REPUBLIC OF KENYA

MINISTRY OF HEALTH

NATIONAL TUBERCULOSIS, LEPROSY AND LUNG DISEASE PROGRAM



Annaul Report 2024

MINISTRY OF HEALTH

DIVISION OF NATIONAL TUBERCULOSIS, LEPROSY AND LUNG DISEASE

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Executive Summary



Tuberculosis remains an infectious disease of global public health concern. There is significant evidence that TB control and prevention efforts are beginning to bear fruits. Slightly over 10M people develop TB disease annually with 10% of them dying due to the disease. There are still gaps in identification of TB cases especially among the most vulnerable including children.

Kenya is high burden for TB and HIV and is among 30 TB high burden countries that contributes up to 90% of the global burden. Drug resistant TB still remains a threat to gains made in TB control but on a positive note Kenya is no longer high burden for DR TB.

In 2024, Kenya diagnosed, started on treated and notified a total 96,865 people with TB representing less than 1% declined compared to the previous year 2023. With an estimated incidence of 124,000 this represented a treatment coverage of 78% up from 68%. This indicates that the country is making progress towards achieving universal coverage targets of 90% treatment coverage. These results were achieved through various interventions that include; strengthening of active case finding in the facilities, expansion of screening and diagnostic capacity, consistent supply of testing and treatment commodities, partnerships and continued community engagement.

In terms of gender and age, 43% of the notified cases were between the age of 25 to 44 years, an important age group in socio economic development of the country while men(male) accounted for 63% of the total notification.

The program has adopted innovative ways to diagnose TB in children, usually vulnerable population with challenges of case identification. This include use of chest x ray for screening and alternative specimen for testing such as stool as opposed to relying on sputum which is ideally difficult to obtain among those aged below 15 years. During the year 13% of all people notified with TB were below the age of 15 years.

Even though HIV prevalence in the country has significantly declined, it remains a risk factor TB disease with 24% of all the TB cases notified being coinfected with TB and HIV. The program in collaboration with

the HIV program and implementing factors endeavors to test all people identified with TB for HIV with 98% testing rate in 2024. Among those that test HIV positive the ART initiation rate was 98%. There are however variations in across all the 47 counties with majority of them meeting the national testing and ART initiation averages.

TB patients are increasingly being diagnosed with other commodities or risk behavior and in 2024, over 10% of the notified cases reported at least one or more comorbidity such as; lung cancer, diabetes, hypertension, mental illness, COPD, smoking and alcohol use.

The country achieved a treatment success rate of 88.9% of the cases reported in 2023 which is a continuous improvement yearly of about 1%. This demonstrates a good progress towards achieving a 90% treatment success rate target. Death and lost to follow up rates declined from 6% and 5% to 5% and 4% respectively.

The program has continued the strengthen surveillance for drug resistant tuberculosis by rolling out DST equipment and reagents in the labs, continued capacity building and sample referral networking. So far, there are over 700 molecular test equipment across the country comprising gene xpert, treunat, TB LAMP and LF LAM. In 2024, there were 749 people diagnosed with drug resistant tuberculosis. The program also launched the use of shorter-term regimen BPAL/BPALM which is a bedaqualine based oral treatment which is friendly to the patients. In terms of DST coverage, 69% and 85% of new and previously treated cases respectively were done DST. Treatment success rate among DR TB patients was 85% in 2024.

The country has been in leprosy post elimination phase since 1989. A number of counties in the coast and western part of the country still remain endemic with active transmission of leprosy. In 2024, a total of 97 new cases were notified of which 77% were multibacillary cases. The leprosy program continues to be under funded with limited health care workers capacity to diagnose and manage leprosy cases. Rehabilitative services are also limited with treatment commodities being donated by WHO.

Social support is critical for TB patients in order to improve prevention and also increase the treatment success rate. During the year the program continued providing cash transfers for patients who needed support most and DR TB patients. Health care workers were also supported to provide DOTS in the community. This support is made possible through The Global Fund implemented by AMREF health Africa.

In order to strengthened the commodity security for TB, leprosy and lung health commodities, the program established and supported monthly commodity security meetings with program and partners to review the commodity stock status and resource mobilize for what is required. The program faced challenges on laboratory commodities that were consistently stocked out especially at national reference laboratory and also procurement challenges at KEMSA.

The program organized a successful world TB day held in Muranga county that was well attended by high level MOH and county leadership led by CS MOH, Muranga county governor, WHO country representative, KCM representative and county representative. This was in line with continued efforts of advocacy and public awareness on TB. There were a number of preceding activities including TB screening in various health facilities

and media engagement. In order to improve demand creation for TB services, the program rolled out a number of activities including mass media campaigns, publication of quarterly bulletin and documentaries supported by various partners.

Lung health is a key agenda for the program and through the support of Clinton health initiative, a pilot lung health project was initiated with lung health baseline assessment of lung health service availability, stakeholder mapping and review of policies and guidelines to mainstream TB into bigger lung health agenda. Three counties of Muranga, Nakuru and Nairobi were identified for the pilot phase with plans to expand to 47 counties based on lessons that will be learnt from the pilot implementation.

The program continued to strengthened monitoring, evaluation and research for TB. The program printed and distributed M&E tools in all the 47 counties while building capacity of health care workers on electronic reporting and data for decision(D4D) through the support of the Global Fund. The program implemented a number of Key impact surveys including; TB drug resistant survey, KAP survey, burden of TB among health care workers and TB stigma index assessment. During the year, the program established a TB research taskforce to coordinate research activities and ensure knowledge translated is translated into policy for effective programming.

Dr. Immaculate Kathure, OGW

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Ministry of Health – Kenya

KENYA TB, LEPROSY & LUNG HEALTH PROGRAM – 2024 SNAPSHOT

TB Burden and Progress (2024)

96,865 people diagnosed and treated **(<1% vs 2023)**

Treatment coverage: **78% (up from 68%)**

Target: **90%** universal coverage

Achieved through:

- Active case finding
- Expanded diagnostics
- Consistent supplies
- Community engagement

Demographics

43% of cases aged **25-44** years (economically active group)

63% male | **37%** female

13% of TB cases were children (<15 years)

Innovations: chest X-ray + stool sample testing

TB/HIV Co-Infection

24% TB/HIV co-infected

98% tested for HIV

98% ART initiation rate

Variations across counties, but most above national averages

TB & Comorbidities

10%+ had ≥1 comorbidity (diabetes, hypertension, COPD, smoking, etc.)

Treatment Outcomes

88.9% treatment success rate (↑1% from previous year)

Death rate: ↓from 6% → 5%

Lost to follow-up: ↓from 5% → 4%

Drug-Resistant TB (DR-TB)

749 DR-TB cases diagnosed in 2024

DST coverage: **69%** (new) | **85%** (retreatment)

BPAL/BPALM oral regimen rolled out

85% success rate among DR-TB patients

700+ molecular diagnostic machines across Kenya

Leprosy Situation



97 new cases **(77% multibacillary)**

Ongoing challenges:

- Underfunding
- Limited HCW capacity
- Rehabilitative services lacking

Treatment drugs donated by WHO

Social Support & Partnerships



- Cash transfers for vulnerable & DR-TB patients

Community DOTS support

- Funded by Global Fund via Amref Health Africa

Lung Health Integration (iPACT Initiative)



Pilot project with Clinton Health Access Initiative

Conducted:

- Baseline assessments
- Stakeholder mapping
- Policy reviews

Plan to scale up to 47 counties

Monitoring, Evaluation & Research

- Nationwide rollout of M&E tools and e-reporting
- Surveys conducted:
- DR-TB survey
- KAP survey
- TB stigma index
- Burden among HCWs
- Established TB Research Taskforce to translate research into policy

Key Achievements Summary

Category	2023	2024	Trend
Treatment Coverage	68%	78%	↑
Treatment Success	87.9%	88.9%	↑
Death Rate	6%	5%	↓
Lost to Follow-Up	5%	4%	↓
ART Initiation (TB/HIV)	97%	98%	↑

ACKNOWLEDGEMENT

The National Tuberculosis program annual report has been developed through coordination of the M&E team in the program, valuable support of the program head Dr Immaculate Kathure and all program staff. TB partners have also made contribution to this report including from TB tamatisha, CHAI, AMREF, KELIN and communities.

The workshop to collate and finalize the report was made possible through the financial support of KELIN.



EPIDEMIOLOGY OF TUBERCULOSIS AND LEPROSY IN KENYA

1

A. DRUG SUSCEPTIBLE TUBERCULOSIS (DSTB)

Drug-sensitive tuberculosis (DSTB) remains highly treatable with standard anti-TB medication. Kenya implements enhanced active case finding (ACF) strategies, complemented by targeted programmatic interventions, to identify tuberculosis (TB) cases. These combined efforts have significantly contributed to timely diagnosis and prompt initiation of treatment. The integrated approach also improved patient outcomes and helped reduce community transmission.

In 2024, Kenya notified a total of 96,865 DSTB cases, representing 78% of the estimated 124,000 cases. This reflects a slight (0.26%) decline compared to the 97,126 cases notified in 2023. Among the 2023 notifications, 8,231 (8.5%) cases were previously treated.

The number of incident cases (new and relapse) notified were 88,895, translating to a case detection rate (CDR) of 74%. This indicates that approximately 26% of TB cases were either missed or not reported, possibly due to initial loss to follow. The overall TB case notification rate in 2024 was 204 per 100,000 population.

As shown in the line graph, between 2011 and 2016, there was a steady decline in case notifications, representing a 23% drop.

Key Achievements in 2024

- 96,865 DSTB cases notified
  - Representing 78% of the estimated 124,000 cases
- Case Detection Rate (CDR): 74%
  - Indicates 26% of cases missed or unreported

After 2016, case notifications began to rise again. This could be attributed to innovative approaches including ACF adopted by the Country. This gain was interrupted by COVID-19 pandemic with a sharp dip in 2020. Post-pandemic recovery is evident with the continuous rise in case notifications. However, the Country has witnessed a recent plateau (2023 -2024).

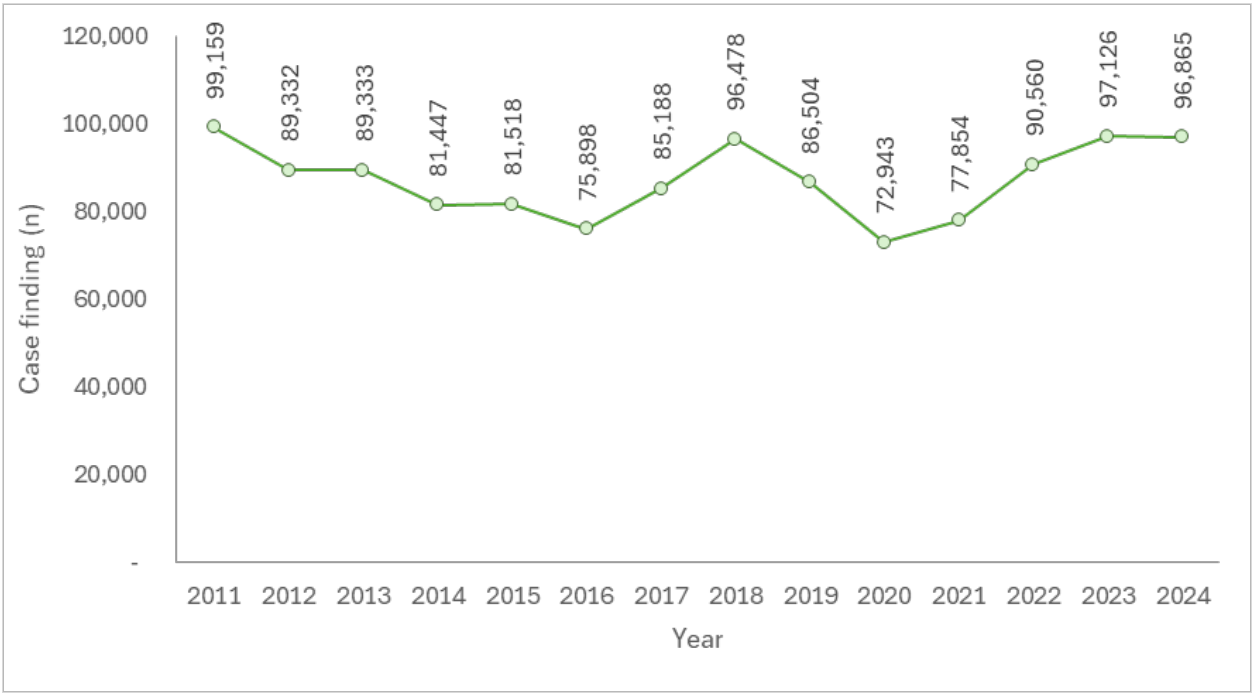


Figure 1.1: DSTB Case Finding Trends

Distribution by Age and Gender

Figure 2 presents insights into age and gender dynamics of TB in Kenya. The 25 - 34 and 35 - 44 age groups account for the highest TB case burden, with a combined total of 41,232 (43%) cases. This is the economically active population, implying socio-economic impact due to lost productivity. Across all age groups 15 and above, males are consistently higher in TB notifications peaking in the 35 - 44 age group where males (14,023) nearly double females (6,712). Males accounted for 63% (60,952) of the total, while females comprised 37% (35,913).

The age distribution of notified TB cases in Kenya showed that children aged 0–14 years represented 13.3% (12,884 cases) of the total burden. Older adults (65+) shows notable burden at 7% (6,784).

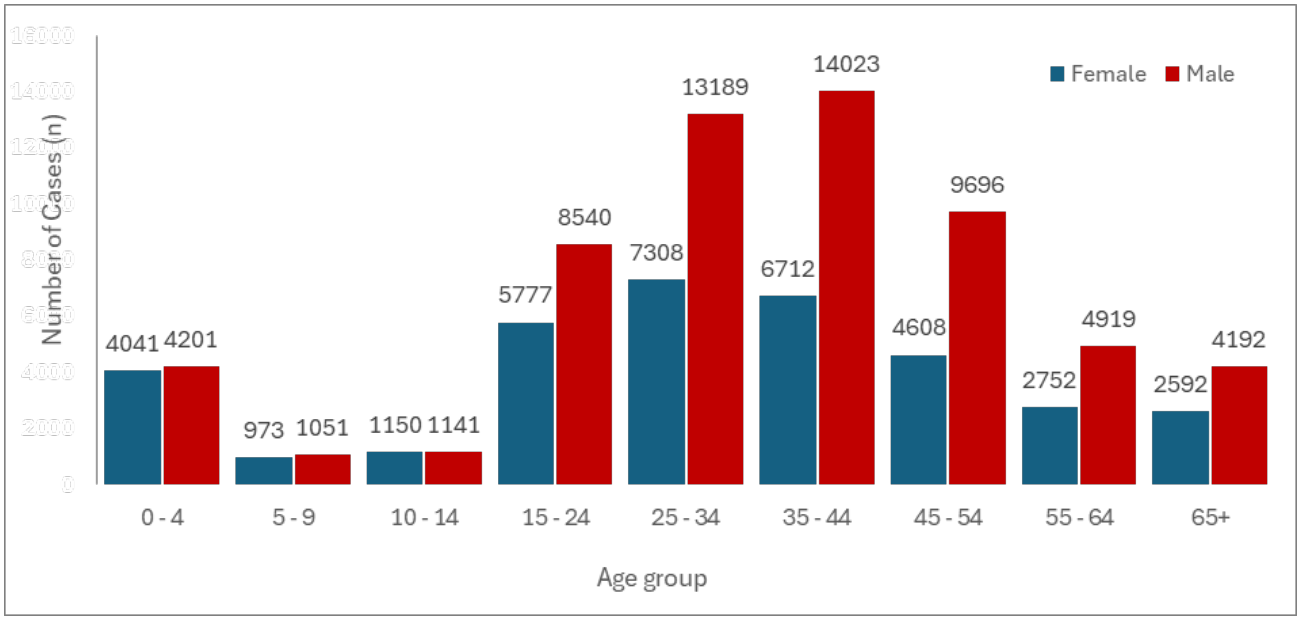


Figure 1.2: DSTB Age Gender

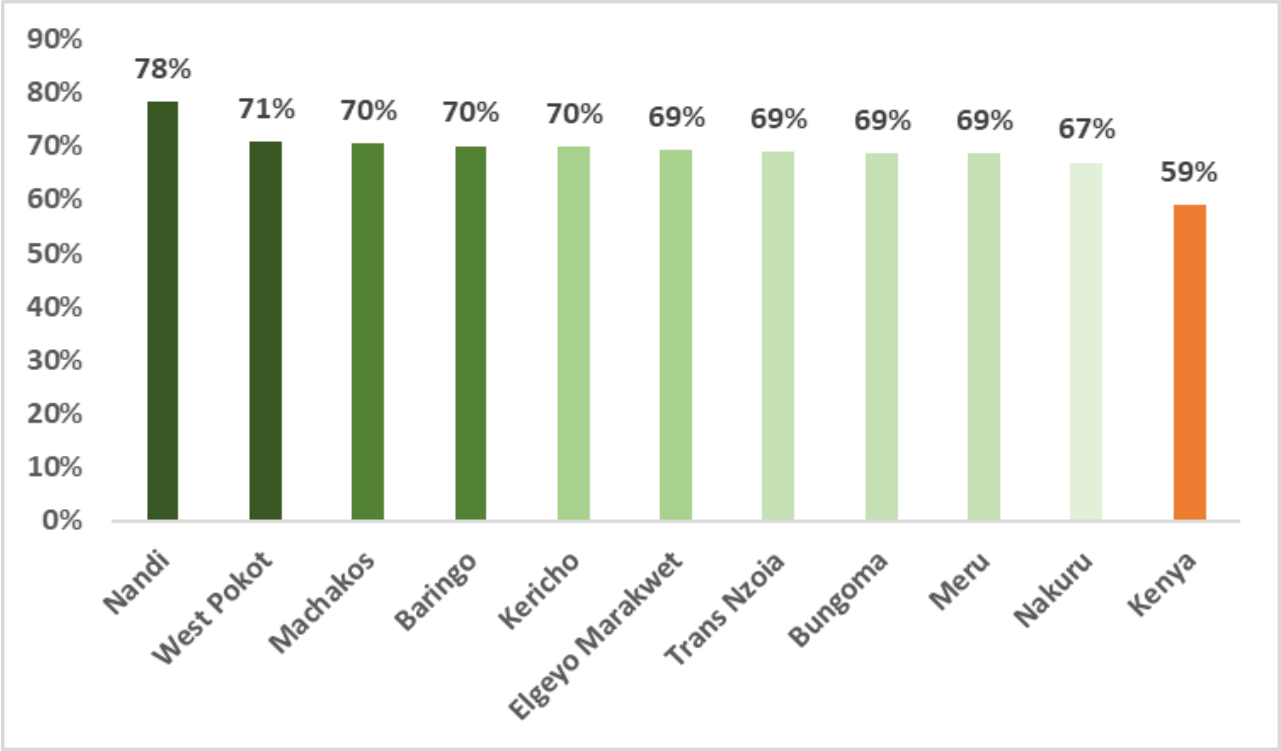
Sector Contribution

Public health facilities accounted for the largest share of TB notifications in 2023, contributing 76.2% of all reported cases.Private sector facilities contributed 15.2%, while faith-based organizations accounted for 7.1%, bringing the combined contribution of non-public sectors to 22.3%. Prisons contributed 1.4% of the total TB patient load. This combined proportion from private and faith-based sectors remains below the 25% national target.

In 2024, public health facilities accounted for the largest share of TB notifications, contributing 76.2% of all reported cases, representing the public–public delivery model. The public–private mix (PPM)—comprising private-for-profit facilities and faith-based organizations—contributed a combined 22.3% of TB notifications, with private facilities at 15.2% and faith-based organizations at 7.1%. Prisons contributed 1.4% of the total TB patient load. This combined proportion from private and faith-based sectors remains below the 25% national target.

DSTB profile by method of diagnosis

In 2024, 59% of the DSTB cases were bacteriologically confirmed, up slightly from 58% in 2023. This proportion was significantly higher in the top 10 Counties. Nandi led with 78%, followed by West Pokot by 71%. Other counties with strong performance included Baringo, Kericho and Machakos (70%), as well as Elgeyo Marakwet, Trans Nzoia, Bungoma and Meru (69%). Nakuru reported (67%), still above the national average.



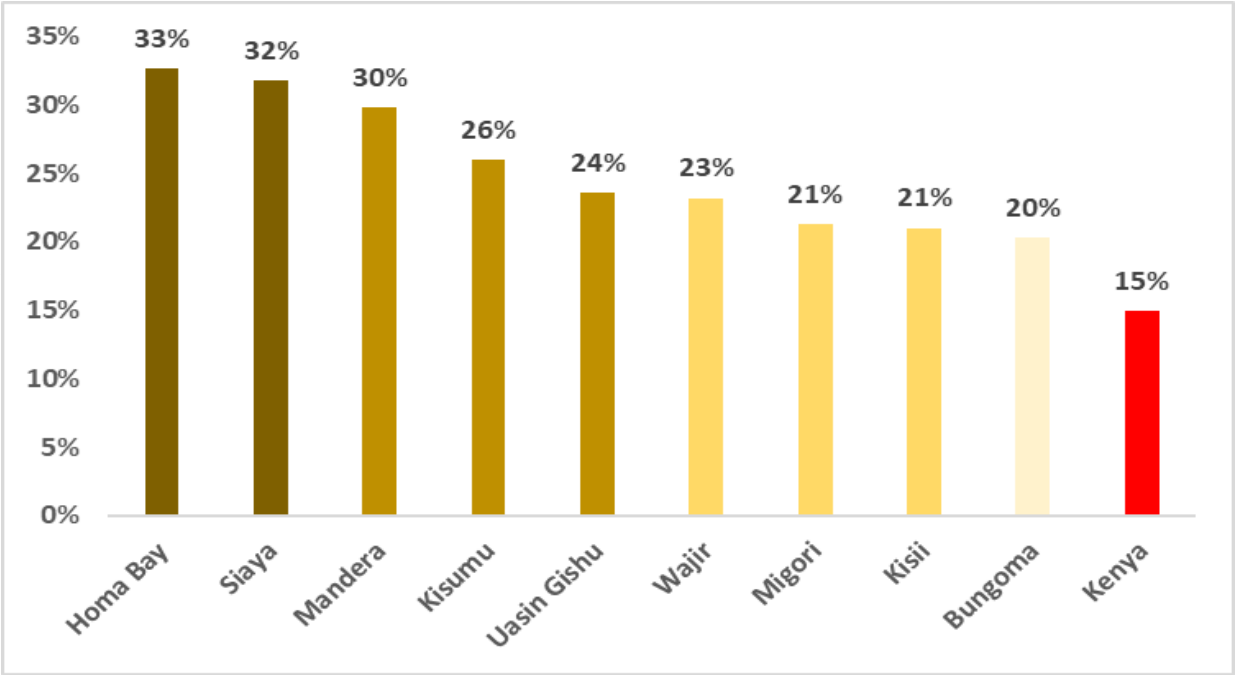


Figure 1.3 illustrates the distribution of bacteriological confirmation across top 10 counties.

Nutrition

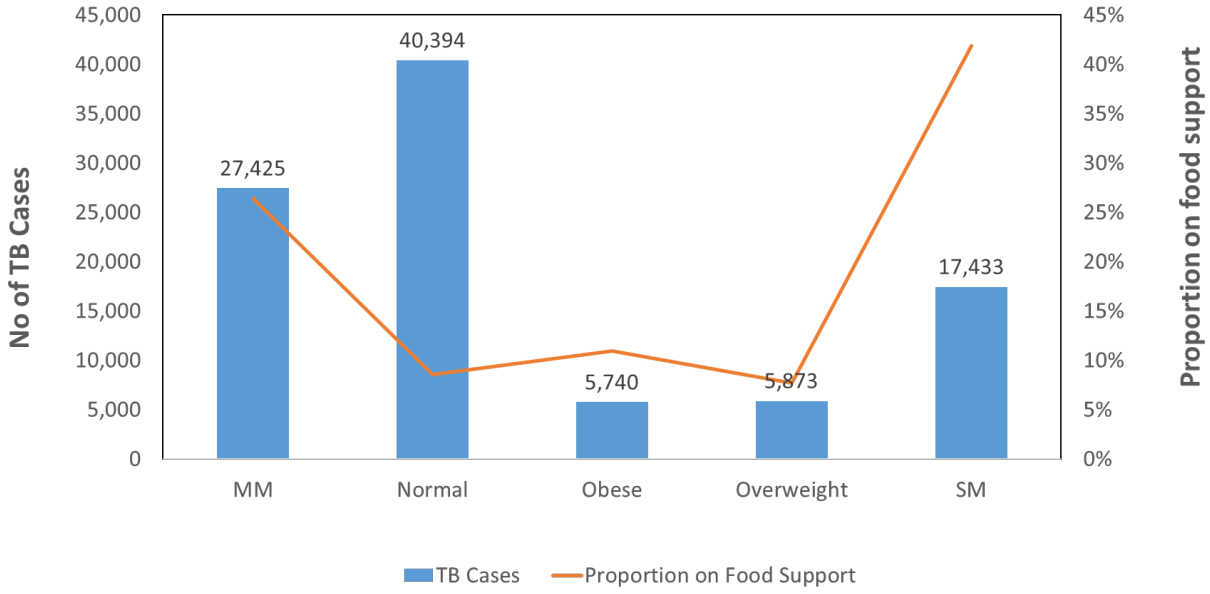


Figure 1.4: Nutritional status and proportion of nutritional support.

Nutritional support for TB patients includes a range of interventions such as nutritional counseling, Ready-to-Use Therapeutic Food (RUTF) for those with severe acute malnutrition (SM), and Fortified Blended Flour (FBF) for patients with moderate acute malnutrition (MM).

Assessment data show that the majority of TB patients fell within the normal nutritional range, accounting for 40,394 individuals. Among patients with undernutrition, 27,425 (28%) were classified with moderate malnutrition, of whom 26% received food support. Additionally, 17,433 (18%) were identified with severe malnutrition, and 42% of them received nutritional support–the highest proportion across all nutrition categories. Comparatively, patients classified as overweight (5,873) or obese (5,740) received the least nutritional support, as reflected in the lower proportions seen in the chart above.

Treatment Outcomes

Comorbidities

Out of all the notified TB cases, 10,095 cases had at least one documented comorbidity or high risk behaviour. The five most frequently reported were alcoholism, smoking, hypertension, drugs and substance use, diabetes, followed by liver and/or renal disorders.

The treatment success rate (TSR), among these cases was at 89%, representing a slight improvement from 88% in 2022. The overall death rate declined from 6% in 2022 to 5% in 2023, while the loss to follow-up (LTFU) rate also dropped from 5% in 2022 to 4% in 2023. Analysis of mortality patterns revealed that TB patients with underlying comorbidities accounted for a significant proportion of reported deaths. The highest death rate was observed among those with cancer (43%), followed by patients with liver or renal disorders (34%) and cardiovascular conditions (30%). Other comorbidities associated with elevated mortality rates included COPD (18%), hypertension (16%), mental illness (14%), and diabetes (13%).

Table 1.1: DSTB Outcomes

Comorbidity	Cases	Death Rate
Lung Cancer	196	43%
Liver Renal Disease	314	34%
Cardiovascular	276	30%
COPD	136	18%
Hypertension	933	16%
Mental Illness	145	14%
Diabetic	838	13%

B. DRUG-RESISTANT TB (DR-TB)

1.2.1 Drug-Resistant TB Case Notification

Trends of DR-TB patients and proportion of pediatrics 2017-2023

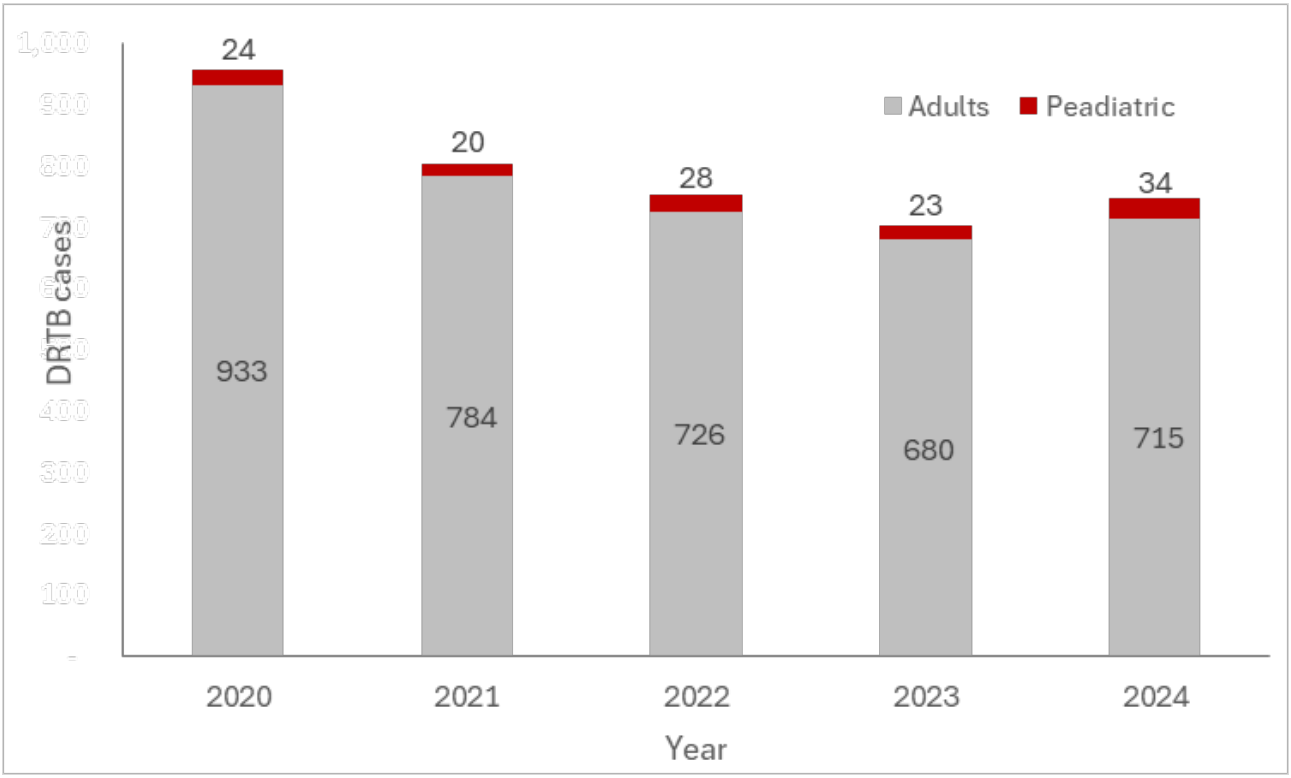


Figure 1.5: DRTB Case Notification

The number of drug-resistant TB (DRTB) cases declined steadily from 957 in 2020 to 703 in 2023, representing a 27% reduction over four years. In 2024, there was a slight increase to 715 cases. In contrast, paediatric DRTB case notification, though remained low, demonstrated a gradual upward trend. The number of notified paediatric cases rose from 24 in 2024 to 34 in 2024, marking a 42% increase. The narrowing gap between adult and paediatric TB notifications – from an adult-to-child ratio of approximately 39:1 in 2020 to 21:1 in 2024 – suggests growing attention to paediatric TB.

Male patients accounted for 70% (522) of all DRTB notifications, while individuals aged 30–39 years constituted 30% of the total patient cohort.

The overall decline in DRTB case notifications is partly attributed to reduced Drug-Susceptibility Testing (DST) coverage (exact percentage to be confirmed), driven by suboptimal healthcare worker capacity and recurring stockouts of essential diagnostic commodities such as GeneXpert cartridges, culture reagents, phenotypic DST, and Line Probe Assay (LPA) kits. Additionally, gaps in contact management—such as limited contact listing, inadequate screening, low chest X-ray uptake among DRTB contacts, and insufficient patient follow-up—further contributed to under-detection.

To address these challenges and enhance DRTB case detection, several strategies were implemented. These included strengthening access to DST through improved supply chain management, expanding the use of stool-based GeneXpert Ultra testing for children under 10 years, scaling up chest X-ray screening among high-risk populations, and enhancing healthcare worker capacity through ongoing training and technical support for early detection and comprehensive management of DRTB.

1.2.2 DRTB surveillance

The WHO recommends universal DST for Rifampicin among all bacteriologically confirmed drug-sensitive TB patients. In Kenya, GeneXpert Ultra and Truenat MTB/RIF are the initial recommended tests for TB detection and rifampicin DST. Additional DST is indicated for the high-risk groups. DST surveillance is shown in the figure below.

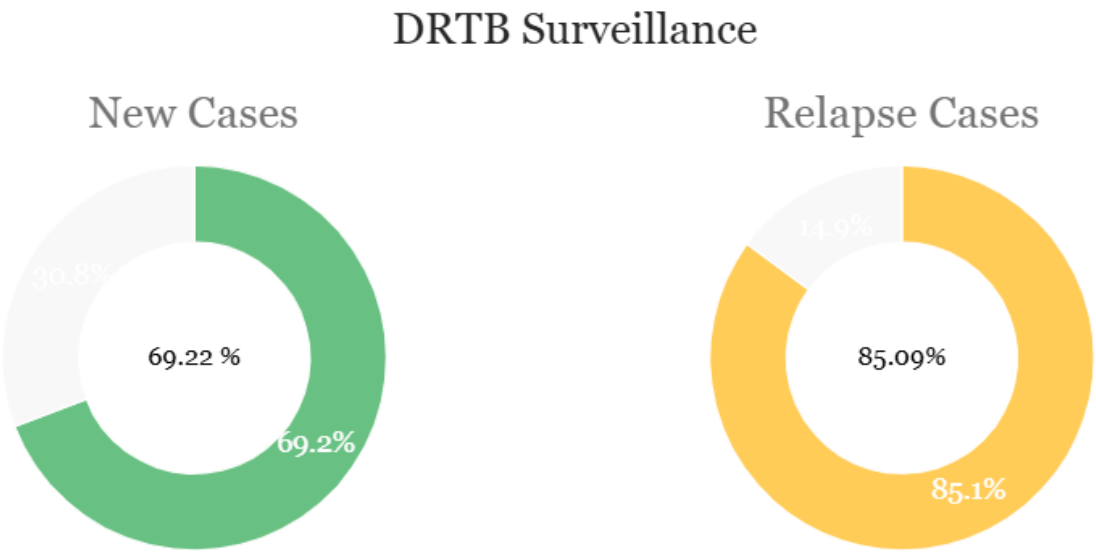
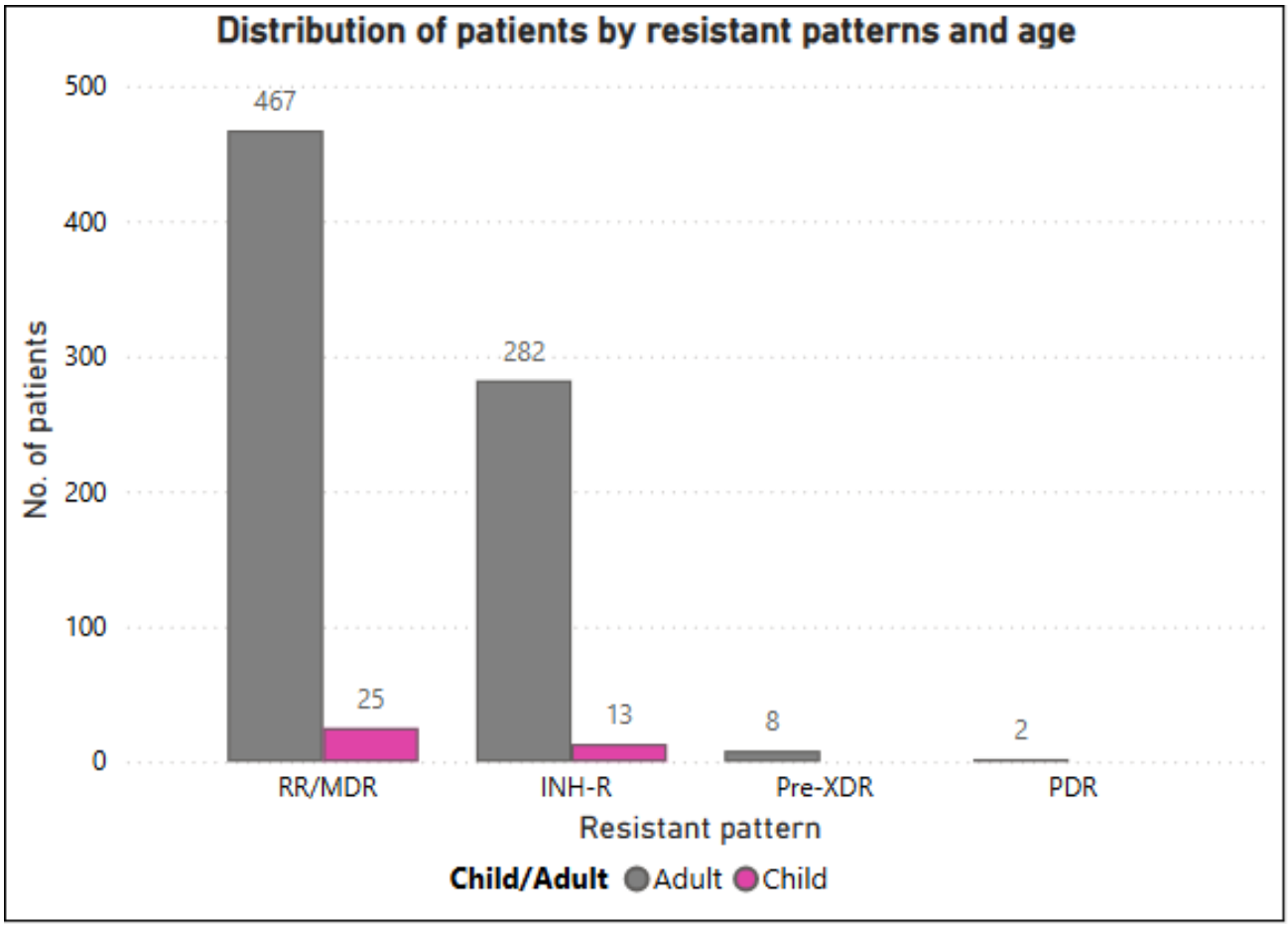


Table 1.2: DST platform usage

DST Platform	No. of DRTB patients	Proportion
GeneXpert/ TrueNat	729	97%
LPA- R&H	395	53%
FL-DST	510	68%
FQ- DST	126	17%
Other SL-DST	82	11%

1.2.3 Resistance patterns

Distribution of DRTB cases by resistance pattern 2024



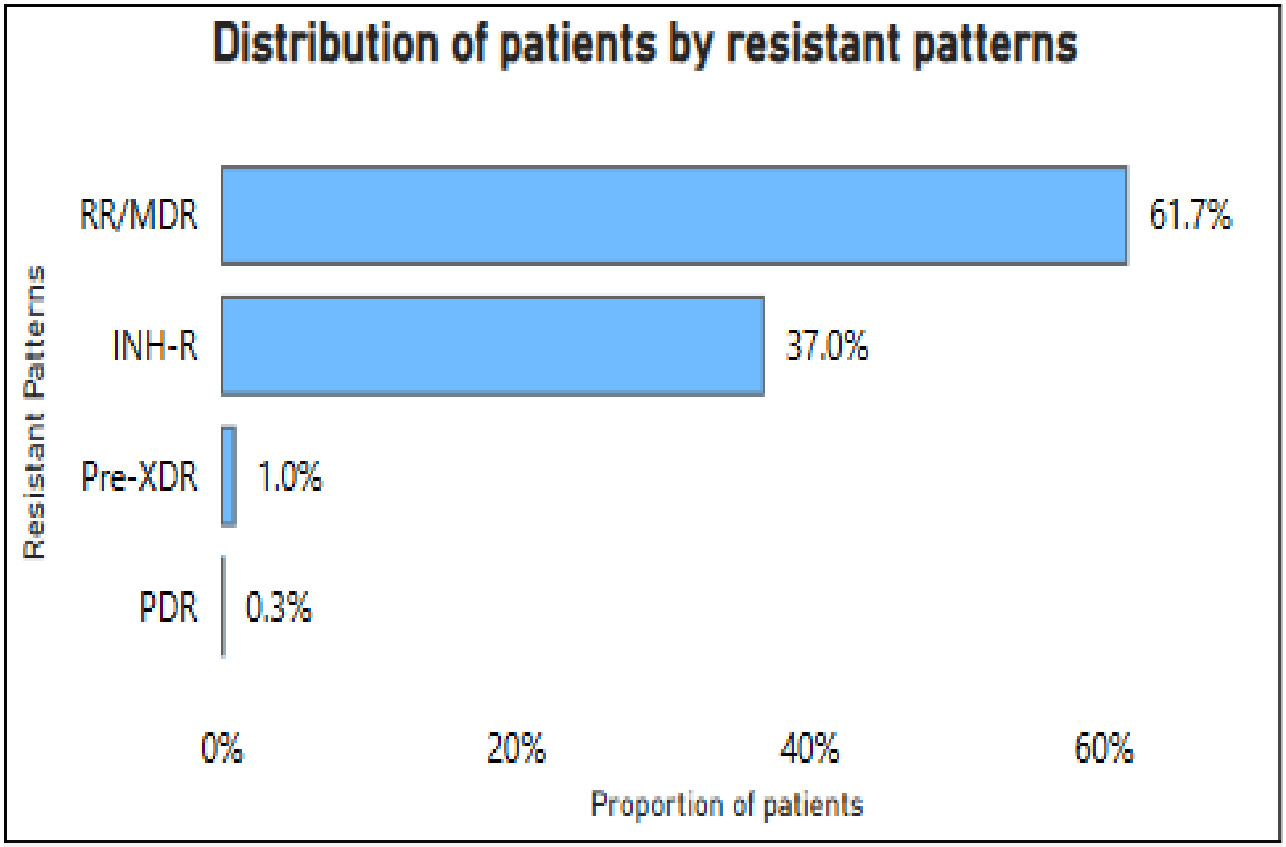


Figure 1.6: Resistance Pattern

The majority of the patients had MDR/RR TB at 61.7% (492), followed by those with isoniazid monoresistance at 37.0% (295). There were eight patients with Pre-XDR TB and two with PDR-TB. There were no cases of XDR TB in the country.

BPAL/M regimen

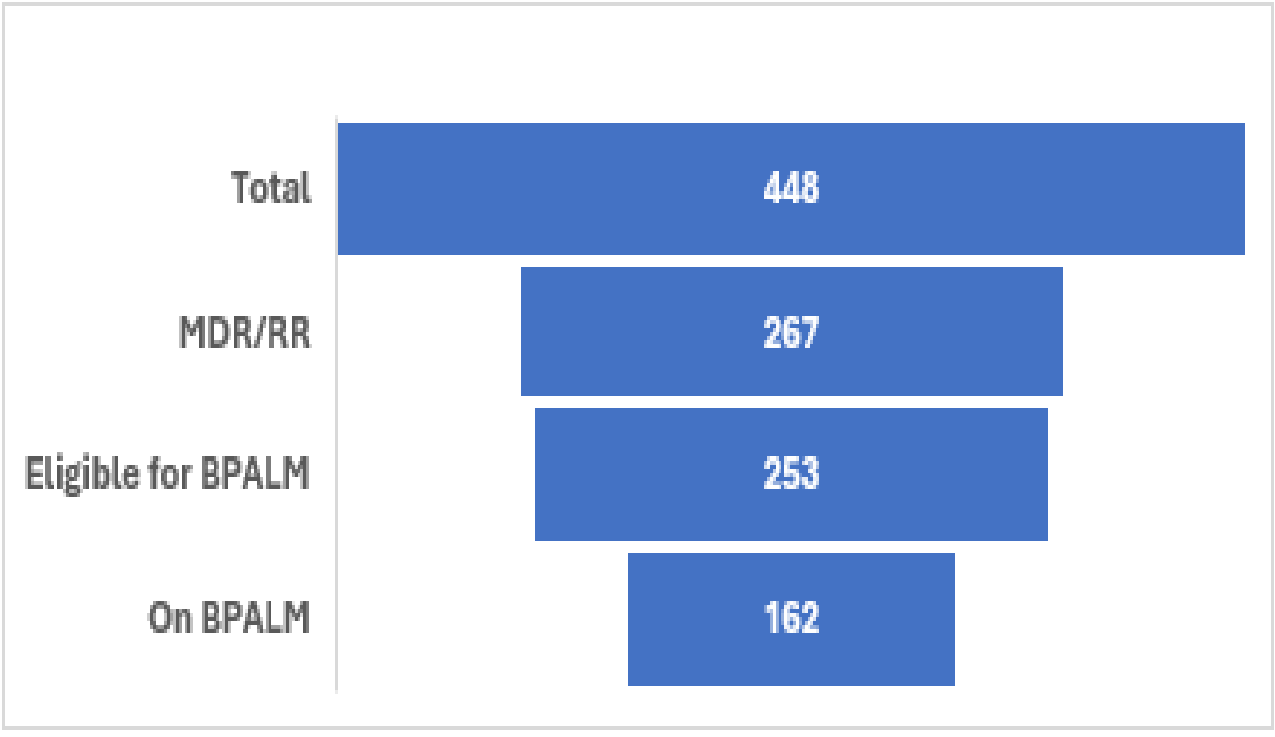


Figure 1.7: Patients on regimen BPAL regimen

The rollout of the shorter 6-month regimens—Bedaquiline, Pretomanid, Linezolid (BPaL), and Moxifloxacin (BPaLM)—officially commenced on July 1, 2025, targeting eligible drug-resistant TB (DRTB) patients with pre-XDR and MDR/RR-TB.
Between July and December 2024, a total of 448 DRTB cases were notified, including 267 with MDR/RR-TB. Of these, 95% met the eligibility criteria for BPaLM; however, only 64% were initiated on the regimen during that period. One of the primary barriers to uptake was the requirement for chest X-ray (CXR) as part of the eligibility assessment.

To address this, the country revised the eligibility criteria to align with WHO guidance, removing CXR as a mandatory prerequisite. This policy change, coupled with targeted capacity-building efforts and enhanced monitoring and evaluation support, significantly improved uptake. As a result, the proportion of counties initiating patients on BPaL/M regimens rose from 47% in July to 89% by December 2025, as illustrated in the figure below.

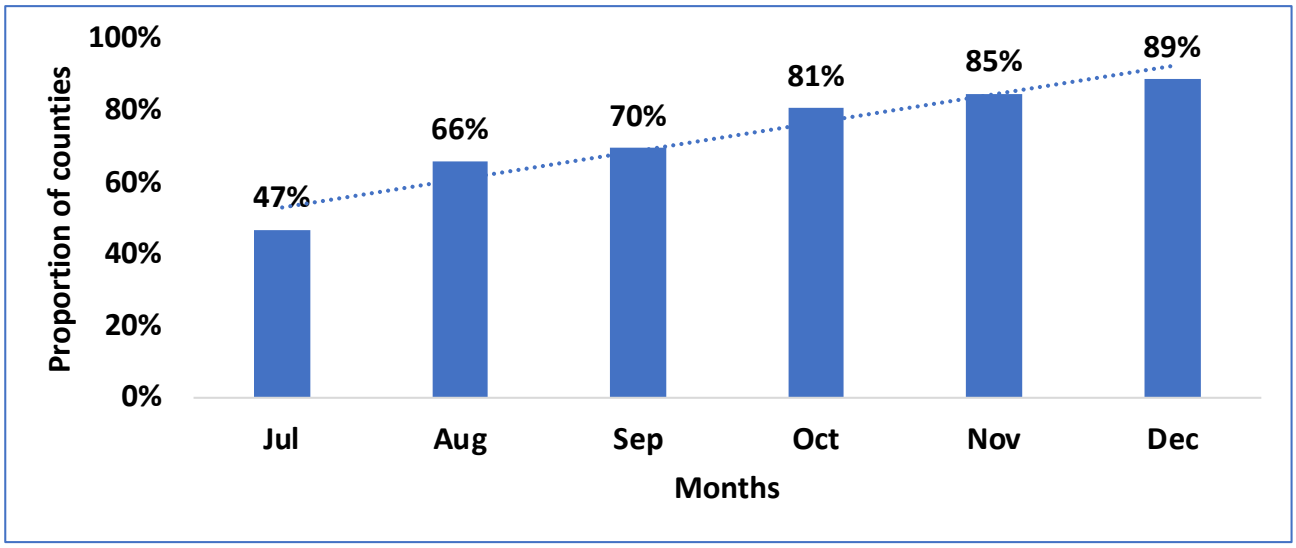


Figure 8: Incremental proportion of counties with patients on BPaLM/BPaL regimen by months, July to December 2024

The shorter-term 9-month regimen, 4-6Bdq(6)/Lzd(2)/Lfx/Cfz/Z/E/hH, for children and pregnant women with MDR/RR-TB was also rolled out at the same time.

1.2.4 Treatment outcomes

The treatment success rate (TSR) was 86.7% among the patients notified in 2022, an increase from 83% in the 2021 cohort. TSR was notably lower in patients with moderate acute malnutrition (MAM) at 83% and severe acute malnutrition (SAM) at 72%. TSR among the HIV co-infected was also low at 76%, despite the commendable increase in HIV testing rates among DR TB patients from 96% in 2022 to 97% in 2023.

The HIV co-infection rate, similar to 2023, stood at 23%, while antiretroviral therapy (ART) coverage was 97% among those diagnosed with HIV, indicating a strong response to co-infection management.

The overall proportion of patients lost to follow-up (LTFU) was 3% (32 patients), which was comparatively lower than 3% among those co-infected with HIV, SAM, and MAM. Although the proportion of LTFU remained within the national target, the number of patients affected is still significant.

The overall mortality rate remained high at 8%, This was a decrease from 10% in 2023. The mortality rate was higher among the patients with comorbidities; HIV-co-infected patients at 19%, the MAM at 12%, and SAM at 23%

Timely diagnosis of DRTB and initiation of second-line drugs (SLD) for DRTB patients are crucial to improving treatment outcomes and controlling the spread of DRTB. There was a delay of 2-4 weeks in the treatment initiation of SLD. To improve the treatment outcomes for DRTB patients, several key measures should be implemented. These include: strengthening HCW capacity for early detection and quality management, decentralizing the distribution of the SLD to minimize the time taken to initiate DRTB patients on drugs, ensuring monthly clinical review meetings for DRTB patients, and improving the overall quality of care for all TB patients through a multidisciplinary approach. This approach can help improve patient adherence to treatment plans, prevent unfavorable outcomes, manage adverse drug reactions, and reduce the emergence of even more difficult-to-treat strains of TB.

The quality of case-based data in TIBU remained a major challenge, including data on follow-up, treatment regimens, and post-treatment complications. This limited the ability to effectively monitor, evaluate, and improve the Programmatic Management of DRTB (PMDT). This led to inefficiencies, missed opportunities, and potential public health risks.

Activities conducted in 2023

Rollout of the shorter-term regimens, BPaL, BPaLM, and 4-6Bdq(6)/Lzd(2)/Lfx/Cfz/Z/E/hH

Training of HCWs on DRTB and the shorter-term regimens

DR-TB TA missions

Support for baseline and follow-up tests for all DR-TB patients through USAID Tamatisha TB

Clinical Review Meeting for new and continuing DRTB patients at the county level

C. PEADIATRIC TUBERCULOSIS

The national target for the proportion of pediatric TB cases is 10-15% of the total TB cases notified. In 2024, the country reported 12,456 pediatric TB cases, accounting for 13% of all reported cases.

The counties of Nyamira,Bomet, and Kajiado reported a proportion of 13%, as shown below:

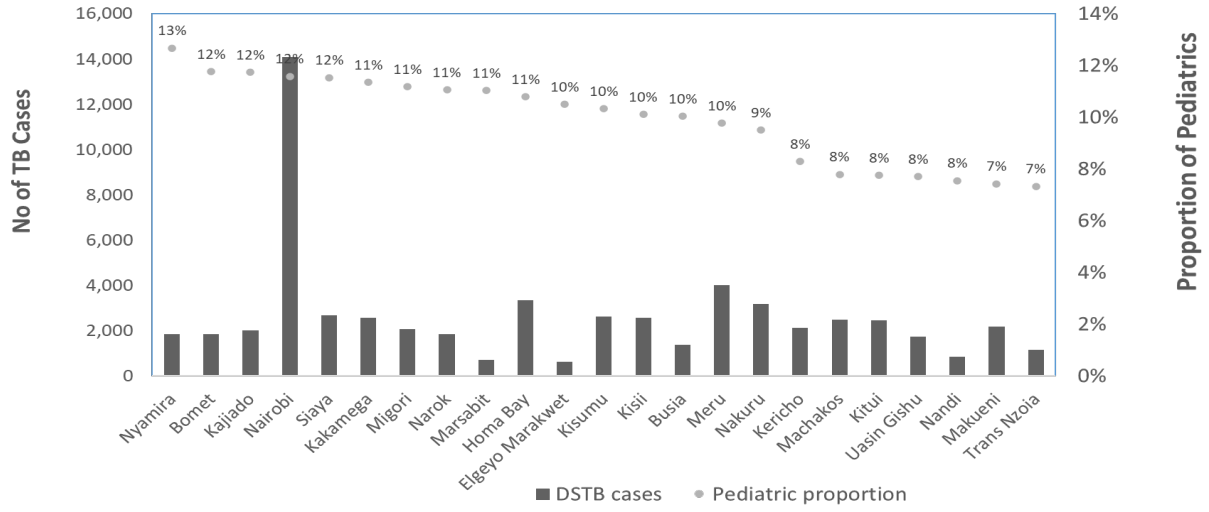


Figure 1.9: Proportion of County Pediatric Performance, 2024, Kenya

Most counties had a decline in pediatric TB case notification to 10% and above compared to 2023. However, the counties of Trans Nzoia and Makuenii had case findings of less than 7%. The low case finding in some counties could be due to health worker knowledge gaps in screening and diagnosing TB among children.

The uptake of paediatric shorter-term regimen (4-month) for the non-severe DSTB was 34%

To improve pediatric case finding and management in the Country, the program undertook the following activities in 2024;

Roll-out of the updated childhood TB guidelines.

The childhood TB guideline was reviewed and updated to include the simplified diagnostic algorithm for PTB/ EPTB and the short-term treatment regimen for non-severe TB in children aged 1 to 10 years.

The national roll-out of the shorter-term (4 months') regimen for non-severe DSTB

Trained 4,95 health care workers on the simplified diagnostic algorithm and the shorter-term 4 months' regimen for non-severe TB

Initiated the adoption plan for the TPT shorter-term regimen (3HP)

Developed the national policy on the simple one-step stool processing on Xpert MTB/RIF Ultra as a specimen for diagnosis of childhood tuberculosis

Characteristics of Pediatric TB Cases

TB HIV AMONG CHILDREN

In 2024, the HIV co-infection rate among pediatric TB cases was 9% (1,083 out of 12,456 diagnosed cases).Antiretroviral therapy (ART) coverage for children co-infected with TB and HIV remained high at 97%, though this represented a slight decline from 98% reported in 2023.

AGE-SEX DISTRIBUTION

Among notified pediatric TB cases in 2024, children aged 0–4 years accounted for 24%, those aged 5–9 years contributed 19%, while the 10–14 age group represented the largest share at 57%.Males comprised 46% of the total pediatric TB notifications.

TREATMENT OUTCOME

Treatment outcomes for pediatric TB cases in 2024 indicate a high treatment success rate of 93.5% (11,878 out of 12,698 cases).The mortality rate among children was 2.9% (373 cases), while 2.7% (340 cases) were lost to follow-up (LTFU). Treatment failure was rare, occurring in only 0.06% of cases (7 children). Additionally, 0.7% (92 cases) were not evaluated. These results reflect strong program performance, although continued attention is needed to reduce deaths and LTFU among pediatric patients.

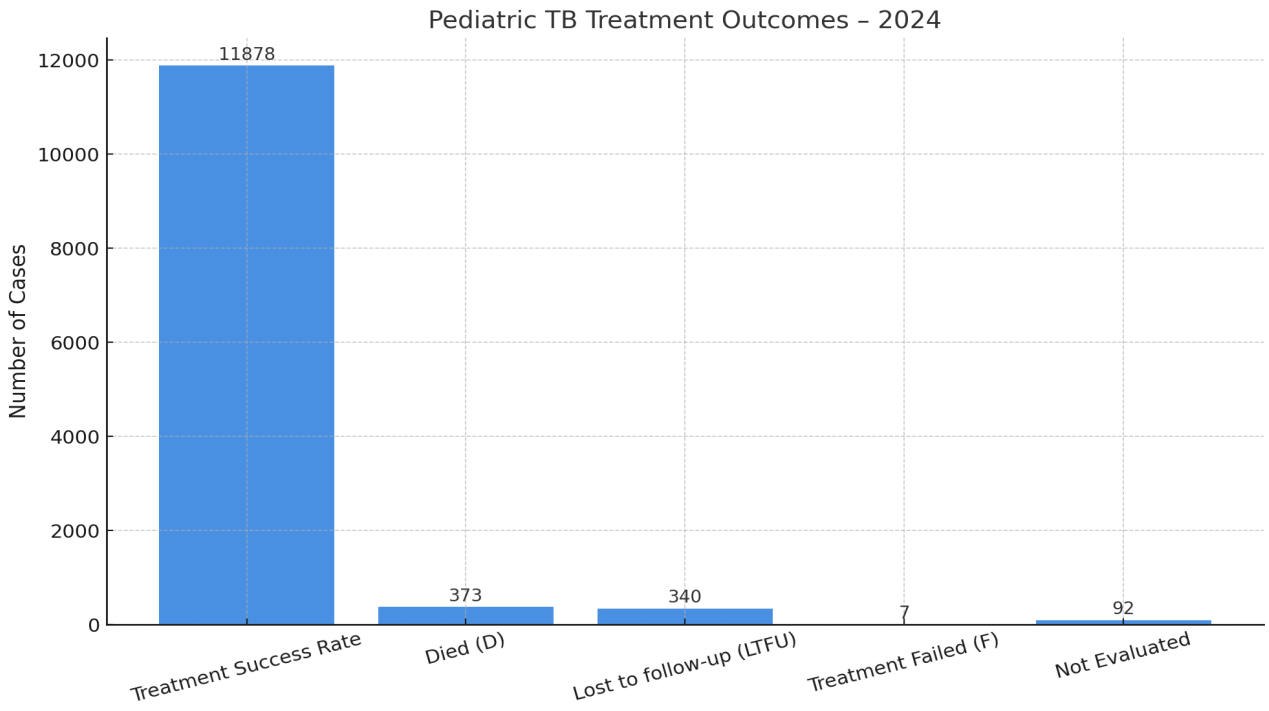


Figure 1.10: Treatment outcomes

TB AND COMORBIDITIES

A. TB/HIV

HIV infection significantly increases tuberculosis risk across all age groups, with TB being the leading cause of death among people living with HIV. TB can accelerate HIV progression in untreated patients, necessitating a comprehensive management approach. Addressing this co-epidemic requires integrated strategies targeting both conditions simultaneously through early detection, prompt treatment initiation, infection control measures, and preventive therapies.

1.4.1 HIV testing among TB patients

In 2024, Kenya maintained a high HIV testing coverage among notified TB cases, achieving an overall rate of 98%, consistent with the performance recorded in 2023. Six counties—Siaya, Kisii, Laikipia, Kwale, Mandera, and Nyamira—achieved a 100% HIV testing rate, reflecting the impact of strengthened screening interventions. On the other hand, Kilifi, Bomet, and Turkana recorded the lowest testing rates at 95%, 95%, and 94%, respectively.

1.4.2 TB/HIV coinfection and ART uptake

In 2024, Kenya reported a national TB/HIV co-infection rate of 25%, representing a slight decline from 26% in 2023. Counties with the highest co-infection rates included Siaya (57%), Kisumu (54%), Homa Bay (54%), Migori (42%), and Busia (42%), highlighting regions with a high dual burden of TB and HIV. These areas may require intensified TB/HIV collaborative interventions, including integrated service delivery and community-level outreach.

Conversely, the lowest co-infection rates were observed in Wajir (1%), Mandera (2%), Garissa (2%), Tana River (6%), and Marsabit (6%). These counties typically report a lower HIV prevalence, which may explain the corresponding lower co-infection rates.

Antiretroviral therapy (ART) uptake among TB/HIV co-infected patients remained high in 2024 at 98%, consistent with the previous year. This strong ART coverage reflects effective linkage to HIV care for co-infected patients.

The national co-infection rate has remained relatively stable at around 25% over the last several years, with only minor year-on-year variations. This trend suggests that approximately one in every four TB patients is living with HIV, underlining the continued importance of robust TB/HIV collaborative programming and universal HIV testing and treatment for all TB patients.

1.4.3 Treatment outcomes in TB/HIV co-infected patients

The country achieved an overall treatment success rate of 85% among the TB/HIV co-infected cohort with variations across counties.Wajir county had a 100% treatment success

rate. 10 counties that surpassed the national average in TSR for this cohort. These included Wajir, Lamu, Homa Bay, Migori, Siaya, Laikipia, Kisumu, Nyamira, Kisii and Makueni. Some counties, on the other hand, fell below the national average, with Nyeri having the lowest treatment success rate of 72%. The mortality rate of 9% and the Loss to follow-up was low at 4%

1.4.4 TB/HIV supported activities

In the reporting period, the following national and county-level TB/HIV coordination activities were carried out.

a. National TB/HIV Stakeholders' Forum

This activity is conducted quarterly, facilitated by the Ministry of Health, and serves as a platform to bring together various stakeholders. The Division of National Tuberculosis, Leprosy, and Lung Disease Program (DNTLD-P) and the National STI and AIDS Control Program (NASCOP) jointly coordinate this effort with support from USAID through the TB ARC II activity. The stakeholders participating in these meetings include representatives from the County governments, Development partners, implementing partners and Civil society organisations.

In 2024, stakeholders collaboratively developed the Kenya TB/HIV Acceleration Plan (TAP) for 2025-2030. The plan aims to address the dual epidemic of tuberculosis and HIV in Kenya by advancing TB case detection and reducing mortality among people living with HIV. The plan seeks to contribute to global commitments by finding 156,912 TB/HIV cases by 2030, maintaining at least 90% case detection rates, and reducing the currently high TB/HIV case fatality ratio (10%). Key strategies include strengthening coordination between TB and HIV programs, introducing innovative screening tools, optimizing diagnostic testing, improving quality of care, enhancing TB prevention, strengthening health systems, and bolstering community engagement.

b. TB/HIV Stakeholder Forums in 20 Counties

Through the Government and USAID TB ARC II activity, 20 Counties ((Nairobi, Kiambu, Siaya, Kisumu, Homabay, Kitui, Mombasa, Embu,TharakaNithi, Meru, siolo, Kericho, Nakuru, Kirinyaga,Turkana, W Pokot, Kakamega, Muranga, Nandi) were supported to conduct quarterly TB/HIV Stakehol der forums. The selected counties fell in the categories of high co-infection, low HIV testing, and high TB/HIV mortality rates. The purpose of these meetings was to improve coordination of TB/HIV activities, align county initiatives with national strategies, enhance the quality of TB/HIV services across the counties, and increase access to TB preventive therapy for both TB-HIV co-infected individuals and other at-risk populations.

C. Joint TB/HIV Support Supervisions

These activities were carried out in collaboration with implementing partners in the counties of Machakos, Busia, Kisumu, Bungoma, and Nandi. The aim of the TB/HIV technical assistance missions was to assess the implementation of TB/HIV collaborative efforts for clients co-infected with HIV and TB. This included conducting External Quality Assurance for TB and HIV diagnostic services, identifying challenges in TB/HIV service delivery, and providing on-site support to address these issues to strengthen overall service provision and improve patient outcomes.

B. Other Comorbidities

In addition to HIV, TB patients may present with a range of other comorbidities that can influence disease progression and treatment outcomes. These include diabetes, chronic kidney and liver diseases, respiratory conditions such as asthma and COPD, malnutrition, substance use disorders, and cardiovascular diseases. Managing these coexisting conditions requires an integrated, patient-centered approach—anchored on bi-directional screening, timely diagnosis, and appropriate linkage to comprehensive care and support services.

In 2024, the highest treatment success rates among TB patients with comorbidities were observed in those with a history of smoking (83%), alcoholism (80%), and asthma (80%). However, elevated loss to follow-up (LTFU) rates were noted among patients with asthma (12%), COPD (12%), and drug abuse disorders (12%), indicating potential gaps in care continuity for these groups. The highest mortality rates were reported among TB patients with cancer (50%), liver disease (45%), and cardiovascular conditions (35%), underscoring the need for strengthened clinical management and early detection of high-risk patients.

1.5 TB Preventive Therapy/Tuberculosis Infection (TBI)

Preventing the progression from TB infection to active TB disease remains a critical pillar in reducing TB incidence, in line with the WHO End TB Strategy. Tuberculosis Preventive Therapy (TPT) is recommended for individuals at increased risk of developing TB disease or exposure to TB infection. Key target populations for TPT include people living with HIV (PLHIV), household contacts of individuals with pulmonary TB, and other high-risk groups such as healthcare workers, prisoners, and individuals with clinical vulnerabilities.

In 2024, the uptake of TPT across these priority groups is detailed in Table 1 below. Kenya has adopted multiple TPT regimens to meet diverse patient needs, including 6 months of Isoniazid (6H), 3 months of Isoniazid and Rifampicin (3RH), and the shorter 3-month regimen of Isoniazid and Rifapentine (3HP). The increased use of shorter regimens, particularly among adults, has been instrumental in improving adherence and completion rates.

TPT by high-Risk groups	
Risk groups	**Percentage**
Household contacts	**87%**
HCWs	**9%**
Prisoners and prison staff	**3%**
Other glinical risks groups	**<1%**
PLHIV	**<1%**

At-risk groups	Numbers	Percentage
PLHIV	114664	70%
Household contacts	42140	26%
HCWs	4527	3%
Prisoners and prison staff	1282	1%
Other clinical risks group	146	<1%
Total	**162759**	**100%**

1.5.2 TB preventive treatment: overall status of progress

a. Household contacts

In 2024, a total of 61,499 contacts of bacteriologically confirmed pulmonary TB cases were recorded in TIBU and screened symptomatically for TB disease. These contacts were linked to 10,873 index TB cases, representing 21% coverage out of the 50,453 pulmonary bacteriologically confirmed TB cases notified during the same period.

Among the screened contacts, 55,023 (89.5%) were asymptomatic, while 6,476 (10.5%) presented with TB symptoms. Further investigation of the symptomatic contacts led to the diagnosis of 1,233 TB cases.

The asymptomatic contacts formed the target population for Tuberculosis Preventive Therapy (TPT). Of these, 49,571 (96%) were initiated on TPT:

- **34,001 on 3HP**
- **13,645 on 3RH**
- **641 on 6H**

In terms of TPT outcomes, 18,186 (83%) of those who initiated therapy successfully completed their course. However, 3,188 (14.6%) were not evaluated, and 1% were reported as discontinued, with another 1% lost to follow-up.

b. Health care workers

There were 4,527 health care workers who were screened for TB and were notified in TIBU in 2024 from 40 counties. 6,997 (99%) were asymptomatic while 28 (1%) were symptomatic. Those with TB symptoms were investigated and one of them was diagnosed with Drug sensitive TB and was initiated on treatment. For those who were asymptomatic 6831(97%) were initiated on TPT and 80% successfully completed their course of TPT. This proportion is low as compared to that of household contacts. The negative outcomes that led to low completion rates were; discontinuation of TPT at 3% and not evaluated at 15%

c. Other risk groups (Prisoners and Prison staff and other clinical groups)

In 2024, Prisoners & prison staff initiated on TPT were 1282(3%) ; this was an increase from 2023 by 11%. Other clinical groups initiated on TPT were 146 contributing to less than 1% of high groups initiated on TPT.



STRATEGIES FOR FINDING MISSING PEOPLE WITH TB

2

Background information

Active case finding (ACF) is the systematic identification of persons with symptoms that suggest TB from a predetermined target group/population by doing symptomatic screening, detailed history taking, physical examinations, and further laboratory and/or radiological investigations to diagnose TB. The NSP 2023/24-2027/28 is committed to patient-centered quality care, grounded in an evidence-based priority setting and planning approach that allocates resources to the identified and validated best practices along the patient pathway to quality care. Patients presenting to any health service delivery point (SDP) be symptomatically screened for TB. The use of other TB screening options, such as digital X-ray with AI /chest radiographs (CXR), is necessary for particular patient groups, such as children and PLHIV, as recommended in the diagnostic algorithms.

Indicator	2021		2022		2023		2024	
	n	%	n	%	n	%	n	%
Workload	79,481,469	N/A	73,221,107	99726833	N/A	117331065	N/A	
Respiratory conditions	25,938,025	N/A	21,622,286	N/A	24,237,343	N/A	19,996,995	N/A
Screened for TB	18,239,923	23	25,253,561	34	32,071,871	32	35,961,338	
Presumptive TB cases identified	499,381	2.7	812,882	3.2	841,501	3	1,171,802	3.3
Presumptive TB cases investigated for TB	245,902	49	502,970	62	509,419	61	587,395	50
Total presumptive cases confirmed to have TB	26,443	5	41,733	8	50,936	10	73,014	12

Presumptive cases clinically diagnosed to have TB	8,347	32	13,331	32	17,182	34	18,642	26
presumptive cases bacteriologically confirmed to have TB	18,096	68	28,402	68	33,754	66	54,372	74
Confirmed TB cases started on treatment	24,414	92	39,738	95	47,366	93	52,235	72
Presumptive cases referred by CHV	14,020		22,952		27,100		37,726	

There have been gains made and lessons learned in the case of finding initiatives, while some challenges and lessons have been realized. The key challenge among these identified by the ACF mission in 2019 was the inefficiency of ACF activities. Quality improvement is a mainstay in improving key indicator outcomes in TB response; the program is currently implemented in 10 counties and continuously learns from QI for the HIV program, which is more established.

To respond to gaps revealed during the 2016 prevalence survey, the TB program implemented strategic initiatives that would find the missing people with TB. The Kenya Innovation Challenge TB Fund (KIC-TB) is one of the Global Fund-supported strategic initiatives to find missing people with TB. The aim of KIC-TB is to find the missing people with TB in the community using innovative approaches and link them to diagnosis and treatment. Other strategic initiatives include Private Mix (PPM) and contact management.

PPM collaborations provide continuous strengthening and expansion of meaningful engagement and participation by the private sector in the fight against TB. The current approaches to engaging private providers are outlined in the PPM Action Plan 2021-2023 which describes goals, objectives, and interventions for expanding and scaling up current PPM in the country.

2.2 Active case finding at the health facility level

In 2024, the NTP continued with intensified efforts toward case finding in health facilities.

Since the incorporation of ACF indicators in TIBU, there has been an increase in reporting from the counties, resulting in almost full-scale documentation looking at data from 2021 to 2024. However, there was a noticeable increase in the workload reporting in 2021 and 2024, which may partially explain some of the data variations in the cascade. As shown in the table above, there is a slight increase in presumptive identification of 3.3% in 2024 from 3% in 2023 mainly due to the increase of the workload in 2024. Overall, the ACF cascade indicators are still below the expected target and thus the situation highlights the need for quality improvement strategies, particularly concerning the reporting of ACF cascade data into TIBU.

Program Quality Efficiency and Improvement (PQE)

To align with the Kenya Quality Model for Health, which outlines the ministry's strategic approach to managing healthcare service quality in the country, the National Tuberculosis, Leprosy, and Lung Disease Program (NTLDP) have adopted the Patient-Centered Quality Improvement (PQE) approach for locating individuals with TB in healthcare facilities. The primary objective of implementing PQE in Active Case Finding (ACF) is to enhance TB case detection by institutionalizing the PQE model within health facilities across Kenya.

To facilitate this, the program first developed the PQE ACF handbook and the Quality Improvement (QI) framework. Subsequently, the program focused on building the capacity of stakeholders at various levels to ensure their active participation and ownership.

Tibu LIMs Screening Data

iNTP- CAD 4 TB Data

CAD Score <40												
2024												
Age group	15-24		25-34		35-44		45-54		55-64		=>65	
Sex	F	M	F	M	F	M	F	M	F	M	F	M
Number of chest X-rays with a CAD score of below 40	2817	4029	3984	6081	4338	5186	3381	3423	2051	1759	2115	1578
Number of chest X-rays with a CAD score of below 40 with positive laboratory results	2	7	11	5	7	8	5	4	0	0	0	1
Number of chest X-rays with a CAD score of below 40 with negative laboratory results	118	187	170	204	180	223	133	150	87	90	71	57
Number of chest X-rays with a CAD score of below 40 without laboratory investigations	2488	3656	3482	5631	3852	4710	3043	3084	1918	1577	1998	1475
Number of chest X-rays with a CAD score of below 40 read by a radiologist												
Active TB	1	0	0	0	0	0	2	0	0	1	0	2
Old TB	0	0	0	0	0	0	0	0	0	0	0	0
Non TB Findings	0	0	1	0	0	0	0	0	0	0	0	0
Normal	0	0	0	0	0	0	0	0	0	0	0	0

CAD Score >60												
2024												
Age group	15-24		25-34		35-44		45-54		55-64		=>65	
Sex	F	M	F	M	F	M	F	M	F	M	F	M
Number of chest X-rays with a CAD score of 60 and above	105	190	182	486	209	730	157	804	82	279	110	283
Number of chest X-rays with a CAD score of 60 and above with positive laboratory results	19	59	49	128	47	138	23	97	4	33	11	27
Number of chest X-rays with a CAD score of 60 and above with negative laboratory results	29	35	45	139	72	271	66	236	42	134	62	133
Number of chest X-rays with a CAD score of 60 and above without laboratory investigations	54	93	88	219	86	312	85	254	35	107	37	101
Number of chest X-rays with a CAD score of 60 and above read by a radiologist												
Active TB	54	87	88	278	104	393	76	328	47	140	53	130
Old TB	3	7	17	28	21	72	17	72	8	38	15	33
Non TB Findings	10	22	20	29	15	37	6	18	7	18	10	19
Normal	1	4	1	5	0	4	1	6	0	1	0	2

CAD Score 40-59												
2024												
Age group	15-24		25-34		35-44		45-54		55-64		=>65	
Sex	F	M	F	M	F	M	F	M	F	M	F	M
Number of chest X-rays with a CAD score of 40-59	177	288	221	483	280	510	249	433	185	238	253	312
Number of chest X-rays with a CAD score of 40-59 with positive laboratory results	3	7	14	11	4	8	2	13	4	4	2	6
Number of chest X-rays with a CAD score of 40-59 with negative laboratory results	77	73	82	112	111	199	119	152	87	99	136	182
Number of chest X-rays with a CAD score of 40-59 without laboratory investigations	93	187	122	332	154	294	124	257	93	132	112	139
Number of chest X-rays with a CAD score of 40-59 read by a radiologist												
Active TB	42	71	81	118	74	148	82	104	48	89	87	84
Old TB	3	7	12	18	18	29	15	45	8	13	9	18
Non TB Findings	35	33	39	52	55	82	84	57	49	44	74	70
Normal	39	74	43	132	49	111	43	92	25	37	30	55

Initially, the implementation targeted 10 counties, encompassing 250 facilities, before expanding to cover all 47 counties. Having successfully conducted TOT sensitization – National program officers, Partners, and CTLCs (10 PQE counties), SCTLCs, Mentors/ Coaches Sensitization and Facility HCWs PQE sensitization in 2022, some of the activities that we conducted in year 2023 were;

Review meetings and Mentorship

Mentorship conducted by QI coaches/mentors supporting the WIT and QIT at the facility level. To track progress on implementation of facility based active case finding by utilizing facility quality improvement approaches, meetings were held every month at the PQE facilities. As part of the effort. Mentorship at the facility was supported through NTP every quarter, while review meetings were held every month through the support of AMREF.

Public-Private Mix (PPM) for TB Control in Kenya: 2024 Activities and Outcomes

Overall PPM Performance

In 2024, Kenya's National TB Program made significant strides in enhancing public-private partnerships for tuberculosis control through collaborative efforts between implementing partners -USAID Tamatisha TB, TB ARC II and AMREF activities. These strategic interventions expanded the reach of TB services into private healthcare facilities, workplaces, and learning institutions, resulting in improved case detection, treatment initiation, and overall coordination of TB control efforts.

In 2024, Kenya's efforts to engage the private sector in TB care continued to show promising progress across several key indicators (Figure 1), reflecting growing alignment between public health goals and private healthcare systems.

No.	Indicator	BaselineTarget as of 2020	Achievement 2023	Achievement 2024
	Provider Coverage			
1	Proportion of private sector providers engaged to provide comprehensive TB services	30%	27%	27.6%
2	Proportion of engaged private sector providers recording and reporting TB cases through an e-system	100%	29%	31%
	Service Coverage			
3	Bacteriologically confirmed	70%	44%	45.7%
4	Initial access to WRD	100%	49.50%	52.7%
	Surveillance			
5	Contribution of the private sector in TB case finding (Notified)	25%	19.40%	22.2%
6	Proportion of cases referred from private sector	3.50%	5.20%	5.8%
	Outcome			
5	Ensure treatment success of at least 90% of all DSTB patients managed by private providers	at least 90%	88%	89.8%
6	Ensure treatment success of at least 80% of DR TB patients managed by private providers	at least 80%	82.3% (2021)	91.4%

Figure 1: Milestones in PPM target implementation, 2024

Private Provider Coverage:

Private sector engagement edged closer to the national target, with 27.6% of providers offering comprehensive TB services—up from 27% in 2023. Reporting compliance also improved significantly, rising from 29% to 51% in just one year. This 76% increase signals enhanced collaboration, greater awareness, and a solid foundation for further expansion.

Service Coverage:

While bacteriological confirmation of TB cases remained steady at around 44–45%—below the 70% target—there is an opportunity to increase diagnostic accuracy through improved access to WHO-recommended rapid molecular tests (currently at 50% coverage). Strengthening the sample referral system and linking more private facilities to diagnostic networks will be key to addressing these gaps.

Case Finding:

The private sector's contribution to overall TB case notifications rose from 19.4% in 2023 to 22.2% in 2024 (Figure 2), marking a 14.4% improvement. Referrals from private facilities also surpassed expectations, reaching 5.8% against a target of 3.5%—an outstanding 65% overachievement. This indicates well-functioning referral pathways and an encouraging trend toward earlier TB detection.

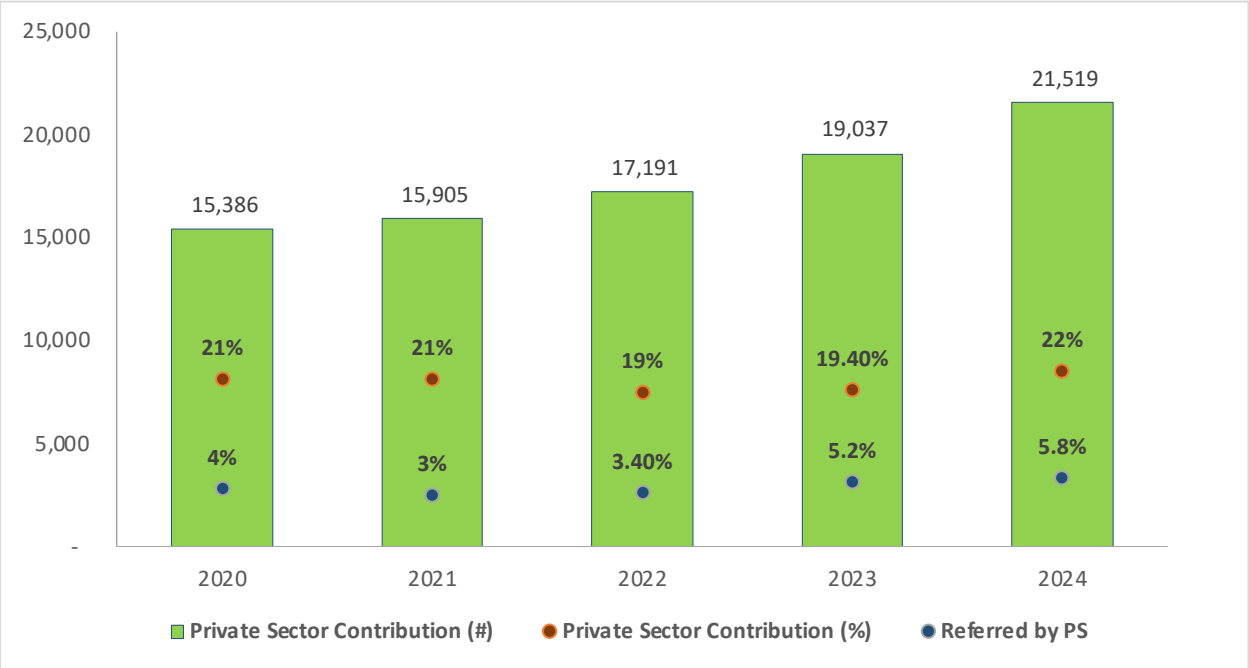


Figure 2: Trends in DSTB Case Finding- contribution by Private Sector – 2020 - 2024

Treatment Outcomes:

Private providers maintained high treatment success for drug-sensitive TB, achieving 89.8%—just shy of the 90% target. Notably, treatment success for drug-resistant TB exceeded expectations, reaching 91.4% against a target of 80%. This outcome underscores the private sector's capability to manage even complex TB cases effectively. However, TB/HIV mortality remains a concern at 9%, suggesting the need for improved integration of TB and HIV services in the private sector.

Activities

1. Strategic Planning and Framework Development- 2024-2028 PPM Action Plan

The USAID Tamatisha TB activity collaborated with the National TB Program and various stakeholders to develop a comprehensive five-year PPM action plan (2024-2028). This strategic document outlines approaches for engaging non-state actors and healthcare providers, including private clinics, chemists, and stand-alone laboratories. The plan included:

- Defined target county selection criteria focusing on high TB burden areas
- Identification of potential service providers across different sectors
- Refined implementation strategies based on lessons learned from previous PPM initiatives

Outcome: The action plan established a structured roadmap for PPM activities, resulting in 74 private healthcare facilities being successfully mapped to GeneXpert locations through collaborative efforts with County TB Coordinators.

2. Digital Mapping and M&E Tools Development

Tamatisha TB supported the creation of innovative digital tools to enhance PPM implementation:

- Development of a digital mapping tool for private provider assessment scheduled for FY25 Q1
- Creation of standardized M&E tools for recording and reporting PPM routine program data
- Refinement of PPM monitoring indicators to track performance consistently

Outcome: The digital mapping tool enabled more effective targeting of private providers, with preliminary assessments identifying 66 private health facilities suitable for TB service integration.

3. Implementation in Focus Counties

3.1 Respiratory Society of Kenya Collaboration

Tamatisha TB engaged the Respiratory Society of Kenya (ReSOK) as a sub-recipient to lead PPM implementation, concentrating efforts in four priority counties:

- Nakuru County: Urban setting with high TB prevalence

- Kericho County: Mixed rural-urban population with significant workplace opportunities
- Meru County: Agricultural region with diverse private sector engagement
- Tharaka Nithi County: Rural setting requiring tailored PPM approaches

Outcome: Through this targeted approach, TB diagnostic and treatment services were successfully integrated into 66 private healthcare facilities, with TB screening becoming a standard service in these institutions.

4. Capacity Building and Healthcare Worker Engagement

4.1 Training and Sensitization Activities

Both Tamatisha TB and TB ARC II invested heavily in building capacity among private sector healthcare workers:

- TB ARC II trained 351 healthcare workers on TB management in workplace settings (161 females, 190 males)
- Tamatisha TB facilitated training for healthcare workers from 66 private health facilities on TB diagnosis and management
- 7,476 workplace TB focal points and champions were sensitized on TB screening protocols (47% female, 53% male)

Outcome: The enhanced knowledge and skills among private sector healthcare workers translated to improved TB screening practices, with 237 presumptive TB cases identified in private facilities, of which 210 (89%) received appropriate testing—53% via smear microscopy, 47% via GeneXpert, and 1% through chest X-rays.

4.2 Continuous Medical Education (CME) Sessions

Tamatisha TB coordinated with county health departments to conduct facility-based CME sessions on TB for private sector healthcare workers, covering:

- TB transmission and pathogenesis
- Screening and diagnostic algorithms
- Treatment regimens and adherence support
- TB/HIV co-infection management

Outcome: These CME sessions reached approximately 3,000 private healthcare workers, strengthening clinical competencies and standardizing TB care protocols across both public and private sectors.

5. Workplace Engagement Model

5.1 Comprehensive Workplace Implementation

TB ARC II expanded its workplace engagement model across diverse sectors:

- Manufacturing and industrial sites: 45 workplaces engaged
- Agricultural estates and processing plants: 37 workplaces engaged
- Mining operations: 12 workplaces engaged
- Export Processing Zones (apparel): 18 workplaces engaged
- Informal sector markets: 35 areas covered
- Transport sector hubs: 22 locations engaged
- Institutions of higher learning: 39 engaged

Outcome: This comprehensive approach resulted in impressive achievements:

- 770,221 clients reached across 208 workplaces
- 377,083 (49%) individuals screened for TB
- 10,909 presumptive cases identified
- 486 (6%) TB cases diagnosed, of which 264 (54%) were bacteriologically confirmed
- 479 (99%) TB patients initiated on treatment
- 21 children under 15 years with TB identified through contact management

5.2 TB Workplace Policy Implementation

Building on the previously launched TB Workplace Policy, TB ARC II continued strengthening the integration of TB services into workplace health programs through:

- Collaboration with Ministries of Health and Labour to mainstream TB screening in occupational health services
- Engagement with private sector organizations including the Federation of Kenya Employers
- Capacity building for workplace health committees to include TB in their health programs

Outcome: The policy implementation resulted in 315 (66%) male workers diagnosed

with TB receiving appropriate care, addressing gender disparities in TB case detection. Additionally, 100% of diagnosed cases were notified through the national surveillance system, demonstrating successful integration of private sector data into national reporting mechanisms.

6. Coordination and Governance

PPM Committee of Experts Forums

Both programs supported the National TB Program in coordinating quarterly PPM Committee of Experts (CoE) forums at national and county levels:

- National-level forums brought together key stakeholders from public and private sectors
- County-level forums facilitated localized planning and coordination
- Technical working groups addressed specific PPM implementation challenges

Outcome: These coordination mechanisms enhanced collaboration between public and private sector players, with documented improvements in reporting rates from private facilities. The PPM dashboard showed a 22% contribution of TB case notifications from the private sector in 2024, exceeding the 20% target.

7. PPM Dashboard Utilization

TB ARC II supported the utilization of the newly developed PPM dashboard to provide efficient access to national data for decision-making:

- Real-time monitoring of PPM implementation progress
- Data-driven resource allocation
- Identification of high-performing private facilities for best practice sharing

Outcome: The dashboard enabled evidence-based decision-making, helping to identify that 7,004 TB cases (22% of total national notifications) were contributed by private sector facilities in 2024.

8. Multisectoral Collaboration

8.1 Cross-Ministry Engagement

Both programs facilitated collaboration across government ministries:

- Ministry of Health: Technical guidance and commodity support
- Ministry of Labour and Social Protection: Workplace policy implementation
- County Health Departments: Local implementation and oversight

Outcome: This multisectoral approach established sustainable structures for TB control in workplace settings, with documented memoranda of understanding between 15 large workplaces and their respective county health departments.

8.2 Public-Private Partnership Structures

TB ARC II supported the establishment of formal partnership structures between County Health Management Teams and various workplaces:

- Creation of workplace TB technical working groups
- Development of joint screening schedules
- Shared commodity management systems

Outcome: These partnerships facilitated 98 TB screening outreaches in workplaces, with more than 25,000 workers screened, identifying 162 TB cases that might otherwise have been missed



DIAGNOSTIC CAPACITY AND SURVEILLANCE OF TB

3

Introduction

The Division of National Tuberculosis, Leprosy, and Lung Diseases Program (DNTLD-P) and the National Tuberculosis Reference Laboratory (NTRL) collaborated to enhance access of TB diagnostic services in the country as per the 2019-2023 NSP priorities. This was done by supporting, introducing, and scaling up WHO-approved rapid diagnostic tests (Truenat, GeneXpert MTB/RIF Ultra, and TB LAMP). Efforts towards revamping the surveillance systems for culture and drug susceptibility testing (DST) were prioritized. Aligned to the DNTLD-P Strategic Plan 2023/2024-2027/2028, the goal is to diagnose and treat at least 417,918 TB patients by 2028. Collaborating with all 47 county governments, there was a focus on improving case notification through various initiatives. These include healthcare worker training, integrated specimen referral systems, equipment maintenance through service level agreements, and the introduction of new tools project (iNTP). The key priorities for the TB diagnostic network included expanding safe and quality-assured testing and surveillance across all healthcare levels, decentralizing services to point-of-care facilities, and supporting laboratory workforce capacity.

Diagnostic Network Assessment (DNA)

In 2023, the DNTLD-P, through the USAID IDDS project and partners spearheaded the first TB diagnostic network Assessment

(DNA) in Kenya. The diagnostic network assessment aimed to evaluate current practices, policies, guidelines and algorithms, identify challenges, and propose evidence-based interventions to enhance TB and MDR-TB detection. Key findings from the diagnostic network assessment highlighted challenges like limited availability of policies, suboptimal performance on Biosafety (26%) as key core element, regular stockout of laboratory commodities, shortage/high turnover of laboratory and clinical staff affecting TB services. The diagnostic network assessment highlighted key recommendations to enhance TB diagnostic services. These include strengthening the capacity of the NTRL, expanding access towards prompt TB detection, improving specimen referral systems, ensuring a steady supply laboratory of consumables, implementing integrated electronic data systems, development/monitoring of TB specific Biosafety manual and dissemination to counties, collaboration with county government to ensure adequate human resource (HRH), and ensuring safe working conditions. These measures aim to address challenges and improve the effectiveness of TB diagnosis in the country.

Note: For more details, refer to the final DNA report 2023.

The Diagnostic Network Optimization

In collaboration with USAID TB ARC II through funding from FIND, the DNTLD-P facilitated meetings in late 2022 to drive the TB diagnostic network's optimization, involving various disease programs and partners. Following baseline scenario presentations on December 6, 2022, collaborative efforts continued to refine data inputs, conduct site-level testing, estimate demand, and plan scenarios. Subsequent workshops and virtual meetings culminated in a final workshop in June 2023, where OptiDx analysis by FIND experts provided insights for optimizing diagnostic platforms and guiding NSP development and grant writing. Currently, the DNO report has effectively guided on the proposed mWRD placement

Key recommendations;

- Increase 10 color Genexpert machines to 52 to reduce the average service distance for XDR to <50km incl in hard-to-reach areas.
- With these 52, the 10 color locations coverage of >99% in 70 km distance could be achieved.

Note: For more details, refer to the final DNO report 2023.

Increasing TB diagnostic access

Aligning with NSP 2019-2023 priorities to enhance TB testing accessibility, the DNTLD-P scaled-up TB diagnostic and screening services nationwide by strategically deploying mWRD tools following spatial analysis. The scale-up was made possible through the introducing New Tools Project (iNTP) funded by USAID/Stop TB partnership global. The key diagnostic tools included Truenat MTB/RIF assay, Chest X-ray/CAD for TB, Quantiferon test for latent TB diagnosis. Other diagnostic tools scale-up included LPA, LF LAM, TB-LAMP, use of stool for Xpert testing for under-fives as illustrated in the map below. The placement of the machines in the TB diagnostic network is tiered as per the figure below;

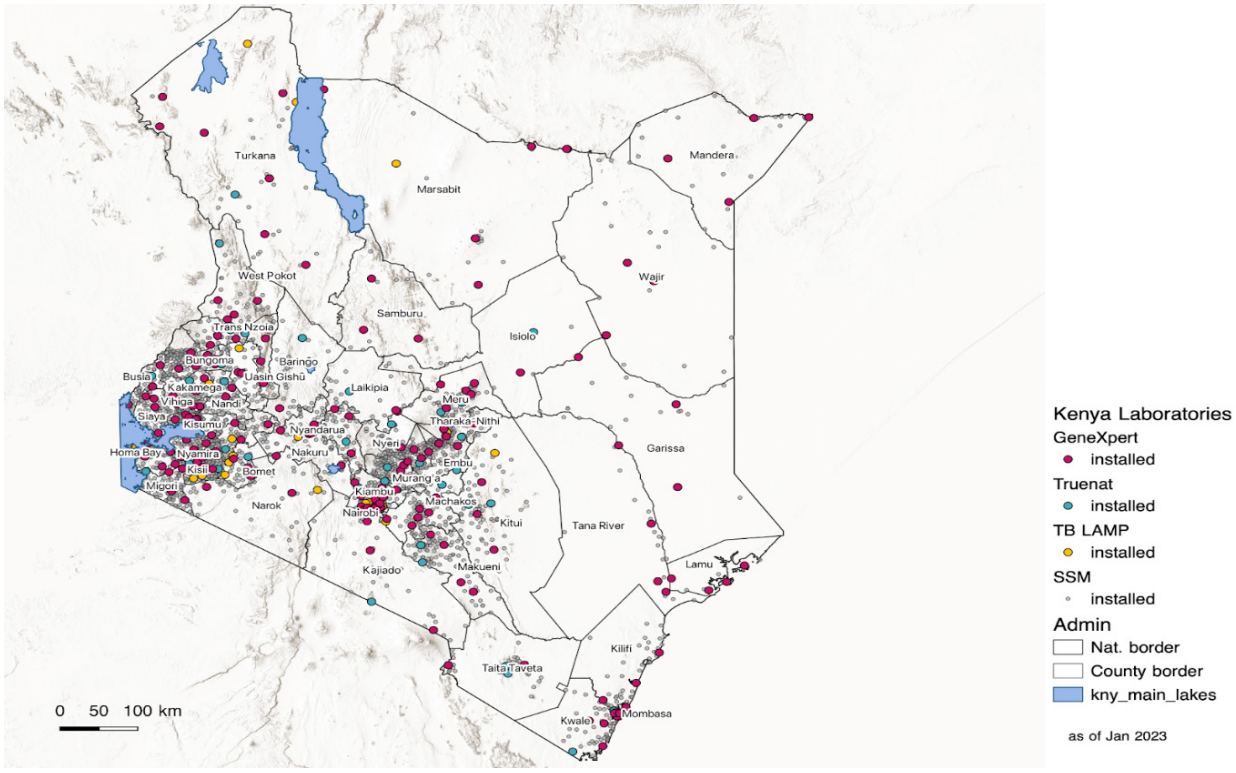


Figure 3.1: TB diagnostic network

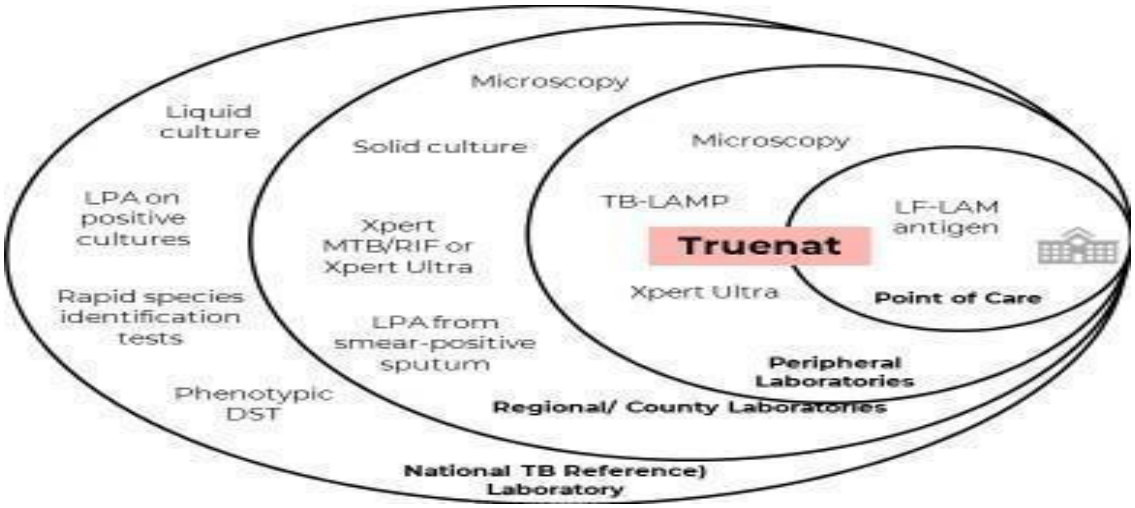


Figure 3.2: Diagnostic Sites in Kenya

Integrated Laboratory Specimen Referral Systems (ISRS)

In 2024, the DNTLD-P continued using the existing ISRS for the referral of TB samples to support transportation of specimens to diagnostic facilities both at the mWRDs and national reference laboratory. This process involved coordination across counties, inter-county regions, and the National Tuberculosis Reference Laboratory (NTRL), utilizing various means such as motor riders, couriers, and healthcare workers. At the county level,

respective implementing partners supported the ISRS, while movement of samples to NTRL, KEMRI TB Lab Kisian, and the new LPA facilities for Culture and DST was facilitated through courier services supported through USAID TB ARC II activity.

In an effort to improve on the ISRS there was a review of the 2019 guidelines, which is still in process this will include county and disease-specific components regarding the 2023 DNO findings. Mapping of partners' support and scoping for the ISRS dashboard was also done

Remote logging

TB culture specimen remote login services were rolled out in 2023, NTRL in partnership with AMREF has up scaled this service to covering 28 counties/734 facilities and 10 counties/68 facilities for specimens being shipped to NTRL and Kemri CDC Kisiani respectively for TB drug resistance surveillance. This initiative provides healthcare workers with real time access to LPA/culture/DST results for patient monitoring, enabling them to track sample progress and minimize rejections as specimens are first verified by hub facilities. Remote login is a web-based application making it possible for any facility with a computer and internet availability.

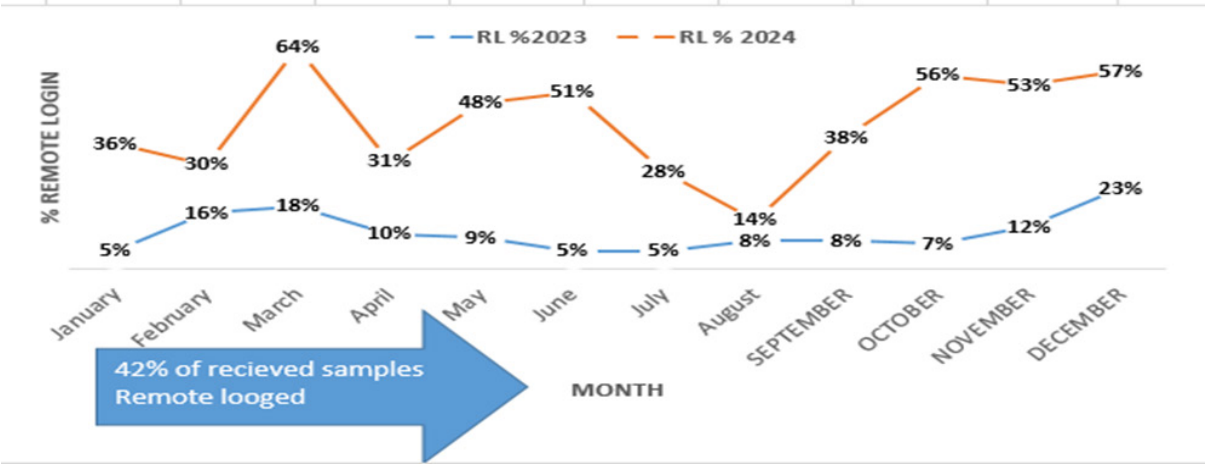


Figure 3.3: The proportion of samples remotely logged in 2023

Tuberculosis testing menu

The current molecular diagnostic techniques in line with the Kenya TB screening and diagnostic algorithm include; molecular WHO Rapid Diagnostic platforms (GeneXpert MTB/RIF ULTRA, Truenat MTB/RIF, TB LAMP) and LF LAM as primary diagnostic tests; all presumptive cases should access it, followed by phenotypic Liquid and solid culture and drug susceptibility testing (DST), Line probe assays (LPA), and smear microscope for treatment follow-ups.

TB LAM

TB LAM use was recommended for use by the WHO in 2015. In 2017, Kenya adopted the use of TB-LAM to aid in the diagnosis of TB among eligible PLHIV. Through USAID TB ARC II support a pilot was carried out in 12 high-burden TB/HIV Counties (Homa Bay, Siaya, Kisumu, Busia, Kisii, Kakamega, Uasin Gishu, Nyandarua, Nairobi, Nakuru, Mombasa and Kiambu). In 2023 the TB LAM testing was scaled-up to all 47 counties.

GeneXpert

Through the support of the USAID TB ARC II project, a total of 208 GeneXpert sites equipped with 219 machines were actively supported and monitored. These sites were bundled on a monthly basis to enable seamless upload of GeneXpert results to TIBULIMS, Kenya's national TB diagnostic reporting platform. This integration not only improved data visibility but also facilitated the automated dispatch of test results via SMS and email to clinicians, thereby enhancing the timeliness of treatment initiation.

Test volumes steadily increased between April and August, peaking in August (51,000 tests). Although a decline followed in the last quarter, the overall growth in test throughput underscores the impact of enhanced bundling, improved digital linkages, and prompt result transmission.

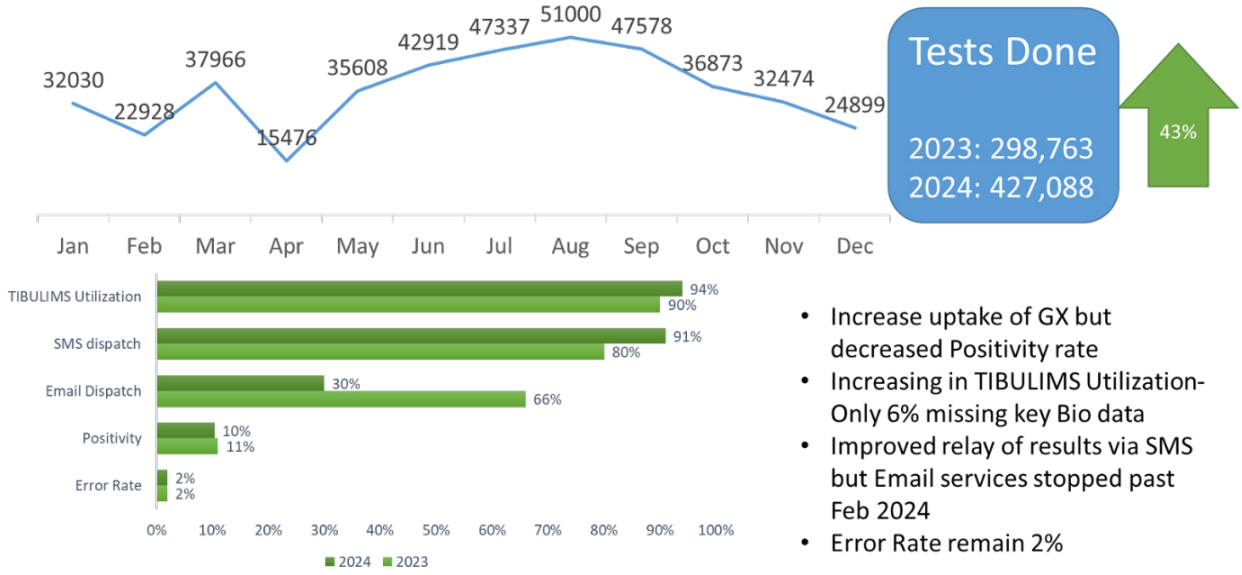


Figure 3.4: GeneXpert testing Indicators, 2024

Genexpert Performance Highlights – 2024 vs 2023:

Total Tests Done:

- 2023: 298,763
- 2024: 427,088
- Change: +43% increase

- TIBULIMS Utilization improved from 90% (2023) to 94% (2024)
- SMS Result Dispatch increased from 80% to 91%
- Email Dispatch saw a significant rise from 30% in 2023 to 66% in 2024
- Positivity Rate remained relatively stable at 11% in 2023 and 10% in 2024
- Error Rate was consistent at 2% for both years

Service Level Agreement (SLA) implementation

The NTLD-P continued to support the GeneXpert Service Level Agreement (SLA) signed with Cepheid International for the maintenance of all GeneXpert equipment countrywide. The program is monitoring the KPIs (Refer table on the right) to assess performance of the cepheid during this period of implementation.

Component	Duration	N	Freq.	Percent
Module replacement	< 5days	11	7	64%
	> 5 days		4	36%
Hardware component	<15 days	9	8	89%
	>15 days		1	11%
Errors	< 5days	37	20	54%
	> 5 days		17	46%
Software component	<15 days	12	10	83%
	>15 days		2	17%
Others	< 5days	27	17	63%
	> 5 days		10	37%

Truenat

In 2022, Kenya introduced the Truenat MTB/RIF assay through the Introducing New TB Diagnostic Tools Project (iNTP), implemented by the Kenya National Tuberculosis, Leprosy and Lung Disease Program (NTLD-Program) in collaboration with USAID and the Stop TB Partnership. Building on the success and insights from the iNTP rollout, the Global Fund supported the procurement of an additional 40 Truenat machines as part of the national expansion plan.

Spatial analysis conducted during the initial iNTP phase informed the selection of candidate health facilities for the installation of the new devices. By 2024, 78 Truenat devices were actively in use across various facilities, with performance metrics highlighted below.

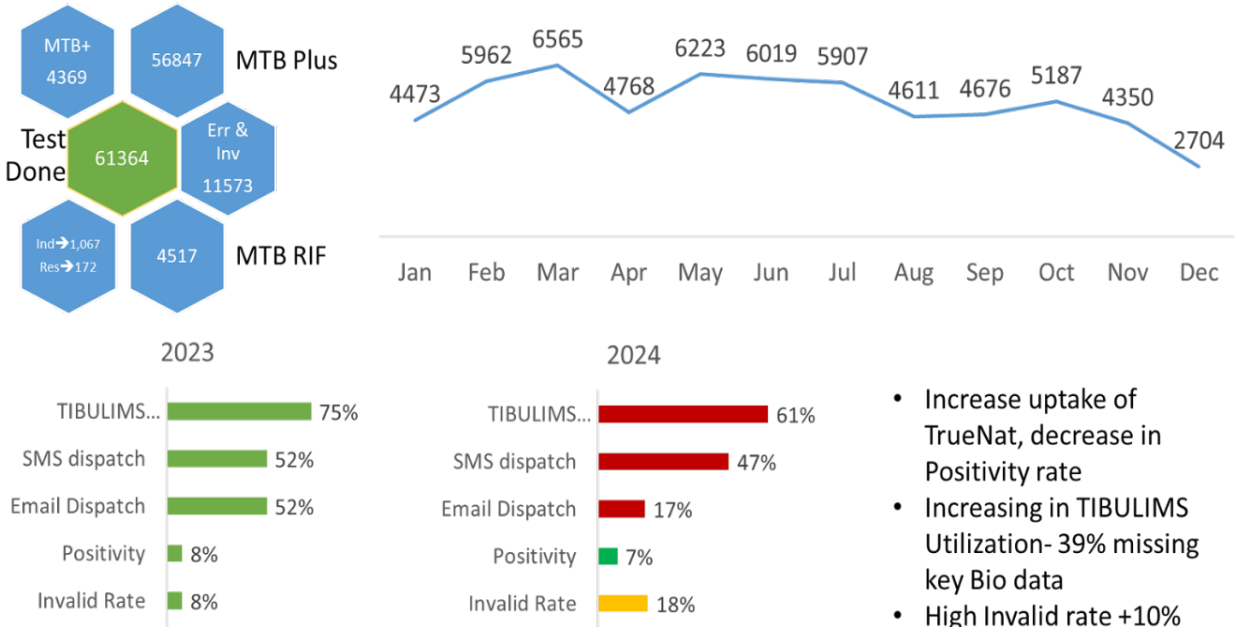


Figure 3.5: TrueNat Data, 2024

Truenat Performance Summary for 2024:

- Total Tests Conducted: 61,364
- MTB Positive Results: 4,369
- Error and Invalid Results: 11,573, comprising 18% invalid rate and 2% error rate
- Indeterminate Results: 1,067
- Rifampicin Resistance Detected: 172
- Positivity Rate: 7%

Monthly testing volumes peaked in March (6,565 tests) and remained above 6,000 in May (6,223) and June (6,019), before showing a gradual decline toward the end of the year, with 2,704 tests in December.

Result Dispatch Trends: Compared to 2023, 2024 saw a reduction in digital result dispatch efficiency:

TIBULIMS Integration dropped from 75% in 2023 to 61% in 2024

SMS Dispatch declined from 52% to 47%

Email Dispatch saw the most significant drop, from 52% in 2023 to only 17% in 2024

The rise in invalid rates from 8% to 18% in 2024 calls for renewed focus on training, quality assurance, and possible device maintenance or sample and/or commodity(cartridges) handling improvements.

Tuberculosis Loop-Mediated Isothermal Amplification (TB LAMP)

In 2022, Kenya introduced TB LAMP diagnosis, procuring 26 machines funded by GoK and distributing them to 26 facilities across 18 countries. Additionally, 4 machines were installed during the pilot phase, totaling 30 machines nationwide. The rollout included facility identification, end-user training, and commodity distribution. TB LAMP offers a rapid and accurate alternative to smear microscopy for TB diagnosis. In 2024, 9,485 tests were conducted, resulting in 757 (8%) positive cases. (to edit when complete data is received)

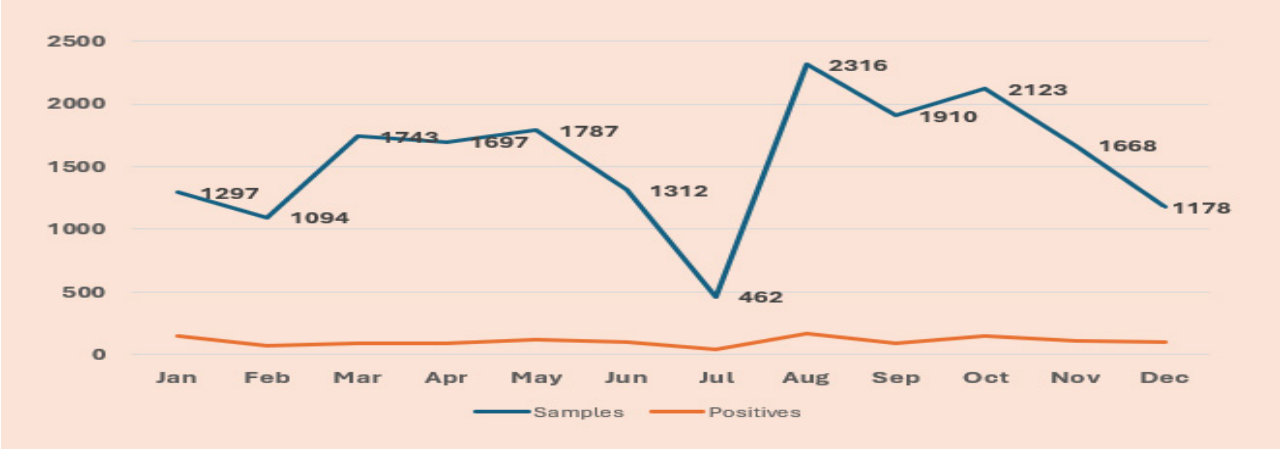


Figure 3.5: TB-LAMP Data, 2024

Smear Microscopy

AFB smear microscopy remains a key diagnostic tool in the identification of TB patients and monitoring of treatment for drug-sensitive TB patients and Drug-resistant TB.

The National TB Program conducted capacity building for laboratory officers across the country through the support of Global Fund, Centre for Health Solutions TB ARC II, and other implementing partners. The participants were selected using objective methods, especially EQA workbook performance, technical visit reports, and new equipment placement. The numbers reached were, however, low, and there is a need for continuous capacity building for AFB microscopy training and refresher training, more so on EQA blinded rechecking. This calls for support from all TB implementing partners to prioritize AFB training based on the training needs assessment records.

Analysis of the AFB microscopy diagnostic data indicates the commitment of various facilities towards TB diagnosis regardless of affiliation.

Online EQA reporting

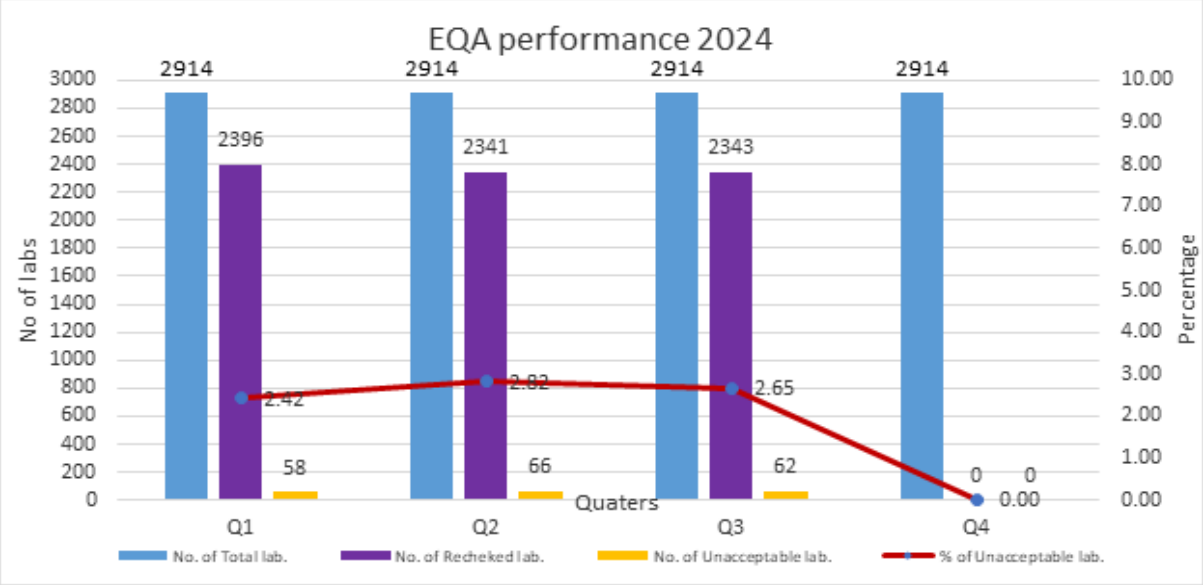
Implementation of electronic EQA reporting received a boost from 19 to 22 counties. This is after three more counties were trained with the support of the Center for Health Solutions. The County participation rate in the reporting period under review was 100% in all quarters, whereas the facility participation was 83% (Q1 2024), 82% (Q2 2024), 68% (Q3 2024), and XXX% (Q4 2024). The steady decrease in EQA participation is due to the closure of laboratories in the Counties and staff turnover.

Microscopy Blinded Rechecking External Quality Assurance (EQA) Performance

External quality Assessment forms an integral part of the quality management system and allows for objectively assessing the performance of the laboratories. Microscopy blinded rechecking has proven to be a useful tool for checking laboratory operations with support from USAID CHS TB ARC II for all 47 counties. Blinded rechecking was conducted in 2331 of 2887 laboratories making for a coverage of 81% The average error rate remained below 5%, and corrective action was taken for labs with errors.

There was a decrease in the number of laboratories that participated in blinded rechecking from 2391 in Q1 2024 to 2341 in Q2 2024, followed by a slight increase to 2343 in Q3 2024 and xxxxQ4 2024 respectively. The reduction in participation was a result of staff turnover and the closure of laboratories.

EQA concordance was at 91%, with the error rate being maintained below 5% across all the quarters



Quantiferon Test for Latent TB Diagnosis (IGRA)

The rollout of IGRA in Kenya took place in July 2022 and was anchored in the introducing New Tools Project (iNTP). Interferon Gamma Release Assays (IGRAs) are blood-based TB infection tests that measure the immune sensitization to mycobacterial protein antigens that occur following infection by the TB bacterium. Unlike the tuberculin-based Mantoux skin test, IGRAs are not affected by prior BCG (bacille Calmette-Guérin) vaccination. Under the iNTP, Kenya piloted the use of IGRA for LTBI targeting TB bacteriologically positive contact, prisoners, HCWs and other risk groups. To be able to scale up IGRA in the country the TB program was able to factor in new automated machines and commodities this will help address the gaps encountered in the pilot testing where manual Eliza technology was used.

Culture and drug susceptibility testing (CDST)(Nelly to Update)

In 2024, Kenya participated in a drug resistance survey (DRS), a lab-based study where all samples were subjected to all TB testing platforms thus increasing sample by test workload. During the year 27,727 samples were received, a slight increase (2%) from 2023's workload. Among these 2809(10%) were DRS study samples, 225(0.8%) were rejected, 27,502 (99%) underwent culture i.e. solid and/or liquid culture, 8620(31%) tested for first line LPA, 2708 (10%) tested for second line LPA, 5614 (20%) underwent first line phenotypic DST and 1997(7.8%) tested for second line phenotypic DST. An increase in testing was attributed by availability of commodities and the DRS study which mandated for every sample to go through all the testing platforms.

Efforts to improve relay of results back to clinician in the set time were in vain due to downtime in NPHL results mailing system and internet stability, only remote login sites could benefit in results promptness.

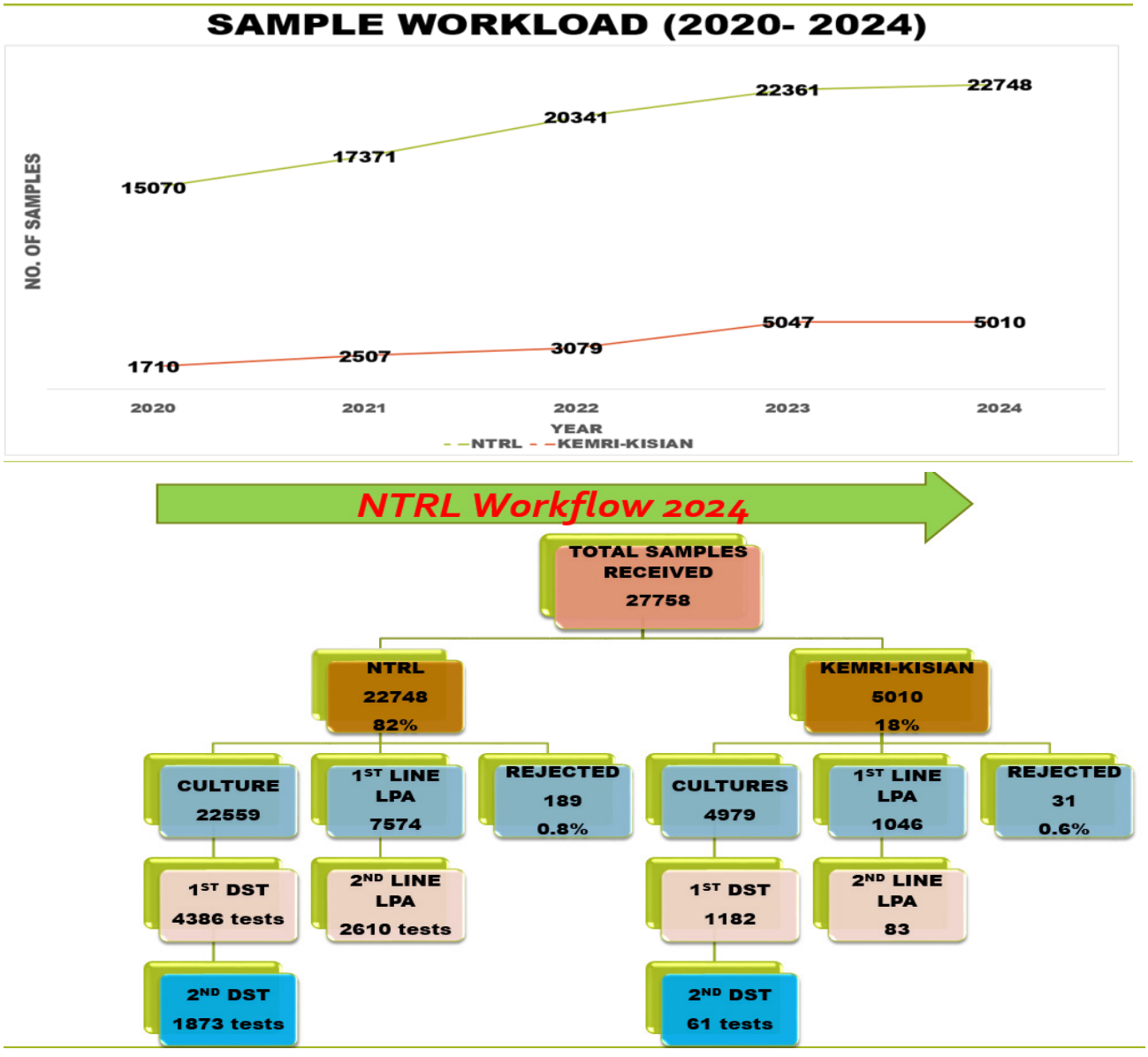


Figure 3.7: No. of samples received

Decentralized LPA sites Technical Assistance

In 2024, the National TB Reference Laboratory (NTRL) supported by the USAID TB ARC II project, provided technical assistance, Corrective Action Preventive Actions (CAPA) and on-the-job mentorship to all four regional laboratories. These labs also received supplies for first- and second-line genotypic testing (LPA), with all equipment covered under service contracts. The goal was to bring first and second-line services closer to patients, create demand and advocate for sample referral to the testing sites, and increase utilization of the instruments while improving test turnaround time (TAT) aligning with universal healthcare coverage.

External Quality Assurance/Proficiency Testing

The National TB Laboratory developed a national quality management framework for TB diagnostics laboratories, guided by having quality assurance for all TB diagnostic processes to ensure quality services regarding Universal Health care.Feedback reporting, data analysis and management is done on an online system. Annually NTRL conducts CAPA review, mentorship and site supervision, in addition to integrated PT review meetings with stakeholders on PT services.

Digital Chest X-ray

In 2024, the eight (8) portable digital X-ray machines deployed in 2022 under the Introducing New Tools Project (iNTP)—a collaboration between the Kenya National Tuberculosis, Leprosy and Lung Disease Program (NTLD-Program), the Stop TB Partnership, the United States Agency for International Development (USAID), and the USAID-funded Tuberculosis Accelerated Response and Care (TB ARC II) project—continued to support both facility-based and community-level TB screening.

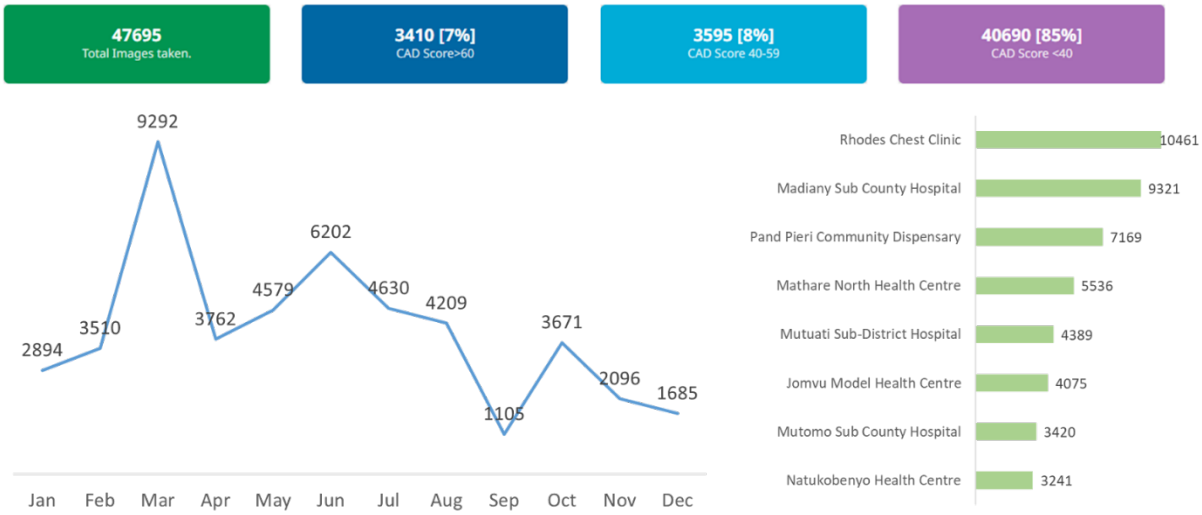


Figure 3.8: CXR CAD Screening indicators, 2024

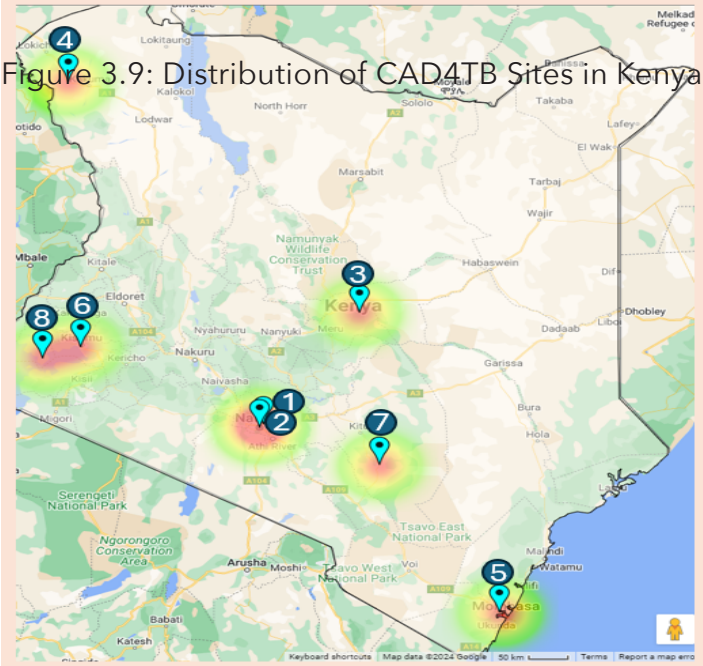
A total of 47,695 chest X-ray images were captured across the implementation period. Of these, 3,410 (7%) had CAD4TB scores greater than 60, indicating a high suspicion of TB, while 3,595 (8%) had scores between 40 and 59, suggesting moderate suspicion. The majority—40,690 (85%)—had CAD scores below 40 and were deemed low-risk.

Among the individuals with high CAD scores (>60), 78% underwent follow-up diagnostic testing as per the diagnostic guidelines.

The highest monthly screening volumes were recorded in March (9,292 images), followed by June (6,202) and July (4,630). A notable dip was observed in September, with only 1,105 images taken.

Rhodes Chest Clinic led in screening volume among all sites with 10,461 images, followed closely by Madiany Sub County Hospital (9,321), and Pand Pieri Community Dispensary (7,169).

Figure 3.9: Distribution of CAD4TB Sites in Kenya



CAD4TB Sites

1. Mathare North Health Centre. [Nairobi County]
2. Rhodes Chest Clinic. [Nairobi County]
3. Mutuati Sub-County Hospital. [Meru County]
4. Natukobenyo Health Centre. [Turkana County]
5. Jomvu Model Health Centre. [Mombasa County]
6. Pand Pieri Community Dispensary. [Kisumu County]
7. Mutomo Sub County Hospital [Kitui County]
8. Madiany Sub County Hospital [Siaya County]



4

SOCIAL SUPPORT AND SELF-RELIANT GROUPS

Social Support for patients with Drug Resistant Tuberculosis (DR TB)- January-December 2024

The Catastrophic Costs Survey (2017) showed that people with drug-resistant TB (DR-TB) experience significantly higher catastrophic costs compared to those with drug-susceptible TB. Given the available resources, the country prioritized monthly cash transfers to all DR-TB patients undergoing treatment, as part of social protection supported through a Global Fund grant. The funds were disbursed by Amref Health Africa in Kenya on behalf of the National TB Program, directly to the beneficiaries or their trusted nominees. Furthermore, healthcare workers engaged in providing directly observed therapy (DOT) services to patients under the community-based model of care received transport reimbursements for their daily visits to the community.

Between January and December 2024, a total of 1,838 patients and 1,682 DOT workers were supported, with an average of 625 patients and 492 DOT workers reached per month, respectively. The country had anticipated reaching at least 957 patients monthly between July and December 2024, with 50% expected to rely on a community-based model of care. However, the number of DR-TB patients under social support during that period ranged between 565 and 698. Additionally, the proportion of patients on community-based models of care ranged between 63% and 84% from January to December 2024, resulting in an overachievement in support provided to DOT workers.

The graph below shows the monthly trends in the number of patients and DOT workers supported from January to December 2024

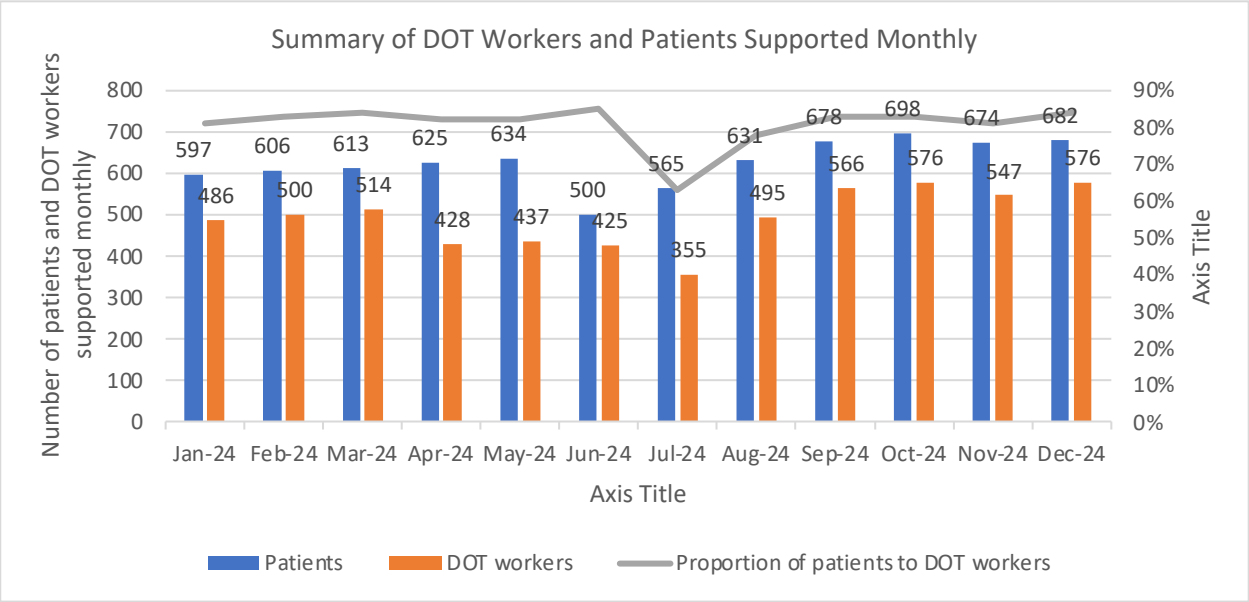


Figure 4.1: DRTB Patients and DOT Workers Monthly Support, January 2024 to December 2024



5 SUPPLY CHAIN MANAGEMENT, PHARMACOVIGILANCE AND ADSM

5.1 Introduction

The Commodity and Pharmacovigilance (PV) section operates within a robust legal and policy framework anchored by two key legislations: the Health Act 2020 and the Pharmacy and Poisons Act 2022.

The Health Act 2020 establishes the Health Products and Technologies Directorate (HPTD), which oversees the formulation and implementation of several guiding policies:

- The National Drugs Policy
- The Health Products and Technologies Management Policy
- The Health Products and Technologies Quality and Safety Policy

These policies collectively guide procurement, quality assurance, and availability of essential health products.

In addition, the Pharmacy and Poisons Act 2022 mandates the Pharmacy and Poisons Board (PPB) to ensure product safety through pharmacovigilance and therapeutic monitoring. This involves routine tracking and evaluation of medicine safety profiles, with an emphasis on Adverse Drug Reactions (ADR) and product quality.

To enhance supply chain efficiency, the section collaborates with the Kenya Medical Supplies Authority (KEMSA), as per the KEMSA Act, to streamline logistics, warehousing, and distribution of TB-related commodities.

Sectional Coordination Structures

The Commodity and PV section is coordinated through three key national-level management structures:

- National Commodities Security Management (NCSM) Committee – Oversees policy and strategic planning to ensure continuous commodity availability.
- National Order Management Team (NOMT) – Coordinates facility-level ordering, stock monitoring, and distribution optimization.
- National Procurement Committee (NPC) – Responsible for procurement planning, forecasting, and vendor engagement.

5.2 The Commodity Security Committee

The National TB Commodity Security Committee is fully operational and serves as the key technical team responsible for oversight and coordination of TB commodity management at the national level.

Core mandate and functions

Monthly Monitoring of Stock Status - Regular tracking of TB commodity stocks across all levels to identify gaps, overstocking or expiries and ensure timely interventions.

Forecasting - Utilization of consumption and morbidity data to develop accurate and timely forecasts for TB commodities, aligned with program needs and epidemiological trends.

Procurement Planning - Coordination with procurement entities such as KEMSA and development partners to ensure timely procurement and distribution of TB commodities.

Impact and reporting

The Committee's monthly updates feed into:

- The National Order Management Team (NOMT)
- The Commodity Security Reports
- These reports have significantly enhanced:
- Procurement timelines
- Warehouse operations
- Data sharing between stakeholders

pharmacovigilance subcommittee and adsm implementation

The Pharmacovigilance Subcommittee, under the Commodity Security Committee, delivered key milestones in 2023:

- Spontaneous Reporting and Safety Surveillance
- Monitored spontaneous pharmacovigilance reports on adverse events related to TB commodities from health facilities.
- Enhanced early detection and timely management of adverse drug reactions (ADRs).
- aDSM Capacity Strengthening
- Established a national aDSM resource capacity team.
- Collaborated with Programmatic Management of Drug-Resistant TB (PMDT) to operationalize sentinel surveillance sites for DRTB in Centres of Excellence (COEs).
- Developed and disseminated:
- The National aDSM Guideline
- An aDSM Training Curriculum
- Standardized tools for pharmacists to support medicines therapeutic monitoring and reporting.

Strategic interventions and innovations under the commodity security committee

The Commodity Security Committee, in collaboration with implementing and technical partners, executed several strategic interventions aimed at strengthening TB commodity management, enhancing pharmacovigilance (PV), and accelerating aDSM implementation across the NTLD-Program.

Key Interventional Activities

Activity	Participants	Funding Partner
Monthly Commodity Security Committee Meetings	25 Pax	GF
aDSM Subcommittee Annual Data Review Meetings	12 Pax	GF
aDSM Capacity Building Workshops (4 workshops/year)	21 Pax/workshop	GF
aDSM Tools Scoping Workshop into TIBU, PPB PVERs, KHIS2	15 Pax	GF
Development of National aDSM Guideline	25 Pax	GF
Quarterly Retreats of Ethics Review & Antibiotic Stewardship Subcommittee	TBD	Unfunded

Operational research, Innovations, and Policy Work

Activity	Funding Status	Lead Partners
Assessment of Commodity Management System indicators in county TB allocation tools	Unfunded	CHAI
aDSM Cohort Event Monitoring for DRTB patients in 20 Centers of Excellence	Unfunded	CHS TB ARCH, CHAI
Establishment of TB Programmatic Ethics Review & Antibiotics Stewardship Subcommittee	Unfunded	MOH, GF, TB ARCH
aDSM Operational Research Data Collection and Report Writing	Unfunded	GF, CHS TB ARCH, CHAI
Assessment of Adherence Monitoring using Pill Boxes and e-Messaging in DSTB Patients (Cosmos Brand Packs)	Funded	CHS TB ARCH 2

Quality and safety assurance for tb medicines (pv, pms, adsm)

To ensure continued product safety, the NTLD-Program, in collaboration with NASCOP, Malaria Program, and HSS, implemented joint interventions under the Global Fund (NFM) Health Sector Strengthening framework. Activities undertaken include:

- County-Level Supportive Supervision
- Post-Market Surveillance (PMS) for TB Commodities
- Pharmacovigilance and DHIS2-LMIS Integration Capacity Building

aDSM reporting progress and data systems integration

aDSM Reporting Trends: Reporting improved across all four quarters of 2022, with a notable increase in reports from 243 to 371, reflecting enhanced awareness and uptake of pharmacovigilance practices.

Tool Development and Ethics Approval: aDSM tools for use in Multidisciplinary Treatment Management (MTM) clinics at Centers of Excellence (COEs) were developed and ethically approved by the AMREF Ethics Committee.

System Integration Milestones:

- aDSM tool scoping into KHIS2 and TIBU completed in August 2021.
- Interphase linkages to the PPB PVERs platform remain an outstanding gap and priority area for resolution.

5.3 National Order Management Team (NOMT-TB)

The National Order Management Team for TB (NOMT-TB) is responsible for managing the national TB commodity distribution chain and facilitating medicine ordering and requisition processes. It ensures Good Distribution Practice (GDP) is upheld, reporting reliability is guaranteed, and quality is consistently maintained—forming the foundation for accurate forecasting, quantification, and timely procurement.

Monthly Meetings and Oversight

Throughout 2024, the NOMT-TB convened monthly meetings at the NTLD-Program boardroom, providing a routine platform for review of:

- Stock status and consumption trends
- Requisition processing
- Partner coordination for supply planning

Transition of DR-TB Commodities to KEMSA

The distribution of Individualized Fixed Regimen (IFR) packs for DR-TB was successfully transitioned from NTLD-P to KEMSA, maintaining a 48–72-hour turnaround time from patient notification to commodity delivery, regardless of location in Kenya.

For first-line TB commodities, the program maintained a 1-month turnaround time from facility order placement to delivery.

Digital Ordering System

The online TB medicine ordering and reporting module embedded within the Kenya Health Information System (KHIS) platform is now fully functional. Facilities can:

- Submit orders directly via KHIS
- Trigger automatic data pulls into the County Allocation Tool
- Enable NOMT-TB to review, validate, and escalate orders with greater accuracy and timeliness

Summary of TB Commodity Distribution – January 2024

Commodity	UOM	Total Distributed	Equivalent Monthly Average
Patient Packs	1	98,615	8,218
RHZE 150/75/400/275 mg Tablets	672	3,704	309
R/H 150/75 mg Tablets	672	1,162	97
RHZ 75/50/150 mg Tablets	84	22,648	1,887
R/H 75/50 mg Tablets	84	43,996	3,666
Ethambutol 100 mg Tablets	100	12,055	1,005
Pyridoxine 50 mg Tablets	100	91,809	7,651

Interventions to Strengthen the TB Commodity Supply Chain

Completed and Funded Interventions

Activity	Funding Source	Status
County Allocation Tool Technical Assistance and COVID-19 Sensitization Workshops	GF & CHAI	Completed (Jan 2023)
County Allocation Tool Refresher Training	GF	Completed
TB Online Dispensing Tool Development and Sub- County Pharmacist Capacity Building	CHAI	Ongoing

Unfunded and Proposed Interventions

Activity	Status	Objective
Emergency Redistribution of TB Commodities	Unfunded	Address urgent stock-outs and excess redistribution
Training on DADR, Patient Pack Monitoring, and Rational Drug Use	Unfunded	Promote accountability, stewardship, and accurate dispensing practices
Commodity DQA and Data Quality Improvement Supervision	Unfunded	Strengthen accuracy, completeness, and timeliness of commodity data
TIBU Meds System Linkages Workshops	Partially Funded	Integrate TIBU, County Allocation Tool, and KEMSA warehouse visibility
Good Distribution Practice (GDP) Audits from KEMSA to Facility Supply Chain	Unfunded	Improve quality assurance, traceability, and distribution integrity

National Order Management Team (NOMT-TB) Interventions

The National Order Management Team for TB (NOMT-TB) has undertaken several strategic interventions to strengthen TB commodity supply chain systems and improve data quality assurance in recording and reporting. These activities target operational efficiency, visibility, rational drug use, and real-time responsiveness across the TB program supply chain.

Completed and Funded Activities

Activity	Funding Partner	Status
Technical Assistance (TA) for County Allocation Tool & COVID-19 Commodities Sensitization Workshops	GF & CHAI	Completed (Jan 2023)
County Allocation Tool Refresher Training	GF	Completed
Development and Roll-out of TB Online Dispensing Tool; Capacity Building for Sub-County Pharmacists	CHAI (committed)	Ongoing

Activities Requiring Funding Support

Proposed Activity	Funding Status	Notes
Emergency Redistribution of TB Commodities	Unfunded	To address stock-outs and overstocking issues in real-time.
Training on Drug Accountability & Dispensing Register (DADR), Patient Pack Management, and Rational Drug Use	Unfunded	Targeted at sub-county pharmacists and chest clinic staff to promote stewardship and accountability.
Commodity Data Quality Assurance (DQA) Supervision and Reviews	Unfunded	Regular facility-level assessments and mentorship to improve accuracy and completeness of reports.
TIBU Meds Concept Workshops and Systems Linkages Enhancement with County Allocation Tool	Partially Funded	Initially funded by GF; 3 additional workshops required for full integration and system visibility.
Good Distribution Practice (GDP) Audits for KEMSA-Facility Supply Chain	Unfunded	Will ensure integrity, traceability, and compliance in end-to-end TB commodity delivery.

Priority Areas for Investment

- System Interoperability: Enhance digital linkages between TIBU, County Allocation Tool, and KEMSA systems to facilitate real-time stock monitoring and improve decision-making across levels.
- Rational Drug Use and Ethics: Promote good pharmacy practice through DADR training and stewardship frameworks to curb wastage and resistance.
- Distribution Chain Oversight: Institutionalize Good Distribution Practice (GDP) audits from central to peripheral levels to minimize losses and inefficiencies.
- Sustainability of TB Online Dispensing Tool: Expand its use to more sub-counties and

link dispensing data to patient outcomes and aDSM platforms.

5.4 Monitoring and Evaluation Framework for TB Commodity and aDSM Systems

Priority Intervention 1: Strengthen Supply Chain for TB Commodities

Indicator	Baseline	NSP Target	Achievement (2022/23)
Supervision & Supply Chain Audits	70% expiries 80% stock-out 20% data audits	0% expiries 0% stock-out 100% audits	40% expiries (short shelf-life items) 25% avg. stock-out in pediatric/ lab/nutrition 30% audits
Reporting Rate (via DHIS2)	45%	100%	98%
DHIS2 Uptake for LMIS	40%	100%	75% (lab = 5%; nutrition = not included)
Order Fill Rate	50%	100%	80% (therapeutics, diagnostics, nutrition)
Forecasting and Quantification (F&Q)	100% annual F&Q 0% NOMT work-shops	100% annual F&Q 100% NOMT work-shops	50% F&Q workshops (drop in funding) 0% NOMT workshops

Priority Intervention 2: Strengthen Active Drug Safety Monitoring and Management (aDSM)

Indicator	Baseline	NSP Target	Achievement (2022/23)
HCW Training on aDSM (Sub-County & County Pharmacists in COE and non-COE counties)	Not trained	100% trained in COE and non-COE county referral facilities	20 COE county pharmacists sensi-tized 0% trained in non-COEs
Adverse Drug Reaction (ADR) Reporting to PPB	<10%	100%	<5%
TIBU and County Allocation Tool Linked to PPB Platform	0%	100%	Not done
aDSM Tools Development	0%	100%	100% developed and approved

Proposed Interventions

- Improve Forecasting and Quantification
- Conduct quarterly F&Q and NOMT workshops
- Incorporate stock visibility dashboards for better planning
- Expand LMIS Integration into DHIS2
- Ensure full inclusion of lab and nutrition commodities
- Train staff at county and sub-county level on data use
- Enhance Supply Chain Audits and Emergency Redistribution Mechanisms
- Introduce routine GDP audits from central to peripheral level
- Support emergency redistribution logistics
- Advance Digital Integration for Reporting
- Link PPB's PV/ADR system with TIBU and allocation tool
- Scale up TB online dispensing and reporting platforms
- Strengthen aDSM Coverage and HCW Capacity
- Train all pharmacists at COEs and non-COE referral hospitals
- Expand aDSM surveillance sites and conduct routine monitoring
- Scale Operational Research and Evidence-Based Policy Development
- Leverage aDSM data for bold policies on patient safety
- Build capacity for local research and innovation uptake

Identified Priority Gaps

- Inconsistent supply of essential TB commodities, particularly short shelf-life items (e.g., pediatric formulations, lab reagents).
- Suboptimal LMIS reporting and limited DHIS2 integration for TB-specific commodities.
- Irregular supply chain audits; GDP assessments are yet to be institutionalized.
- Limited staff capacity in using dashboards and developing 2-pager summaries for stock planning and reporting.
- Inadequate forecasting and quantification cycles due to funding gaps.
- Limited procurement pipeline reviews, impacting timely availability of commodities.
- Underdeveloped aDSM systems, with gaps in HCW training, ADR reporting, and surveillance tools linkage.

- Low investment in operational research for commodity policy design and continuous system improvement.



6 PREVENTION, HEALTH PROMOTION AND COMMUNITY ENGAGEMENT

Introduction

Tuberculosis (TB) remains a major public health concern in Kenya, posing a significant burden, particularly among vulnerable and high-risk populations. The Social Pillar of Vision 2030,emphasizes accessible and quality health care, reduced disease burden and improved health outcomes. TB control is central to these goals, supported with smart policies that can fast-track progress.

Effective TB control goes beyond medical treatment, requiring a strong focus on prevention, health education, and community engagement. Prevention strategies such as early case detection, infection control, and provision of TB preventive therapy are vital in breaking the chain of transmission. At the same time, health education plays a critical role in increasing public awareness, reducing stigma and promoting health-seeking behavior. Community engagement–through the involvement of community health workers, local leaders and people affected by TB helps ensure that interventions are culturally appropriate, widely accepted and sustainably implemented.

Achievements in 2024

Multisectoral Approach and Engagement

The Multisectoral Accountability Framework represents a shift from a health sector response on dealing with the TB epidemic to a society responsiveness and responsibility. It recognizes the individual opportunities each sector has in response to TB, collectively accelerating its elimination by 2035. Multisectoral coordination is fundamental in enhancing the potential to accelerate elimination of TB through collaborative approaches that increase access to TB services and pool resources towards optimizing the quality of health for communities..

Key steps that were done

- Initiated the development of a National Police Service wellness policy that includes a TB component.
- Development of a draft TB policy prevention and control policy for institutions of learning
- Development of a wellness draft policy for the transport sector to include TB

Outcomes of the policies.

The following aspects will be impacted on once the policies are put in place;

- improved collaborations in TB prevention , management and Control
- Improved TB services access and utilization
- Improved awareness and stigma reduction an aspect of behavior change
- Assured sustainability through resource mobilization and commitment

Active TB case finding at community level:

Through the reporting period, NTP in collaboration with its partners implemented integrated community TB targeted outreaches. This is a process of finding persons with TB symptoms in the community through collaborative approaches, where diverse cadres, sectors, populations, and community groups were involved and reached respectively. Key activities included mobilization through existing community health structures, TB screening at targeted communities, nutritional and comorbidities assessments, counseling and referrals.

Targeted Community TB Outreaches & Screening at the Prisons

In the year 2024, Kenya had approximately 65,000 prisoners with a turnover of 200,000 passing through prisons annually. Multiple factors increase the vulnerability of prisoners to TB diseases key being; Congestion, poor ventilation, poor Health seeking behaviors, high number of men.

TB outreach targeted a total of 18 prison facilities and the target groups included the Inmates, Prison staff and their families and children accompanying mothers to prison. The following prisons participated in the screening exercise:

1. Muranga main and Women	10. Ngeria Farm
2. Thika main and Women	11. Eldoret main and women
3. Naivasha Main and Women	12. Tambach
4. Nakuru Main and Women	13. Kabarnet

5. Narok Main and Women	14. Eldama Ravine
6. Bomet main and Women	15. Kapenguria
7. Sotik Prison	16. Shikusa Farm - Kakamega
8. Kericho main, women and Medium	17. Kakamega main and Women
9. Kapsabet main and women	18. Kisumu Main, women and Medium

Outcome from the 18 Prisons outreach

18 Prisons	
No. Sensitized on mobilization	8000
Chest X-ray Suggestive	1391
No. sputum for Gene-Xpert or Truenat	359
No. Bacteriologically confirmed	83
No. Clinically diagnosed	44
No started-on TB treatment	**127**

World TB day commemoration

The 2024 World TB Day was commemorated on 24th March at Kenol in Murang'a County, preceded by a series of pre-event activities such as integrated targeted TB outreaches and tree planting. These activities, led by the National TB Program in partnership with the Murang'a County Government, Amref Health Africa, USAID TB ARC II and the Catholic Diocese of Murang'a, aimed to raise public awareness, identify undiagnosed TB cases, and initiate prompt treatment. Outreach services were implemented across seven sub-counties: Muthithi Dispensary (Kigumo), Mukurwe Dispensary (Gatanga), Greystone Catholic Church (Ithanga), Kabati Town (Kandara), Mukuyu Social Hall (Kiharu), Mbari ya Hiti Dispensary (Kahuro), and Kimorori Grounds (Maragua), enhancing community engagement and TB case finding. The event, organized in collaboration with key stakeholders, brought together a wide array of participants, with Hon. Susan Nakhumicha, Cabinet Secretary for Health, serving as the Chief Guest. Other notable attendees included the WHO Country Representative, USAID officials, the Governor of Murang'a, and representatives from the private sector, civil society, affected communities, and the media. The event highlighted Kenya's collective commitment to ending TB and reinforced the need for multi-sectoral action, political will, and sustained public awareness to achieve the goals of the End TB Strategy.

Summary data

Indicator	Male (M)	Female (F)	Total
Target Population			36,180

Total Number Screened	546	633	1,179
Presumptive TB Cases Identified	312	273	585
Chest X-Rays Taken	392	368	760
Abnormal X-Rays	26	7	33
Suggestive X-Rays	92	46	138
Initiated on Treatment through X-Ray	39	12	51
Sputum Samples Collected	101	92	193
Bacteriologically Confirmed TB Cases	11	1	12
Bac+ Cases Initiated on Treatment	11	1	12
Total Initiated on Treatment (Bac+ & X-Ray)	43	15	63

Capacity building for community system strengthening

Under the Global Fund Cycle 7 (GC7), community health actors, commonly referred to as TB Champions, have been positioned to play a critical role in implementing community-based TB activities. To prepare them for this role, a two-tier capacity-building approach was adopted to ensure effective sensitization and training. The first tier involved regional training for mentors of TB community health actors, conducted in five counties—Bomet, Kisumu, Machakos, Murang'a, and Nakuru—where five mentors per county were trained, covering a total of 20 counties. The second tier entailed county-based training sessions in the same 20 counties, where 25 TB community health actors were trained per county. These counties included Bomet, Homa Bay, Kakamega, Kericho, Kiambu, Kilifi, Kisii, Kisumu, Kitui, Machakos, Makueni, Meru, Migori, Mombasa, Murang'a, Nairobi, Nakuru, Narok, Siaya, and Turkana. The capacity-building process revealed key lessons, including the persistence of myths and misconceptions around TB that led to some individuals refusing services during outreaches. It also highlighted the potential of digital platforms to enhance awareness creation and drive behavior change, as well as the importance of a multisectoral approach to sustainably accelerate TB prevention and control efforts in line with the End TB Strategy.

Communications

In 2024, the National TB Program (NTP) collaborated with other stakeholders to raise awareness and increase demand for TB services and treatment completion nationwide. The following milestones were achieved:

1. Mass Media Campaign:

The TB Awareness Campaign 2024 was executed across 14 radio stations (compared to 15 in 2023) and five (5) TV stations in Kenya. The campaign aimed to raise public awareness about tuberculosis and promote demand for TB services through mentions, ads, and promos as part of the World TB Day commemoration between March and June 2024. The number of mentions increased by 1,111 to 3237 as priority was given to the government-led stations compared to the private stations with more reach.

Radio				
Stations	**Mentions**	**Ads**	**Promos**	**Sponsorships**
RAMOGI FM	31	50	25	
RADIO TAIFA	70	144	95	
MAYIAN FM	42	100	51	
RADIO WAUMINI	51	168	77	
KASS FM	30	41	11	
MUSYI FM	27	50	44	
WEST FM	46	146	68	
RADIO CITIZEN	30	46	42	
MUUGA FM	30	57	31	
RADIO KAYA	37	79	59	
Radio Jambo	30	35	40	
INOORO FM	30	54	54	
EGESSA FM	28	80	57	
CLASSIC FM	30	29	47	
Sub Total	**512**	**1079**	**701**	
TV				
KTN Home		126		349
TV 47		69		
KBC		200		
NTV		117		
CITIZEN		84		
Sub-Total		**596**		**349**
Total Spots				**3237**

There were a total 3237 spots compared to 2126 in 2023,

Key Observations:

- Prime Time (7PM-9PM) has the highest average viewership (7.33M), likely due to popular evening news and prime shows.
- Early Evening (6PM-7PM) follows with 4.46M, likely driven by the transition from daytime to prime-time programming.

- Daytime (6AM-6PM) has the lowest average (3.46M), as viewership is typically fragmented due to work/school hours.

2. Social Media Campaign

1. Facebook Averages (Per Month)

Metric	Total	Average (Per Month)
Posts	96	8.0
Reach	736,712	61,393
Likes	11,635	970
Shares	177	15
Comments	504	42

2. Twitter Averages (Per Month)

Metric	Total	Average (Per Month)
Tweets	111	9.3
Impressions	93,705	7,809
Engagements	9,521	793
Retweets	1,022	85
Likes	1,468	122

3. LinkedIn Averages (Per Month)

Metric	Total	Average (Per Month)
Posts	51	4.3
Impressions	34,430	2,869
Members Reached	8,562	714

Reactions	671	56
Comments	10	0.8
Reposts	66	5.5

1. Facebook had the highest reach (61K/month) and engagement (970 likes/month) but relatively low shares (15/month).
2. Twitter sees moderate impressions (7.8K/month) but better engagement rates (793 engagements/month, 85 retweets/month).
3. LinkedIn has the lowest activity (4.3 posts/month), but reactions (56/month) suggest decent engagement per post.
4. Peak Months:
    - Facebook: March 2024 (high reach and likes).
    - Twitter: March 2024 (high impressions and engagements).
    - LinkedIn: March 2024 (highest reach and reactions).

3. Knowledge Products

a) TiBa Newsletter (13th and 14th Editions) published

b) End-of- TB ARC II Project Documentary

Showcased interviews with TB survivors, health workers, and policymakers.

Watch here: https://www.youtube.com/watch?v=CKrriDzAZCI

4. Policy & Advocacy

National Strategic Plan (NSP) Launch

The Program launched the National Strategic plan for Tuberculosis (TB), Leprosy and Lung Health, the National TB Laboratory Operational Plan, the National Quality Management framework for TB diagnostic laboratories and the pediatric TB shorter-term treatment regimen. The launch was presided over by Public Health and Professional Standards Principal Secretary (PS), Mary Muthoni.



LUNG HEALTH

7

Background

In 2024, lung health remained a key global and national health priority. While advancements were made in TB control and prevention, challenges persist in availing the essential package of care and establishing the true burden of other chronic lung diseases, such as asthma, COPD, PTLD, lung cancer, and occupational-related lung diseases. Lung health affects all age groups and directly impacts productivity, education, and quality of life. The true burden of chronic lung diseases is unknown, with national estimates at 1% (KDHS 2022) and a sub-national study showing 21.7% prevalence (Navulun, 2023). Men and urban populations show higher prevalence rates. According to the KEMRI-BOLD study, among the patients with respiratory symptoms attending the outpatient clinic, 36% had asthma, 25% had chronic bronchitis, 8% had COPD, 5% had bronchiectasis, and 4% had PTLD. Key risk factors include tobacco use in 11% of men and <1% of women, indoor cooking practices in 50% of households, and solid fuel use in 73.4%, predominantly in rural areas. Only 24% use clean fuels and technology, mainly in urban settings. Additionally, preterm birth has been linked to childhood asthma and lung function abnormalities (Meme et al).

Based on the review of the last strategic plan, the key gaps in lung health include:

- Lack of an integrated lung health training curriculum
- Suboptimal knowledge and skills for screening, diagnosing, and managing lung health conditions at all levels of care, more specifically in public sector hospitals
- Siloed service delivery of lung health services, with TB screening in TB clinics being more prevalent
- There were no M&E reporting tools for lung health; thus, no data on the status of lung health in the country
- Medication and consumables for lung health are in short supply, especially

in public facilities, and some are not included in the essential medicines and supplies list; thus, counties do not have access to these commodities and supplies through KEMSA

- Suboptimal mapping and linkages/collaboration of donor and government efforts toward addressing lung health service delivery.

The program, in its mandate to oversee lung health services, addressed these challenges through a strategic focus model as follows:

• Operationalization of the lung health unit at DNTLP • Stakeholders' mapping • Baseline assessment of lung health services • Investment case • Policies and guidelines review • Screening, diagnosis, and management algorithm • Human resource- capacity building, TA	• Advocacy, Communication, and Community Engagement • Prevention of lung conditions • One Health concept/ approach • Operational research • Sustainability strategies • Monitoring and Evaluation

Achievements

The program implemented these strategies in a phased approach. The areas achieved under the initial phase are summarized in Table 7.1:

Strategic Focus	Achievements
Operationalization of the lung health unit at DNTLP	• 100% with the posting of 3 officers with a lung health coordinator • Deployment of 5 additional officers from partners to support the lung health unit
Stakeholders' mapping	• Held an inception meeting and developed a joint lung health concept note • Defined the programmatic scope of lung health • Continuous engagement in all the activities
Baseline assessment of lung health services	• Successfully conducted in 99% (201) of selected health facilities in seven counties in December 2024 • Dissemination of key findings and recommendations to the key stakeholders - scheduled for 2025

Policies and guidelines review	• Draft review and update on the lung health services in the overall integrated TB and other lung disease guideline • The process to continue and for finalization, April 2025 • Developed draft PTLD guidelines, including Pulmonary rehabilitation, for integration into the overall lung health guidelines

Baseline Assessment of Lung Health: Key Findings and Recommendations

A service availability and readiness assessment (SARA) for lung health was conducted to evaluate the capacity of health facilities, including the readiness to provide lung health services. The survey provides a detailed analysis and understanding of the availability of lung health services and the readiness of health facilities to deliver these services, identifying strengths and areas for improvement, and providing implementable and comprehensive remedial strategies.

The key findings and recommendations are summarized in Table 7.2:

Healthcare Building Block	Key Findings	Recommendations
Governance	• No integrated national guidelines for comprehensive lung health. • Policy frameworks exist but lack coordination and implementation support	• Develop and disseminate integrated national lung health guidelines. • Establish and empower a dedicated Lung Health Taskforce/TWG
Human Resources for Health	• Unequal distribution of skilled health workers across counties. • Lack of specialized training in spirometry and pulmonary rehabilitation.	• Train frontline workers on basic and specialized lung health care. • Integrate spirometry and pulmonary rehab training into CPD and pre-service curricula. • Leverage e-learning platforms for continuous learning.

Healthcare Building Block	Key Findings	Recommendations
Service Delivery	• Only 9% of facilities offer spirometry services. • Advanced care (e.g., pulmonary rehab) is limited to Levels 4–6. • Inadequate tobacco cessation services (offered in just 11% of service delivery points).	• Designate spirometry as an essential service and equip primary care with diagnostic tools. • Develop and implement a standard package of lung health services across all levels. • Establish Centers of Excellence in Level 4/5 hospitals.
Diagnostics & Equipment	• Only 16 spirometers are available nationwide (mostly in the private sector). • 38% of facilities have X-ray machines, mostly concentrated in higher-level hospitals. • TB diagnostics (microscopy, LAM) are widely available; AI-assisted imaging is used in a few facilities.	• Expand the adoption of AI tools for chest X-ray interpretation. • Standardize and equip facilities with spirometers, nebulizers, and peak flow meters. • Enhance diagnostic capacity through referral networks and remote reading support.
Health Information Systems	• Poor lung health data disaggregation in KHIS. • Limited use of EMRs for non-TB lung conditions. • Essential recording tools like TB contact registers are often missing.	• Update KHIS and EMRs to include disaggregated indicators for lung health. • Expand and adapt systems like TIBU to cover chronic respiratory diseases.

Healthcare Building Block	Key Findings	Recommendations
Health Products and Technologies	• Gaps in availability of asthma medications (e.g., salbutamol inhalers available in only 39% of facilities). • Essential antibiotics and TB medicines are relatively well-stocked.	• Include asthma and COPD drugs in the essential medicines list at PHC. • Train HCWs on new treatment protocols and promote electronic dispensing tools
Infrastructure and Financing	• Majority of facilities have electricity, internet, and water, but less than half are disability-friendly. • Oxygen is available in 74% of facilities, with regional disparities.	• Improve oxygen access and disability-friendly infrastructure. • Advocate for increased funding and remove user fees for lung health services at PHC level. • Conduct resource mapping and use data to inform strategic investments.
Community and Outreach	• Lack of community-based lung health interventions and screening. • Limited engagement of Community Health Promoters (CHPs) in lung health.	• Develop community lung health packages and train CHPs in screening and referral. • Integrate lung health into existing outreach programs and eCHIS reporting.



8

MONITORING, EVALUATION AND RESEARCH

Antituberculosis Drug Resistance Survey

Anti-Tuberculosis (TB) drug resistance surveillance is essential for monitoring the effectiveness of TB control and provides an avenue for tracking the development of resistant strains of Mycobacterium TB (MTB). Although active surveillance for drug-resistant TB (DRTB) in high-risk groups is vital, determining accurate estimates of the current DRTB among all persons with TB is critical. This is particularly important following the recent wider use of first-line (isoniazid) in prevention of TB and use of second-line anti-TB (fluoroquinolones) in the general medical practice. The 2015 drug resistance survey conducted in Kenya found a multidrug-resistant TB (MDR TB) prevalence of 0.7% among new cases and 2.0% among previously treated cases. The DRTB management landscape has changed with the introduction of shorter and more safer molecules in the treatment of DRTB. This necessitated the fifth antituberculosis drug resistance survey to determine the prevalence of first – and second- line drug resistant among the new and previously treated TB patients.

The design and implementation of the survey was guided by 2021, WHO guidelines for conducting drug resistance surveys. A cross-sectional survey design is being used with a sample size of 2,314 pulmonary bacteriological confirmed individuals with counties considered (primary sampling units). A nested study involving an additional 756 individuals was included to determine the prevalence of anti-TB drug resistance in Nairobi metropolitan area among people living with HIV and TB who have previously been exposed and those who have never been exposed to anti-TB drugs including tuberculosis Treatment prevention (TPT). The survey population targeted all bacteriologically confirmed TB patients whose sputum samples are collected from selected facilities, triple packaged and sent using cool box via courier services, and received at the National TB reference Laboratory (NTRL). At the NTRL samples are subjected to sputum-smear microscopy, GeneXpert (Cepheid, Sunnyvale, CA, USA), Truenat (Molbio Diagnostics Private Limited, Goa, India), Liquid Culture (MGIT), Solid culture (Löwenstein Jensen; LJ), molecular line probe assay Hain Lifescience GmbH Hardwiesenstr Germany, drug susceptibility testing (DST) and whole genome sequencing

(WGS). Supra National Reference Laboratory will provide External Quality Assurance for the DRS survey.

The survey commenced in Mid-April 2024 despite receiving ethical approval in August 2023. The delay was occasioned by prolonged procurement processes for laboratory consumables. The progress has been steady with data collection for the main study concluding on 31st December 2024. Enrolment for the nested sub study is still underway and will conclude on 23rd April 2025. For successful implementation of the survey, a nexus of both internal and external quality assurance is key.

Mid-term evaluation by the WHO team was conducted in August 2024 and it aimed to take stock of the survey status, analyze lessons learnt from the initial data collection and sample processing phase as well as to assess the progress made towards achieving planned objectives.

Key Findings

- The DRS is well-run, and the protocol has been observed
- Enrolment is well on track (~70% complete)
- The sub study on TB/HIV is behind schedule on enrolment
- Trained staff were still working on the survey, however, some newly recruited staff required training
- There is a need to reinforce inclusion criteria and encourage enrolment of previously treated cases and children
- The laboratory staff at DRS sites require further training and, in some cases, additional packaging supplies
- Sample transport was working well, and the central lab reported 0 leakages thus far.
- Power backups were available at all visited sites
- No shortages of reagents/consumables
- There is an active Whatsapp group but attendance on weekly sensitization meetings needs improvement
- TIBULIMS system is strong for data entry and results feedback apart from server down times
- The whole genome sequencing (WGS) capacity may not be ready in time for initial survey analysis, although perhaps for confirming preliminary results.

Key Recommendations

- Increase supervision visits and meetings to ensure consistent adherence to protocols and timely identification of issues.
- Include sites that have completed enrollment in the supervision visits for data cleaning and completion activities.
- Continue the TB/HIV sub study beyond the DRS enrollment phase to enhance the understanding of co-infections.
- Re-sensitize clinicians at HIV survey clinics on the importance of screening for presumptive TB cases.
- Begin DRS data cleaning immediately to ensure the accuracy and reliability of the collected data.
- Foster closer collaboration between the data manager and the lab team to improve data handling and processing.
- Adopt TIBULIMS routinely for effective tracking of samples and results throughout the survey.
- Expedite plans to upgrade the laboratory biosafety structure and air handling system to enhance safety and compliance. An oversight from WHO including independent assessments, and technical assistance during civil and mechanical works is highly recommended
- Strengthen the core equipment capacity and human resources of the National TB Reference Laboratory (NTRL) to support current and future needs.
- Support the fast-tracking of the Whole Genome Sequencing (WGS) setup for testing DRS samples, including providing technical assistance (TA) for the lab team and conducting a quick status assessment.

TB Burden among workers in a health facility setting

TB remains a significant public health challenge, particularly for HCWs who are at a higher risk of infection due to their constant exposure to TB patients. The study aimed to determine the prevalence of TB among HCWs, identify associated risk factors, and evaluate the effectiveness of existing TB prevention and control measures in healthcare settings. Therefore, a comprehensive assessment of the burden of tuberculosis among healthcare workers (HCWs) was done during the year.

The assessment was conducted across 13 counties in Kenya, encompassing various levels of healthcare facilities, from dispensaries to national referral hospitals. A mixed-methods approach was employed, incorporating both quantitative and qualitative data collection techniques. A total of 640 healthcare workers were interviewed comprising 368 females (58%) and 272 males (43%). Among the respondents, 123 (19%) identified as nurses or midwives, making them one of the larger groups, while orthopedics professionals were

the least represented. During the study, 19 cases (3%) of Mycobacterium tuberculosis (MTB) were detected, with 4 of these cases (21%) occurring among healthcare workers. The survey also revealed that approximately 79% of the participants reported having access to preventive measures. The findings revealed a substantial TB burden among HCWs, with notable variations across different cadres and facility levels. Key risk factors identified included inadequate use of personal protective equipment (PPE), insufficient TB infection control measures, and limited awareness of TB transmission risks.

The prevalence of tuberculosis (TB) among healthcare workers and support staff in medical facilities was significantly higher compared to the general population (640 cases per 100,000 people). Therefore, the study underscores the urgent need for targeted interventions to protect HCWs from TB, including enhanced infection control protocols, regular screening, and increased uptake of TB preventive therapy (TPT). Addressing these challenges is crucial for safeguarding the health of HCWs and ensuring the sustainability of healthcare services in Kenya. The insights gained from this assessment will inform policy and programmatic decisions aimed at mitigating the TB burden among HCWs and advancing the country's progress towards ending TB by 2035.

Knowledge Attitude Practices(KAP) Survey

Kenya, being one of the high-burden countries for TB and TB/HIV, has put in place ambitious targets to meet both local and international commitments to end TB by 2030. Lack of knowledge, poor attitude, and poor practices can pose serious barriers to access to Tuberculosis services and hence hinder the program from achieving its targets. This survey sought to assess the knowledge, attitude and practices for Tuberculosis among the general population regarding prevention, diagnosis and treatment of Tuberculosis in Kenya. The methodology adopted was a cross-sectional household-based survey using a mixed-method design that entailed both qualitative and quantitative methods.

The findings of the survey across various counties highlight significant disparities. Males (68%), persons with tertiary education (82%), separated marital status (69%), healthcare workers (100%), those aged 35-44 (71%), and urban residents (71%), demonstrate the highest TB knowledge scores. The majority of respondents (95%) have heard of TB, yet 36% remain unaware of the TB cause. Among those aware, only 23% correctly mentioned bacteria as the cause, 19% mentioning germs, 16% smoking, 9% viruses. 38% from rural residence unaware of TB causes compared to urban 32%. Awareness of TB transmission, 76% of respondents correctly identifying airborne transmission via coughing or sneezing, urban areas accounted for 84%. However, misconceptions persist, with 40% mentioning sharing food and utensils, 12% physical contact, and 8% sexual contact or kissing.9.3%) did not know how TB is transmitted. Cough is recognized as a symptom by 90% of respondents, with urban areas slightly more aware (91%). Nonetheless, 25% are unaware of the cough duration suspicious of TB, and only 11% correctly mentioned any duration of a cough as a concern. Regarding attitude;76% of respondents are willing to work with individuals currently or previously treated for TB, but 19% are not. Preventive measures like taking medication (32%), covering the mouth when coughing (32%), and wearing masks (25%) are commonly cited, though a notable percentage (8.2%) are unsure, especially in rural areas (9.2%). The misconception that TB is linked to HIV/AIDS is held by 24% of respondents, more commonly

in urban areas (25%). Regarding TB practices, 64% of respondents mentioned sputum test, with urban residents (72%) leading. However, awareness of drug-resistant TB is low33%, particularly in informal settlements 32%. The majority (96%) would seek TB treatment at nearby facilities, and mass media is the preferred source of TB information (53%). Better TB knowledge is more likely among males (aOR: 1.33, 95% CI: 1.14 - 1.55). Age group (aOR=3.84, 95% CI: 2.76 - 5.35) and those with Tertiary education (aOR=5.01, 95% CI: 3.65 - 6.89) Good knowledge (aOR: 5.36, 95% CI: 4.26 - 6.771) and positive attitude (aOR: 2.11, 95% CI: 1.68 - 2.641) are strongly associated with better TB practices.

The survey highlights the need for context-specific and targeted interventions. Urban areas show higher awareness, yet misconceptions about TB causes persist across all regions, with rural areas particularly lacking in knowledge. Education and occupation are key determinants of TB knowledge, while positive attitudes and practices are influenced by age and marital status. Educational programs should target females and younger individuals to increase TB knowledge, with rural areas requiring specific health education to address misconceptions about TB causes. Public health campaigns should be enhanced to provide correct information on TB transmission, emphasizing airborne transmission from coughing and dispelling wrong beliefs about other modes like food sharing. Psychosocial programs should be optimized to reduce stigma, with campaigns in urban areas where stigma and discrimination are more prevalent. Lower-level healthcare facilities should be strengthened as they are key access points for TB services. Additionally, TB prevention messages should be translated into local languages to effectively address knowledge gaps and encourage behavior change.

Revised Joint Work Plan

The execution of program activities is guided by quarterly, semi-annual, and annual work plans, developed collaboratively by the Policy and Planning Section in coordination with other program sections. The process begins with the joint creation of an annual work plan, involving the National Tuberculosis Program (NTP), donors, and key partners engaged in TB control initiatives. Approval for implementation is obtained from departmental heads and the Ministry of Health.

In May 2024, a collaborative work planning meeting was held at the Kenya School of Government in Nairobi, with participation from multiple stakeholders, including AMREF, KCCB, CHAI, WHO,Tamatisha TB project, and Health IT. During this meeting, a detailed activity schedule was developed, aligning planned interventions with available funding sources, budget allocations, and designated responsible persons to ensure efficient performance monitoring and tracking.