REPUBLIC OF KENYA

MINISTRY OF HEALTH

ANNUAL REPORT
2020

NATIONAL TUBERCULOSIS, LEPROSY AND LUNG DISEASE PROGRAM

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ACRONYMS

ACF	active case finding
aDSM	active tuberculosis drug-safety monitoring and management
BMI	basal metabolic index
BSCs	bio-safety cabinets
CAPA	corrective action preventive action
CHVs	community health volunteers
CMEs	continuous medical education
CNR	case notification rate
COVID-19	corona virus disease, 2019
DM	diabetes
DQA	data quality assessment
DRTB	drug resistant tuberculosis
DST	drug susceptibility testing
DSTB	drug sensitive tuberculosis
EQA	external quality assessment
FM	fluorescent microscopy
HCWs	health care workers
IFR	injection-free regimen
IGRA	interferon gamma release assay
KIC-TB	Kenya innovation challenge TB fund
KII	key informant interviews

LF-LAM	lateral flow lipoarabinomannan
LPA	line probe assay
LTFU	loss to follow up
MCH	maternal and child health
MTB	mycobacterium tuberculosis
NSP	national strategic plan
PPEs	personal protective equipment
PT	panel testing
PV	pharmacovigilance
RR	rifampicin resistant
SDP	service delivery point
SI	strategic initiatives
SLA	service level agreement
TB	tuberculosis
TB ARC II	TB Accelerated Response and Care II
TPT	tuberculosis preventive therapy
TSR	treatment success rate
UHC	universal health care
USAID	United States Agency for International Development
WHO	world health organization
ZN	ziehl neelsen

ACKNOWLEDGEMENT

The Division of National Tuberculosis, Leprosy and Lung Disease Program (DNTLD-P) is grateful to all stakeholders for their support and contribution towards TB control in 2020. The year had a myriad of challenges due to COVID-19 but with great collaboration, TB control activities were on course. Stakeholders include the Government of Kenya, county governments, developmental and implementing partners, civil society, FBOs and communities.

Special thanks go to The Global Fund to fight AIDS, Tuberculosis and Malaria (GFATM), USAID TB ARC II - CHS, Clinton Health Access Initiative (CHAI), World Health Organization (WHO) and AMREF Health Africa for their financial and technical support during the year.

The writing team was drawn from program staff and partners including USAID TB ARC II - CHS, CHAI, AMREF Health Africa and KCCB KOMESHA TB.

The Program would like to specifically thank USAID TB ARC II - CHS for their financial support during finalization of this report

Finally, special appreciation to the monitoring and evaluation and the communication team in the program for finalizing the report.

Dr. Waqo Ejersa
Head, National TB Program

EXECUTIVE SUMMARY

Tuberculosis (TB) is an epidemic of global public health concern being the leading cause of death from a single infectious agent, surpassing HIV/AIDS.

426 per 100,000 population

TB prevalence in Kenya according to TB prevalence survey (2015/2016), meaning, Kenya remains high burden for TB, TB/HIV and DR TB.

140,000 & **2,500**

estimated incidence of **TB** and **DRTB** respectively, in Kenya in 2020

72,943

people with **drug susceptible tuberculosis (DSTB)** and an additional **961** with **DRTB** diagnosed and started on treatment in 2020 by the program, translating to treatment coverage of **52%**, down from **60%** in 2019.

The year 2020 was the most challenging in the recent history as far as public health is concerned. **COVID-19** which was first reported in the country in March 2020 resulted in unprecedented response to contain and minimize the effects of the pandemic in the country.

15%

estimated reduction in TB case finding in 2020, largely attributable to the pandemic and subsequent responses. Lab diagnosis for TB also went down, negatively affecting case finding

75

TB patients reported to have been diagnosed with COVID-19 in the year 2020

66%

of all cases notified with TB in 2020 were men, hence they remain the most affected population

20 - 44 Years

age group that carried the majority of TB burden

8%

of all notified cases constituted children under the age of 15 years

TB/HIV collaboration continues to be strengthened with TB and HIV programs rolling out joint activities to address the challenges of TB/HIV co-infection. As a result, TB/HIV indicators remained impressive:

98%

HIV testing rate in 2020

97%

ART uptake of among those co-infected.

25%

HIV co-infection rate among TB patients in 2020

+1%

improvement in reatment success rate for all forms of TB (new and relapse) improved from **84%** to **85%** compared to the previous year.

+40%

increase in DR TB notification up from **689** in 2019 to **961,** unlike DSTB case finding, despite COVID-19 pandemic

4
additional Gene Xpert machines in the country slightly improved diagnostic capacity for TB

11%
Positivity for MTB increased to 11% among the samples tested using the platform in 2020

Malnutrition remained a major challenge in TB control

46%
of DSTB patients
&
53%
of DRTB patients
being **undernourished** at the time of diagnosis.

The country also updated its latent TB infection (LTBI) management guidelines to be in line with the most recent WHO guidelines incorporating an expanded population and shorter treatment regimens.

8,803
children **under 5** started on INH during the year representing **61%** of the expected numbers.

Most counties continued to implement strategies to find missing cases including active case finding and Public-Private Mix (PPM). Private sector notification also increased to **20%**. This has been made possible through the strengthening of partner coordination via PPM Technical Working Group (TWG).

3,600
health care workers in **198** health facilities who benefited from facility-based mentorships in all counties and sensitization by the Program

In terms of commodity security, there were no reported stock outs of first line and second line medicines except pyridoxine and nutrition commodities which were unavailable throughout the year. The program carried out commodity F&Q meetings as scheduled and also provided technical support to the counties especially on the roll out of commodity allocation tool.

99%
overall reporting rate during the year

Due to covid-19 containment measures world TB day was not commemorated as planned but other TB awareness campaigns and local TB screening took place in the counties.

The program organized performance and quarterly review meetings with the counties to review progress of implementation and achievement of targets. DQA was conducted in 6 counties in the country. The level of agreement for TB notified cases between TIBU and the facility register was 94%. The program continued to generate more evidence and additional data by way of operation research through various surveys.

Resource mobilization is key towards achievement of NSP goals.

$34,169,895.81
total funding for TB activities from various sources in 2020, against a costed NSP budget of **$60,072,511.39,** leaving a **43%** unfunded gap.

$67,000,000
additional funding request the country submitted to The Global Fund in 2020 for TB control activities in next 3.5 years starting July 2021.

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EPIDEMIOLOGY OF TUBERCULOSIS AND LEPROSY IN KENYA

140,000
estimated incidence of **TB** in Kenya in 2020

15.7%
average decline in Tuberculosis (TB) case notifications in 2020 to **72,943**

48%
estimated incident TB cases that were either missed or not notified in the year.

The top 5 counties which notified majority of the cases

13% Nairobi | **5%** Meru | **5%** Kiambu | **4%** Mombasa | **4%** Nakuru

Counties which notified the least cases

0.4% Lamu | **0.5%** Tana River | **0.6%** Elgeyo Marakwet

154 per 100,000 population
case notification rate (CNR) in 2020, a decline from the **165/ 100,000** population in the previous year

289 per 100,000 population
estimated TB incidence in the same period (2020), indicating that at least **135** persons with TB were missed or not notified per **100,000** population

The top 3 counties which reported highest CNRs

1,271 Mombasa
per 100,000 population

1,248 Tharaka Nithi
per 100,000 population

1,246 Turkana
per 100,000 population

The top 3 counties which reported least CNRs

64 Mandera
per 100,000 population

67 Wajir
per 100,000 population

72 Nandi
per 100,000 population

1.1 Drug Susceptible Tuberculosis

1.1.1 TB Case Finding

In 2019, Kenya reported an average decline in Tuberculosis (TB) case notifications of 10.4%. In 2020, there was a further 15.7% decline to 72,943 notified TB cases (**Fig 1.1**). The incidence of TB in the country in 2020 was estimated at 140,000, indicating that at least 48% of incident TB cases were either missed or not notified in the year.

The further decline of notified TB cases in 2020 has been attributed, largely, to the COVID-19 pandemic and attendant mitigation measures which included movement restrictions, reduced facility attendance by patients, repurposing of health facilities and health workers and stigma related to similar presentations of COVID-19 and TB. However, there are other operational challenges affecting active case finding witnessed in the previous years which likely persisted.

The top 5 counties which notified majority of the cases were: Nairobi (13%), Meru (5%), Kiambu (5%), Mombasa (4%) and Nakuru (4%), while Lamu (0.4%), Tana River (0.5%) and Elgeyo Marakwet (0.6%) counties notified the least cases. The **county profiles (Annex 1)** section of this report presents the performance of each of the 47 counties with regards to several indicators.
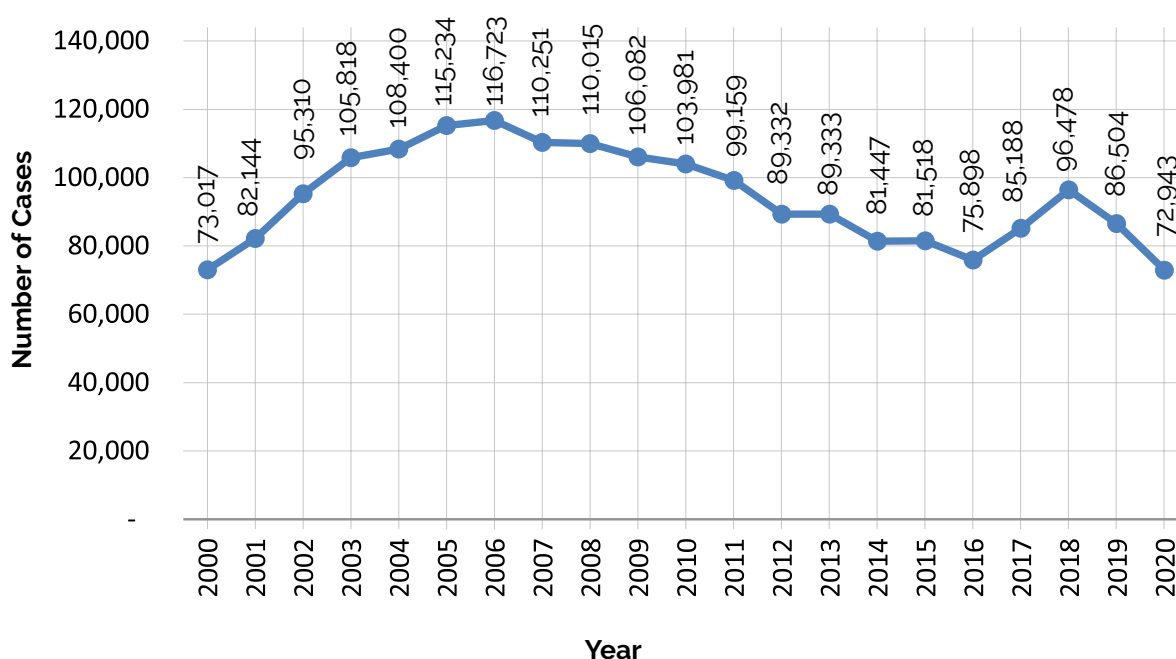
Figure 1.1: Tuberculosis Case Finding in Kenya, 2000 – 2020

1.1.2 Case Notification Rates

The case notification rate (CNR) in 2020 was 154 per 100,000 population. This was a decline from the 165/ 100,000 population in the previous year. TB incidence in the same period (2020) was estimated at 289 per 100,000 population, indicating that at least 135 persons with TB were missed or not notified per 100,000 population. The country thus needs to sustain its efforts to find all the missing cases.
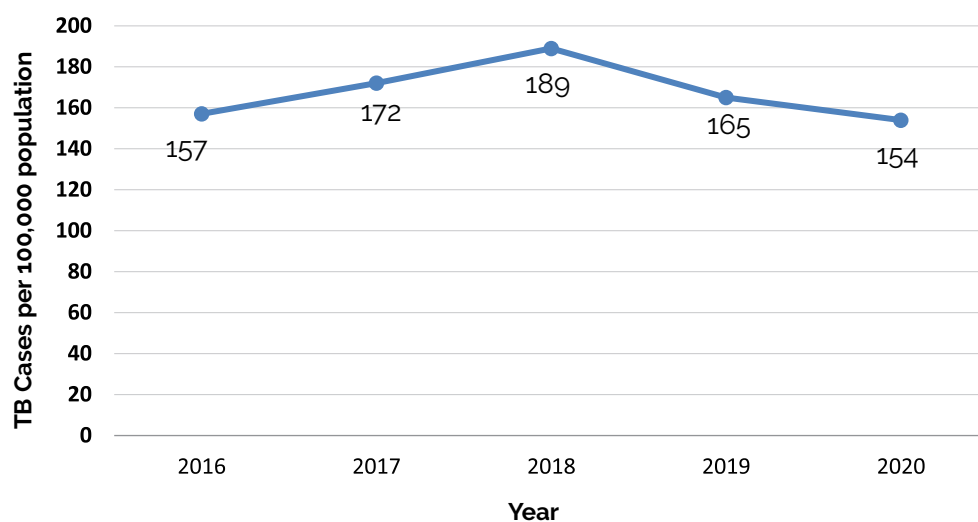
Figure 1.2: TB Case Notification Rates (CNR) in Kenya, 2016 – 2020

The counties reporting highest CNRs included Mombasa (271/100,000), Tharaka Nithi (248/100,000) and Turkana (246/100,000) while those reporting least CNRs were Mandera (64/100,000), Wajir (67/100,000) and Nandi (72/100,000). **Figure 1.3** is a map showing the varied TB CNRs in the country in 2020.
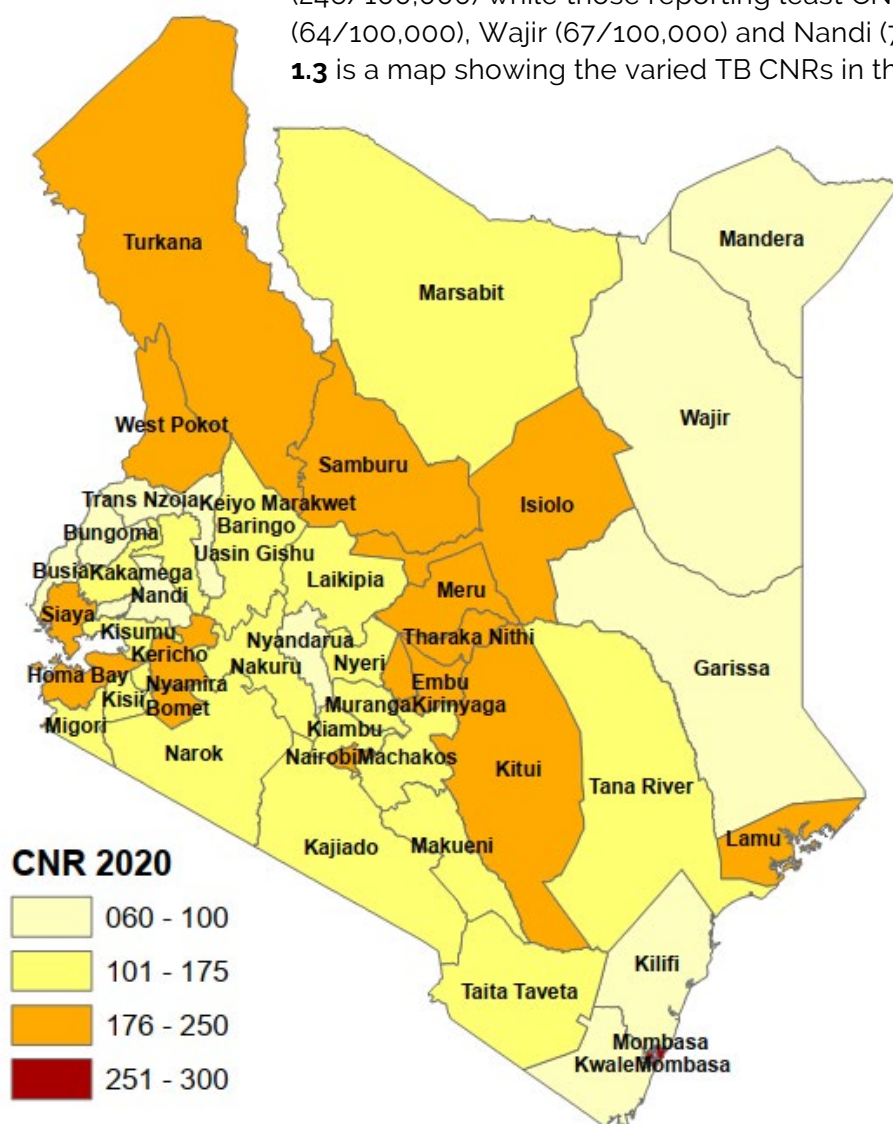
Figure 1.3: TB case notification rate per county, Kenya, 2020

1.1.3 Characteristics of the notified patients with TB

72,943 patients notified	**66%** were male	**20 - 44 Years** age group that carried the majority of TB burden	**8%** previously-treated
86% pulmonary TB cases	**59%** bacteriologically confirmed	**8%** children between **0-14 years**	**25%** HIV co-infection rate among TB patients in 2020

39% Normal BMI	**17%** severely malnourished	**29%** moderately malnourished	**6%** Overweight	**5%** Obese	**4%** not evaluated for BMI	**20%** non-state sector contribution to case finding

Figure 1.4: Age-sex distribution of the DS TB cases in Kenya, 2020
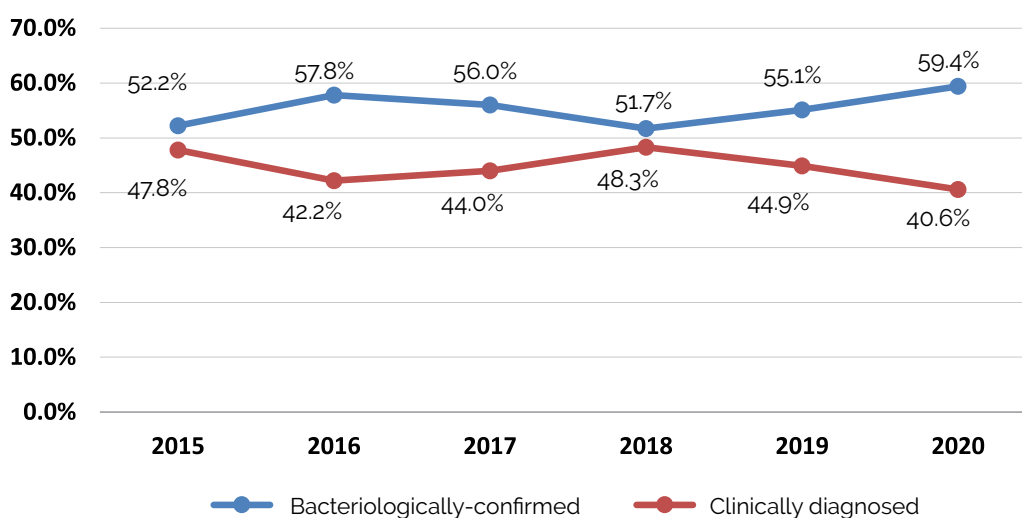
Figure 1.5: DS TB case notifications by type of diagnosis, 2015 - 2020

1.1.4 Treatment outcomes among Drug Susceptible TB cases in Kenya
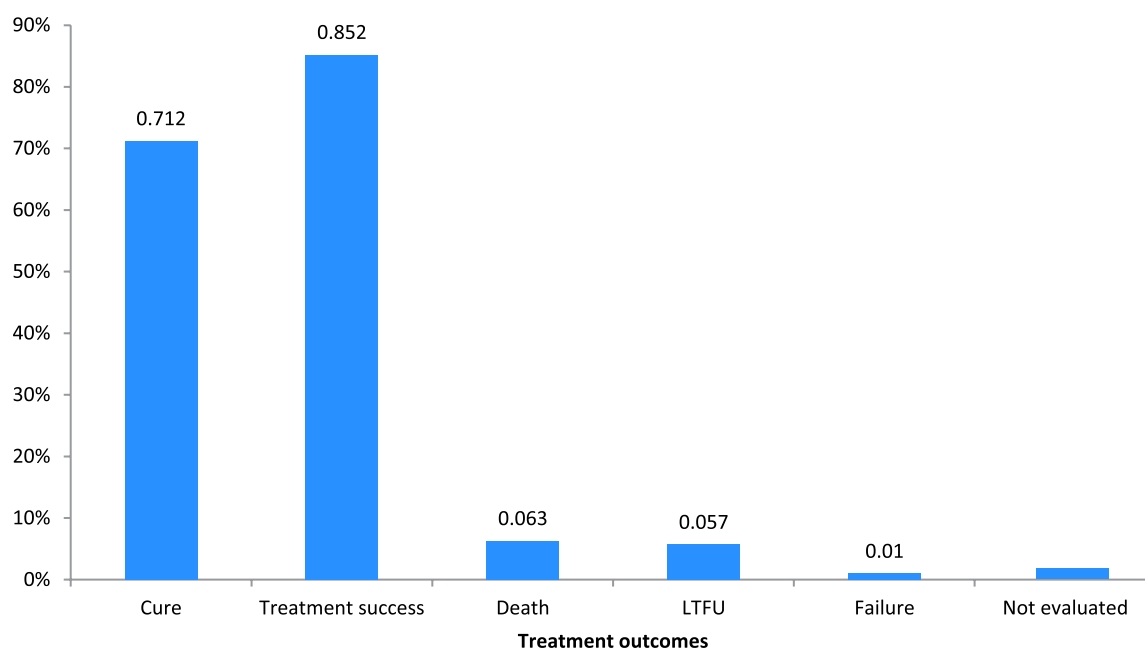
Figure 1.6: DS TB Treatment outcomes, 2020

Treatment success rate (TSR) for all forms of TB was 85.2% (2019 cohort). This was a 1.2% increase compared with the previous year. This is despite the COVID-19 pandemic. Eight counties had TSRs above the national target of 90%. These counties are Mandera (93.4%), Wajir (92.2%), Homa Bay (92.2%), Isiolo (91.9%), Migori (91.2%), Nyamira (91.0%), Tana River (90.5%) and Kisii (90.3%). Pokot (75.0%), Taita Taveta (79.0%) and Uasin Gishu (79.6%) counties had the least TSRs.

Cure rate for bacteriologically-confirmed pulmonary TB patients remained similar to the previous year at 71.2%, pointing to the need for heightened quality of care measures. Only Nyamira county attained the national cure rate target at 91.9% while seven counties had cure rates below 60% - Baringo, Turkana, Elgeyo Marakwet, Trans Nzoia, Pokot, Taita Taveta and Narok.

Overall death rate was 6.3%, almost similar to the previous year's 6.5% and still higher than the national target of less than 5%. Five counties had death rates above 10% – Taita Taveta (13.0%), Vihiga (12.6%), Busia (11.1%), Nyeri (10.2%) and Siaya (10.1%). Overall loss to follow-up (LTFU) rate was 5.7%, failure rate was at 1.0% while not evaluated was 1.9% (down from 3% in 2019).

Death and loss to follow-up remain the biggest challenges to attaining the target TSR pointing to the need to continue improving on quality of care and patient linkage and retention mechanisms. The program continues insisting on carrying out and documenting audits of all mortalities occurring during TB treatment.

1.2 Childhood Tuberculosis

1.2.1 Pediatric Case finding

In 2020, 5663 childhood TB cases were notified to the program representing 8% of all notified cases against a national target of 10 – 15%. This was a 33% drop compared to the cases notified in 2019 and the lowest in number (and proportion of cases notified) in the last five years. A significant part of the drop is explained by the impact of the COVID-19 pandemic on case-finding activities. The drop in case notification was in tandem with the overall drop in cases notified in the country.
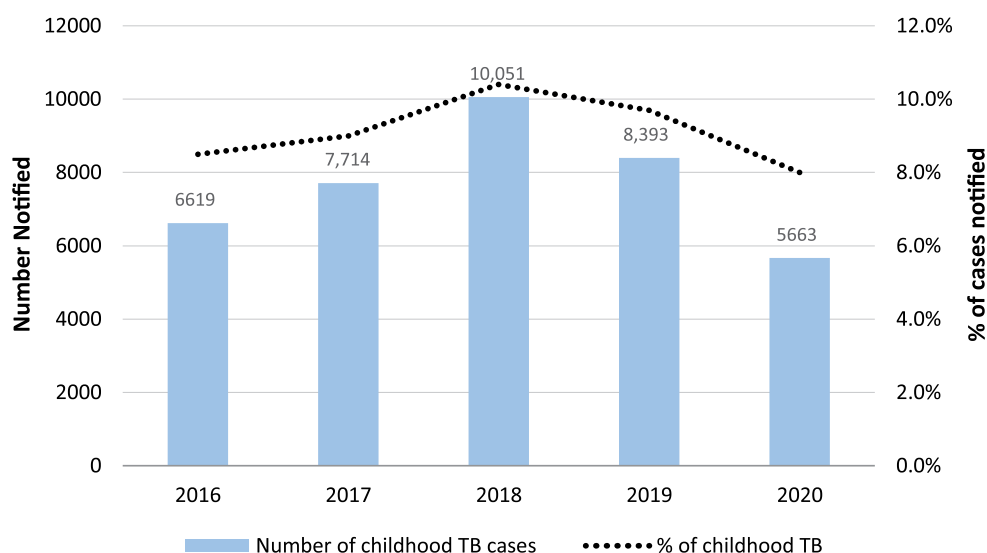
Figure 1.7: Trends in Childhood TB Case Notifications, 2016 – 2020
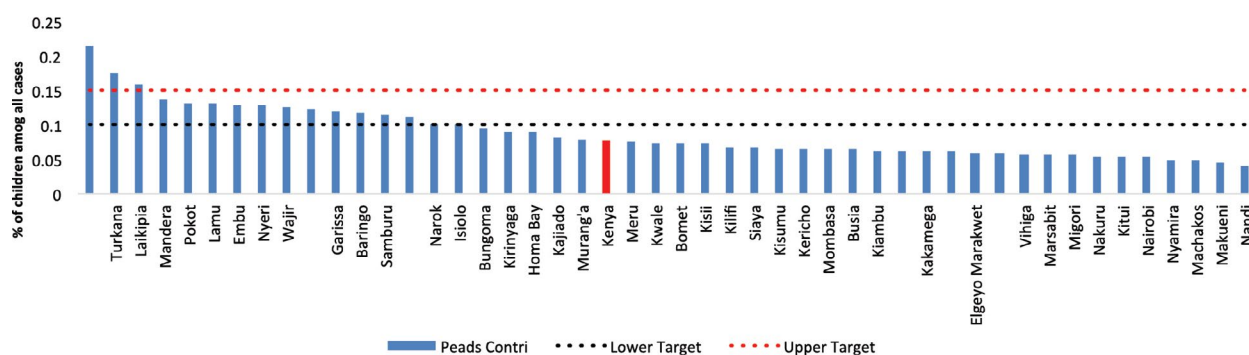
Figure 1.8: Proportion of Childhood TB Cases notified by each county

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1.2.2 Characteristics of Childhood TB Cases

5,663 cases notified	**49%** were female
56% aged between **0-4 years**	
89% had nutritional assessment	**24%** Severe Acute Malnutrition
8% Moderate Acute Malnutrition	
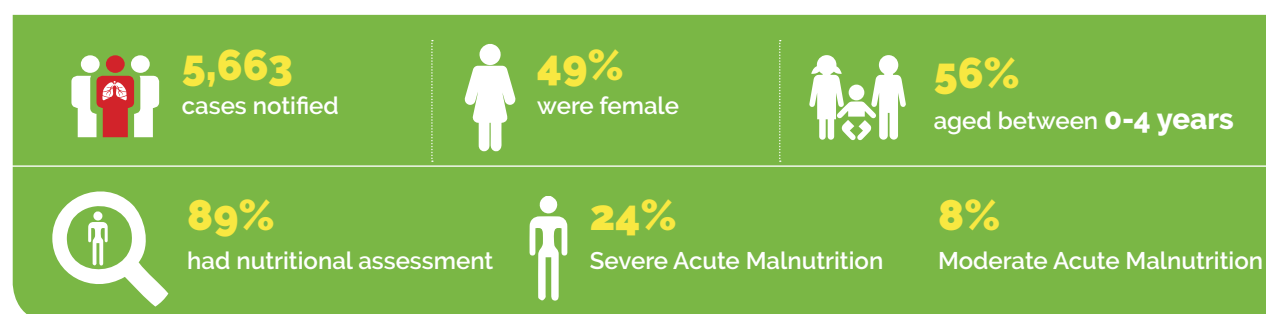
1.2.3 Treatment outcomes among childhood TB cases

The treatment success rate among children 0 – 14 years was 88.6% for the 2019 cohort which was similar to that of the 2018 cohort. Cure rates among this age group remain low (66%) because of the low coverage of sputum testing at baseline and during follow-up. The death rate was 4.8% which is within the national target of <5%. Eighteen counties had death rates above the national target with the top five including Taita Taveta (8.3%), Kisii (8.2%), Kitui (7.5%), Bungoma (7.2%), and Nakuru (7.1%).

1.3 TB/HIV

HIV testing among the notified TB patients was 98%, with 9 counties recording 100% testing rate. These counties are as follows: Elgeyo Marakwet, Homa Bay, Kakamega, Kisii, Kitui, Laikipia, Mandera, Nyamira and Trans Nzoia. HIV testing was similar among males and females but higher among adults at 98.6% as compared to children at 96.1%, there is need to scale up HIV testing among children. The TB-HIV co-infection rate was 25.2%, a drop from 26% in 2019, however the positivity rate among the females was higher at 32% as compared to the males which was at 21%. In addition, the HIV positivity was 26% among the adults and at 14% among the children. ART uptake among the co-infected patients was at 97% with Homa Bay county reporting 100% ART uptake.

98% HIV overall testing rate	HIV testing Males = Females	**98.6%** HIV testing for adults	**96.1%** HIV testing for children
25.2% HIV co-infection rate	**21%** HIV positivity rate for males	**32%** HIV positivity rate for males	
26% HIV positivity for adults	**14%** HIV testing for children	**97%** ART uptake of among those co-infected.	
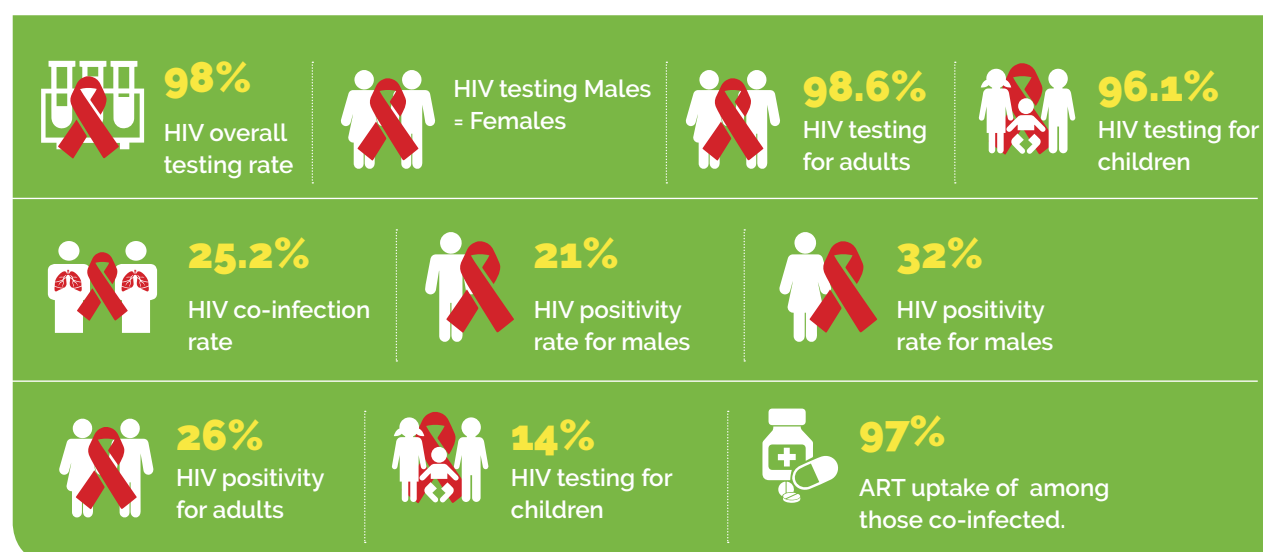
1.4 Drug Resistant Tuberculosis

1.4.1 Introduction

The burden of DRTB in Kenya remains high and with an estimated 2,500 incident cases in 2020. Case detection and quality of care are key challenges to making progress in the fight against drug resistant TB in Kenya. The National Tuberculosis Strategic Plan (2019 – 2023) estimates that only 47% of TB cases in Kenya receive a first line DST and only 21% of DRTB cases are detected. The goal of the TB program is to increase these to 95% and 80% respectively by the end of the current strategic plan.

1.4.2 DRTB Case Finding

In 2020, 961 drug resistant TB cases were notified representing a 40% increase when compared to 2019. This was a 38% case detection rate. A majority of the counties (72%) recorded an increase in cases with nine counties (Meru, Embu, Mombasa, Nairobi, Nakuru, Pokot, Kericho, Machakos and Migori) recording an increase of 10 or more cases.
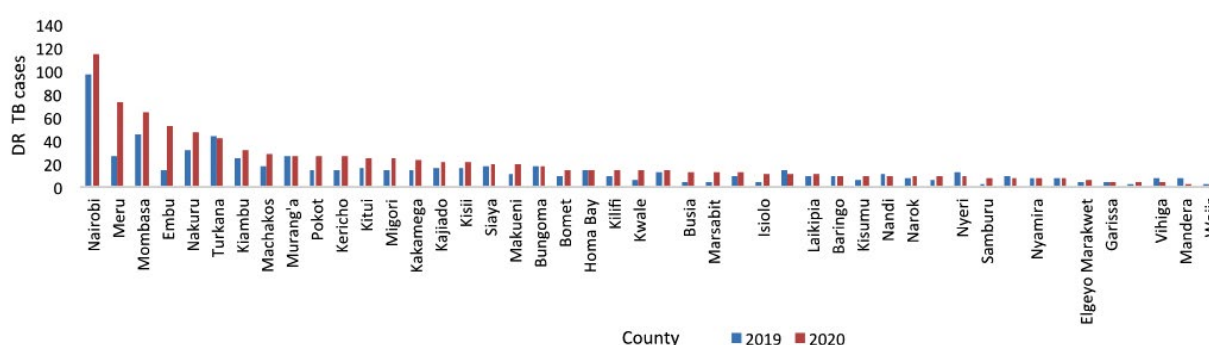
Figure 1.9: DR TB case notification by each county, 2019-2020

Cases among adults were the main drivers of the increase accounting for 97% (264/273) of the additional cases. Pediatric DRTB case notification increased by 64% (23 vs. 14) and adult case notification increased by 39% (938 vs 674). In terms of resistance patterns, INH mono-resistant cases were the main drivers of the increase with a 103% increase (343 vs. 169) compared to the previous year and accounting for 64% of the overall increase. In contrast there was a 28% increase in RR cases (458 vs 381). The increase in DRTB cases occurred despite the drop in DSTB cases notified and is attributed to increased surveillance for DRTB in specific counties during the period. In 2020, 68% of new DSTB patients accessed 1st line DST compared to 31% in 2019.
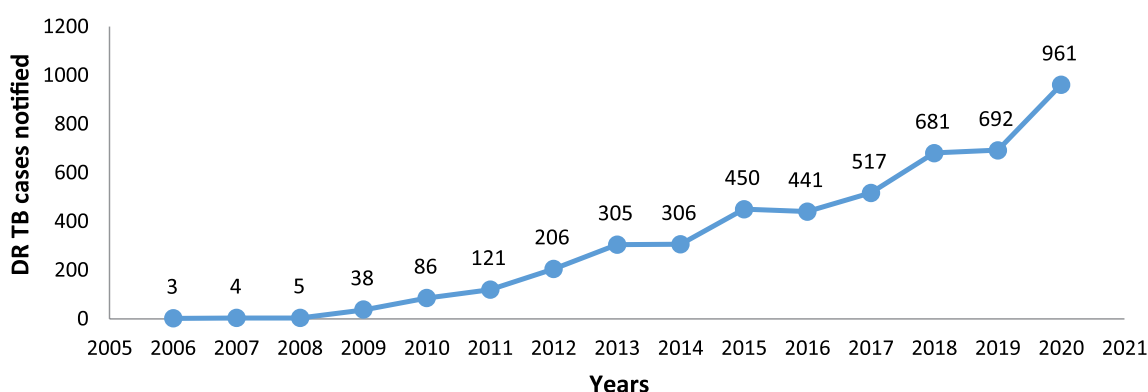
Figure 1.10: DRTB cases notified by year, 2006 – 2021

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1.4.3 Characteristics of DRTB cases notified in Kenya in 2020

458 **(48%)** had Rifampicin Resistance (including MDR, XDR & Pre-XDR)

343 Isoniazid Mono-Resistance (excluding RR)

1 XDR case

7 Pre-XDR cases

32% HIV co-infection rate (down **5%** from 2019)

93% ART uptake (down **3%** from 2019)
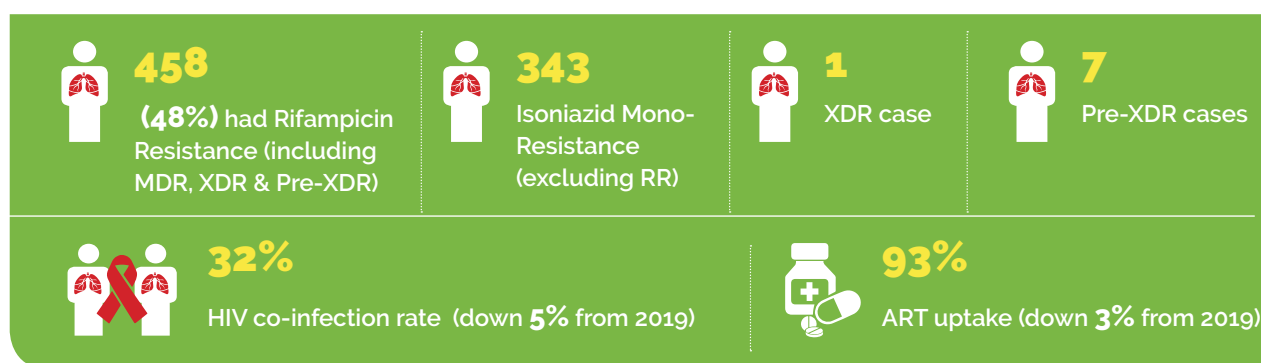
1.4.4 Treatment outcomes for the 2018 DRTB cohort

The treatment success rate and cure rates for the 2018 DRTB cohort were 79.2% and 62.1% respectively. This was an improvement compared to the outcomes of the 2017 cohort which were 76.4% and 52.4%, respectively. There were 23 children with MDR TB in the 2018 cohort with a TSR and cure rate of 73.3% and 52.6% respectively which were lower than those observed among adults.
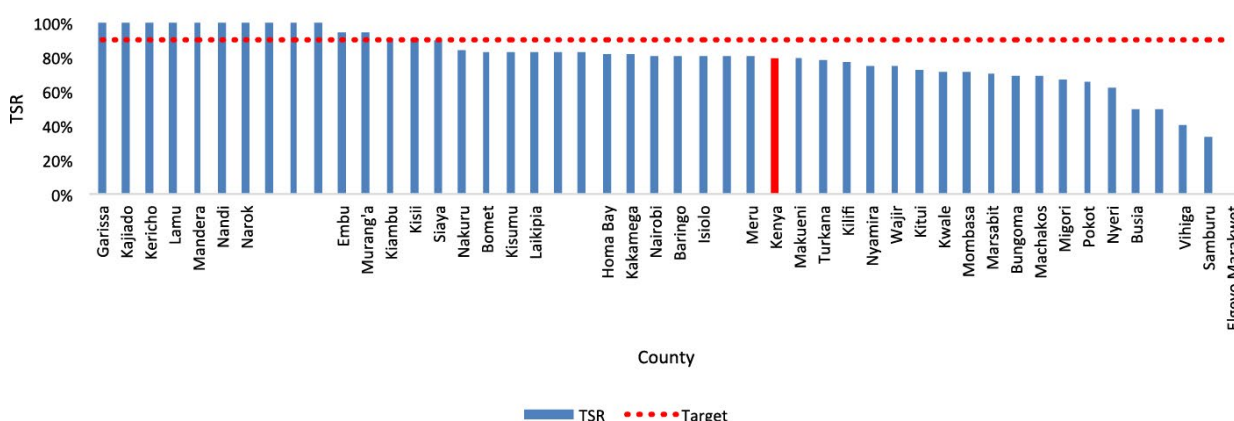
Figure 1.11: Treatment Success Rate by County for the 2018 DRTB cohort

1.5 TB/DM and other comorbidities

Several medical conditions are a risk for TB and for poor TB treatment results. On the other hand, TB can complicate the outcomes for patients with these medical conditions. It is therefore important to identify these comorbidities in people diagnosed with TB in order to ensure early diagnosis and improve co-management. HIV and malnutrition were the leading comorbidities among the TB patients notified each accounting for 25% and 57% of the total cases, respectively. In 2020 there were 2,452 patients that were reported to have other comorbidities during TB treatment. The distribution of the reported comorbidities was as shown in **Table 1.1**.

Table 1.1: Comorbidities reported among patients with TB in 2020

Total with comorbidities- 2452	
Comorbidities	**Count**
Diabetes	1757
Alcoholism	1282
Smoking	859
Hypertension	348
Drug abuse	117
Covid-19	75
Cancer	73
Liver Disease	67
Asthma	55
COPD	20

1.6 Effects of COVID-19 pandemic on TB

The first case of COVID-19 in Kenya was reported in mid-March. What followed were COVID-19 containment measures including:

- Movement restrictions – lockdowns and curfews
- Repurposing of heath workers to COVID-19 response mechanisms – which affected many staff in TB care both at the facilities, sub-counties, counties and nationally
- Some health facilities were converted to COVID-19 isolation centres – affecting diagnosis and follow up of patients in those facilities
- Temporary closure of some facilities
- Re-allocation of finances to COVID-19 response

Other untoward effects of the pandemic and attendant responses included

- Reduced attendance to health facilities; Patients kept away for fear of contracting COVID-19 in the health facilities or their respiratory symptoms being mistaken for COVID-19 thus facing mandatory isolation or quarantine
- Stigma related to COVID-19 led to many patients with cough either not presenting to facilities or not admitting the presence of cough
- There were fears of contracting COVID-19 among Lab staff handling sputum samples, negatively affecting diagnosis of TB

1.6.1 Effects of COVID-19 on TB case finding

There was at least 15% reduction in TB case finding, largely attributable to the pandemic and subsequent responses. Lab diagnosis for TB also went down, negatively affecting case finding. Despite this, 75 TB patients were reported to have been diagnosed with COVID-19 in the year 2020. This is likely an under-reporting due to the lack of implementation measures for bi-directional screening and diagnosis of TB and COVID-19. Of these patients, 20 (27%) were reported to have died during the course of treatment.

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1.6.2 Effects of COVID-19 on continuum of care for TB and treatment outcomes

With reduced attendance to health facilities, the country expected a reduction in facility attendance for patients already on care. To mitigate the negative effects of these, the program directed on longer drug refills and clinic return dates. This also coincided with the development of differentiated care models for TB care as part of the integrated guidelines.

Patients not keeping their clinic appointments were also followed up via phone calls. CHVs were supported to deliver TB medications to patients in the community, further reducing instances of treatment interruptions.

Through the support of the various partners, including USAID TB ARC II - CHS, AMREF Health Africa, KCCB Komesha TB projects and others, the program made significant efforts to mitigate these negative effects of COVID-19. These efforts also included enhanced mainstream media campaigns to create awareness in the wake of COVID-19, support to CHVs to deliver medications to patients at home and trace patients via phone calls.

1.7 Latent TB Infection Management

1.7.1 Introduction

The management of latent TB through the use of TB preventive therapy (TPT) among the at-risk populations is a key strategy to ending TB by 2035. In 2020, the Ministry of Health launched the LTBI policy and thereafter developed the guidelines on management of Latent TB infections to be used by HCWs.

1.7.2 Contact Management

Screening of household contacts of patients with TB is a recommended strategy to improve early case detection and also an opportunity to identify those to be initiated on TB prevention therapy. The utilization of contact management register has improved over the years, however, there is need to increase the notification and screening of contacts of the diagnosed bacteriologically-confirmed pulmonary TB patients.
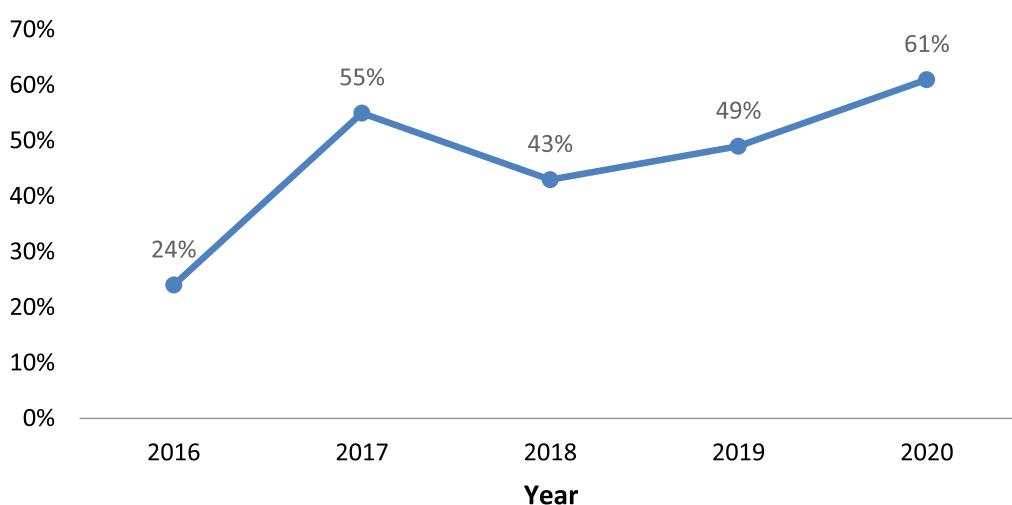
Figure 1.12: Proportion of children contacts initiated on TPT, Kenya, 2016-2020

The number of under-five child contacts initiated on TB preventive therapy was 8803 (61%) against a target of 14,445 (A-third of the bacteriologically-confirmed pulmonary TB cases notified). The improvement compared to the uptake in 2019 of 49% is attributed to sensitizations among health care workers on the need to screen contacts and initiate those eligible on TPT. There is need, however, to scale up this intervention to ensure that all children exposed to bacteriologically-confirmed cases are screened for TB and subsequently initiated on TPT when found to be negative.

1.7.3 Outcomes for TB Preventive Therapy

Among the under five children initiated on TPT in 2019, those who completed therapy successfully were 6467 (76.4%). This was a drop compared to 2018 where the treatment completion was 81%. One of the challenges experienced in the year was stock out of commodities.

1.7.4 Screening of Health Care Workers

Health care workers face a two- to three-fold increased risk of developing TB compared with the general population due to frequent and prolonged exposure to undiagnosed persons, close contact with TB patients and TB specimens in the line of duty. Due to this exposure all health care workers should be symptomatically screened for TB at least twice a year.

In 2020, randomly selected health care workers from Kiambu County were screened for TB and those found to be asymptomatic were subjected to IGRA test to detect latent TB infection. A total of 360 health care workers found to be asymptomatic for TB were tested and 280 (78%) turned positive for latent TB infection.

1.8 Leprosy

45%

drop in leprosy case reported in 2020 to **89 cases**

Kenya has reported a rising trend in leprosy case detection since 2018. In 2020, however, there was a 45% drop (as compared to 2019) to 89 cases.
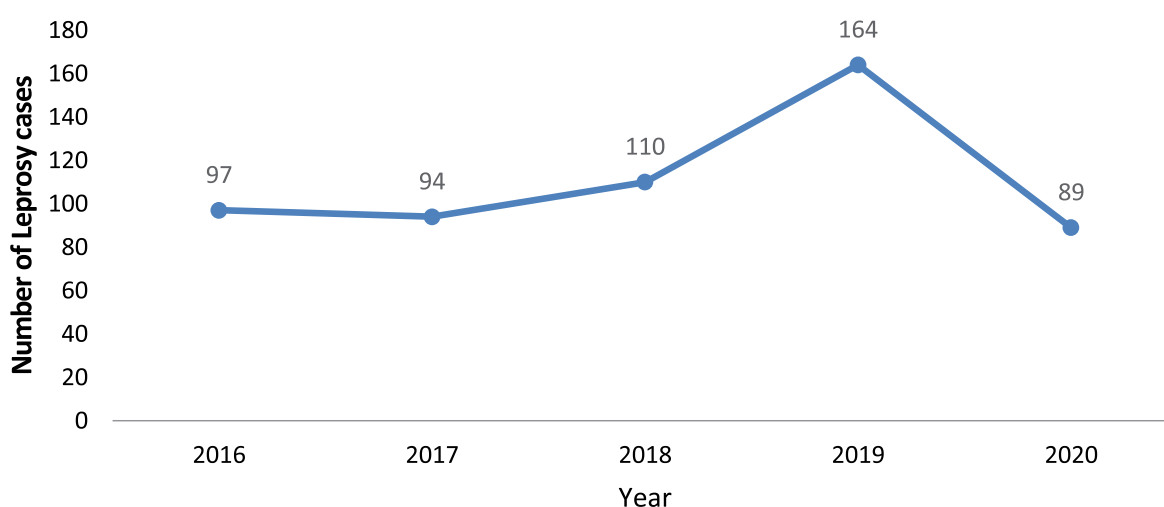
Figure 1.13: Trend of leprosy cases, Kenya, 2016-2020

These cases were reported from 22 counties with Kilifi and Kwale reporting the highest number of cases. There were 6 additional counties that reported cases in 2020 as compared to 2019. These counties are as follows: Baringo, Kajiado, Kirinyaga, Machakos, Taita Taveta and Trans Nzoia. Children contributed to 7% of the notified cases – this is an indication of ongoing transmission in the community.
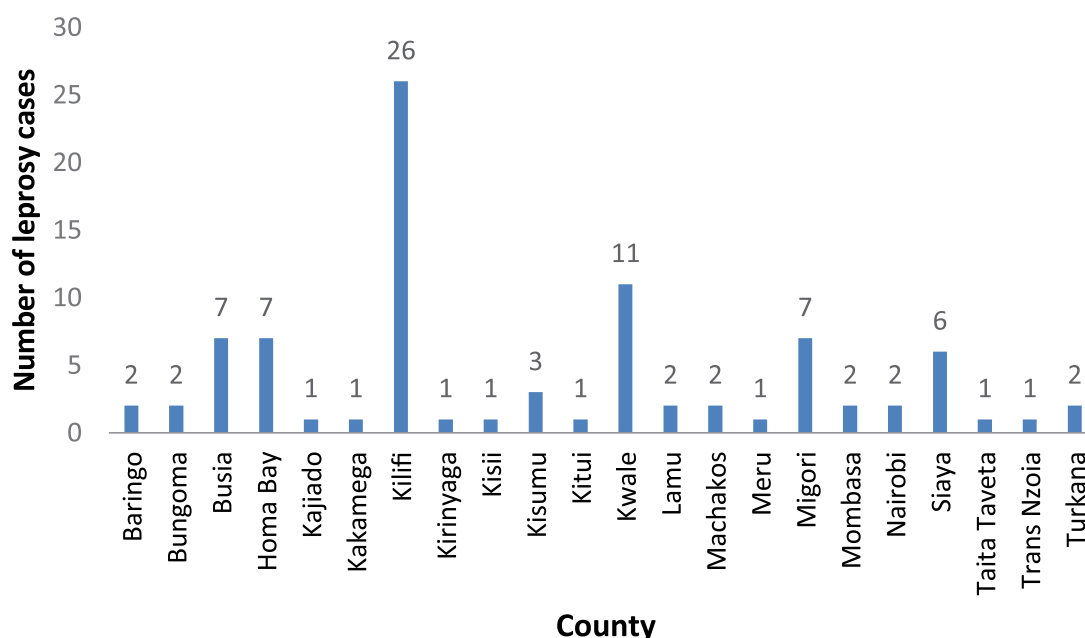
Figure 1.14: Number of notified leprosy cases by county, 2020

Disability grade 2 was reported in 30% of the notified cases which points out to delay in diagnosis. There is need to improve capacity among health care workers to enable them to do early case detection and to improve patient follow-up and quality of care for all patients on treatment.

Among the leprosy cases notified in 2019, those released from treatment were 52.4% while 40% were not assigned an outcome which points to a challenge in updating leprosy outcomes in recording and reporting tools.
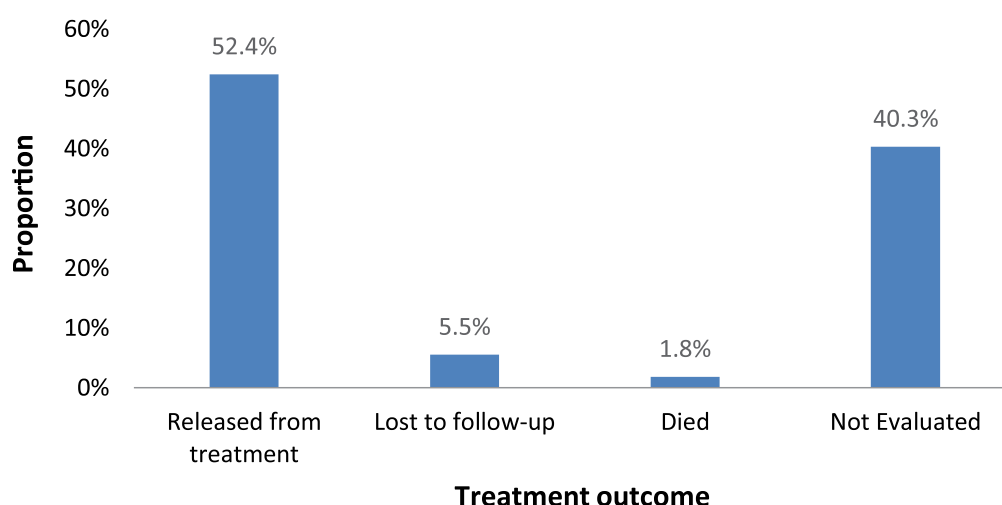
Figure 1.15: Treatment outcomes for cases notified in 2019, Kenya

In 2020 the national program reviewed the chapter on leprosy under the integrated guidelines to adopt the few recommendations made by WHO which include the management of leprosy with 3 drugs regardless of the type of leprosy. These drugs include Rifampicin, Dapsone and Clofazimine.

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CHAPTER 2

STRATEGIES FOR FINDING MISSING PEOPLE WITH TB

2.1 Active Case Finding

2.1.1 Background Information

Active case finding (ACF) is the systematic identification of presumptive TB cases 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. Ownership by the management team is the cornerstone for successful execution of Facility-Based ACF.

The NSP 2019 - 2023 envisions that patients presenting to any service delivery point (SDP) be screened for TB and any patient found to have respiratory symptoms managed according to the diagnostic algorithm. This approach ensures early TB diagnosis for patients with respiratory symptoms. The use of other TB screening options such as chest radiographs (CXR) is necessary for particular patient groups such as children, PLHIV as recommended in the diagnostic algorithms.

In December 2019, GF conducted a mission to review the TB program implementation approach of facility-based ACF following a drop in case finding over the quarters in 2019. An action plan was developed to address challenges in implementation as well as identify opportunities to leverage on. An actionable work plan was developed to improve the implementation of facility-based ACF in Kenya. Subsequently a circular **(Annex 2.)** to revamp ACF activities from the Director General for Health was released to all counties. The country started gaining momentum in 2020, however, this progress was curtailed by unfavourable effects of the COVID-19 pandemic.

3,603
health care workersfrom 11 counties sensitized on ACF

14,888
cases notified through the private sector (PFP-Private for profit and FBOs-faith based organisations), accounting for **20%** of all notified cases and an additional 4% who were referred by the private sector.

2.1.2 Mentorship and Support Supervision

Continuous mentorship and supervision is the main stay in entrenching ACF at the facility level. During these activities, the facility performance is tracked against the targets leading to developing and refining the quality improvement plan. In the process, best practices on ACF implementation are shared and facilities are encouraged to use their data for decision-making. During the year, most of the counties benefited from the facility-specific ACF mentorship and supervision.

2.1.3 Sensitization of frontline HCWs

The goal was to address the knowledge gap among HCWs on ACF and hence get their buy-in and ownership on TB screening for all the patients visiting the facility. Understanding how to plug ACF in the patient pathway and clearly defining the roles and responsibilities are key for the success of TB screening interventions. Further, it is during ACF sensitization that healthcare workers are guided on how to set their targets based on the workload and encouraged to review progress regularly. In 2020, at least 3,603 HCWs from 11 counties were sensitized on ACF (**Table 2.1**)

Table 2.1: Sensitizations for HCWs on ACF in 2020

Activity	Counties	No. of Sub Counties	No. of facilities	No. of HCWs
HCWs sensitization on ACF	11	99	198	3,603

2.1.4 Performance - ACF Care Cascade

Since incorporation of ACF indicators in TIBU, there has been increased reporting from the counties with almost full-scale documentation being realized in 2020. As indicated in **Table 2.2**, hospital workload in 2020 was greatly affected by the COVID-19 pandemic and declined by 16% relative to 2019. The incorporation of TB screening indicators in mainstream MoH tools has contributed to a proportionate increase in patients screened for TB. The proportion of presumptive TB cases identified still remains low at 3% (5% in 2019) and calls for quality improvement approaches.

Table 2.2: Comparison of 2019 & 2020 ACF Care Cascade indicators

Indicator	2019	%	2020	%
Workload (Clinical encounters)	275,255,468		244,959,711	
Respiratory Conditions	24,046,033	9%	18,128,861	7%
Screened for TB	7,292,486	3%	14,900,145	6%
Presumptive TB cases identified	383,652	5%	467,263	3%
Presumptive TB cases investigated for TB	203,648	53%	275,538	59%
Presumptive cases clinically confirmed to have TB	5,113		8,633	
Presumptive cases bacteriologically confirmed to have TB	12,077		19,472	
Total Presumptive cases confirmed to have TB	17,190	8%	28,105	10%
Confirmed TB cases started on treatment	15,531	90%	25,738	92%
Presumptive cases referred by CHVs	16,113	4%	23,437	5%

The cascade is still leaking with just about 60% of the presumptive TB cases undergoing investigation for TB; while various facets of sample networking have been optimized, a lot still needs to be done to ensure that all presumptive cases are linked to diagnosis. Eight percent of the confirmed TB cases were not linked to treatment according to the data, which could point to a documentation gap – continuous mentorship on the same is paramount. Community Health Volunteers (CHVs) still remain pivotal in community TB screening and referral.
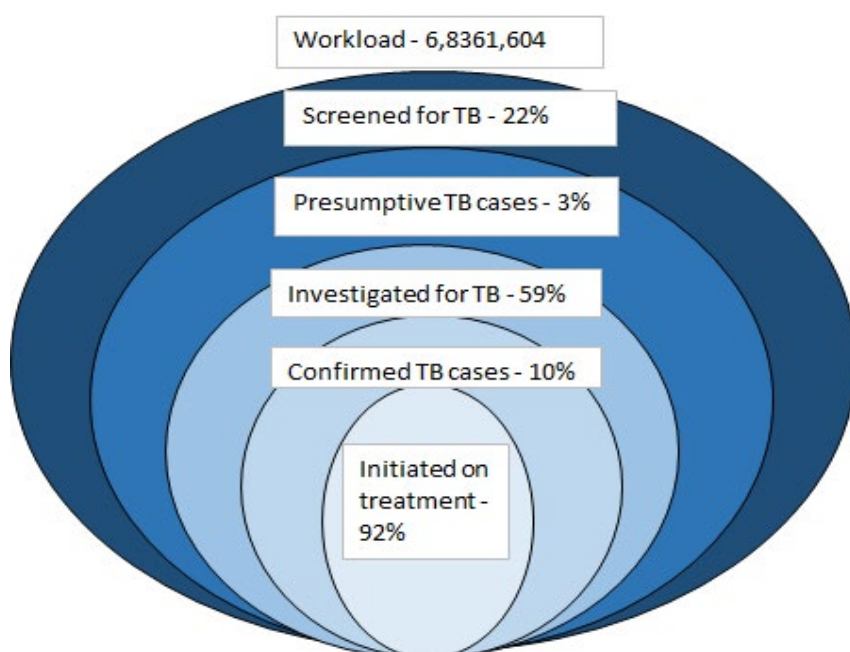
Figure 2.1: Performance of 2020 ACF Care Cascade indicators

2.2 Public-Private Mix (PPM)

2.2.1 Background Information

Engaging all care providers in TB control is critical in attaining the global and national targets. PPM collaboration is important as it improves early TB diagnosis irrespective of where the patients first seek care in the health system, and establishes mechanisms that allow for efficient and high quality diagnosis and treatment. The year saw the end point to the implementation of the PPM action plan (2017-2020) that aimed to strengthen and expand the engagement of the private sector in the fight against TB as an effort to increase access to TB and MDR TB prevention, care and control services. During the year, the private sector (PFP-Private for profit and FBOs-faith based organisations) notified 14,888 cases accounting for 20% of all notified cases and an additional 4% who were referred by the private sector.
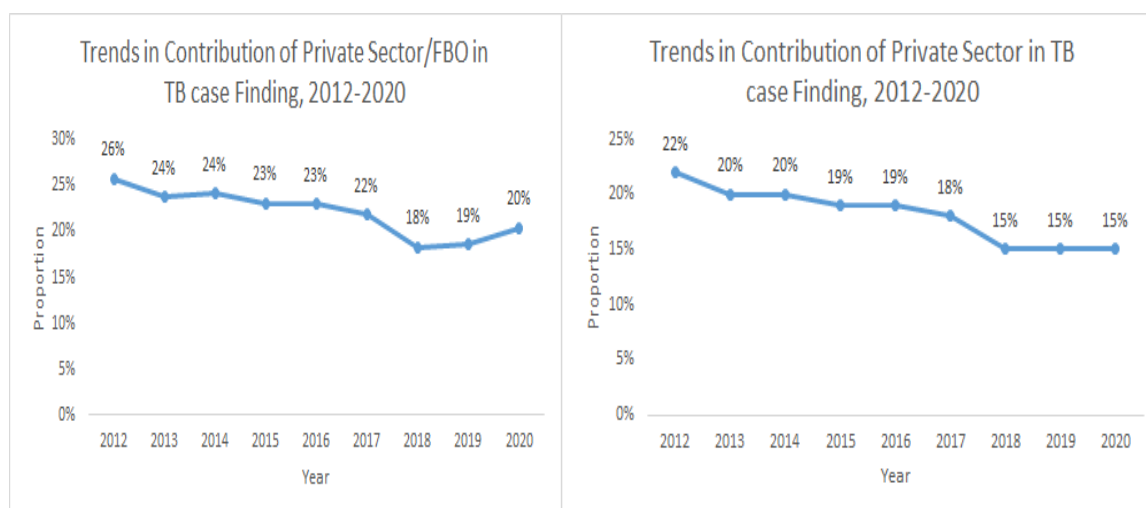
Figure 2.2: Contributions of a) private sector and FBOs and b) private sector alone in TB case finding in Kenya, 2012-2020

The achievement of the PPM gains was possible through collaborative efforts of NTP and implementing partners. The engagements were guided by the 2017-2020 action plan which entailed engaging the unengaged providers who have never provided TB services in the past as well as supporting the optimization of services in the already engaged health facilities. The engagement of private providers was implemented by organizations acting as intermediaries and played a critical role in linking private providers with the NTP.

These organizations have been at the forefront in supporting private for-profit health facilities and include:

1. AMREF Health Africa through the Global Fund support
2. Center for Health Solutions – Kenya (CHS) through the USAID TB ARC II activity
3. Respiratory Society of Kenya (ReSoK)
4. Population Services Kenya (PSK) through the Global Fund and TB REACH support
5. The Kenya Conference of Catholic Bishops (KCCB) through the KOMESHA TB program

The PPM Committee of Experts continued to provide a strong advisory and monitoring role which saw all the PPM and KIC-TB innovations significantly increase the numbers of clients screened for TB, the proportion of presumptive cases having a Gene Xpert test and ultimately an increase in the number of patients notified in the private sector from 14% in Q1 2020 to 17% in Q4 2020 (**Fig 2.3a**) . Additionally, the proportion of TB cases referred by the private sector increased from 3% in Q1 2020 to 5% in Q4 2020 (**Fig 2.3b**).

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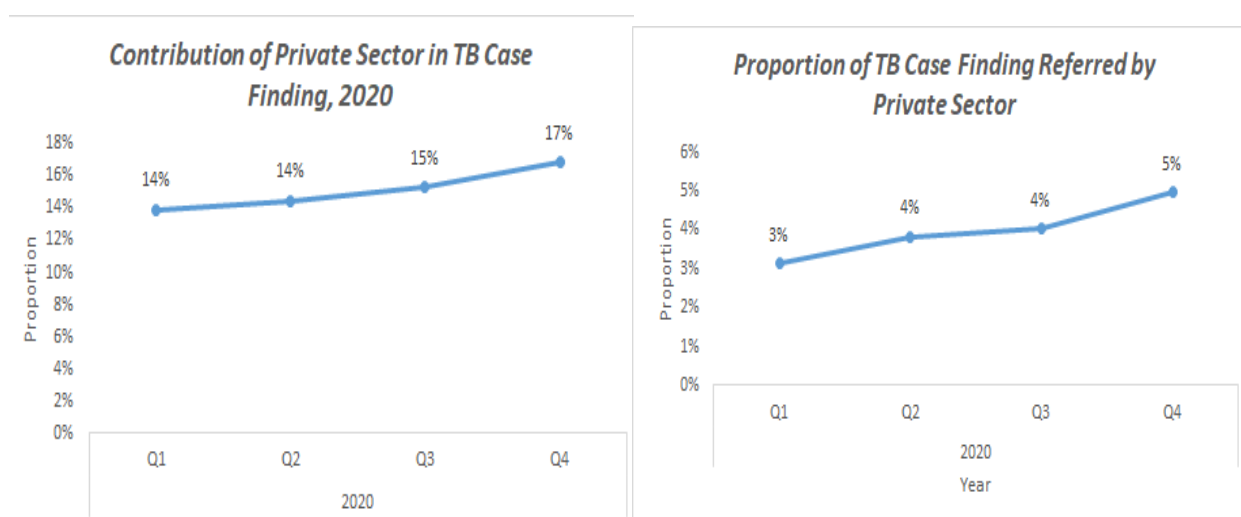
Figure 2.3: Quarterly trends of contributions of the private sector in a) TB case finding and b) referrals, 2020

2.2.2 PPM Action Plan 2017-2020

PPM implementation was largely guided by the PPM action plan 2017 – 2020 which defined six models of engagement with the private sector in a bid to strengthen efforts in finding missed cases, sustain treatment outcomes among diagnosed cases, and improve access to TB and MDR-TB care services.

The models included:

1. **Private Sector (Institution and Individual Provider) Model**: aimed at improving access, equity, efficiency and quality TB care through structured and sustainable engagement of the formal private health providers e.g. Tunza clinics.

2. **Pharmacist Model**: promoting identification of presumptive TB cases by the pharmaceutical personnel and their prompt referral to the NTP network of providers to facilitate early diagnosis and management.

3. **Pediatric TB Model**: aimed at engaging the private providers to expand access to TB services for children through integration between MCH clinics, pediatric clinics and TB service providers to facilitate childhood TB diagnosis and treatment.

4. **Laboratory Model**: This model aims at strengthening the collaboration with the private laboratories and put up mechanisms to link diagnosed cases from the private laboratories to the NTP network of providers for appropriate case management e.g. TB Reach wave 6.

5. **Corporate Model**: aimed at engaging corporate organizations and workplaces in implementation of interventions that target the employees at their workplaces in TB care and prevention.

6. **The Informal Service Providers (ISPs) Model**: has an objective of expanding the number of informal service providers engaged.

A. AMREF Health Africa - Global Fund PPM Report 2020

AMREF Health Africa in Kenya through the Global Fund Tuberculosis Project implemented PPM interventions in 10 urban centres across 8 counties. The goal of the project was to enhance the contribution of unengaged standalone formal and informal health providers in finding missing people with tuberculosis. The engagement models employed included the private sector model with focus on previously unengaged providers as well as the pharmacist and laboratory models. A hub-and-spoke model was used to link private providers (spokes) to Gene Xpert diagnostic sites (Hubs) though sub-recipient Population Services Kenya (PS Kenya). A total of 487 (360 private facilities, 126 chemists and 1 laboratory) private providers were engaged in the year and provided TB services. The interventions carried out in the year included:

1. Technical Support for the Private Providers

    - 10 field assistants (technical assistants) and 4 service delivery officers engaged by PS Kenya provided the day to day technical support to the providers

    - Two joint technical assistance missions for Strategic Initiatives (SIs) (PPM and KIC-TB) were carried out in the year by AMREF and NTP

    - Virtual continuous medical education (CMEs) were carried out on a monthly basis due to COVID-19 restrictions. Providers were supported with data bundles. An average of 250 providers were reached every month.

2. Incentivization - Providers were provided with monetary incentives based on the number of presumptive TB patients tested and the number of people diagnosed with TB. On average a total of 120 providers were incentivized monthly for testing and 60 for diagnosing people with TB. Diagnostic hubs were also provided with incentives for handling increased workload from the private providers.

3. Sample Transport - 11 riders were supported to transport samples in the 10 urban centres

4. Linkage to treatment services - A total of 18 linkage assistants (CHVs) were supported to ensure all patients diagnosed with TB are linked to treatment. They also worked with other partners to carry out contact tracing for these patients.

5. Review Meetings with providers - 8 regional review meetings were carried out (One physical meeting and 7 virtual meetings). One Quarterly review meeting was also conducted.

Support supervision to the Private Providers in Thika Urban Centre

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AMREF, PS Kenya and NTP team during TA visit in Nairobi County

A motorcycle rider supporting Mombasa County for sample transport undergoing mentorship by a Service Delivery Officer

During AMREF PPM QRM meeting

Table 2.3: Performance along the TB Cascade of Care (January – December, 2020), AMREF Health Africa

Indicators	Targets	Total	Achievement (%)
Number of people screened for TB	201,887	281,959	**140%**
Number of presumptive people identified	30,283	13,746	**45%**
Number of presumptive people tested for TB	23,167	7,675	**33%**
Number of people diagnosed with TB	1,158	823	**71%**
Number of people started on TB treatment	823	802	**97%**

B. USAID TB ARC II - CHS

USAID TB ARC II - CHS continued to provide a participatory approach to improve TB uptake services and expand private sector community partnership. In the first three quarters of the year (January to September 2020) PPM activities were implemented under PS Kenya as sub-recipients through the Tunza network in 11 counties including: Nairobi, Mombasa, Kiambu, Meru, Embu, Tharaka Nithi, Kisumu, Isiolo, Nakuru, Kajiado and Kilifi. A total of 101 health facilities were engaged and health care providers from these facilities trained on TB management and control.

In the final quarter of the year (October to December 2020), PPM activities were implemented in only 5 counties namely: Mombasa, Kilifi, Nyeri, Kirinyaga and Meru under direct implementation by USAID TB ARC II - CHS. The following activities were conducted:

1. Development of a training/sensitization Package for Health Care Providers in the Private Sector: Training slides were developed targeting critical cadres of health care workers including clinicians and nurses, laboratory technicians/technologists and pharmacy technologists and pharmacists. The training was tailored to fit a one day sensitization for clinicians, nurses and laboratory personnel and half a day for pharmacists/pharmacy technologists.

2. Training and Sensitization County Health Management Teams and Health Care Workers from the Private Sector on TB Control: USAID TB ARC II - CHS supported training and sensitization of over 500 health care workers on TB management and control. Various channels and modes were used to conduct the training including didactic training, CMEs, On-the-Job Training (OJT) and ECHO via zoom. The ECHO sessions were utilized more during the COVID-19 pandemic period to ensure continuous learning.
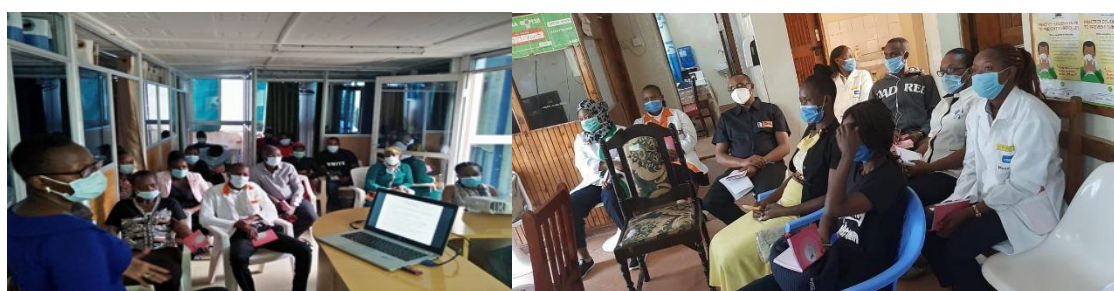
On the left is a Sub County-based CME in Kisauni and on the right a Facility-based CME at Jambo Health Facility in Mombasa

3. Strengthen Mentorship, Support Supervision and Linkage to Diagnosis and Care: USAID TB ARC II - CHS supported the engagement of county and sub-county TB coordinators to provide mentorship and support supervision in private facilities. All facilities engaged received continuous mentorship and support supervision from the county and sub-county teams, NTP and USAID TB ARC II - CHS technical staff.

USAID TB ARC II - CHS staff, the sub-county TB and Leprosy coordinators as well as facility staff reviewing TB data during the review visits in Meru and Nairobi Counties

Figure 2.4 shows the number of cases diagnosed over time from Tunza facilities.

Confirmed TB cases per quarter put on treatment

	Y1 Q3 (May-June'19)	Y1 Q4 (July-Sept'19)	Y2 Q1 (Oct-Dec'19)	Y2 Q2 (Jan-Mar'20)	Y2 Q3 (April-June'20)	Y2 Q4 (July-Sept'20)
Confirmed	8	19	14	20	37	55
Put on Treatment in Tunza	5	17	11	7	29	44
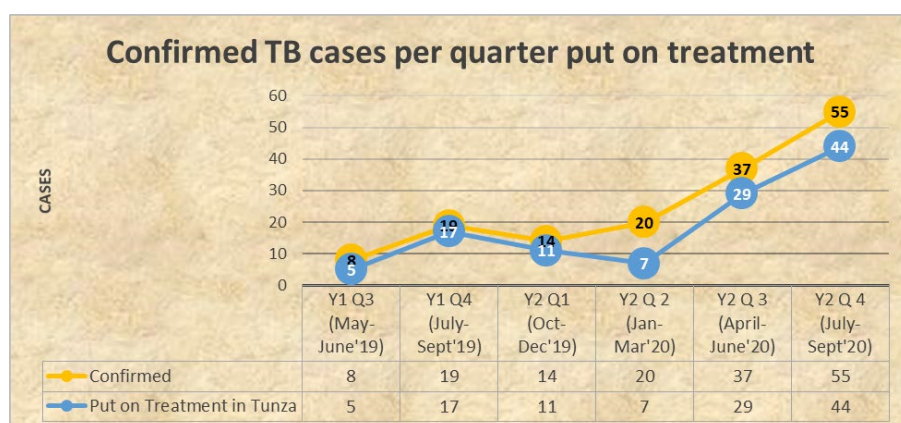
Figure 2.4: Trends of confirmed TB cases and those put on treatment in Tunza facilities

A total of 56 patients were diagnosed from private facilities in Q4 2020 under USAID TB ARC II - CHS direct implementation; 52 from health facilities, 2 from chemists and another 2 from stand-alone laboratories. Overall in 2020, a total of 168 patients were diagnosed from private facilities under the USAID TB ARC II - CHS activity support.

4. Strengthen PPM leadership and stewardship in the Counties: The project supported establishment of PPM Technical Working Groups in five PPM focus counties with clear terms of references. The TWGs provide leadership and guidance with regards to PPM activities. The county Directors of Health were appointed as the chairpersons and the county TB and leprosy coordinators as the secretaries for the TWGs.

5. Engagement of corporate sector: A total of 7 non-health private sector companies were reached with a representation by 14 focal persons, where strengthened engagement, coordination and participation in TB integration in the industrial business sector was emphasized.

C. Komesha TB Program

Komesha TB Program is a cooperative agreement from USAID to Kenya Conference of Catholic Bishops (KCCB). The program supports faith-based organizations and private health institutions and runs from October 2019 to September 2024. The program has four key objectives: i) improving access to high-quality person-centered DSTB, DRTB, and TB/HIV services, ii) strengthening TB services delivery platforms, iii) reducing TB transmission and Progression, and iv) accelerating TB research and innovation with its impact on program implementation.

In the year 2020, USAID's Komesha TB Program mapped and sensitized 657 Community Health Volunteers (CHV) for 67 private and faith-based health facilities in the nine counties of Western Kenya and Nyanza. Zoning of faith-based schools was also done, but school health activities could not be done optimally because of public health lockdowns as a result of COVID-19 pandemic.

Community Health Volunteers sensitization and data review sessions

At Facility level: The program conducted mapping and entry meetings with site owners and administrators of the 67 faith-based and private facilities. To focus implementation on patient-centered quality of care, a TB focal person was identified in each of the facilities to drive the agenda of TB active case finding in the sites with particular emphasis at the departmental level. Routine facilitative supervision aimed at providing on-the-job training in TB management and improving TB recording and reporting was undertaken every quarter in each facility. CME sessions aimed at developing and enhancing the skills of healthcare providers in TB ACF, contact, and case management were also supported. A minimum of one CME per facility per quarter has been embraced as an important capacity-building strategy. **Table 2.4** shows the report for the 67 Facilities

Table 2.4: Performance along the TB Cascade of Care – 2020, Komesha TB

Indicators	Target	Total	Achievement (%)
# of people screened for TB	677,901	624,148	87%
# of presumptive people identified	16,056	20,311	42%
# of presumptive people tested for TB	11,239	15,851	78%
# of people diagnosed with TB	2,901	858	30%
# of people started on TB treatment	2,901	858	100%

Despite a delay in start-up activities, and implementation challenges due to COVID-19 restrictions, Komesha TB achieved 87% TB screening in the 12 months of reporting in the outpatient, maternal and child health, and the inpatient departments of the 67 targeted facilities across the nine counties of operation. Seventy eight percent (78%) were investigated for TB disease. The Program managed to diagnose 858 cases of TB in these three departments, and a total of 858 patients were started on treatment for drug susceptible TB.

D. TB REACH Wave 6

The TB Reach wave 6 aimed to find missing people with TB through strengthening diagnostic capacity of labs in the private sector and linkage to the surrounding network of spokes. Xpert MTB/RIF machines were placed in private laboratories in highly populated urban areas to provide free TB diagnosis. Further, the nearby chemists, private clinics and nursing homes (spokes) were mapped, selected (based on a pre-defined criteria) and engaged to identify people with presumptive TB out of the pool of patients visiting their facilities. The spokes included facilities that were previously engaged or unengaged in TB work but had to be located within 5km radius from the hub. Real time web-based system was developed to link the spokes and hubs and ensure seamless samples and patient referral.

To aid in sample networking between the hub and the spokes, a motorcycle rider was engaged who would do a complete circuit per day to ensure delivery of samples and relay of hardcopy results. The sub-county and hub teams jointly supervised the spokes to mentor them on the active case finding process and discuss their performance.

The project was implemented between November 2019 and October 2020 in five counties (Kiambu, Machakos, Kajiado, Trans Nzoia and Nakuru) in urban setups because of the high population and high numbers of established private facilities. A total of 84 private facilities were networked to refer samples/ clients to the hub for testing via the system. Case notification from the project site started in mid-November of 2019 and for the next 12 months a total of 3,644 presumptive TB cases were identified out of which 3,602 were subjected to a Gene Xpert test, 474 (13%) were confirmed to be have TB and all of them put on treatment.

E. TB REACH Wave 8

This was implemented beginning Quarter 4, 2020 in Nairobi County by Population Services Kenya (PSK) through support from Stop TB Partnership. Focus was on enhancing TB active case finding among private health providers.

The project used several interventions including:

- Engaging private health providers currently not offering TB services
- Improving access to diagnostic services by strengthening sputum networking via hub-and-spoke model and subsidized chest x-ray for children
- Improving routine reporting from private health providers
- Strengthening access to quality assured TB supplies and commodities.
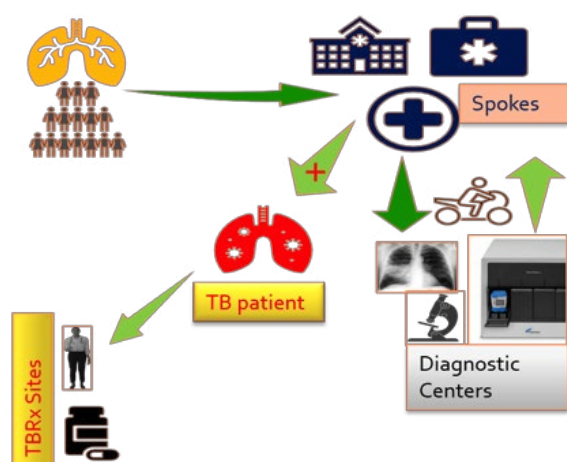
Linkage Model

Table 2.5: Private Provider Engagement, TB REACH Wave 8

Sub County	Mapped Providers	Trained HCWs	Engaged Private Providers			
			Health Facility	Chemist/ Pharmacy	Laboratory	Total
Dagoretti North	88	11	31	1	1	33
Dagoretti South	100	10	27	3	-	30
Kamukunji	86	8	29	8	-	37
Kasarani	84	21	39	1	3	43
Langata	40	7	25	10	-	35
Roysambu	95	7	26	-	-	26
Ruaraka	70	17	22	1	1	24
Grand Total	**563**	**81**	**199**	**24**	**5**	**228**

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F. Respiratory Society of Kenya

The Respiratory Society of Kenya (ReSoK) continued its mission to promote quality lung health in Kenya through its various activities in the year 2020.

1. Active Case Finding for TB: During the year, the Society continued to support community active case finding activities for TB in Kiambu County through the GF TB project 2018-2021 and to finding the missing persons with TB in Nairobi by promoting TB self-screening using the USSD code (*371#), an innovation funded through the KIC-TB initiative.

2. Sustaining gains for TB prevention & care in the Private sector: Through the **E**nhancing **Qual**ity of **T**B care **i**n the **P**rivate Sector (EQualTiPs) program, ReSoK continued to promote quality TB care and ensure access to affordable-quality-assured TB medicines to patients receiving TB services in 30 Institutional Private Health Care Providers & Specialists' Clinics.

3. Monthly Scientific Forums to improve lung health: These forums target a wide array of health care providers with interest in respiratory medicine. In 2020, this program reached >1,900 healthcare providers of different cadres with various topics on the management of lung diseases.

Training on Helmet Ventilation (Helmets for NIV): The Society trained 12 Critical Care Providers (6 Critical care physicians and 6 Critical Care Nurses) from Kenyatta National Hospital, The Nairobi Hospital and Avenue Hospital on the use of Helmets for Non-Invasive Ventilation for the management of respiratory failure in COVID-19 patients. In addition to this training, ReSoK donated Helmet Ventilators to these facilities.

Scholarships: ReSoK in partnership with Merck Foundation offered scholarships to 4 Medical Doctors to undertake Postgraduate Diploma training in respiratory medicine from the University of South Wales.

2.3 Kenya Innovation Challenge TB Fund

The Kenya Innovation Challenge TB Fund (KIC-TB) is one of the Global Fund-supported strategic initiatives to find the missing people with TB in the country. The initiatives address key gaps identified from the TB prevalence survey (2016), the Patient Pathway Analysis (2017) and Inventory studies. The focus of KIC-TB is to increase TB risk awareness, screen people for TB in the community, and link them to TB diagnosis and treatment services through innovative strategies. Implementation of KIC-TB began in July 2019 with 11 innovations implemented by 9 organizations as highlighted in **Table 2.6**.

Table 2.6: KIC-TB innovations and implementing organizations

Innovation	County	Implementing organization
Using USSD platform for enhanced self-screening for TB among men in work places informal settlements	Nairobi	KAPTLD/Respiratory Society of Kenya
Using manned call centers and financial support to enhance screening for TB in informal settlements	Nairobi	TAC Health Africa
Use of Automatic Screening Teller Machine (ASTM) for self-screening of persons seeking services at Huduma Centers, Passport control office and SGR terminus	Nairobi	Sema Limited

Innovation	County	Implementing organization
Using school-going children to screen family members and household contacts	Kakamega	Community Support Platform
Expanding TB screening in congregate settings to include detainees in prisons & police cells; prison & police officers, and their families	Kiambu	Resources Oriented Development Initiative
Use of SMS platform for self-screening of plantation and industry workers		
Expanding TB screening services for truck drivers and corridor communities	Mombasa	North Star Alliance
Finding people with TB among Matatu crews and associates with linkage to health facilities.	Mombasa	Partnership for a HIV free Generation
Strengthening TB screening in prisons through enhanced use of champions	Homa Bay	Heroes Oasis Counselling Center
Use of USSD platform for self-screening in the community		
Integrating private sector and incentives to increase TB screening in informal settlements	Kajiado	Nais Healthcare Ltd

Key Achievements

In 2020, a total of 174,232 people were screened through the innovations and 42,487 (24%) were presumed to have TB. Of these, 21701 (51%) were investigated, 1168 diagnosed with TB (n=692, 59% bacteriologically and 476 clinically-diagnosed) and 1,020 (87%) started on treatment. **Table 2.7** is a breakdown of the performance along the TB care cascade.

Table 2.7: Performance of the innovations under KIC-TB, 2020

Indicator	Target Jan - Dec 2020	Total
Number of people screened	311,482	174,232
Number of people with presumptive TB	31,148 (10%)	42,487
Number of people investigated for TB	24,919 (80%)	21,701
Number of people bacteriologically confirmed with TB	-	692
Number of people clinically diagnosed with TB	-	476
Total number of people diagnosed with TB	1,304 Based on NNS	1168
Number of people started on treatment	1,174	1020

To ensure smooth implementation of the innovations, joint technical assistance missions, data quality audits, KIC-TB Experience sharing and progress review meetings were conducted. KIC-TB innovations are to run until June 2021 after which select innovations based on stringent criteria will be eligible for scale up funding.

DIAGNOSTIC CAPACITY AND SURVEILLANCE OF TB IN KENYA

3.1 Introduction

The laboratory plays a key role in TB diagnosis both at the national and programmatic level through detection of active TB cases and drug susceptibility testing (DST).

Key functions of National TB Reference Laboratory
• Developing TB Laboratory Guidelines, SOPs, Job aids and Policies
• Ensuring high quality and standardized smear microscopy and Gene Xpert services
• Overseeing the refresher training of laboratory staff
• Conducting surveillance of drug resistance
• Participating in epidemiological and operational research
• Preparation and coordination of Gene Xpert PT panels
• Participate in forecasting and quantification of lab TB commodities

The country has decentralized TB surveillance services to five more regional facilities to support National TB Reference Laboratory focus on its core mandate. These decentralized laboratories include: KEMRI Kisian, Walter Reed Kericho, Malindi Sub-county Hospital, Kitale County Referral Hospital, and Machakos County Hospital. All these facilities including the National TB Reference Laboratory are ISO 15189:2012 accredited.
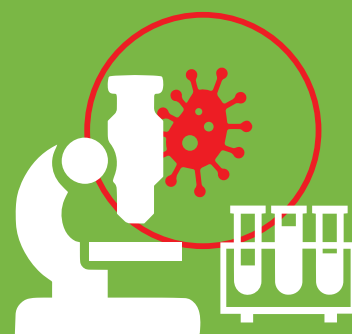
193

Number of Gene Xpert machines distributed across all 47 counties in 2020, against a target of 250, representing **77.2%**

337,142

Total number of samples were analyzed using Gene Xpert in 2020

35,483

tested positive for MTB

1,107

samples had Rifampicin resistance in **173/189** facilities. The rest had either no result, invalid results or errors (**1,305, 2,308,** and **9,101** respectively).

3.1.1 Challenges faced on decentralizing the services

There were several challenges encountered while operationalizing the decentralization process to ensure the laboratories function optimally including:

- Inadequate resources for commissioning of the LPA machines to the hospital management for ownership (in Machakos, Kilifi, Kitale and Kericho).
- The decentralized labs (Machakos, Kilifi, Kitale and Kericho) operated sub-optimally
- Inadequate human resource
- Inadequate resources for equipment service contract
- The current system is manual-based hence the need to create the inter-operability layer for data sharing.

3.2 TB Diagnostic tests and Network in Kenya

Microscopy	Molecular diagnostic methods
■ Conventional light smear microscopy -- ZN ■ Fluorescence light smear microscopy such as LED Microscopy	■ Gene Xpert (Xpert MTB/Rif or Xpert Ultra – for detection of MTB and Rifampicin resistance ■ Line Probe Assay (both First Line (FL) and Second Line (SL) ■ TrueNat

Culture	Other Investigations
■ Solid media (LJ) ■ Liquid media (MIGT)	■ LF LAM ■ QuantiFERON (QFT) for LTBI

Distribution of smear microscopy sites by population density, 2020	Distribution of Xpert by population density, 2020	Map showing distribution of GeneXpert sites in Kenya, 2020
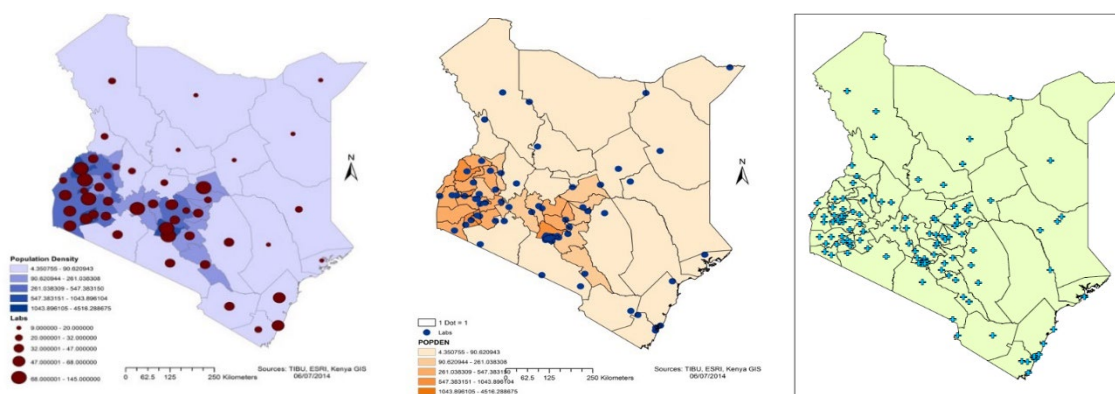
Figure 3.1: Map showing the distribution of Gene Xpert and Microscopy services in Kenya, 2020

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Number of microscopes

FM – 469
ZN – 2,106

Number of Gene Xpert

193

3.2.1 Gene Xpert testing

Through support of the Global Fund and other partners, the country has managed to operationalize Gene Xpert machines in all counties since 2011. Four more additional machines were introduced in 2020. The placement varies from the county referral hospitals to health centers, faith-based hospitals and private facilities. The testing platform has greatly improved the tests turnaround time for laboratory diagnosis of tuberculosis while helping detect drug resistance cases promptly.

Table 3.1 Gene Xpert network expansion over time

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Targets	3	18	115	120	170	200	250	250	250	250
Actual	3	11 (61.1%)	24 (20.9%)	71 (59.2%)	126 (74.1%)	146 (73%)	159 (63.6%)	189 (75.6%)	189 (75.6%)	193 (77.2%)

Gene Xpert tests done, 2020

337,142

This was 70.2% of the expected tests

Monthly trend of Gene Xpert tests done, 2020

COVID-19

2.6%
Rifampicin resistant

MTB Pos 11%
MTB -ve 86%
Error 3%
Invalid/No result 1%

- 2.6% Rif resistance in new and previously treated patients
- Error rates remained the same compared to 2019
- Positivity rate increased with 2% compared to 2019
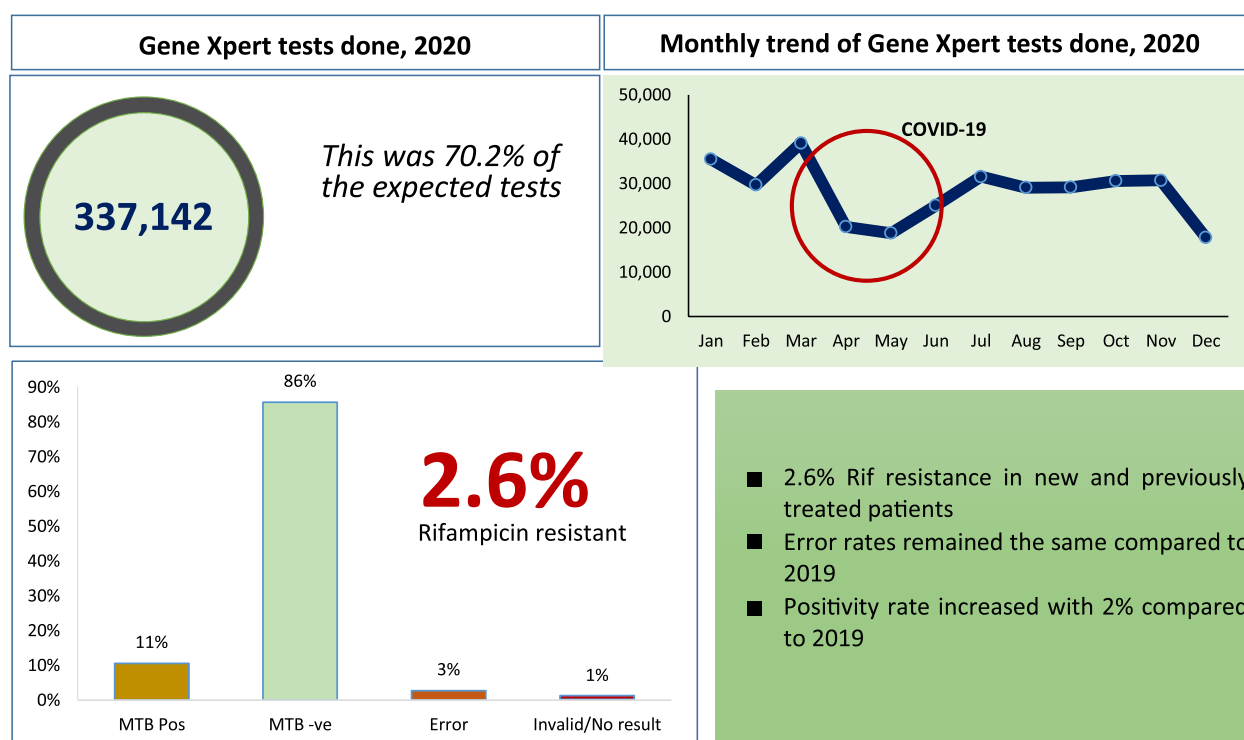
Figure 3.2: Gene Xpert test results, 2020
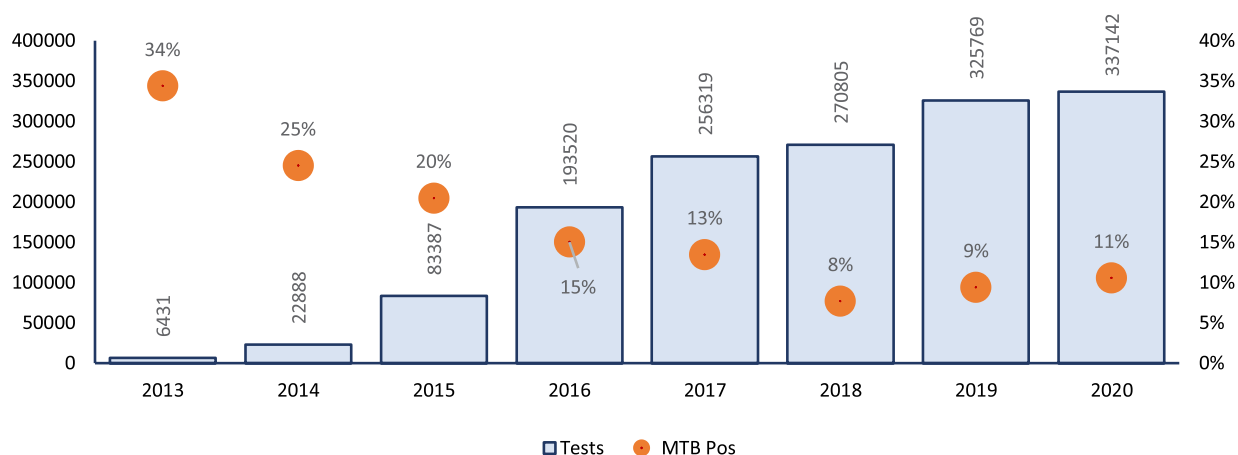
Figure 3.3 Trends in Gene Xpert testing and positivity rates

3.2.1.1 Gene Xpert indicators performance

In 2020, a total of 337,142 total samples were analyzed and 35,483 tested positive for MTB. A total of 1,107 samples had Rifampicin resistance in 173/189 facilities. The rest had either no result, invalid results or errors (1,305, 2,308, and 9,101 respectively).
Although children were also tested, the proportion was low.

3.2.1.2 Gene Xpert Proficiency Testing

In 2020, NTRL through the support of CDC Atlanta and the SRL Uganda, completed the process of in-country production of external quality assurance panels for Gene Xpert testing. The lab joined the NPHL integrated EQA program where the system was assessed by KENAS and recommended for accreditation on 17043 ISO standards for EQA.

National TB Reference Laboratory with the support of CDC, NPHL and partners supported the process of PT panels preparation and distribution targeting all the 193 Xpert sites. The Xpert enrolled-sites for PT received both panels A and B in this period. The overall national participation achievement was 96.4% against a target of 80%.

Table 3.2 NTRL Gene Xpert EQA enrollments

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Number of Gene Xpert Machines	3	11	24	71	126	147	159	189	189	193
Number enrolled/ participated in PT	- (0%)	- (0%)	10 (41.7%)	20 (28.2%)	57 (45.2%)	90 (61.2%)	156 (98.1%)	158 (83.6%)	186 (98.4%)	186 (96.4%)

3.2.1.3 Other activities supported to implement Gene Xpert testing

- Through the support of USAID TB ARC II - CHS, super users were supported to carry out monthly support visits to the Gene Xpert machines in the 47 counties
- USAID TB ARC II - CHS supported the monthly bundling of 189 Gene Xpert equipment to facilitate electronic results dispatch to the clinicians and patients and online reporting of key indicators to the national level. Support for bulk SMS for the dissemination of Gene Xpert results was also supported.

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- USAID TB ARC II - CHS also supported a super user's data review meeting in 2020 during which the NTP introduced a performance score-card to rate county performance on the various Gene Xpert Indicators.

- The Gene Xpert Service Level Agreement (SLA) and implementation with Cepheid International was renewed in March 2020. Notwithstanding, some delays were still reported in the servicing of the machines by the local Cepheid agent.

3.2.2 AFB Microscopy testing

During the year, AFB refresher and EQA trainings were conducted targeting medical laboratory technologists. Majority of the laboratories during the year under review received adequate AFB commodities.

3.2.2.1 Microscopy External Quality assurance (EQA) performance

In the reporting period, USAID TB ARC II - CHS supported reimbursement of EQA costs in all counties to ensure quality in diagnostics within the country's AFB microscopy sites. The average coverage of the EQA was 89% across all microscopy diagnostics facilities. Though the average error rate reported remained below 5%, corrective action preventive action (CAPA) was done as a preventive measure.
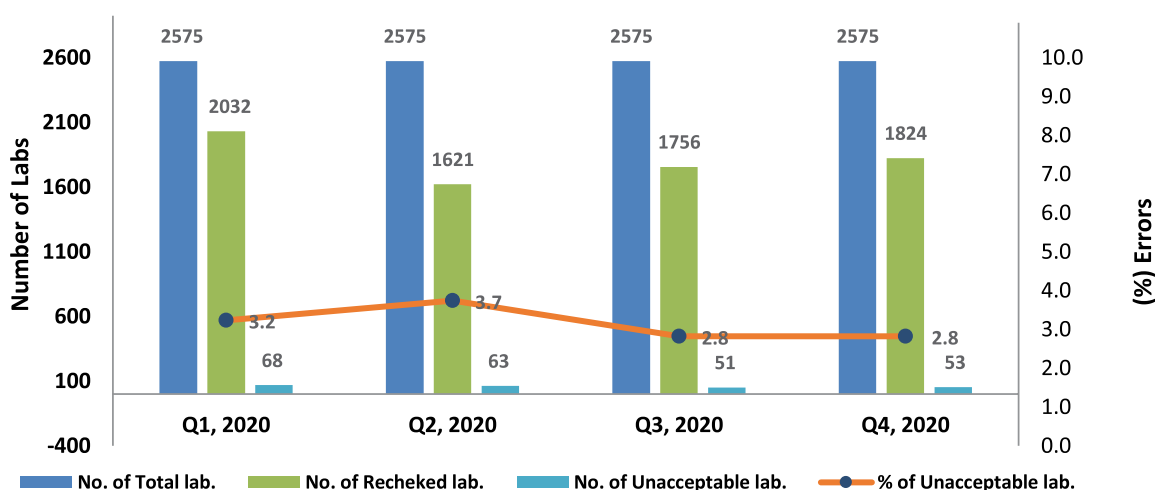
Figure 3.4: Quarterly EQA performance in Kenya, 2020

3.2.2.2 Commodities

AFB commodities were available at facilities despite stock outs for methylene blue and phenol crystals at KEMSA level.

3.2.2.3 Some challenges which affected the microscopy services included

- Closure of some laboratories due to COVID-19 pandemic in most counties affected the EQA performance

- Some facilities with diagnostic laboratories were converted to COVID-19 centers reducing the number of laboratories rechecked for EQA especially for Q2 2020.

- Untimely submission of EQA reports (workbooks and surrenders) from the counties

3.2.3 LF LAM

In 2017, Kenya agreed to adopt the use of LF LAM to aid in diagnosis of TB in eligible PLHIV. The country carried out a pilot on the use of LF LAM in 12 high burden TB/HIV Counties (Homa Bay, Siaya, Kisumu, Busia, Kisii, Kakamega, Uasin Gishu, Nyandarua, Nairobi, Nakuru, Mombasa and Kiambu) which will later lead to scaling up to rest of the country.

3.2.4 TB Culture and DST services

Total Number of samples	Rejected samples
15,465	174

Culture (MGIT&LJ)	Smear positive
13,410	6317

Smear negative 228

LPA (1st line)	LPA 2nd line)
4923	636

Contaminated	118
No growth	8755
Growth	4537

Sensitive	4807
Resistant	549

Capreomycin	93
Viomycin	371
Amikacin	158
Fluoroquinolones	33

Resistance

Rifampicin	93
INH	371
Ethambutol	158
Pyrazinamide	33

Resistance

RpoB	216
KatG/ InhA	449

Resistance

Figure 3.5: Culture and DST Workload, NTRL, 2020

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Despite the COVID-19 pandemic, surveillance services continued as usual and an overall increase of samples at the reference laboratory was experienced. Out of all the 15,465 specimens received for TB culture in 2020, 174 were rejected and 15,291 subjected to culture and DST. All smear positive samples were subjected to 1st line LPA. With the current injection free DR TB treatment regimen (IFR), the samples are subjected to both 1st and 2nd line LPA DST as the patients are receiving treatment for both the first and second drugs. In cases where the specimen received is smear negative, and the phenotypic DST turns out to have confirmed growth of MTBC, the isolates are subjected to LPA as per the laboratory algorithm. The resistant numbers are shown in Figure 3.5.

Rejection rates was at 1% mainly attributed to leakages, mismatch of information and lack of samples in the container.
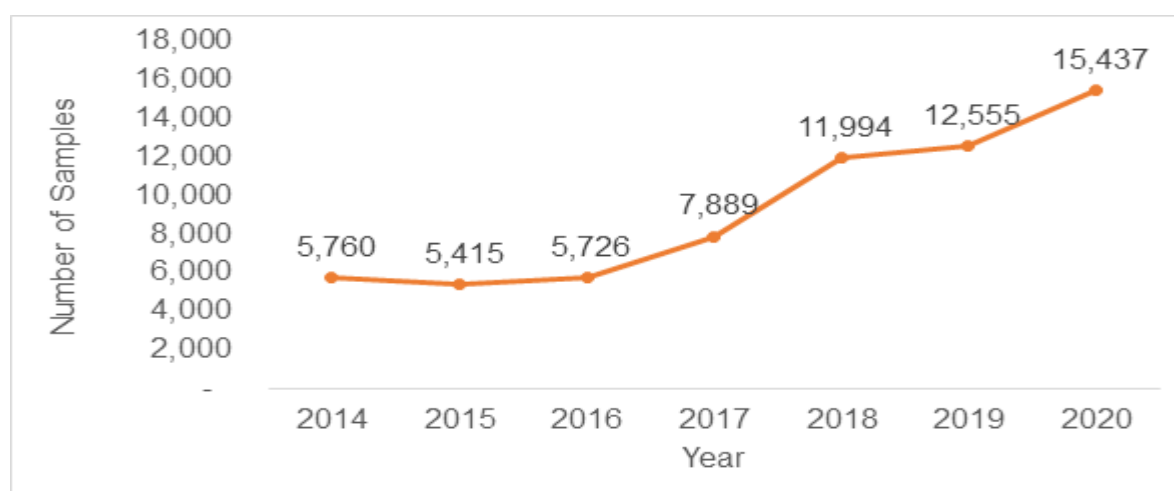
Figure 3.6: A trend showing a gradual increase in NTRL workload (2014-2020)
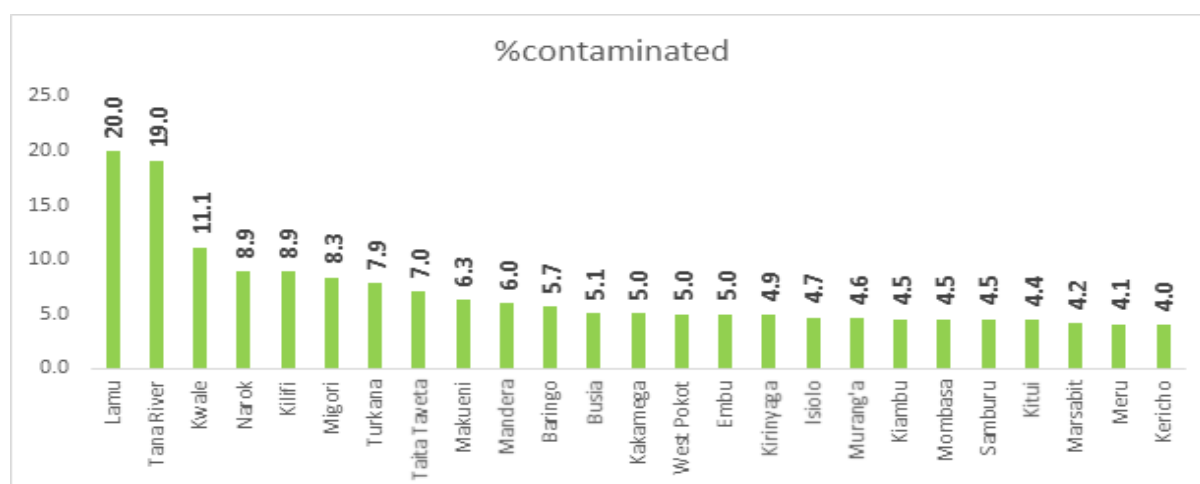
Figure 3.7: A graph showing culture contamination rate at NTRL in 2020 by county

The recommended sample contamination rate should not be more than 3 - 5%. Figure 3.7 shows that some had more than 10% sample contamination rate.

3.2.5 Test Turn-Around-Time

Table 3.3: Turn-around-times for tests at NTRL, 2020

TESTS	Overall TAT (days)	TAT for growth of positive cultures (Days)	Expected TAT (Days)
MGIT	39 (Range: 6-100)	23 (Range: 7-97)	45
LJ	57 (Range: 4-89)	43 (Range: 7-70)	90
LPA 1st line	9 (Range: 1-75)		Average 7
LPA 2nd line	14 (Range: 1-95)		Average 14

The average turnaround time for 1st line and 2nd line LPA was 9 and 14 days respectively. However, in case of stock-outs and delays, the TAT can be prolonged.

3.3 Technical assistance to the counties

NTRL offered technical assistance to PT participating Gene Xpert sites to provide corrective action preventive action (CAPA). Additionally, NTRL staff participated in the NTP technical assistance to the counties.

3.4 Future Plans

- Introduction of the whole genome (DNA) sequencing which can provide detailed information on resistance across multiple gene regions.
- Operationalization of Gene Xpert testing for SARs-CoV-2 in the country through capacity building of Xpert sites, follow-up mentorships and operational research on simultaneous testing of TB and COVID-19.

CHAPTER 4

SOCIAL SUPPORT, GENDER AND HUMAN RIGHTS

4.1 Universal Health Coverage

WHO End TB Strategy established three high-level indicators to monitor TB progress globally, one of which is the proportion of TB patients and their households that experience catastrophic costs as a result of TB. The End TB Strategy milestones for 2020 and 2025 can only be achieved if TB diagnosis, treatment and prevention services are provided within the context of progress towards UHC, and if there is multisectoral action and accountability to address the broader determinants that influence TB epidemics and their socioeconomic impact.

Vision:

A world free of TB, Zero deaths, disease and suffering due to TB

Goal:

End the global tuberculosis epidemic

Indicators:

- **95%** reduction **by 2035** in number of **TB deaths** compared with 2015.
- **90%** reduction **by 2035** in **TB incidence rate** compared with 2015.
- Zero TB-affected families facing **catastrophic costs** due to TB by 2035.

KES 500

NHIF cover sponsorship program for DR TB patients per month for a period of two years to ensure patients don't incur catastrophic expenditures as they seek medical care.

Kenya adopted UHC as the framework for the national health care system as stated in Vision 2030, the Constitution 2010, and the National Social Protection Policy in 2012 whose objectives include to reduce financial shocks due to ill health and ensure sustainable healthcare financing. UHC means that everyone can obtain the health services they need without suffering financial hardship.

The TB program continues to enroll DR TB patients into a sponsorship program where each patient receives an NHIF cover of Ksh 500 per month for a period of two years to ensure patients don't incur catastrophic expenditures as they seek medical care.

When a patient is diagnosed at the health facility, he/she is registered in the nearby NHIF branch office and the details notified to the NTP for payment processing to the NHIF account. Of the 720 patients eligible for NHIF in 2020, only 300 (41%) benefited from NHIF compared to 2019 (46%). The low enrolment rate is partly attributed to i) patients not having national identity cards which is mandatory for NHIF registration, and ii) subcounty oversight officers not requesting for social support through the TB program which affects patient stipend and DOT workers support

In addition, patients with DR TB continued to receive monthly cash transfers of up to Ksh 6,000 through Global Fund support, to cushion them against associated catastrophic costs. The support is aimed at reducing the burden of non-medical costs such as transport and food. Funds are transferred directly to beneficiaries through their mobile phones or those of trusted nominees for patients who do not have registered phone numbers, using the TIBU Cash platform. Health care workers providing DOT services to DR TB patients on the community based model of care are also supported with a similar amount to cover transport costs.

Through this support, a total of 1,344 (90%) DR TB patients against the expected 1,500, and 971 DOT workers received support at least once in 2020. On average, 659 patients and 432 DOT workers were supported monthly in 2020 compared to 503 patients and 285 DOT workers in 2019. This was as a result of the rise in the number of DR TB patients notified in 2020. In addition, owing to the COVID-19 pandemic more patients were put on the community based model of care. From March 2020 when the first COVID-19 case was reported in the country to December 2020, approximately 67% of patients had DOT workers supported monthly compared to 57% in 2019.

NHIF
Afya Yetu. Bima Yetu

300

of the **720** patients eligible for NHIF in 2020, representing **41%** who benefited from NHIF compared to 2019 **(46%).**

KES 6,000

monthly cash transfers through Global Fund support sent to patients with DR TB, to cushion them against associated catastrophic costs

1,344

patients with DR TB, against the expected **1,500**, and **971** DOT workers received support at least once in 2020

659

average number of patients with DR TB and **432** DOT workers were supported monthly in 2020 compared to **503** patients and **285** DOT workers in 2019

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4.2 Nutrition

27.1% of DSTB
&
53.7% of DRTB-affected

households experienced food insecurity due to TB, according to the TB Patient Cost survey, 2017

33,116

representing **45.4%** of the notified 72,943 cases of TB

521 &

representing **53.9%** of **961** cases of drug resistant TB cases were undernourished at the time of diagnosis.

The TB Patient Cost survey, 2017 indicated that 27.1% of DSTB and 53.7**%** of DRTB affected households experienced food insecurity due to TB. Additionally, the high cost drivers among the DR-TB patients were largely attributed to nutritional supplement while among DSTB patients, the main cost drivers in order of cost were hours lost, nutritional supplements and direct medical costs.

In 2020, 45.4% of the notified 72,943 cases of TB and 53.9% (521/961) of drug resistant TB cases were undernourished at the time of diagnosis. Key limitations in nutrition management of TB patients with malnutrition include:

- Knowledge gap among HCWs on importance of nutrition assessment and management
- Unsteady supply chain management leading to untimely procurement of nutritional supplements which affected provision of nutritional support to TB patients in 2020.

4.3 Human Rights and Gender

The WHO End TB Strategy recognizes the "protection and promotion of human rights, ethics and equity" as one of four principles essential to ending the global TB epidemic. The Stop TB and WHO targets for ending TB urge national stakeholders to build TB interventions that focus on the link between protection of human rights and the effectiveness and efficiency of national TB responses. Similarly, Kenya`s TB NSP (2019-2023) recognizes that implementation of a human rights-based approach to TB calls for diverse, focused and sustained advocacy efforts directed at key stakeholders led by people with TB, TB survivors and other allies as necessary to implement a human rights-based approach to TB.

In 2020, the Global Fund TB project in collaboration with NTP, NASCOP, Stop TB Partnership and Pamoja TB Group conducted sensitizations for a selected HCWs (TB clinicians/nurses and CHVs) and TB champions on documentation and reporting on human rights issues relating to TB and TB/HIV. This activity was aimed at removing gender and human rights barriers to TB care and prevention by equipping the participants with the knowledge and skills to identify and document these barriers at the household and facility level. The identified violated clients will be linked to pro-bono lawyers for legal aid in Meru, Mombasa and Kisumu counties.

Kenya Legal and Ethical Issues Network on HIV and AIDS (KELIN) and Stop TB Partnership with support from UNOPS were selected to implement the Challenge Facility for Civil Society, whose goal was to empower communities affected by TB, monitor provision of TB services at the community and advocate for rights of people with TB in Kenya. Through the project, capacities of TB affected communities in four (Nairobi, Homa Bay, Kisumu and Mombasa) TB high burden counties of Kenya were enhanced.

The trained TB affected communities will continually be supported to build capacity of other community members, conduct advocacy activities at the community level, conduct dialogue forums within their communities, and monitor provision of TB services in the community. Information and the conversation of rights-based approaches to TB in the community will thus be ignited and sustained thus ensuring that both national and global targets on TB are achieved. This project builds on a previous project titled Enhancing an enabling legal environment to reduce barriers to uptake of TB services in Kenya which was supported by Stop TB in the Challenge Facility for Civil Society Round 8.

SUPPLY CHAIN MANAGEMENT AND COMMODITIES

5.1 Commodities security system

Monthly commodities security meetings were held by the program to review the country's commodities status. These meetings include a number of stakeholders including donors, implementing partners, Kenya medical supply agency (KEMSA) and the HIV program. The discussions aim to:

- monitor security of the commodities in the country under a monthly procurement team and also track procurement pipeline at KEMSA and global drug facility (GDF)

- follow up on monthly commodities reports and requisition from counties, thereafter, rationalize and allocate available commodities accordingly under National Order Management Team (NOMT)

- discuss commodities projections and mobilizes resources from country's partners and Global Funds using QUAN-TB dashboards and forecasting and quantifications (F&Q) exercises and reports. The team also reviews commodities dashboard based on the 2 pager reports generated from the county allocation platform

- monitor the safety of the commodities in the country under aDSM and PMDT.

Global Fund quarterly review meetings were also held which were coordinated by national treasury (TNT) to update the ministry on the country's TB commodities.

5.2 Distribution of TB commodities

In March 2020, 6 months of stocks of patient packs were distributed to counties to avoid disruption of services at facility level on account of COVID-19 pandemic. The 6 months stock levels were maintained in the facilities till August 2020, however, from September to December, the distribution was reduced to 3 months of stocks. Turn-around-times for distribution were delayed last year for both 1st & 2nd line drugs due to travel restrictions and reliable transporters whose contract could not be terminated.

147

PV cases reported via TIBU mong the notified TB cases reported in 2020, with **54** being mild in severity, **54** being moderate, **38** being severe, and **1** fatality.

5.2.1 TB stock status

As of December 2020, pyridoxine 50mg and INH 300mg for TB preventive therapy were stocked out. **Figure 5.1** shows first-line anti-TB agents stock status as of December 2020.
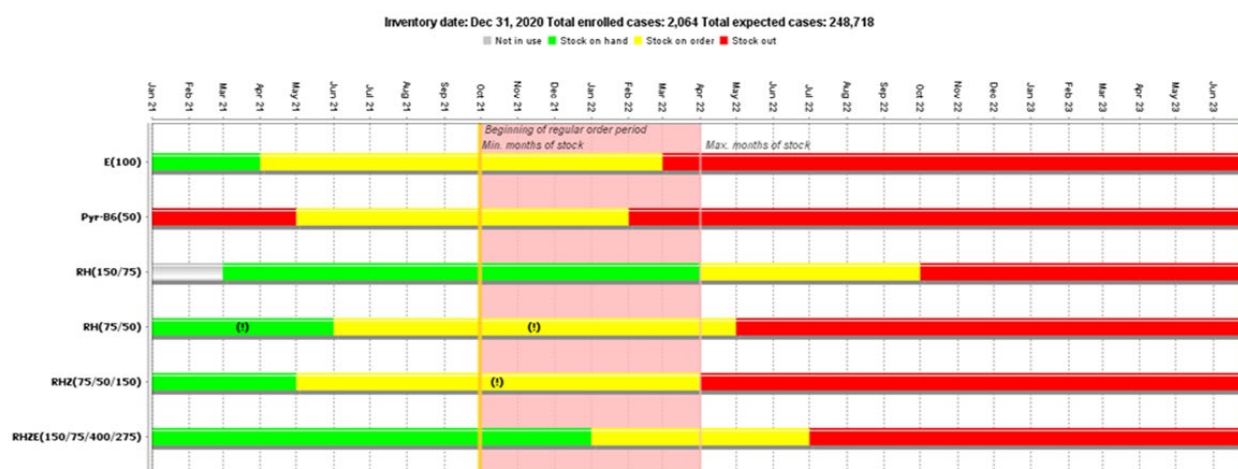
Figure 5.1: First line TB drugs stock status as of December 2020

5.2.2 Second-line drugs

In 2020, the country transitioned from short-term regimen to injection free all-oral longer regimen (IFR). There was also introduction of the use of linezolid that replaced delamanid.

Figure 5.2: Second line TB drugs Stock status as of December 2020

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5.2.3 Supply chain audits under COVID-19 supplementary budget

The program received a supplementary grant in July 2020 from Global Fund meant to help the three programs (HIV, malaria, and Tuberculosis) in monitoring their supply chain indicators and correlate this to monitoring and evaluation outcomes of patients in each treatment cycle. Data collection was done on ODK tool to capture M&E indicators and supply chain indicators by sub-county teams. The program did mentorship to county teams who cascaded the mentorship and did support supervision down to the sub-county teams.

5.3 Forecasting and Quantification Exercise

DNTP conducted bi-annual forecasting and quantification to determine the country's requirement and projections for the financial years (FY) 2020 to 2023. This exercise involved determining estimates and developing a procurement plan for 1st line and 2nd line tuberculosis medicines, leprosy medicines and laboratory commodities. Funding gaps were also identified that form basis for resource mobilization. **Table 5.1** shows the summarized stock on hand and expiry dates for first line commodities as at December 2020.

Table 5.1: Stock on Hand and Expiry dates as at Dec 2020

Product	UOM	On Hand Quantity	Unit Value (Ksh)	Cost Value (Ksh)	Expiry Date
R-H-Z-E [PATIENT PACK150+75+400+275mg/ TAB+R-H [PATIENT PACK]150+75MG/ TAB	PACK	134,880	3,950	532,776,000	30.06.2022
RHZ (75/50/150) 3FDC RHZ DISPERSIBLE TABLET	PACK OF 84'S	21,856	490	10,709,440	30.04.2021
ETHAMBUTOL TABLETS - 100mg	PACK OF 100S	4,213	548	2,308,724	30.11.2022
RH (75/50) RIFAMPICIN / ISONIAZID 75/50 DISPERSIBLE TABLET	PACK OF 84'	54,851	425	23,311,675	28.02.2021
RIFAMPICIN 150mg	PACK OF 100S	638	567	361,746	31.12.2021
ISONIAZID SYRUP 50mg/5ml 120ml	120ML BOT- TLE	942	61	57,462	31.03.2021
PYRIDOXINE 25mg FILM COATED TABLET	PACK OF 100S	–	100	–	–

5.4 Report management system - TB allocation tools

A web-based system was developed and rolled out to all the 47 counties by the NTP to assist in rationalization/allocation and projection of monthly TB orders. The tool also generates a 2-pager report, which assists the team in doing forecasting and quantification of TB commodities. The allocation tool is also used to:

- Show counties and sub-counties reporting rates
- Shows county 1st line drugs order
- Order all DRTB drugs
- Show month of stock, based on issues data, as in KEMSA and in counties
- Shows stock on hand trend through the monthly period
- Shows consumption trend at facilities
- Linking/mapping of TB satellites facilities to central stores
- Linking with the warehouse management system (WMS) in KEMSA to track the stock movement on weekly bases.

Figure 5.3: Snapshot of TB allocation tool (disclaimer – for demonstration, not actual for 2020)

5.5 Reporting rates

TB reporting rate has been increasing steadily from 43% in 2016 to 99% in 2020 following the national roll out of TB allocation tool in 2020. The country has 303 central stores and 4 stand-alone sites that are expected to report on a monthly basis. The tool is also integrated into KHIS platform that shows average reporting rates and orders allocated.
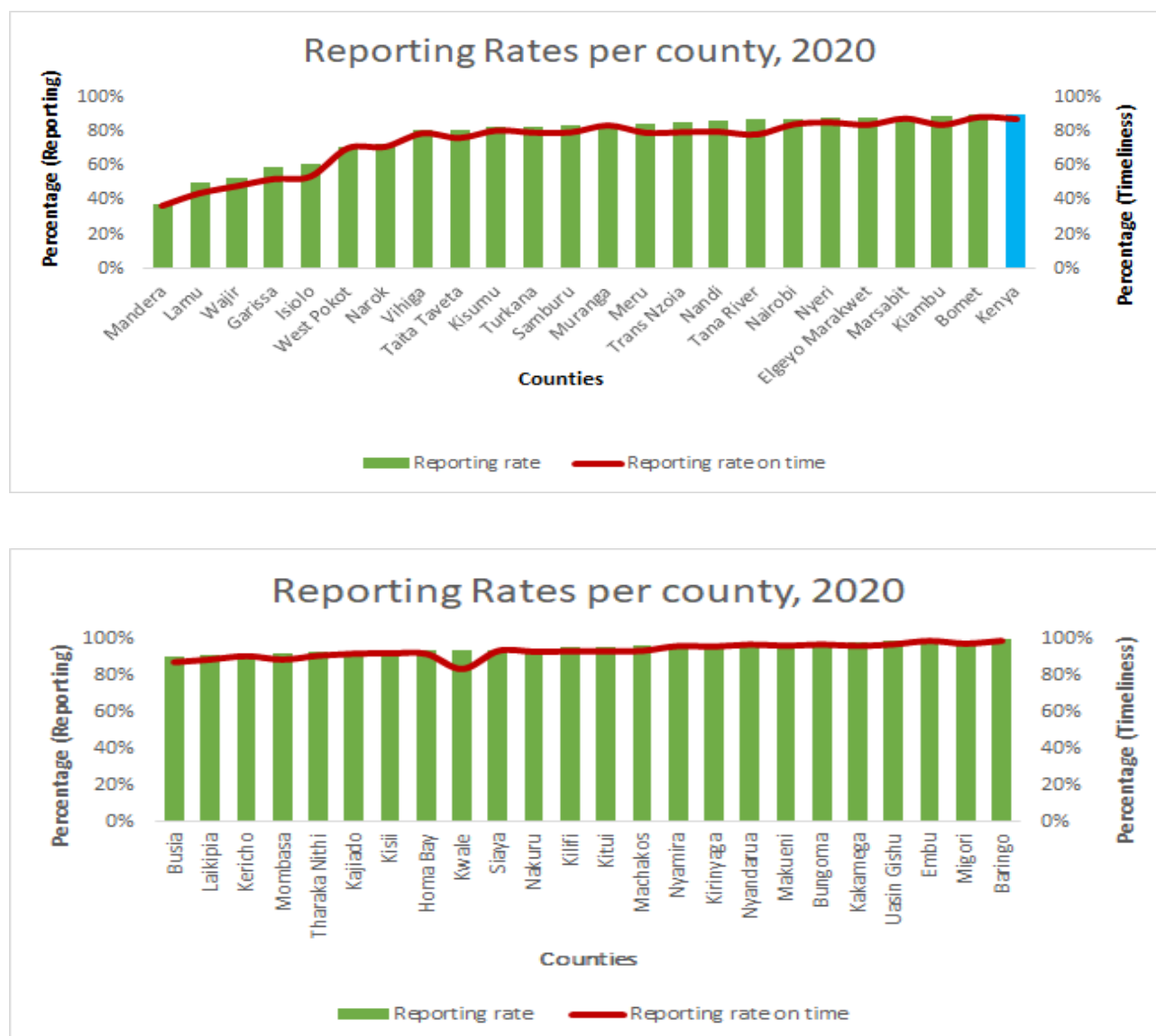
Figure 5.4 (a,b): Reporting rates and timeliness per county

5.6 Drug safety monitoring

5.6.1 Pharmacovigilance (PV)

The program continues to collect and act on pharmacovigilance concerns raised from the counties as shared with the Pharmacy & Poisons Board. The program takes the function of response, monitoring and management of patients on TB drugs. One major issue reported under drug quality was on Clofazimine packaging that was recalled by Pharmacy and Poisons Board. The issue was resolved through replacement with new drug consignments. In addition,

among the notified TB case reported in 2020, 147 were PV cases reported via TIBU. **Table 5.2 & 5.3** shows breakdown of the severity of reactions reported and the outcomes for each reaction.

Table 5.2: Severity of the reactions reported in TIBU for the year 2020

Severity of the reaction	Count	Percentage
Mild	54	37%
Moderate	54	37%
Severe	38	26%
Fatal	1	1%
Total	147	100%

NB: The fatal case was due to drug-induced liver failure (1%). Majorly of severe cases reported were jaundice, hepatotoxicity, and itchiness.

Table 5.3: Outcome of the pharmacovigilance reported in 2020

Outcome	Fatal	Mild	Moderate	Severe	Total
Fatal Reaction may be contributory	0	0	0	1	1
Not Recovered/ Not Resolved	1	3	6	4	14
Recovered/ Resolved	0	11	6	5	22
Recovered/ Resolved with sequelae	0	0	0	1	1
Recovering/ Resolving	0	16	18	16	50
Under Observation	0	22	23	10	55
Unknown	0	2	1	1	4
Total	1	54	54	38	147

NB: 50 of the cases reported were resolved

5.6.2 Active TB Drug-Safety Monitoring and Management (aDSM)

Active Drugs Safety & Surveillance, Monitoring and Management (aDSM) protocol was developed in 2020 and submitted to AMREF ethical review committee awaiting reviews for the program to start collecting facility-based patient level data.

PREVENTION, HEALTH PROMOTION, COMMUNITY AND STAKEHOLDER ENGAGEMENT

6.1 Background

Prevention, health promotion, community and stakeholder engagement in TB response entails implementing interventions on advocacy, communication and social mobilization of communities. This is aimed at increasing TB awareness in the target populations, promoting demand for TB services and reducing TB related stigma and discrimination. In the long run, this is hoped to increase the finding of the missing persons with TB, promoting treatment adherence through enhanced quality of care in the efforts to control TB in Kenya.

6.2 Advocacy and communication

Advocacy is the use of political capital to mobilize relevant sectors and resources while health communication is the use of appropriate media to reach out target audiences. Some of the activities planned for implementation during the period to realize the above objectives include;

6.2.1 World TB day Commemoration

The 2020 World TB day commemoration did not take place as planned due to the COVID-19 pandemic regulations, which disrupted key health activities and provision of health services. The commemoration was to be held in Meru County, one among the 10 highest TB burden counties. Some of the planned activities including public gatherings like the World TB Day main event had to be cancelled. The TB Program in collaboration with partners opted to utilize alternative platforms to commemorate the day. This included digital TB awareness, mainstream media interviews and social media campaigns.

5

Number of TV stations that ran the mass media campaign

13

Number of radio stations involved in the mass media campaign

38

Public service vehicles with capacity ranging from 11 to 51 seats that had seat headrests branded with TB campaign messegeswere engaged in 2020.

6.2.2 Media Engagement

The Program ran a mass media campaign on five (5) TV and 13 radio stations. The campaign was part of the Global Fund programming and was aimed to create public awareness on TB and demand for TB services amid the COVID-19 pandemic.

Table 6.1: List of TV stations engaged in TB campaigns, 2020

No.	TV Station	Number of Spots	Weeks
1	Nation TV (NTV)	294	2
2	Kenya Television Network (KTN)	294	2
3	K24 TV	294	2
4	Citizen TV	294	2
5	KBC TV	294	2

Table 6.2: List of radio stations engaged in TB campaigns, 2020

No	Radio Station	Sponsored Adverts
1.	Kameme FM	2 weeks
2.	KASS FM	2 weeks
3.	Ramogi FM	2 weeks
4.	Radio Citizen	2 weeks
5.	Musyi FM	2 weeks
6.	Mulembe FM	2 weeks
7.	Radio Maisha	2 weeks
8.	Classic 105	2 weeks
9.	Radio Jambo	2 weeks
10.	Qwetu Radio	2 weeks
11.	Ole Sidai FM	2 weeks
12.	Hope FM	2 weeks
13.	Angaaf FM	2 weeks

To counter the low uptake of TB services in health facilities due to COVID-19 disruptions, the Program in collaboration with USAID TB ARC II - CHS engaged six national and vernacular radio stations, four national television stations and two newspapers in documentation, airing and publication of TB awareness and feature stories. Technical officers from the Program and USAID TB ARC II - CHS were also hosted in interactive live shows and interviews in these media stations, to raise TB awareness amid COVID-19.

6.3 Launch of Policy Documents initiatives - LTBI and IFR treatment

The Program launched two new TB treatment initiatives on June 30, 2020 at MoH Headquarters - Afya House grounds in Nairobi. Latent TB Infection (LTBI) for most-at-risk populations and the use of Injectable-Free Treatment (IFR) for patients with DRTB initiatives are aimed at stepping up efforts to end TB epidemic in Kenya. The Program was able to engage the MOH leadership to ensure TB was not forgotten during the COVID-19 response. The launch also served as an opportunity to heighten awareness on TB in relation to COVID-19. In addition, this leveraged to create TB awareness of the two initiatives through media engagement during the COVID-19 live media briefing and reinforcing the MOH, NTP and TB implementing partners' commitment and collaboration in ending the TB epidemic in Kenya. The Chief guest was Chief Administrative Secretary, Dr. Rashid Aman. Other key guests included Dr. Rudolf Eggers, WHO representative in Kenya, Mr. Macharia Gerald of Clinton Health Access Initiative (CHAI), Ms. Jackline Mogeni the Chief Executive Officer, Council of Governors and Ms. Evaline Kibuchi from Stop TB Partnership-Kenya. There was a wider mainstream media coverage of the launch as it was broadcasted live on major TV stations (NTV, KTN, Citizen, KBC and K24), radio stations and published in daily newspapers (Star, Standard, and Nation). https://twitter.com/CHSKenya/status/1325747030505959425

6.4 IEC Materials

The section supported the Program to publish a number of tools and IEC materials for effective communication and TB management. Some of the materials included:

- Three editions of TiBa
- World TB DAY banners and posters
- 2019 Annual Report
- 200 copies of IFR
- 200 Copies of LTBI
- IFR factsheets
- LTBI factsheets

- Social Media Toolkits
- COVID-19 Guidelines
- TB Diagnostic Algorithm
- TB Tools
- DQA Report
- DRTB Guidelines
- Forecasting and quantification report

6.5 Implementation of Out-Of-Home (OOH) Mass Campaign Activities

The NTP in collaboration with USAID TB ARC II - CHS ran a OOH mass campaign with a reach comparable to television and enduring effect as opposed to the momentary effect of TV or radio, and with lesser costs. This meant greater message recognition and recall for a longer time frame.

> **The Out-of-Home campaigns also supplemented NTP radio and television commercials and ensured the target audience received 360-degree messaging, which improves behaviour change outcomes.**

6.5.1 Wall Branding

Wall branding activity was done in nine counties during the project period: Nairobi, Kiambu, Tharaka Nithi, Embu, Nakuru, Kisumu and Meru and Isiolo county.
Areas of focus included:

- **Commuter zones** - high foot and vehicle traffic, including matatu and bus stops, boda stands
- **Health zones** - high-density zones around health facilities, including private facilities
- **Informal high-density areas,** the local "base" (hang out zones, where target audience members and the wider community congregate, including markets and community centres)
- **Other zones** – include places with high concentration of people, including entertainment and baraza places

127,351
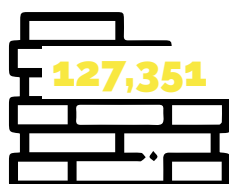
A total area in square feet of wall branding done in **57** sites across the targeted counties shown in the Table 6.3.

This was an addition to the **154,616.67** square feet and **58** strategic sites branded in 2019

Table: 6.3: Wall branding per county

Wall Branding per County/Square feet branded			
No.	**County**	**Total Sq.ft. branded**	**No of sites branded**
1	Nairobi	91,022.67	20
2	Isiolo	14,464	7
3	Kisumu	41,786	20
4	Nakuru	35,251	20
5	Meru	36,305	20
6	Embu	29,645	15
7	Tharaka Nithi	19,404	8
8	Kiambu	14,090	5
Total		**281,967.67**	**115**

Figure 6.1 Wall branding with TB messages at Mukuru Health Centre, Nairobi

6.5.2 Public Service Vehicle Seat Headrest Branding

This rationale of this intervention was to leverage on the large number of public transport users to reiterate the campaign message. It involved interior branding of public service vehicles seat headrests and targeted public service vehicles that ply popular routes with dense populations. A total of 38 public service vehicles with capacity ranging from 11 to 51 seats were engaged in 2020. This was in addition to the 114 matatus engaged in 2019 thus totalling 152 for the campaign period.

Table: 6.4 Reach of Branding of Matatus

No. of branded matatus/county, capacity and approx. reach/month				
No.	County	# Matatus	Capacity	Approx. Reach/month
1	Nairobi	42	33, 37, 29, and 26 seaters	519,120
2	Mombasa	24	29, 33, 37, 14, 26 and 51 seaters	247,000
3	Embu	15	14 seaters	78,120
4	Kisumu	18	14, 29, 33 and 35 seaters	89,160
5	Meru	18	14 seaters	50,400
6	Nakuru	16	15 seaters	119,280
7	Tharaka Nithi	15	16 seaters	25,200
8	Isiolo	4	11 seaters	8,580
Total		**152**		**1,136,860**

6.5.3 Entertainment Joints

Entertainment joints were not branded due to the effects of covid-19 pandemic that led to closure of the joints.

6.6 Social Media Campaign

The social media campaigns were a support mechanism for out-of-home and to increase awareness of TB messaging amongst the primary audience and wider public. The target audience were approached mainly through advertising on Facebook and Twitter. Social media influencers (micro and macro) were also utilized. The strategy also used NTP and CHS Facebook, and Twitter channels given their existing audience and the public was linked to NTP website for support to the program. It also leveraged influencers and programmatic media buying.

99,620

reached and **10,396** engagements through the Facebook

Twitter: This was a secondary channel for the campaign and the top organic post and metrics (Figure 6.2):

Figure 6.2: A screenshot of facebook posts

6.7 Meaningful Engagement and Community partnerships

Advocacy Interventions focused on promoting participatory approaches to improve TB services in Kenya through expanded community partnerships. Community engagement in both community activities and in advocacy is one of the recommended strategies in the UN-High Level Meeting (UNHLM) commitments for contribution towards the UNHLM targets and effectively the National TB targets. With this background, Stop TB Partnership continued to engage the TB champions in communities and in advocacy for resource mobilisation. During the writing of the Global Fund grant, Stop TB supported 13 TB champions to participate in the entire process of the grant writing. Their role was to ensure that community human rights and gender were included and allocated a budget in the grant. The champions were distributed across the different thematic areas in which they followed the process keenly to uphold the community related issues. For their participation and contribution to the process, the National Network of TB Champions which is hosted at Stop TB Partnership- Kenya were among the winners of the Kochon Award 2020 awarded at the Stop TB Partnership (Geneva) Board meeting.

National Tuberculosis, Leprosy and Lung Disease Program

ANNUAL REPORT 2020

2020 Stop TB Community Award Winners

6.7.1 Implementation the Multi Sectoral Approach

The Program pursued the TB Multisectoral approach agenda through collaboration with Stop TB Partnership Kenya and other partners. Quarterly task force meetings were held and a roadmap and concept notes developed with clear terms of references to guide the Task Force. In pursuit of a Kenya TB multi-sectoral accountability framework, the documents were shared with the MOH leadership for endorsement. The approach was adopted during the Global Fund proposal writing.

The various activities undertaken focused on engagement of the education sector in a bid to integrate TB response and updating TB information in the respective curricula and promoting efforts towards finding the missing persons with TB. Some of the activities undertaken by TB partners in collaboration with the NTP, included and not limited to:

- Engagement of Education Department of Juja Sub-county where 667 teachers were screened and sensitized on TB

- Virtual sensitization of heads of medical training institutions (MTCs) on country's TB targets and the new technologies that needed to be included and updated in the MTC curriculum

- Engagement of higher institutions of learning in TB response was undertaken by Program partners where TB was a key agenda in the conference. This was in partnership with the Federation of African Medical Students' Associations (FAMSA) which is the umbrella association of all medical schools in Africa. Below is an article published by one of the students at the Jomo Kenyatta University College of Agriculture (JKUAT) who Stop TB Partnership – Kenya has been engaging in TB activities in previous years. *https://inforyculture.wixsite.com/ryculture/post/world-tb-day-tb-eradication-is-at-its-tipping-point*

- Dialogue towards mobilizing partnership with the private non-health sector towards TB response was championed by USAID TB ARC II - CHS in Turkana County. Equity Bank committed to support finding of missing persons with TB and promoting TB awareness, demand creation, linkage and referrals, by leveraging on their 450 Agents located in diverse parts of Turkana County.

6.7.2 Journey to Self Reliance (J2SR) in TB response

Resources for TB response in Kenya have largely been a collaborative effort of the GOK and the donor community through multinational or local partners. In the recent past, donor funds have been dwindling and with Kenya transitioning to a devolved form of government, health was one of the functions that was transitioned to the counties. This calls for innovative interventions and efforts towards sustaining the gains that have been made in TB control in the country such as the Journey to Self-Reliance which focuses on optimal utilization of the currently available resources, while making plans for transition as well as prioritization of domestic resource allocation at country and county level.

The NTP in collaboration with USAID TB ARC II - CHS supported the J2SR initiative in Nyeri, Machakos and Turkana counties where several implementing partners were hosted to discuss J2SR in February and December 2020 respectively. The county leadership and the health departments have been working towards prioritization of resources as guided by the respective Counties TB Strategic Framework. The expected outcome is that the TB priorities can be integrated into their respective county work plans and budget for county support.

This presented a good opportunity for noting the counties commitments to TB programming which included the integration of TB support supervision in the counties in the various health interventions and activities.

6.8 Community Engagement

In the year, outreaches were conducted in Meru, Homa Bay and Kakamega counties. Truckers were also screened in Mariakani, Namanga, Isebania and Busia each activity taking five days. The Meru and Kakamega outreaches were conducted in July 2020 over 10 days while Homa Bay outreach activity took 14 days during the month of August. The table 6.5 gives a summary of the achievements during the outreaches in 2020.

For Meru and Kakamega outreach activities, the targeted populations were in rural and urban informal settlements, urban centers and busy bus parks. Gold mines and major market centers were additional populations in Kakamega while In Homa Bay the key target populations were the fishing folks at the beaches, prisons, rural and urban informal settlements.

Table 6.5: Summary of the achievements during the outreaches in 2020

No	County	No Screened	No Done X-rays	No Bact-Confirmed	No Clinically Diagnosed	Total No initiated on treatment	Supporting Agency
1	Meru	1661	971	10	9	19	AMREF
2	Homa Bay	1779	1679	9	38	47	AMREF
3	Kakamega	2394	841	13	30	43	AMREF
4	Kakamega	2946	2290	25	85	110	AMREF-CSP
5	Kisumu	755	746	3	7	10	TB REACH

No	County	No Screened	No Done X-rays	No Bact-Confirmed	No Clinically Diagnosed	Total No initiated on treatment	Supporting Agency
		Truckers and their crew					
6	Mariakani	890	890	0	3	3	NTP
7	Busia	1890	892	4	14	18	NTP/KCCB
8	Malaba	1025	1000	5	10	15	NTP
9	Isibania	654	168	2	21	23	NTP
10	Namanga	296	296	0	3	3	NTP
	Totals	**14290**	**9773**	**71**	**220**	**291**	

The supporting agencies included the Global Funded through the NTP, AMREF Health Africa and the TB REACH project in Kisumu.

6.8.1 School health

School health and TB prevention in institutions of learning faced unique challenges in its implementation due to the following reasons:

1. COVID-19 pandemic which led to schools closing almost the entire period of 2020
2. The inadequate support from partners both financially and technically and
3. The fragmentation of the activity from community approaches and infection prevention in congregate settings.

6.8.1.1 Achievements

1. Finalized a prototype school health concept for engaging counties on TB prevention in institutions of learning. Counties should prioritize and implement the activities.
2. Developed TB messaging that is going to be used for painting/ murals on 34 school water tanks and 4 walls in Nairobi County. This activity was rescheduled to quarter 3 2021. Example of the TB messages is illustrated Figure 6.3.

Figure 6.3: Draft messages for school branding

3. A virtual sensitization meeting on TB targeting 30 principals of Kenya Medical Training College (KMTC) was held. The objectives of this sensitization were:

- To equip the heads of institutions with current relevant policies and knowledge in TB
- To clarify roles and responsibilities of health care workers and KMTC as stakeholders in TB prevention and management
- To understand some of the interventions to prevent and manage TB, Leprosy and Lung diseases in Kenya
- To come up with modalities of collaboration in contributing to ending TB in Kenya
- To identify strategic areas that need review in the medical training curriculum

4. Finalized a concept on corporate engagement in TB prevention.

CHAPTER 7

MONITORING, EVALUATION AND RESEARCH

7.1 National Data Quality Assessment

Quality data is critical in the implementation of TB control activities as it generates evidence which is vital for decision making, policy formulation and guides implementation approaches. It is therefore imperative to ensure that appropriate validation and audit checks are conducted routinely to assure the same across data collection levels. Provision of updated recording and reporting tools, which are in conformity with WHO standards, is vital for capturing essential data elements. Further, routine supervision, continuous capacity building and mentorship is necessary to ensure proper usage and fidelity of outcomes.

To this end the Program conducted a national data quality assessment in July 2020 in 6 counties to assess data for 2019 for DS TB and 2018 for DR TB. The overall level of agreement between TIBU and the facility registers for all the sub-counties visited was 94%.

94%

The overall level of agreement between TIBU and the facility registers for all the sub-counties visited, according to a national data quality assessment conducted in July 2020 in 6 counties

Table 7.1: Summary of recommendations from the 2020 National DQA

#	Recommendation	Level	Priority	Responsible Person(s)
1	The program should review and update the current version of tools to enhance uniformity in data capture	National	High	NTP & supporting partners
2	The program and supporting partners should sensitize HCW on use of new tools before roll out	National, County and Sub County	High	NTP, supporting partners and CTLCs
3	Counties should institute mechanisms to carry out subnational DQA	National, County and Sub County	Medium	NTP, supporting partners and CTLCs
4	County Directors of Health should take lead in tracking TB indicators through random data checks at the facility by strengthening supervision and coordination at the county and sub-county level	County	High	NTP, CTLCs and CDHs

#	Recommendation	Level	Priority	Responsible Person(s)
5	Standardization and simplification of DRTB reporting	National	High	NTP & supporting partners
6	Develop and share policy guide on documentation of TPT data in the contact management register	National	High	NTP

7.2 Data Review Meetings

The National TB program conducts regular evaluation of TB data where the counties are clustered and brought together to validate their data and review performance. This activity is essential in ensuring that the program maintains high quality data that can be used to make strategic decisions in TB control at sub-national and national levels. The activity also serves as a platform to review individual performance, provide solutions and benchmarking from other counties as well as cross match data sets to find any loss to follow up cases.

Objectives of Data Review Meetings

- To conduct Data Validation

- To review Counties' and Sub-counties' performance

The program conducted only one data review meeting in 2020 that brought together the County Directors, County TB Coordinators, County Lab Coordinators, County Pharmacists and their sub-county counterparts to validate data and review performance. **Table 7.2** shows the summary the achievements and action points noted during the review.

Table 7.2: Summary of cluster reports from the 2020 Data Review Meetings

#	Cluster	Achievements	Action Points
1	Baringo, Elgeyo Marakwet and Uasin Gishu	1. Some sub-counties had good uptake of HCW screening 2. Mortality audit was a consistent practice in all counties 3. HIV testing was maintained at 97%	1. Establish a sample network mechanism 2. Ensure timely update of data and outcomes by SCTLCs 3. Strengthen use of CHVs for tracking and tracing interrupters
2	Bomet, Kericho and Narok	1. Bomet county posted an increase in case finding between Quarter 2 and Quarter 3	1. Data cleaning activities should be continuous and not attached to QRM activity 2. Use set target of 3:1 for tracking TPT performance 3. Scale up ACF and targeted screening
3	Meru, Isiolo and Marsabit	1. Marsabit county had an increase in case finding of 5% 2. HIV testing in all counties was maintained at 95% in all counties 3. TSR for DRTB was above 80% for all the three counties	1. Fast track supply and distribution of nutritional commodities 2. Increase sample networking coverage 3. Ensure all diagnostic facilities are enrolled into EQA program

#	Cluster	Achievements	Action Points
4	Muranga, Kiambu and Nyeri	1. More labs were opened in the three counties 2. Sample networking improved in Muranga (to 90%)	1. Plan and implement a training program particularly for AFB microscopy 2. Engage operational research on the issue of high transfer-outs 3. Train lab officers on biosafety biosecurity, provide PPES and BSCS
5	Nairobi	1. HIV Testing among TB patients was maintained at 99% 2. Contact tracing was intensified yielding 3% of the TB cases notified 3. Scaling up PPM in the county led to an additional 2% yield from the sector	1. Adopt differentiated care model specifically for clinic visits in the COVID-19 period 2. Strengthen mortality audits to address the technical and process gaps noted 3. Intensify ACF at all SDPs and have targeted community TB screening
6	Nyandarua, Samburu and Laikipia	1. All the counties were noted to have consistently done mortality audits 2. HCW screening was at 45% in Nyandarua	1. There is need to blend ACF with facility COVID-19 activities in all the three counties 2. Nyandarua needs to urgently develop a PPM action plan due to increase of private facilities
7	Turkana, Trans Nzoia and West Pokot	1. TSR increased from 87% to 89% in Trans Nzoia county and Turkana had a TSR of 88%	1. Strengthen TWGs at county and sub-county level in all the three counties 2. Address the gaps in Gene Xpert utilization and Error rates
8	Wajir, Garissa and Mandera	1. Pediatric case finding in the 3 counties was 13% 2. All the counties maintained HIV testing rate at 98% and above	1. Fast track supply of nutritional commodities 2. Increase the coverage of the current sample networks in the three counties
9	Kakamega, Vihiga, Bungoma and Busia	1. PPM contribution was at 23% 2. HIV testing and ART uptake rates were good (at 99%) for the counties	1. ACF in the counties is still sub-optimal and needs to be intensified 2. Strengthen mortality audits in the counties considering two (Kakamega and Vihiga) had a death rate of over 10%

7.3 County Performance Review Meeting

The NTP with support from USAID through USAID TB ARC II - CHS conducted a performance review meeting in February 2020. The meeting was attended by TB Coordinators, County Pharmacists, County Lab coordinators, County Directors for Health from 47 counties, TB implementing partners and the NTP officers.

Head, Dr Elizabeth Onyango (extreme right, 1st photo) and Dr Lorraine Mugambi Nyaboga (extreme right, 2nd photo) hand over trophies of best performing counties to CDH, CTLC and SCLTC of Mandera and Tharaka Nithi counties after the counties emerged position one and two respectively during the TB performance review meeting held at Sarova Woodlands, Nakuru, February 2020.

The performance review meetings' theme for 2020 was "*It is time for quality of care in our health systems to end TB in Kenya".* The main objectives of the performance review meeting were:

i.   Review annual TB program performance against the agreed targets for 2019

ii. Develop action plans for correcting shortcomings during the period under review

iii. Provide stakeholders consultative forum in TB control

iv. Share any lessons learnt during the implementation period

v.   Share the TB program updates and developments

vi. Recognize and award counties with outstanding performance.

County performance was ranked for various indicators using an innovative and objective scorecard developed jointly by the NTP and USAID TB ARC II - CHS M&E officers. Mandera County was awarded the best performing county, with Tharaka Nithi and Nyamira being 1st and 2nd runners up respectively. Bomachoge Chache sub-county in Kisii County was ranked the best with an overall score of 74%.

7.4 NTP M&E Plan Review

In 2020, the NTP undertook a review of the M&E Plan for its National Strategic Plan (2019-2023). The M&E Plan specifically describes the monitoring and evaluation processes for TB, Leprosy and Lung Health control activities.

Objectives of the M&E Plan:
  i)   To describe the M&E coordination mechanism
  ii)   To describe the indicators to be monitored and tracked as per the interventions and activities defined in the Strategic Plan.
  iii) To outline data management processes such as data collection, data flow, data audits, frequency of measure, responsible persons and data sources.
  iv)   To itemize and prioritize research areas to be undertaken within the implementation of the Strategic Plan.
  v)   To highlight/quantify the budget for resource mobilization for M&E activities
  vi)   To define feedback mechanisms and dissemination processes for M&E findings.

7.5 Work planning

The implementation of program activities is based on quarterly, semi-annual and annual work plans that are developed by the policy and planning section in liaison with other sections in the program. First, a half year plan for the period January –June 2020 was developed which was a pull out of the annual plan that had been developed in consultation with all partners in May 2019. A schedule of activities was prepared matching available funds, source of funds and responsible persons to ensure performance and tracking. Due to the COVID-19 pandemic, the joint work planning meeting was held virtually in the second half of the year. The partners involved included AMREF, KCCB, CHAI, WHO, and USAID TB ARC II - CHS. The schedule of activities from different stakeholders was developed and consolidated into a joint work plan for the period July 2020 to June 2021.

The implementation of the year 2021 work plan was affected by COVID-19 control restrictions with mostly trainings, performance review meetings and workshops involving inter county travels mostly affected. The program was able to carry out 63% of the activities that had been scheduled for the period January-December 2020.

7.6 Data for Decision-Making capacity building

The program continues to enhance data analysis and utilization at all levels of TB service delivery. For the last 3 years, a course on data for decision-making was introduced targeting CTLCs, CMLTs and SCTLCs. The main objectives of this course is to build capacity to enable participants:
  •   Understand the importance of TB surveillance data and factors that drive the TB epidemic for program planning and monitoring
  •   Understand the Principles of data management
  •   Monitor the quality of TB and TB/HIV surveillance data

- Perform basic analyses to describe TB epidemiology, rates, and programmatic performance at national and subnational levels
- Learn how to effectively create and present clear graphs and tables
- Critically interpret results of analyses and use them to make policy recommendations.

The training adopts lecture approaches to provide a background for analyses, practical sessions for participants to learn and practice and group work presentations. In 2020, a total of 3 trainings against a target of 8 were conducted due the COVID-19 restrictions on travel and number of persons in a meeting. A total of 62 participants were trained from 31 Counties and served as the final training for the SCTLCs and CTLCs. The program intends to continue with these trainings among the CMLTs and selected national program officers to ensure data is utilized for decision making at all levels.

7.7 Sentinel Surveillance in Kenya

The NTP established ten sites for MDR-TB sentinel surveillance in 2018 in major health facilities drawn from high burden TB counties, low to moderate burden counties as well as selected boarder point counties. These sites were based in the following county referral hospitals: Kajiado, Garissa, Nakuru, Busia, Meru, Marsabit, Homa Bay, and Moi Teaching and Referral Hospital in Eldoret, Port Reitz in Mombasa and Mama Lucy Hospital in Nairobi.

The objective of sentinel surveillance is to strengthen the national MDR-TB surveillance based on systematic drug susceptibility testing (DST) by collection of quality data, prompt analysis and dissemination of information on MDR-TB from selected health facilities to inform decision-making. Results of the surveillance will be available in subsequent reports.

7.8 Assessing barriers to access of Tuberculosis care services in Kenya study

Tuberculosis control efforts have become increasingly patient-centered and have been directed towards universal access to care. Though TB diagnosis, medicines and nutritional support are offered free of charge in all government and faith-based health facilities, there are still many people with TB who are missed or cannot access TB health care services.

To further understand these, the NTP conducted a barrier study assessing access to tuberculosis care services. The specific objectives were to determine the individual level and health care system barriers to access of TB care services in the country. This was done in 12 sub-counties sampled from 11 counties. A total of 1614 individuals comprising TB patients, healthcare workers and the general population were interviewed using a structured questionnaire, key informant interviews (KII) and focus group discussions (FGDs).

The following were the key findings from the Barrier Study:

Health system barriers

1. Stigma from healthcare workers as well as the community members was cited as a hindrance to healthcare seeking

2. Lack of some services and drug/commodity stock outs – lack of diagnostic and therapeutic services such as radiology, laboratory and surgical procedures seemed to put off potential hospital clients

3. Frequent strikes by nurses and doctors – this seemed to make the healthcare system unreliable and participants narrated how the experience of strikes had pushed them to rely more on other avenues for healthcare services

4. Unavailability of TB services during weekends – although most health facilities offered services 24 hours, seven days a week, participants reported that some facilities did not offer TB services on Saturdays and Sundays yet that was the time some people would be free to seek these services

Individual level barriers

- High transport costs limited access to health facilities in cases where the distance to the facility was long. This was further complicated by poor road network in some areas which pushed the transport fees higher

- Diagnostic costs – although TB care and treatment services were free, participants clearly stated that this was only after a positive TB diagnosis which meant that one had to cater for some diagnostic expenses such as X-ray costs which some could not afford

Recommendations from the findings of the Barrier Study include

- Continuous expansion of TB diagnostic and treatment services to cover most of the health facilities in the country

- Strengthen the involvement of alternative medicine providers, including herbalists, so that they are able to direct their clients to appropriate TB medications

- Programming should also include the female gender as they are disproportionately affected by cultural norms affecting TB and general health services access

- Facilities and counties to be encouraged to allocate more money for TB-related activities to improve service delivery

- There is a need for a contextualized and sustainable high impact TB message delivery strategy to the intended recipients

- Need for an evaluation to establish the utility of the current TB message delivery channels

- Continue expanding the patient-centred care approach to further include TB service delivery outside the routine hours/ days.

7.9 M&E Tools Revision

The program with the support of USAID through USAID TB ARC II - CHS had an opportunity to review all the monitoring and evaluation tools for TB and Leprosy control in Kenya. The key revision areas were: inclusion of the NEMIs number in all the tools, merging of the IPT and Contact registers, pharmacovigilance tools to include aDSM, revision of lab tools, updating old tools with new WHO updates and definitions and inclusion of the ISO reference number and versions for all the tools. These were to be printed and distributed while withdrawing the old ones.

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CHAPTER 8

FINANCE, ADMINISTRATION, HUMAN RESOURCE AND CAPACITY BUILDING

8.1 Funding and Financial Performance

The fight against Tuberculosis received financial support directly from Government, The Global Fund to Fight Aids Tuberculosis and Malaria (GFATM), as well as indirectly from partners which include USAID TB ARC II - CHS and Komesha TB, the Respiratory Society of Kenya (ReSoK) and Clinton Health Access Initiative (CHAI). However, the funding gap has not been sufficiently filled as documented in the NSP.

The total funding received from various sources during the year amounted to $34,169,895.81 (Kshs 3,451,159,477) for implementation of TB interventions against a costed NSP budget of $60,072,511.39 (Kshs 6,067,323,650) leaving a gap of $25,902,615.57 representing 43%.

Table 8.1: Funding sources for TB in Kenya, 2020

Source	Amount USD)
GOK - Domestic	13,664,831.96
GF - PR1 & 2	15,817,873.48
USAID	4,687,190.38
Other	-
Gap	25,902,615.57

KES 3,451,159,477

Total funding received from various sources during the year ($34,169,895.81) for implementation of TB interventions

KES 6,067,323,650

Costed NSP budget for implementation of TB interventions

$25,902,615.57

Funding gap, representing 43% of the NSP budget

$28,056,668

was utilized on human resource and development, managing drug susceptible TB, supporting laboratory infrastructure equipment and supplies, representing **82%**

$2,047,735

of the budget spent on drug-resistant TB

$1,439,375

of the budget spent on collaborative TB/HIV activities

$13,664,831.96
GoK Domestic,
representing **22.75%**

$25,902,615.57
Gap, representing
43.12%

$15,817,873.48
Global Fund,
representing **26.33%**

$4,687,190.38
USAID, representing
7.80%

$60,072,511.39

Costed NSP budget for
implementation of TB
interventions
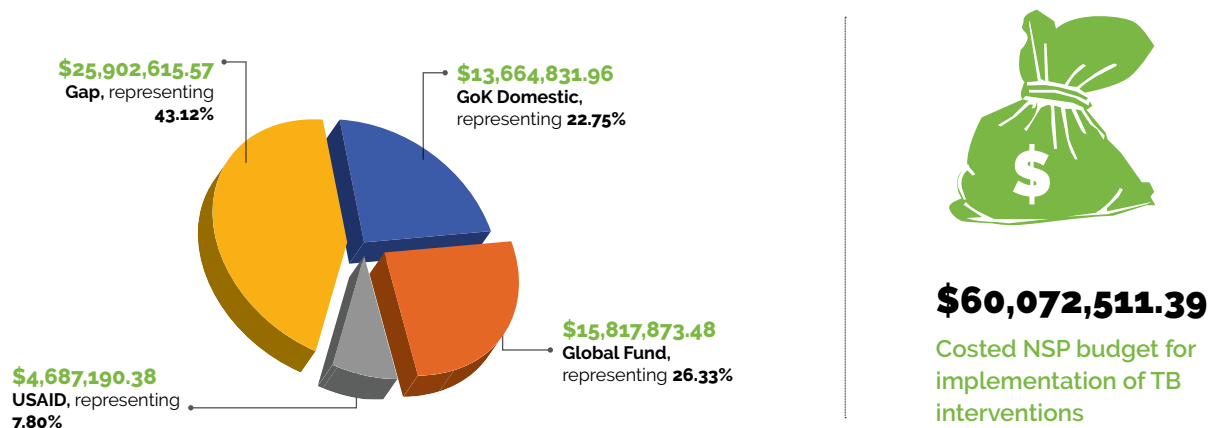
Figure 8.1: Funding sources for TB in Kenya, 2020

Expenditure

As indicated in Figure 8.2, 82% (USD 28,056,668) was utilized on human resource and development, managing drug susceptible TB, supporting laboratory infrastructure equipment and supplies. The budget on drug-resistant TB (USD 2,047,735), and collaborative TB/HIV activities (USD 1,439,375) made up 6% and 4.2% respectively. Expenditure for operational research and surveys, and patient support was 4% and 2% consecutively.

2020 Funding per Thematic Area

All other budget lines for TB	$648,559
Operational research and surveys	$1,273,595
Patient support	$703,965
Collaborative TB/HIV activities	$1,439,375
Drug-resistant TB: programme costs	$656,707
Drug-resistant TB: drugs	$1,391,028
Drug-susceptible TB: programme costs	$8,185,765
Drug-susceptible TB: drugs	$3,792,120
National TB Programme staff (central unit staff and...	$12,634,563
Laboratory infrastructure, equipment and supplies	$3,444,220

Figure 8.2: Expenditure for TB services, 2020

8.2 Capacity Building and Training

The NTP in its implementation of TB control activities across all the 47 counties supported capacity building of 9,396 health care workers. Due to COVID-19 pandemic during the year 2020 the TB program experienced an interruption in conducting routine refresher and capacity building activities for various cadres of healthcare workers.

To mitigate the effects of COVID-19 on TB, the program scaled up online capacity building sessions with support from USAID TB ARC II - CHS by increasing the learning platforms and by bundling 4,380 health care workers devices to facilitate various learning opportunities.

During the year the program was able to train a total of 775 HCWs with the support from Global Fund TB grant, through USAID TB ARC II - CHS, 5,643 HCWs were trained and through USAID Komesha TB, a total of 2,978 HCW were trained. Table 8.2 shows a summary of the capacity building sessions conducted.

Table 8.2: TB capacity building sessions conducted in 2020

Capacity Building session	Mode	USAID TB ARC II - CHS	GF	USAID Komesha TB	Total
Active Case Finding	CME	63		359	422
Contact Management	CME			49	49
DR TB Management	CME	18		28	46
Gene Xpert Utilization	CME			62	62
IFR Onlin sensitization	CME	347			347
Injection Free Regimen	CME	114	200		314
Pediatric TB	CME	30		39	69
Sensitization - Community TB Case finding	CME	12			12
TB Sample Collection	CME			40	40
CLICQ Project Review	ECHO	223			223
COVID 19 and Latent TB	ECHO	98			98
DR TB Extra pulmonary	ECHO	660			660
Facility Wall Charts review	ECHO	136			136
Improving Patient Testing using PT	ECHO	511			511
Interpreting Lab results	ECHO	532			532
Joint USAID TB ARC II - CHS data review	ECHO	35			35
Lab Turn Around Time	ECHO	417			417
Optimizing DR TB quality of care	ECHO	358			358
Pediatric TB Overview	ECHO	325			325
Private Provider Engagement	ECHO	140			140
TB Prevention, MDR TB, TB/HIV	ECHO	128			128
TPT Community of practice	ECHO	129			129
Use of RH for TPT	ECHO	414			414
Use of RH for TPT 2	ECHO	220			220
11th Union Training	Training	27	225		252
ACF	Training			320	320
AFB	Training			92	92

Capacity Building session	Mode	USAID TB ARC II - CHS	GF	USAID Komesha TB	Total
AFB Refresher	Training		100		100
Childhood TB	Training			132	132
Community ACF	Training			1363	1363
D4D Training	Training		25		25
GeneXpert Training	Training		50		50
Integrated Lung Health	Training			137	137
IPC	Training			91	91
Project management in global health	Training	57			57
TB DM Training	Training		100		100
TB in light of COVID-19	Training	625			625
TIBU Trainings	Training	24	75		99
TPT	Training			266	266
Total		**5643**	**775**	**2978**	**9396**

In addition, the TB program continued to facilitate sensitization of HCWs at sub-county and health facilities on ACF implementation, IPC Sensitization, NPA/NGA sensitizations and OJT for NTRL.

Other capacity building sessions conducted include:

11th Union 'Principles of TB Care & Prevention' Training: During the year in review, the 11th Union Principles of TB Care and Prevention: "Translating knowledge into action' training was conducted targeting 27 participants from Vihiga, Narok, Migori and Trans Nzoia counties. The training was held in Kisii County where facility support visits were done as part of the learning process.

The TBData4Action training is a 7-day course implemented by International Union Against Tuberculosis and Lung Diseases (The Union) collaboratively with local faculty, composed of NTP, USAID TB ARC II - CHS, and County officers. The objective of these trainings is to equip TB coordinators with skills on data-driven supportive supervision and how to tabulate and analyze routine TB data for decision making at all levels. In addition, the training aims to improve quality of care for TB through updates on clinical and operational aspects of TB control.

TIBU Trainings: In the year under review, 99 county and sub-county TB coordinators were trained on the enhanced Phase 3B version of the TIBU system. The objective of the training was to build the capacity of TB coordinators on the new features in the TIBU Phase 3B enhancements.

ECHO Learning Sessions: Extension of Community Health Outcomes (ECHO) is one way to create engagement and foster community learning online. Since 2016, NTP and USAID TB ARC II - CHS has been supporting virtual interactions for health care workers. During the year under review, a total of 4,326 health care workers were reached via various sessions

National Tuberculosis, Leprosy and Lung Disease Program

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Figure 8.3 Screenshot - Sensitization of private sector providers on TB

Private Sector Engagement: USAID TB ARC II - CHS conducted its maiden ECHO call targeting private practitioners "ECHO - Engaging the private sector in TB control" with 140 health care workers joining.

TPT Community of Practice Sessions: The TPT Communities of Practice was started to engage partners and stakeholders in a process of collective TB learning: Tuberculosis Preventive Therapy: the what, why and how?

Collaborations with External Learning Institutions: Through USAID TB ARC II - CHS, the division worked together with local and international partners to strengthen health care workers capacity to manage TB. During the period under review, the Project Management in Global Health by the University of Washington was supported: USAID TB ARC II - CHS together with the University of Washington Global Health facilitated learning for 57 Health care workers on the Project Management in Global Health course. This course focuses on the project management skills necessary to work effectively in the global public health environment. The participants were trained on how to design and conduct needs assessment, create planning and implementation documents, manage project resources (both financial and human), plan for transition of assets to local ownership, and monitor and evaluate project.

8.3 Human Resources

The NTP has a total staff establishment of 35 GoK, 10 GFATM-supported, 3 FELTP, 13 Interns, 1 seconded by CHAI, 3 by USAID STAR project and 1 by CDC to NTP. The GFATM TB grant also continued to support a total of 99 county-based staff.

165

Total number of staff working at the Division of National Tuberculosis Leprosy and Lung Disease Program at the national and coumty level

Table 8.3 Staff Distribution at the NTP, Kenya, 2020

No.	Section	GOK	GF	USAID	FELTP	TB Reach	CDC	CHAI	Interns	Total
1)	Head of Program	1								1
2)	Care & Support	5	1	-	2	1		1	-	10
3)	Commodity & Logistics	4	-	-	-	-	-	-	-	4
4)	Admin & Finance	16	-	-	-	1	1	-	6	24
5)	MER	2	7	1	-	1	-	-	5	16
6)	PHP	3	1	-	-	-	-	-	2	6
7)	Policy Planning	2	1	1	-	-	-	-	-	4
8)	Laboratory	2	-	1	1	-	-	-	-	4
	Total	**35**	**109**	**3**	**3**	**3**	**1**	**1**	**13**	**69**
Grand Total										**69**

8.4 Fleet Management

The TB program has a fleet of vehicles totaling 23 supported by partners and GFATM, out of which 15 are used to support program implementation at national level and 8 vehicles are at county level.

Table 8.4 NTP fleet distribution, 2020

Location	No
National Program	15
Kwale County	1
Busia County	1
Embu County	1
Garissa County	1
Isiolo County	1
Kisii County	1
Nairobi County	1
Nyeri County	1
Grand Total	**23**

23 Total number of **vehicles the TB program has** .

15 Number of **vehicles at national level** .

ANNEXES

ANNEX 1

County Profiles

Visit https://www.nltp.co.ke/ here to access the 47 County Profiles

Baringo

Population : 666,763
Cases notified :2,604
CNR :125 per 100,000 population

Number of Facilities: 257
Number of TB Treatment Sites:90
Gene xpert Sites: 2
AFB Sites: 0

Drug sensitive TB	2018	2019	2020	2021
Pulmonary Bact Confirmed	548	550	485	116
Pulmonary Clinically Diagnosed	142	161	145	51
Extra Pulmonary TB	118	117	81	10

Case finding contribution by sector for 2020
Public, 85.5%

DSTB Outcomes for year 2019
53% 82%

Nandi

Population : 885,711
Cases notified :2,395
CNR :85 per 100,000 population

Number of Facilities: 222
Number of TB Treatment Sites:64
Gene xpert Sites: 2
AFB Sites: 0

Drug sensitive TB	2018	2019	2020	2021
Pulmonary Bact Confirmed	459	548	492	141
Pulmonary Clinically Diagnosed	201	103	80	26
Extra Pulmonary TB	127	93	59	17

Case finding contribution by sector for 2020

DSTB Outcomes for year 2019
70% 84%

Bungoma

Population : 1,670,570
Cases notified :5,065
CNR :96 per 100,000 population

Number of Facilities: 232
Number of TB Treatment Sites:118
Gene xpert Sites: 2
AFB Sites: 0

Drug sensitive TB	2018	2019	2020	2021
Pulmonary Bact Confirmed	957	974	840	198
Pulmonary Clinically Diagnosed	690	359	241	68
Extra Pulmonary TB	270	203	143	41

Case finding contribution by sector for 2020
Public, 90.7%

DSTB Outcomes for year 2019
74% 84%

Kilifi

Population : 1,453,787
Cases notified :5,982
CNR :134 per 100,000 population

Number of Facilities: 305
Number of TB Treatment Sites:125
Gene xpert Sites: 2
AFB Sites: 0

Drug sensitive TB	2018	2019	2020	2021
Pulmonary Bact Confirmed	983	971	877	102
Pulmonary Clinically Diagnosed	1086	718	416	79

Case finding contribution by sector for 2020
Public, 74.3%

DSTB Outcomes for year 2019
69% 82%

Migori

Population : 1,116,436
Cases notified :5,467
CNR :153 per 100,000 population

Number of Facilities: 256
Number of TB Treatment Sites:110
Gene xpert Sites: 3
AFB Sites: 0

Drug sensitive TB	2018	2019	2020	2021
Pulmonary Bact Confirmed	871	852	768	223
Pulmonary Clinically Diagnosed	667	583	479	107
Extra Pulmonary TB	314	266	204	45
Total	1852	1701	1451	375

Case finding contribution by sector for 2020
Public, 58.4%

DSTB Outcomes for year 2019
73% 91%

National Tuberculosis, Leprosy and Lung Disease Program

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ANNEX 2

New MoH Tools with TB Screening Indicators Circular

MINISTRY OF HEALTH
OFFICE OF THE DIRECTOR GENERAL

Telephone: Nairobi 254-020-2717077
Fax: 254-2719008
Email: dghealth2019@gmail.com.

AFYA HOUSE
CATHEDRAL ROAD
P. O Box 30016-00100
NAIROBI

When replying please quote:

Ref: MOH/ADM/1/1/2

22nd February 2021

County Directors for Health

Thro'

The Chief Executive Officer
Council of Governors
Delta House- Westlands
NAIROBI

RE: NEW MOH TOOLS WITH TB SCREENING INDICATORS

Facility Based Active Case Finding (ACF) is a systematic screening for Tuberculosis among all patients presenting in a health facility regardless of presenting complaints. This has been institutionalized in both public and private health facilities. Presumptive registers have been used to document all those patients presumed to have TB and the results of investigations conducted. However, key gaps have been on documentation on the numbers of patients screened for TB.

To overcome this challenge, TB screening has been included in the following MoH tools to capture the patients screened for TB among those attending health facilities:

1. MOH 204A - OPD <5 register
2. MOH 204B - OPD >5 register
3. MOH 406 - PNC register
4. MOH 405 - ANC register
5. MOH 514 - Household register
6. MOH 514 - Community Service delivery log book
7. MOH 711 - Summary for the screening data from all service delivery points
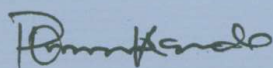8. MOH 515 - Summary for Community data

Documentation and reporting from these tools should follow the health facility procedures. The Health Records Information Officers (HRIOs) will summarize the information in the tools and upload into the KHIS.

The technical assistance missions, both internal and external have identified the following gaps

- Inadequate ownership of ACF by the hospital management,
- Most facilities lacked dedicated ACF focal persons.
- ACF recording and reporting is not streamlined

The purpose of this letter therefore to request your office to support the ACF by highlighting the importance of involvement of hospital management in ACF as well as ensuring proper recording and reporting of the ACF indicators in the tools above.

Dr. Patrick Amoth, *EBS*
AG. DIRECTOR GENERAL FOR HEALTH

Facility-Based Active Case Finding (ACF) Improvement Plan

MINISTRY OF HEALTH

OFFICE OF THE DIRECTOR GENERAL

Telephone: Nairobi 254-020-2717077
Fax: 254-2719008
Email: dghealth@2019.gmail.com.

When replying please quote:

Ref: MOH/ADM/1/1/2

To: All County Executive Committee Member for Health

Thro'

The Chairman
Council of Governors
Delta Plaza
NAIROBI

AFYA HOUSE
CATHEDRAL ROAD
P. O Box 30016-00100
NAIROBI

Date: 10th January 2020

RE: FACILITY BASED ACTIVE CASE FINDING (ACF) IMPROVEMENT PLAN

Findings from the Kenyan TB prevalence survey 2015/2016 indicated that the burden of TB disease in Kenya was still high at 426/100,000 population. Consequently, the National Tuberculosis Leprosy and Lung Disease Program has rolled out active case detection interventions through support from the Global Fund Catalytic Fund. Facility Based Active Case Finding (ACF); which entails systematic screening for Tuberculosis among all patients presenting to the health facilities regardless of presenting complains, was rolled-out nationally in collaboration with development partners. The reported impact of the initiative in the first year of implementation was significant—with an increase in total TB case notification nationally by 10.1% percent from 77,376 cases in 2016 to 85,188 cases in 2017. However, quarterly trends in TB case notification for 2019 (Q1, Q2 & Q3 2019), seem to suggest a decline in the TB case notifications compared to 2018 results for the same period.

The country hosted the Global Fund Country team from 2nd to 6th December 2019. The main purpose of the visit by the team was to review the TB program implementation approach of the health facility ACF, discuss the existing challenges and bottlenecks in its implementation and identify opportunities to leverage on for scale up.

From the mission, the following gaps were evident;

- Hospital leadership, ownership and guidance on ACF was lacking
- Most facilities lacked dedicated ACF focal persons.
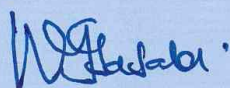- ACF recording and reporting was not streamlined

ISO 9001:2015 Certified

In view of the above and in order to reverse the trend of declining TB case finding, we propose that the following mechanisms be put in place: -

- The CHMT/SCHMT/Facility managers to take charge and grant full support in matters of ACF for the facilities at all Service Delivery Points (SDPs)
- Health facility managers to appoint an ACF focal person; preferably a clinician (CO/nurse/doctor) working in OPD
- Health Facility managers to ensure that monthly facility meetings have TB ACF as a standing agenda to aid in decision making and identify areas of improvement.
- Facility managers to set targets for SDPs in their facilities (e.g. 30% of URTI patients are presumptive TB cases, 10% of the facility workload are presumptive TB cases)
- The County Director of Health to ensure TB/ACF is included as a mandatory indicator during support supervision
- Facility managers and Facility HRIOs to strengthen recording and reporting on a monthly basis through DHIS-2
- Facility managers and clinicians at the TB clinic to strengthen contact tracing

We therefore request you to cascade this information to all the County and Sub County Health management and facility in charges.

Herein attached is the circular on ACF to all health facilities

Dr . Wekesa J Masasabi
AG DIRECTOR GENERAL FOR HEALTH

Encl

Copy to: County Commissioner

ISO 9001:2015   Certified

MINISTRY OF HEALTH

OFFICE OF THE DIRECTOR OF MEDICAL SERVICES

Telephone: Nairobi 254-020-2717077	**AFYA HOUSE**
Fax: 254-2719008	**CATHEDRAL ROAD**
Email: dms@health.go.ke	P. O Box 30016-00100
	NAIROBI

When replying please quote:

Ref: MOH/ADM/1/1/2   Date: 8th March 2017

All County Executive Committee Members of Health

Thro'

Chairman
Council of Governors
Delta House
NAIROBI

RE: FACILITY BASED ACTIVE TUBERCULOSIS CASE FINDING (ACF)

Health care delivery is a core function of the county governments, and hence it is paramount that TB case finding and treatment is institutionalized within the county health system. Findings from the Prevalence Survey 2015/2016 demonstrated that approximately 90,000 people with active TB are missed annually. Majority of these cases are missed at the facility level where they repeatedly seek care; some take up to five hospital visits before TB is diagnosed.

Facility-based Active Case Finding (ACF) is an evidence-based intervention for finding missing cases of Tuberculosis. This intervention is underpinned in the first pillar of the End TB strategy 'Integrated, patient-centered care and prevention' and is in line with a key recommendation from the Prevalence Survey and patient's pathway analysis findings. **All County Governments and all implementing partners should adopt and institutionalize to screen all persons seeking services, at every entry point, in all (public and private) health care facilities.**

ACF has been conducted as a pilot initiative in 13 county referral hospitals since December 2016 and this has contributed to a 12% increase in TB cases notified in 2017. ACF is highly cost effective and should be integrated in service delivery in all the health facilities (public and private) and adopted as **a routine standard of care.**

ISO 9001:2008 Certified

It minimizes leakage of TB patients from various service delivery points, ensures early diagnosis, treatment and notification consequently reducing TB transmission and increase TB case detection.

Below please find;

How Facility Based Tuberculosis Active Case Finding Will Be Implemented

The intervention is hinged heavily on the following key activities:

1. Strengthening the Hospital Management Teams (HMT) to provide leadership for TB case finding
2. Building the capacity of Health Care workers in all departments in health facilities to routinely screen all patients for TB
3. Improve TB Diagnostic capacity
4. Improve documentation, monitoring and support supervision

All persons who will visit the health care facility will be screened by asking if the person has experienced any of the following:

1. Cough of any duration
2. Weight loss/ Failure to thrive among children
3. Fever (should be accompanied by another symptom)
4. Night sweats (sweating a lot at night)

When screening for TB in children, the following signs can also be asked for:

1. History of restlessness,
2. Irritability
3. Reduced playfulness.

Any of the persons who is found to have any of these symptoms should undergo further testing using Xpert MTB/RIF test.

For ACF to succeed,

1. The facility in-charges are responsible for reporting on progress of Active TB Case Finding in their facilities
2. TB Case detection is a key performance indicator for the facilities
3. Overall ownership of TB care and prevention by the facilities is strengthened

Dr. Kioko Jackson K., OGW, MBS
/vDIRECTOR MEDICAL SERVICES

Copy: County Chief Officers of Health
County directors of Health
Medical Superitendent
Health Facility In-charge

NATIONAL TUBERCULOSIS, LEPROSY AND LUNG DISEASE PROGRAM