https://hfrs.moh.go.tz/web/index.php?r=portal%2Findex



Electronic Sample Referral System (eSRS)

- Electronic system for sample and result tracking
- System integrate HIV, TB, HPV and surveillance samples
- The system has been integrated with couriers tracking systems
- Scale up to include tracking of influenza and emerging diseases samples is underway

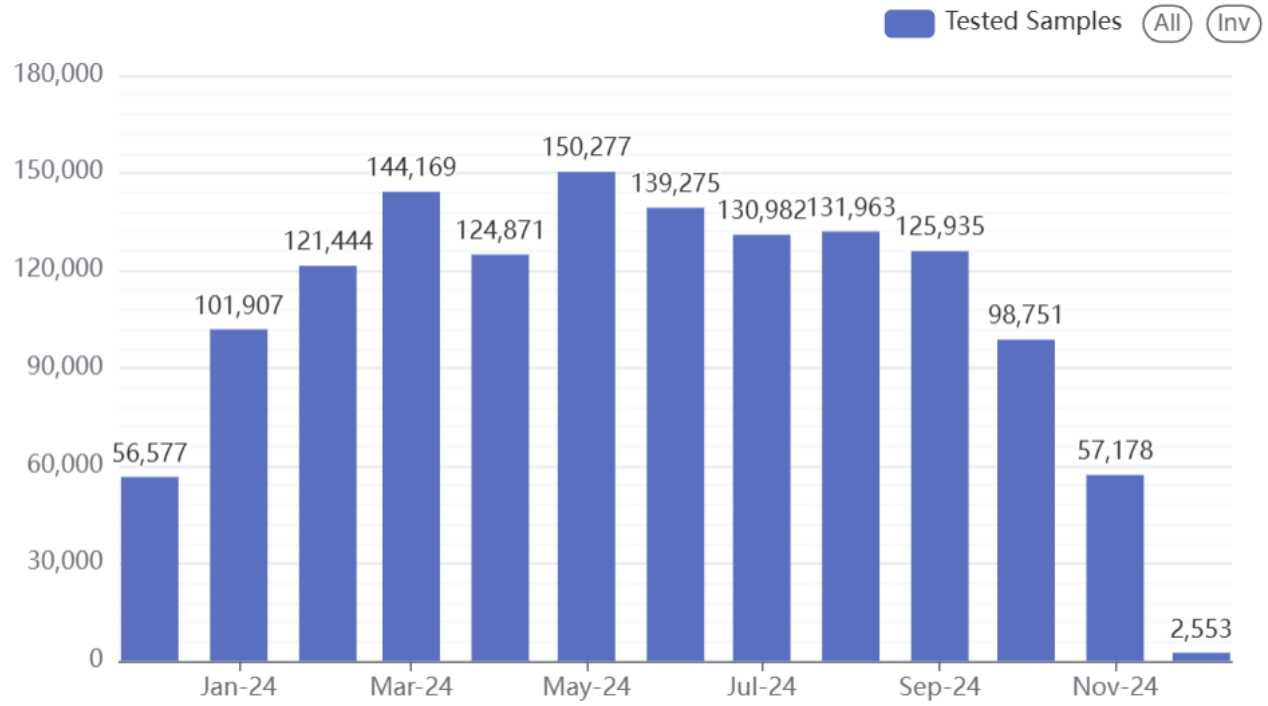


Electronic Sample Referral System (eSRS)

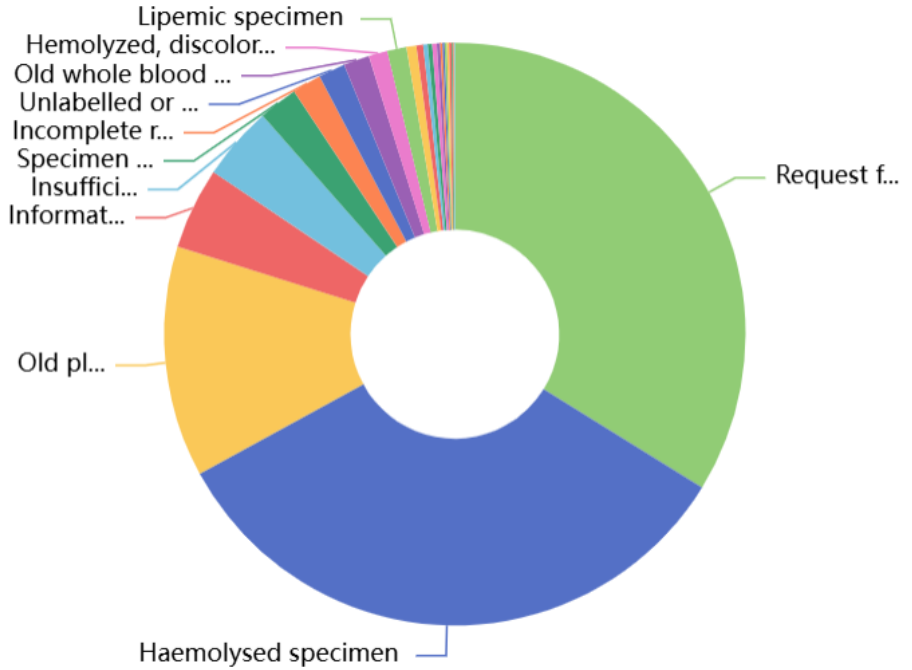
eSRS Dashboard

General Dashboard | Turn Around Time (TAT) | Lab Quality Indicators | Sample Tracking | Sample Status at Lab | Sample Status at POC | Hub Status | System Usage Report

Number of Samples Tested with Results



Rejections per Reasons



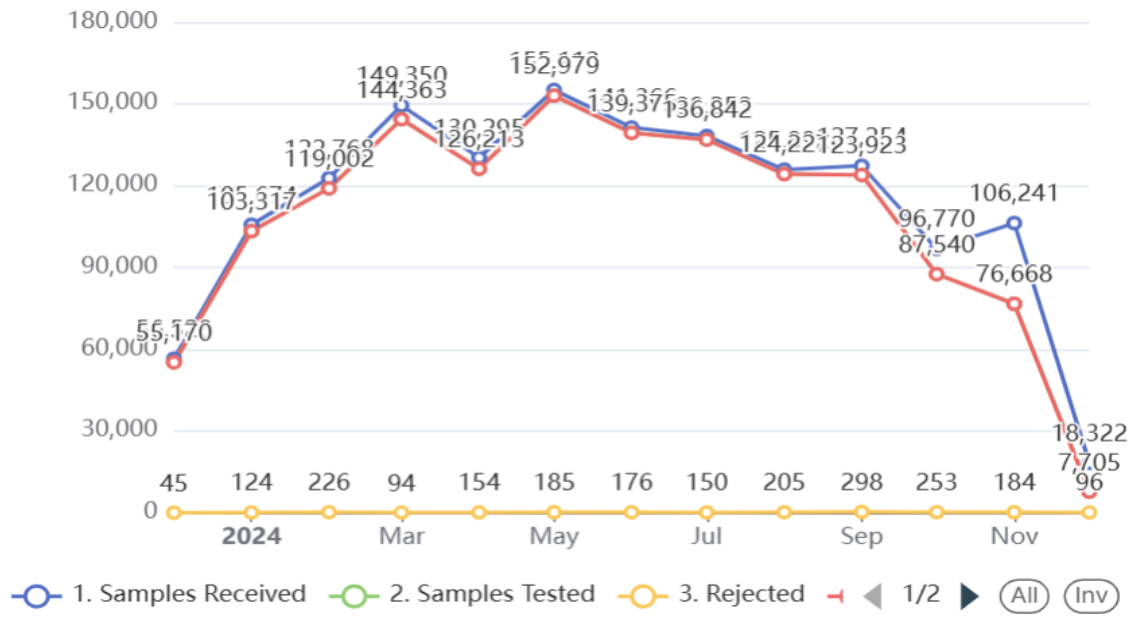
Tracking of Laboratory Indicators using e-SRS

eSRS Dashboard

General Dashboard | Turn Around Time (TAT) | Lab Quality Indicators | Sample Tracking | Sample Status at Lab | Sample Status at POC | Hub Status | System Usage Report

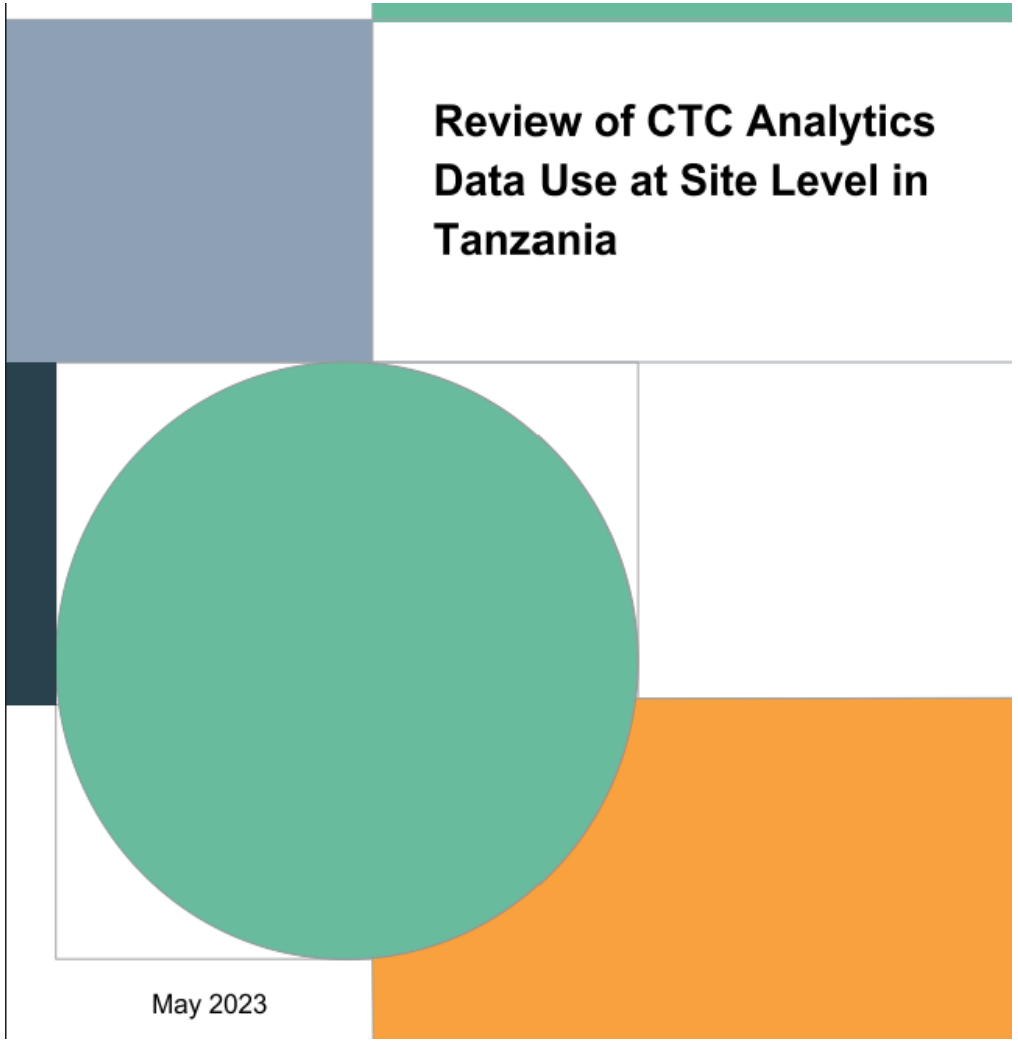
Samples Received

Samples Received Trend



CTC Analytics

- Help sites to better view the performance data
- Tracks client's records, visits and results
- Dashboards/ user interface to visualize country indicators e.g suppression numbers/ percentages
- Data uploaded by user and data analyzed by the system are visualized through the dashboard

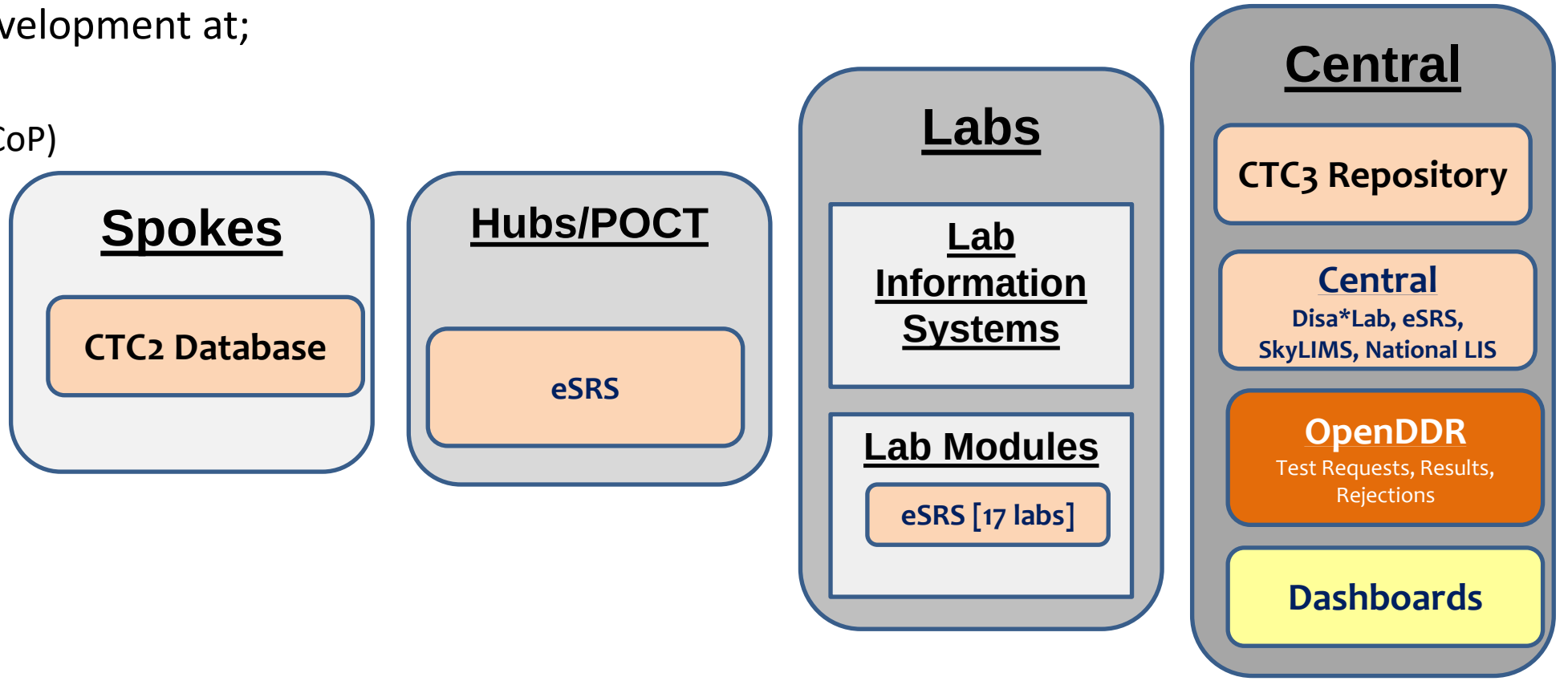


Existing systems related to labs

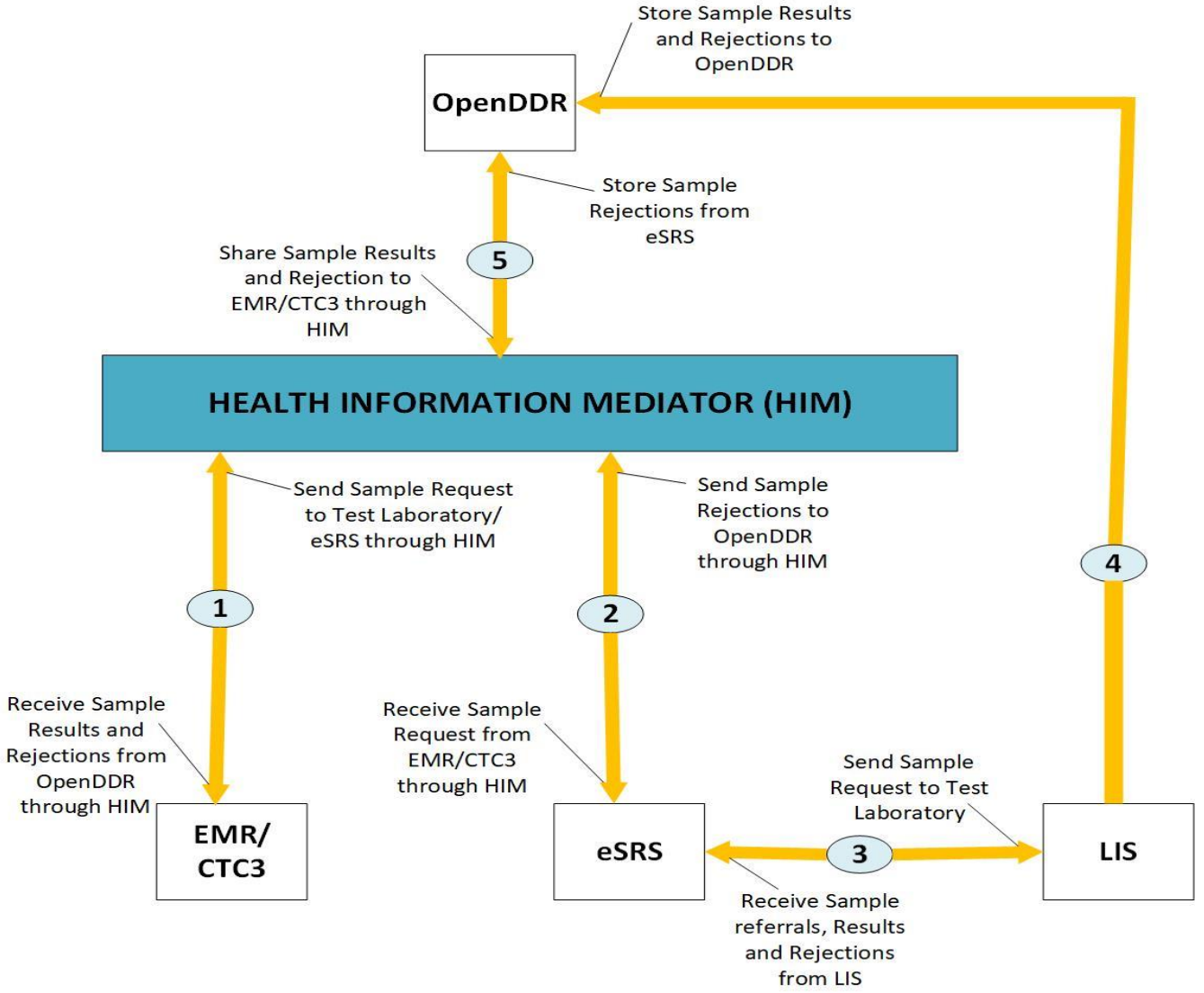
Fully-fledged LIS	EMR	Disease specific lab modules	e-SRS	Lab Data Repository	Analytical Systems
• Disa*Lab • Skylims • National LIS	• Jeeva • eHMS • GoTHoMIS • AfyaeHMS • MedPro • **CTC2**	• Enhanced eSRS • TB LIS • eTL • GX-Alert • eIDSR (Priority Disease Surveillance) • Afya msafiri	• Enhanced eSRS	• DDR • CTC3	• eSRS Dashboard • DHSI2 dashboard • **Diagnostic Dashboard**

Use of laboratory related systems in different levels

- LIS system integration is essential for data accessibility and use
- Centralized data are used for decision making and policy development at;
  - Ministry
  - Program level (NASHCoP)
  - Regional
  - District

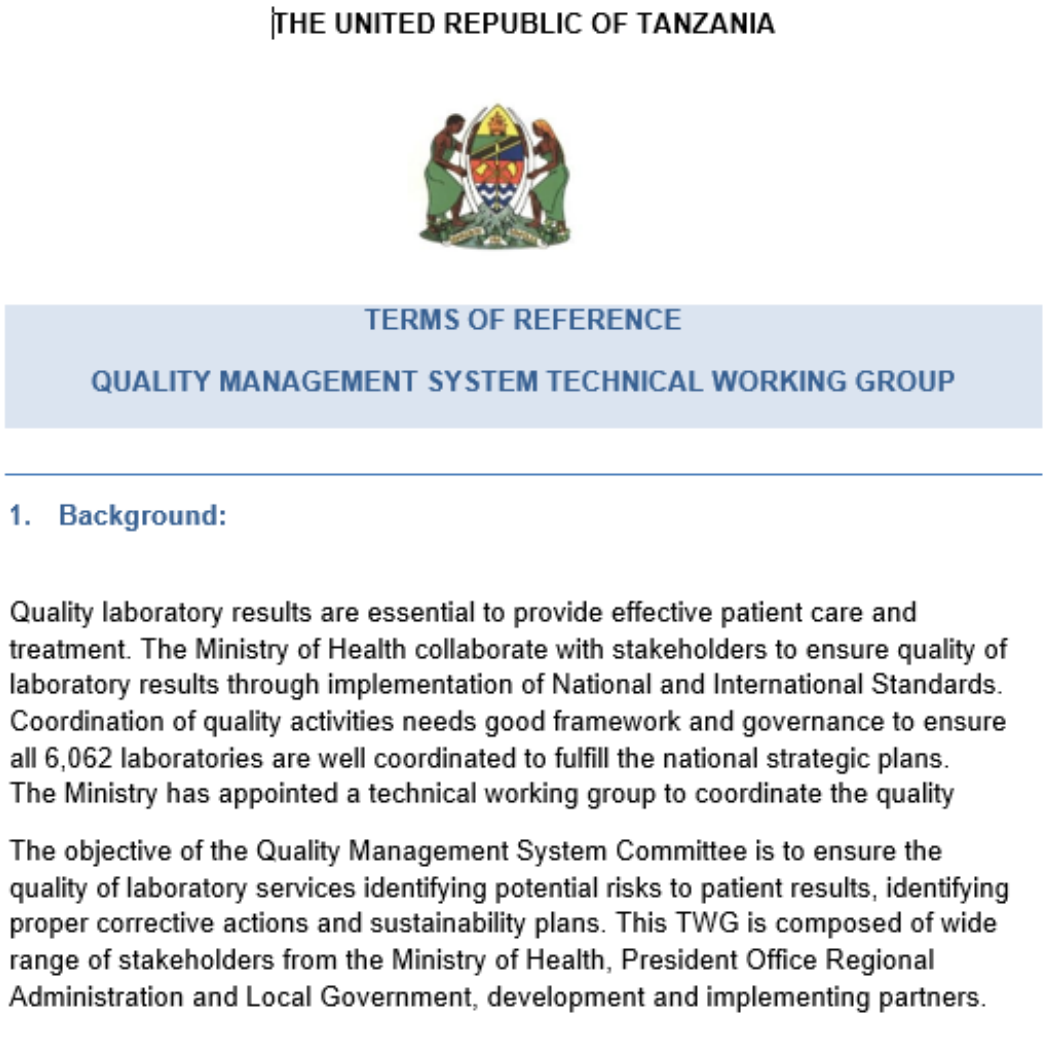


CTC2/3 - LIS Integration Architecture



Data Analysis and Sharing platforms

- MoH has established the workstreams TWG's for coordination of laboratory activities including data management
  - Sample Referral
  - HIV Viral Load &HEID
  - LIS
  - Quality Assurance
  - Supply Chain
  - Laboratory based surveillance



THE UNITED REPUBLIC OF TANZANIA

TERMS OF REFERENCE

QUALITY MANAGEMENT SYSTEM TECHNICAL WORKING GROUP

1. Background:

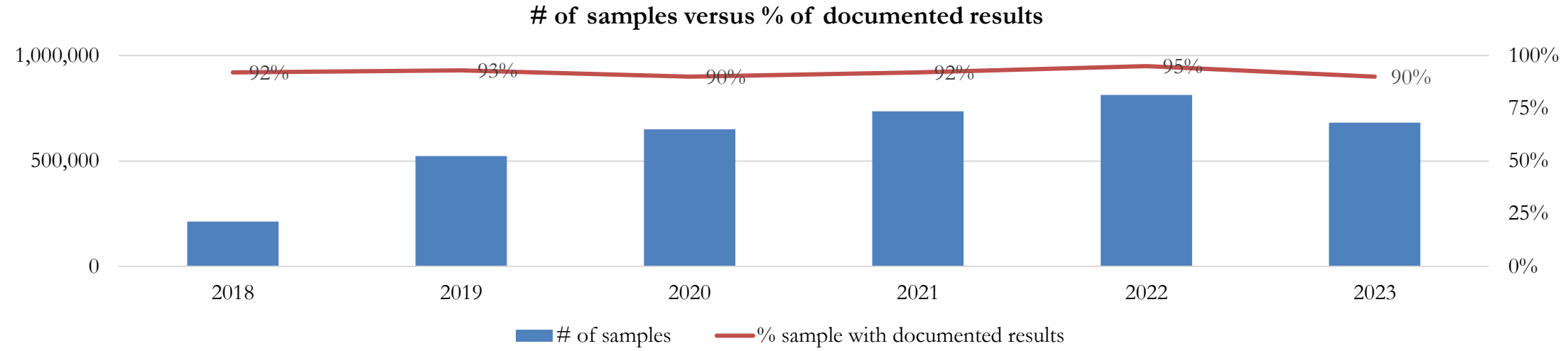
Quality laboratory results are essential to provide effective patient care and treatment. The Ministry of Health collaborate with stakeholders to ensure quality of laboratory results through implementation of National and International Standards. Coordination of quality activities needs good framework and governance to ensure all 6,062 laboratories are well coordinated to fulfill the national strategic plans. The Ministry has appointed a technical working group to coordinate the quality

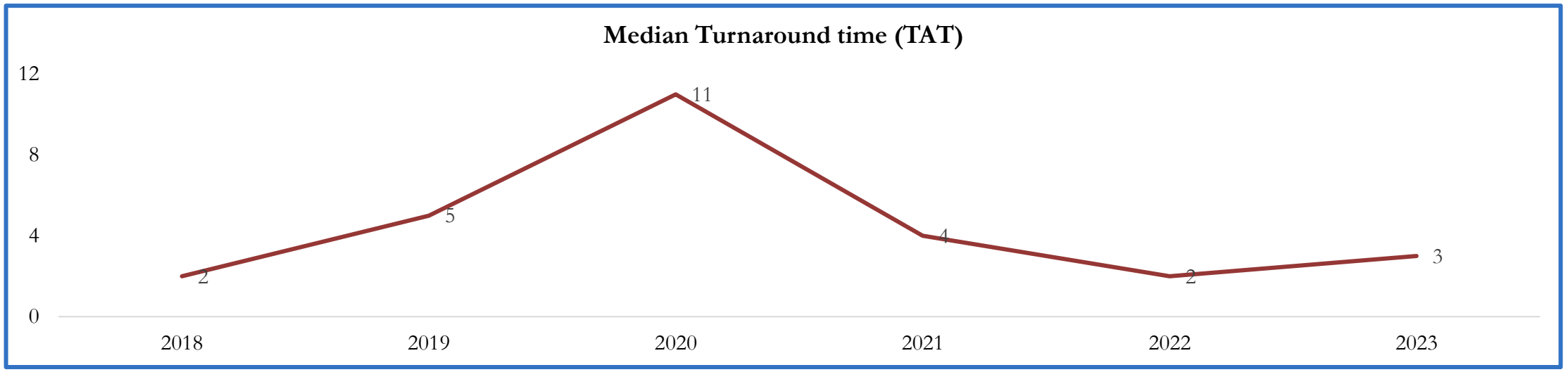
The objective of the Quality Management System Committee is to ensure the quality of laboratory services identifying potential risks to patient results, identifying proper corrective actions and sustainability plans. This TWG is composed of wide range of stakeholders from the Ministry of Health, President Office Regional Administration and Local Government, development and implementing partners.

Transforming Data into Actions

- Availability of data at National level has shown various impacts including
  - Improvement of Sample Referral Network and enabled reduction of transportation time from 7 days in 2018 to 24hrs in 2024
  - Real time reporting of equipment functionality and breakdown
  - Real time reagent, consumables requisition and reporting
  - Real time reporting of error rates and identify trends for improved laboratory efficiencies

Trend of HVL results documentation and Turn Around times (TAT)





Transforming Data into Actions…..

- Availability of data at National level has shown various impacts including
  - Dashboards have helped with resource utilization, monitoring equipment usage and functionality, and staff workload (DNO report)
  - Enhanced communication, improving operational performance, and providing better patient care at the facility level e.g CTC, HVL and EID dashboards
  - Early Detection and confirmation of Disease Outbreaks (Malaria, COVID-19, Marburg & Cholera)

Challenges and Way forward

Challenges

- Inadequate integration of laboratory and Disease surveillance data
- Inadequate expertise in data management among laboratory professionals
- Inadequate data monitoring for diseases which are not supported by programs

Way Forward

- MoH working on integrating all health system
- In country capacity building for Advanced Epidemiology program supporting laboratorian at MUHAS
  - short course on data utilization by in country universities
- Integrating the existing EMR with supported donor systems

Lessons Learnt

- System integration is essential in Data management
- Joint planning is essential in framing laboratory indicators for M&E
- Clinical –Lab interface is critical in ensuring comprehensive data management for decision making

THANK YOU