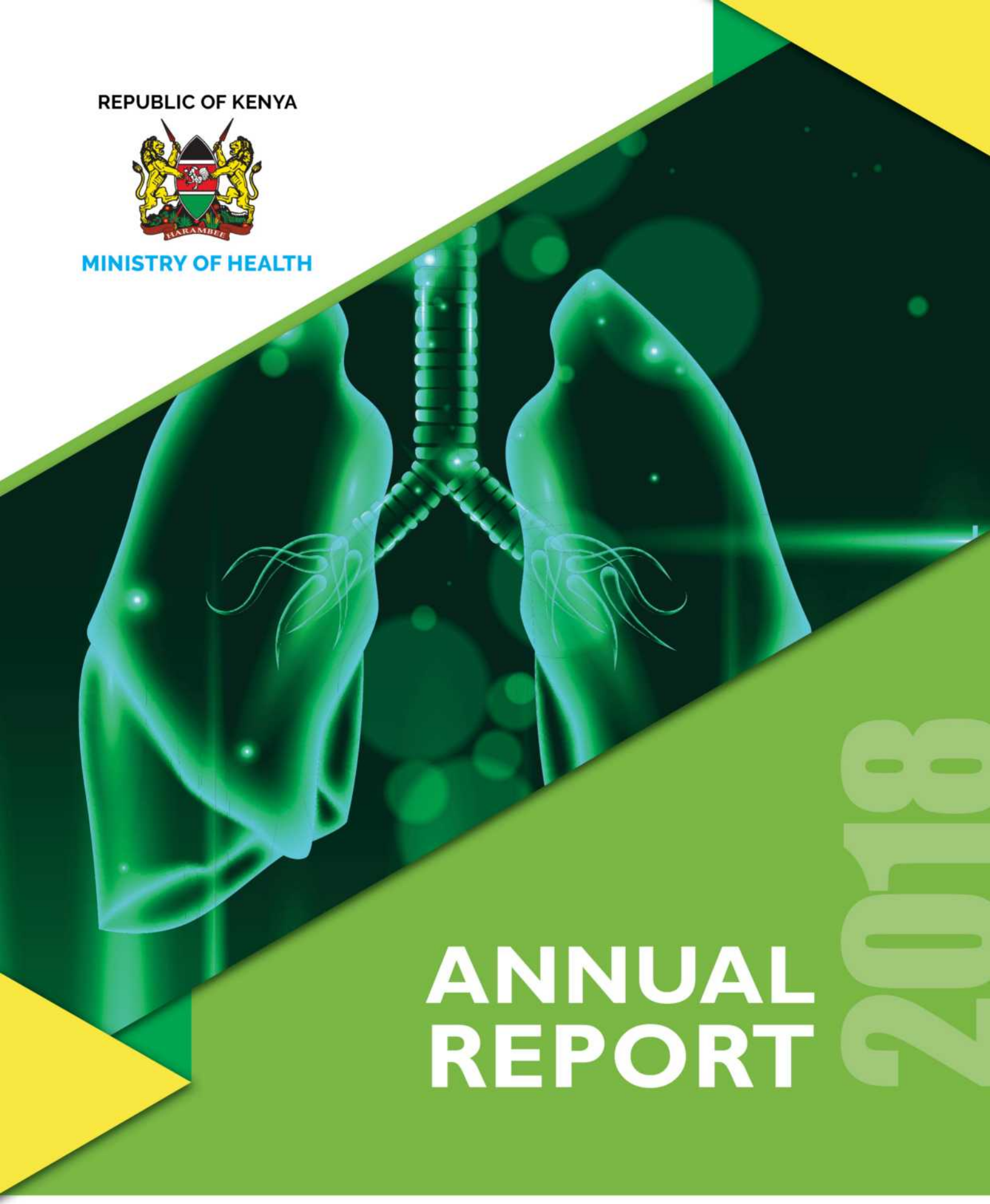
REPUBLIC OF KENYA

MINISTRY OF HEALTH



ANNUAL REPORT

2018

NATIONAL TUBERCULOSIS, LEPROSY AND LUNG DISEASE PROGRAM

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Contents

Acronyms

ACF	active case finding
ACSM	advocacy, communication and social mobilization
ADR	adverse drug reaction
aDSM	active TB drug safety monitoring and management
AFB	acid-fast bacilli
AFRO	African Regional Office (of the World Health Organization)
AIDS	acquired immunodeficiency syndrome
AMR	antimicrobial resistance
ART	antiretroviral therapy
BC	bacteriologically confirmed
BCC	behaviour change communication
BCG	Bacille Calmette-Guerin
BMI	body mass index
BOLD	burden of lung disease
BSC	biosafety cabinet
CAD	computer-aided detection
CBHI	community based health insurance
CBO	community based organization
CDC	Centres for Disease Control and Prevention
CDR	case detection rate
CFR	case fatality ratio
CHC	community health committee
CHE	current health expenditure
CHEW	community health extension worker
CHS	Centre for Health Solutions
CHV	community health volunteer
CHW	community health worker
CI	confidence interval
CIDP	county integrated development plan
COC	Clinical Officers Council
CoE	centre of excellence
CoK	Constituion of Kenya
COPD	chronic obstructive pulmonary disease
CPD	continuous professional development
CPT	cotrimoxazole preventive therapy
CQI	continuous quality improvement
CR	cure rate
CRH	county referral hospital
CSO	civil society organization
CSR	corporate social responsibility
CTBC	community tuberculosis care
CTLC	county tuberculosis and leprosy coordinator
CU	community unit
CU	Central Unit
CV	community volunteer
CXR	chest x-ray
TB ARC	TB Accelerated Response and Care
USAID	United States Agency for International Development

LIST OF FIGURES

LIST OF Tables

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Finally, we thank the communication team lead by Mr. Felix Mbetera for the editorial and design work that has gone into the report.

VISION

A Kenya free of TB and leprosy, and reduced burden of lung disease.

MISSION

To ensure provision of quality care and prevention services for all people in Kenya with TB, leprosy and lung diseases.

Executive Summary

Tuberculosis prevalence in Kenya is 426 per 100,000 as per 2017 TB prevalence survey. This translates to an estimated incidence of about 169000 cases with a decline of 4% annually. This means that an estimated 156,000 fell ill with TB disease last year. The surveillance system detected and notified 96, 478 people with TB who were put on first-line treatment. This represents 64% of the incidence cases while the rest were missed. The treatment success rate for all forms of TB was 83%. The country notified 689 people with DR TB who were initiated on second-line treatment. In spite of these achievements, Kenya still remains among 30 high burden countries for TB, DR TB, and TB/HIV. A large proportion of the population (36%) with TB are still missed by the surveillance system.

Majority of the notified TB cases (85.4%) were from the public sector while the private sector underperformed with notification of 14.6%. Men remain the most affected by TB with 64% of all cases notified with TB being men. Childhood TB diagnosis and case-finding still remains a challenge with only 10,051 children under 15 years notified which represents about 10.4% of all forms of TB notified. This was a slight improvement from 2017 which could be attributed to capacity building of health care workers and implementation of childhood case finding project "FIKIA", which was funded by TB REACH in a number of counties including Nairobi which is a high burden for TB.

The program continues to perform well in most of the TB/HIV indicators with HIV testing rate of 98% and CPT and ART uptake of 99% and 97% respectively. TB/HIV co infection rate in 2018 was 27%. The only sub optimal area for TB/HIV is IPT for under 5 years where a total of 7000 children were initiated on IPT representing only 13% of those targeted.

People detected with DR TB cases rose from 577 in 2017 to 689 in 2018. This is due to the efforts by the program to increase DR TB surveillance where DST coverage for previously treated TB cases which is high risk group was 65.2% against a target of 90% and for new cases was 44.8% against a

target of 50%. DST coverage results was affected by Gene-xpert cartridge stock-outs and break down of a number of GeneXpert machines in the last half of 2018. The program has signed a bundled service level agreement with CEPHEID for maintenance and supply of consumables to address this problem.

Malnutrition remains a major challenge in TB control with 40% of DS TB and 51% of DR TB being undernourished at the time of diagnosis.

By end of 2018, the country had 189 GeneXpert sites, 2,320 microscopy sites and two main culture labs in Nairobi and Kisumu. The program through support of Global Fund employed nine lab scientists to assist in the decentralization of culture lab to three more sites. EQA coverage for microscopy sites in 2018 was 86%.

Even though Kenya is in post-elimination stage for Leprosy, case notification for new cases of leprosy continue to increase. The country notified 109 leprosy cases last year with endemic regions being; Western, Coast, Nairobi and Eastern.

The program continued to roll out active case finding to narrow the gap of missing people with TB. In 2018, a total 7,475 health care workers were sensitized on ACF in about 453 high TB burden facilities. TB in prison activities were carried out with 4557 inmates screened in outreach activities and 17 TB cases diagnosed and started on treatment.

There was no major stock out for first-line and second line drugs in 2018. All commodity security meetings were held as planned and 31 stores were renovated countrywide. The program also carried out two planned forecasting and quantification meetings with the support of technical partners and reports for the same disseminated to all stakeholders. The county reporting rate for the commodities was 87% against a target of 90%.

In terms of Advocacy Communication and Social Mobilization;5309 community health volunteers were sensitized on basic facts of TB, 50 county-based journalists from far to reach areas were also trained and the country participated in UN high level meeting on TB in New York. Radio and TV spots were also aired through the support of USAID funded TB ARC activities.

The program begun implementation of a new GF grant valued at USD 62m to be implemented by National Treasury and AMREF Health Africa as Principle Recipient (PR)1 and PR2 respectively. This grant supports TB care and prevention, MDR TB, TB/HIV and Resilient and sustainable systems for health activities for 3 ½ years.

The program also carried out data quality assessment in six counties namely; Busia, Kirinyaga, Nyandarua, Tharaka Nithi, Uasin Gishu, and Wajir.

Finally, the program together with partners and stakeholders in TB started a process of developing a national strategic plan to respond to the TB prevalence survey findings and also be in line with End TB strategy goals, vision 2030 and the big 4 agenda of the government. The NSP is a five-year plan that was launched in 2019 and ends in 2023.

Dr Elizabeth Onyango

Head, Division of National Tuberculosis, Leprosy and Lung Diseases Programme (DNTLD-P)

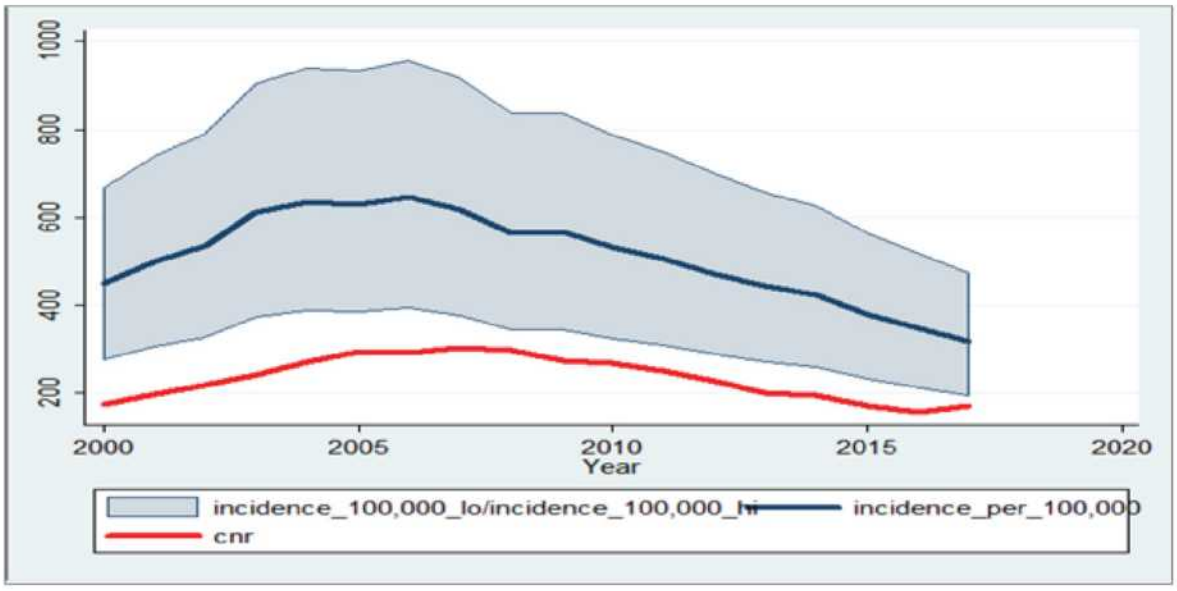

PATIENT PACK
ANTI - TB DRUGS
RHZ - E
RH
PATIENT PACK
ANTI - TB DRUGS
EACH PACK CONTAINS
RHZ - E
AND
RH
4 months Continuation Phase (RH) 120 doses
2 months Intensive Phase (RHZE) 60 doses
TB Patient Pack - Control Card
GoK - MoH. NOT FOR SALE

1 EPIDEMIOLOGY OF TUBERCULOSIS IN KENYA

Burden of TB in Kenya

Kenya conducted its first post-independence TB prevalence survey in 2015-2016. The survey revealed that the true burden of TB in Kenya was 426 cases per 100,000 population with an annual incidence of 169,000 persons. The annual decrease in TB incidence is estimated at 4% which translates to about 156,000 persons fell ill with TB in 2018. In 2018, about 64% (96,478) of the incidence cases were notified and therefore about 36% of estimated TB cases were not diagnosed, treated and notified in 2018. The trends for children are presumed to be similar.

Figure 1: TB incidence trends 2000 to 2018, Kenya



426

Estimated number of cases per **100,000** population, according to first post-independence TB prevalence survey conducted in 2015-2016.

156,000

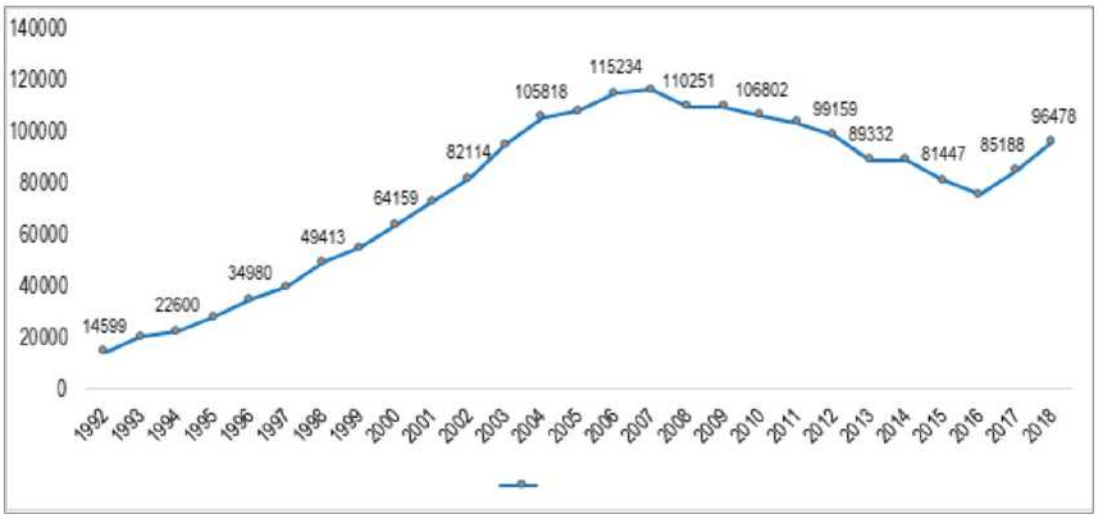
Estimated number of persons that fell ill with TB in 2018, representing an **4%** estimate annual decrease in TB incidence.

38%

Estimated estimated TB cases were not diagnosed, treated and notified in 2018.

Trends in case notification of Drug susceptible TB in Kenya 1992 -2018

Figure 2: TB Case Notification trends 1992 - 2018



Case notification

Case notification in 2018 was 96,478 which is 13% increase compared to 85,188 cases notified in 2017. This achievement can be attributed to various programmatic strategies that included:

1. Successful roll out of Active Case Finding (ACF) in health facilities in all the 47 county hospitals and sub-county hospitals.
2. Registration and notification of cases at the point of diagnosis
3. Strengthened collaboration between the national and county government

Summary of Characteristics of Drug Susceptible TB Patients in Kenya, 2018

96,478
Case Notification (2018)

64%
Male

36%
Female

10'051 | 10.4%
Pediatric
10,051

7,242 | 7.5%
Previously treated Number/%

48,649 | 50.4%
Bacteriologically confirmed No/ %

47,829 | 49.6%
Clinically diagnosed

32,111 | 66%
DST coverage for Bacteriologically confirmed

39,929 | 44.8%
DST coverage among new cases

4,720 | 65.2%
DST coverage among previously treated

8.6%
CHV contribution

14.6%
Private sector contribution

97.9%
HIV Testing rate

26.6%
Coinfection rate

Treatment outcome

Treatment success rate (TSR) for drug susceptible TB patients, 2017 cohort was 82.8% for all forms of TB and 77.3% for previously treated patients. This is below the target of 90%. This is contributed by death rate of 6.3% and loss to follow-up of 5.4%.

Total Number of new Cases Notified

96, 478

Previously Treated

7, 242

Outcomes

Indicator	All Forms	Previously Treated
TSR	82.8%	77.31%
CR	70.0%	61.9%
Death Rate	6.3%	7.5%
Loss to Follow-up	5.4%	8.9%

Childhood Tuberculosis

According to the World Health Organization (WHO), at least one million children become ill with TB every year (Global TB Report, 2018). Children represent about 10-15% of all TB cases and this figure is estimated to be higher in the high burden countries. Children under five years are more vulnerable to developing TB and when they do, they develop severe forms of the disease because of their low immunity. Diagnosis among children is often challenging due to the paucibacillary nature of TB and the non-specific symptoms of the disease. Child contacts with household exposure are 1.7 times more likely to be TB infected and are at 66% increased risk of mortality than non-child contacts. There is a low index of suspicion for childhood TB among health care workers and hence an estimated 65% of children with TB seeking services at health facilities remain undiagnosed (Global TB Report, 2018).

Case Finding: The case notification for children increased from 7,714 (9.1%) in 2017 to 10,051 (10.4%) in 2018, translating to a 31% increase. This is attributed to the active case finding that was rolled out country-wide in 2018 and the various projects that focused on TB in children in different counties (See chapter on project management). Children below 5 years diagnosed with TB represented only 5.8 % of all children. These children are at greatest risk of morbidity and mortality from TB. Overall, 81% of children were diagnosed with pulmonary TB with those below 5 years accounting for 51% of the childhood TB.

10-15%

Estimated percentage of all TB cases represented by children, and is higher in the high burden countries

81%

Estimated percentage of children diagnosed with pulmonary TB in 2018, with those below **5 years** accounting for **51%** of the childhood TB.

TB diagnosis in children:

2,404 No. of GeneXpert done on children below 15 years

41% being MTB detected

2.8% had drug resistant TB (DRTB).

1.7% of the bacteriologically confirmed cases attributable to extra-pulmonary cases

Treatment outcomes for children:

87% cure rate

5% death rate

3.6% lost to follow-up.

10 - 14 years majority of those dying

TB/HIV co-infection in children:

21% TB/HIV co-infection rate in children 5-14 years. The childhood cohort with the highest co-infection rate.

1,487 co-infected with TB/HIV,

97% were put on ART

99% were put on CPT

Nutritional assessment in children:

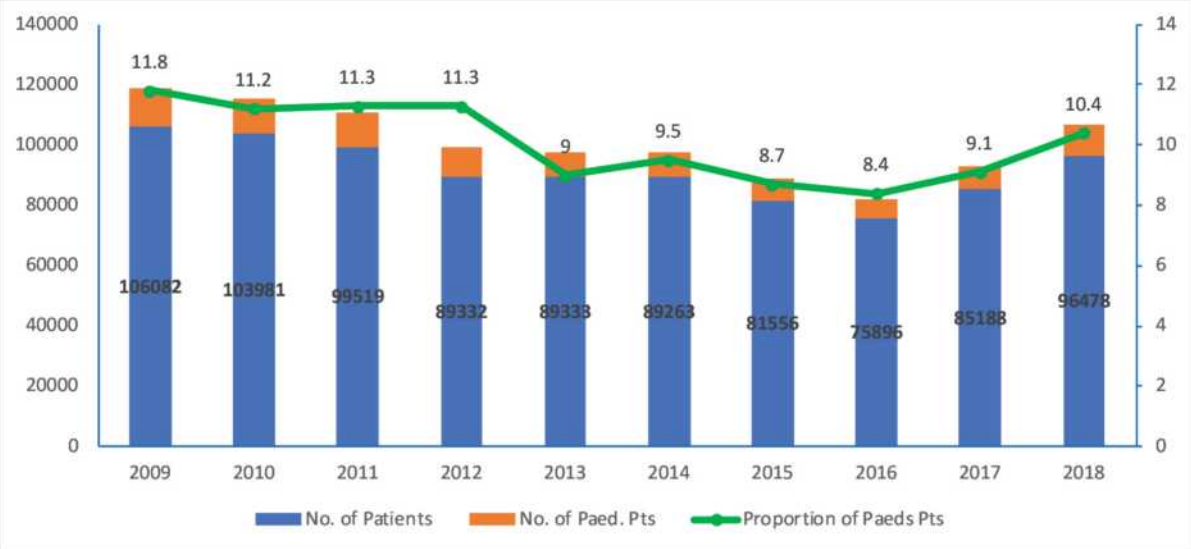
2018, about 43% of children with TB had nutrition assessment done.

12% with either moderate or severe malnutrition.

18% The coverage for nutritional

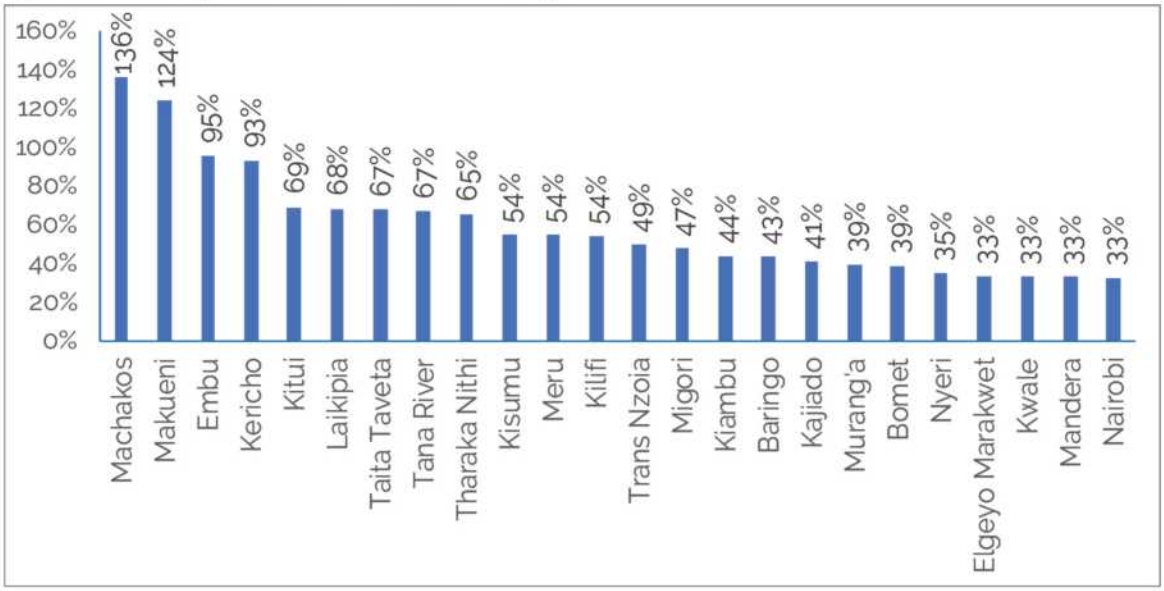
5 years and below: Majority of children with severe and moderate of age malnutrition and incidentally had the highest TB/HIV co-infection rate of 67%.

Figure 3: Pediatric Case Notification



Pediatric Case finding by County: Counties recorded good efforts in finding children with TB. Machakos County recorded the highest percentage change (135%) in pediatric case notification followed by Makueni (120%) and Kericho 101%. This is attributed to the increased health care worker trainings on use of nasopharyngeal aspirates in these counties as well as Universal Health Coverage being implemented by the County. Bungoma, Nakuru, Nyamira and Uasin-Gishu counties recorded negative percentage change. This may have been due to poor implementation of active case finding (ACF).

Figure 4: County Pediatric TB Case Finding



Capacity Building: NTLD-P with support from CHS through the TB REACH 'Fikia' project conducted weekly paediatric TB ECHO sessions aimed at enhancing health workers' capacity in TB management among children countrywide.

As part of its efforts in strengthening TB case finding among children, the National TB program in collaboration with partners conducted the following trainings;

623

Health care workers trained on Management of childhood TB – (96 under Global fund and 527 under TB ARC).

88

TOTs trained on sample collection in children (Naso-Pharyngeal and gastric aspiration) as well as how to conduct a Mantoux Testing (Tuberculin Skin Test).

IPT in Children under 5 Years

IPT decreases disease progression by 59% in children and has been shown to be a cost-effective strategy in high TB burden countries. However, in 2017, global figures indicate that of the estimated 1.3 million children eligible for IPT, only 23% were initiated (Global TB Report, 2018). Equally in Kenya, only 13% and 14.5 % of eligible children were initiated on IPT in 2017 and 2018 respectively.

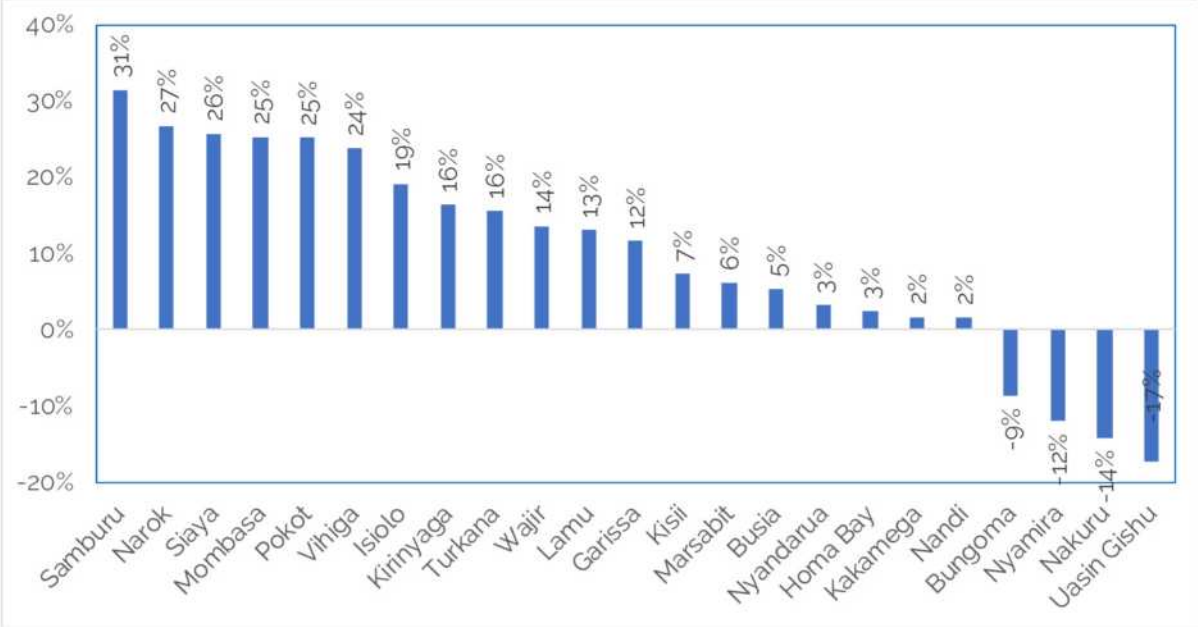
- Number of exposed children <5 years initiated on IPT in 2018 were **7,000**
- Of these **46 (1%)** were HIV positive, **6045 (86%)** HIV negative, and **909 (13%)** HIV tests not done.

Table 1: Treatment outcomes for children initiated on IPT, 2017 cohort

Completed	Died	Discontinued	Defaulted	Not evaluated
52%	0.1%	0.6%	1.2%	46%

The uptake of IPT is still suboptimal. There is need to scale up strategies to ensure all the children <5 years exposed to household bacteriologically-confirmed pulmonary tuberculosis are screened and started on IPT accordingly.

Figure 5 : County Pediatric TB Case Finding



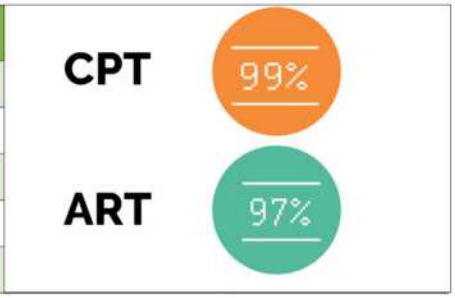
TB/HIV and co-morbidities

a) TB/HIV

In 2018, 98% of TB patients were tested for HIV, 27% of whom were HIV co-infected (which is similar to 2017). The coinfection rate was higher among females (34%) compared to males (23%), and patients aged ≥15 years (28%) compared to children 14 years and below (15%). Overall CPT and ART uptakes were at 99% and 97% respectively in this TB/HIV co-infected cohort. ART uptake was similar among females and males (at 97%) and among adults and children (97%).

Table 2: TB/HIV indicators, Kenya, 2018

	HIV co-infection
Overall	27%
Males	23%
Females	34%
Adults (≥15y)	28%
Children (0-14y)	15%



About 77% of TB/HIV co-infected patients that were started on treatment in 2017 were successfully treated, which was lower than that for HIV negative TB patients (86%). Below are the other treatment outcomes for TB/HIV disaggregated by gender and age-group.

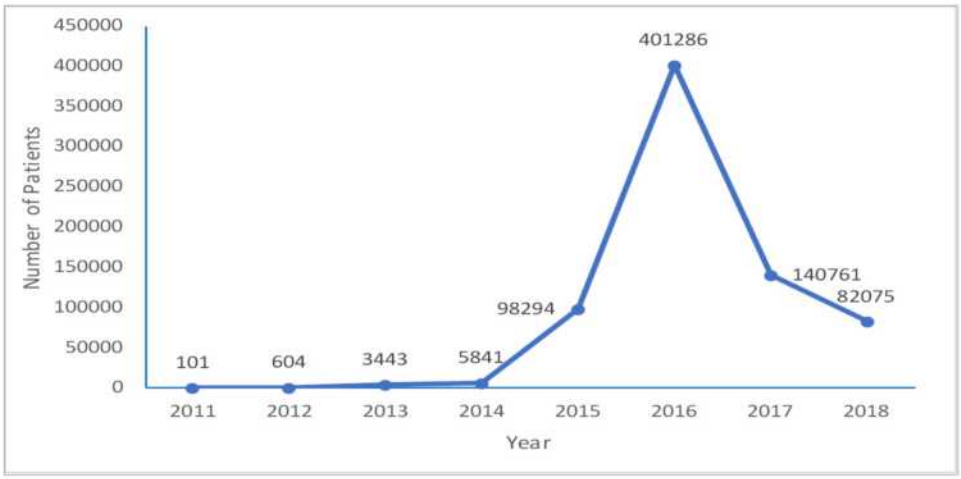
Table 3: Select treatment outcomes for 2017 TB/HIV patients cohort, Kenya

	Treatment success	Died	LTFU	Other treatment outcomes combined
Overall	83%	6%	5%	6%
TB/HIV negative	86%	4%	5%	5%
TB/HIV co-infected	77%	12%	5%	6%
Males TB/HIV	76%	12%	5%	7%
Females TB/HIV	78%	11%	5%	6%
Adults (≥15y) TB/HIV	77%	12%	5%	6%
Children (0-14y) TB/HIV	80%	11%	4%	5%

Isoniazid Preventive Therapy among PLHIV

IPT is one of the 5I's of TB/HIV collaborative mechanisms. In 2015 the country scaled up IPT among PLHIV. In 2018, 82,075 PLHIV were initiated on IPT, bringing the cumulative number of PLHIV ever initiated on IPT to 798,334 by end of 2018. This is about 76% (798,334 of 1,051,055) of PLHIV in care in Kenya.

Figure 6: Trend of uptake of IPT among PLHIV in Kenya



Technical Working Groups

The national TB/HIV Technical Working Group has membership comprising the national TB (NTLD-P) and HIV programs (NASCOP), development and implementing partners, Civil societies, private health facilities, professional associations and other key stakeholders in the TB/HIV field. The key roles of the TWG include: coordinating national TB/HIV collaborative activities, developing TB/HIV policy guidelines, joint planning, budgeting, monitoring and evaluation of TB/HIV collaborative activities.

Two TB/HIV TWGs were held in 2018. The first meeting, held in March, focused on the following areas: Building consensus on the key elements and contents of TB LAM policy guideline; Optimizing ART in TB/HIV coinfection; Updates on IPT among PLHIVs; and experience of community TB/HIV integration including community M/E framework.

The second meeting, held in December, centred on the following areas: EMR for TB/HIV updates; TB/HIV case presentation; granulated TB and HIV profile for Nairobi county for 2017; and AMREF community sensitization program. The main recommendations were: encourage all facilities to fill in all data elements on the EMR; finalize TB/HIV module; development of county- and subcounty-specific TB targets; adoption of data collection at subcounty level to support better programming; standardize mortality audit tools; and HIV programme to invest in GeneXpert machine and cartridges to facilitate integrated TB/HIV services.

The NTLDP with support from TB ARC held quarterly TB/HIV implementing partners coordinating forums targeting all USAID and CDC/ PEPFAR, and other partners. The main aim of these meetings was to disseminate national policies, update implementing partners on any changes in TB and HIV management and ensure coordination of implementing partners support countrywide to improve efficiencies and synergies.

Capacity building: ECHO

Capacity building is one of the mandates of the national government. There are various methods of capacity building and ECHO sessions have been proved to be valuable as many participants can be reached at the same time from their various locations. In 2018, we had 3 TB/HIV ECHO sessions. The first session which was in June was a case presentation

and discussion of a TB/HIV coinfected patient. The second session, in July, focussed on management of TB/HIV coinfection, was delivered didactically. The last session in December was a didactic presentation on the updates of ARV, and in relation to TB/HIV.

Technical assistance

The NTLD-P and NASCOP agreed to have annual joint TB/HIV technical assistance to counties and their respective health facilities to support them in enhancing the quality of services provided to TB/HIV patients. To this end, the two programs conducted a 5-day TA mission to 6 counties of Baringo, Kiambu, Wajir, Tharaka Nithi, Homabay and Taita Taveta in December 2018. Factors considered in selecting the counties included regional balance, high TB/HIV burden and absence of recent TA from the TB program. A total of 46 health facilities were visited.

The key objectives of the TA missions were: to assess the performance of counties/ sub-counties and selected health facilities on TB/HIV indicators and TB/HIV service integration; strengthen capacity of county, sub-county and health facility staff through technical assistance, OJT, mentorship and other measures; Update the counties on new policy directives; learn from counties of best practices, what has worked and what has not worked; and provide feedback to the counties on the findings of the TA visit.

Sensitization of PLHIV and CHVs on TB screening, HIV testing, IPT and Patients rights.
To create demand for TB services 204 sensitization meetings were carried out to sensitize PLHIV and CHVs on TB screening, HIV testing, IPT and patients rights. A total of 3862 PLHIV were sensitized

Research on TB/HIV

In 2018, NTLD-P and NASCOP through the support of the Global Fund developed protocols for two surveys on TB/HIV:

i) Assessment of IPT outcomes among PLHIV in Kenya

ii) Evaluation of TB/HIV service integration in the country.

The actual implementation were carried out in 2019 after relevant ethical clearances and approvals. These studies will help inform the country on key areas and help shape policy moving forward.

Policy development

Part of the mandate of the national level MOH is to develop policy. Considering the dynamic nature of TB and HIV management, NTLD-P and NASCOP through the support of the Global Fund, developed TB/HIV job aids for the clinical management of TB/HIV and updated the SOPs for Isoniazid Preventive Therapy. These will aid clinicians and other users in the management of TB/HIV.

b) Tuberculosis and Diabetes Mellitus

Diabetes increases the risk of tuberculosis and worsens its treatment outcomes. TB worsens glycaemic control and can unmask diabetes. Since 2016, MoH has been strengthening TB/DM collaborative activities and enhancing bi-directional screening for either disease.

In 2018, the program, in collaboration with the NCD department of MoH carried out the following capacity building activities to strengthen TB/DM collaboration:

- A ToT training of 25 health workers from 10 selected high TB and DM counties. The represented counties were Nairobi, Mombasa, Kisumu, Nakuru, Uasin Gishu, Kiambu, Kisii, Garissa, Meru and Busia.
- The trainings were further cascaded to frontline health workers in 7 counties of Nairobi, Mombasa, Kisumu Kiambu, Meru, Nakuru, and Uasin Gishu. The trainings were aimed at equipping at least 20 frontline health workers per county from the high volume facilities with skills and knowledge for bi-directional screening and management of TB and DM. Each team developed action plans and were supplied with TB/DM SoPs, algorithms and posters to take to the facilities.
- 3 ECHO sessions on TB/DM focussing on TB/DM linkages and integration and a case study on management of TB/DM, which also included drug-drug interactions and common adverse reactions.

Drug Resistant TB Situation in Kenya

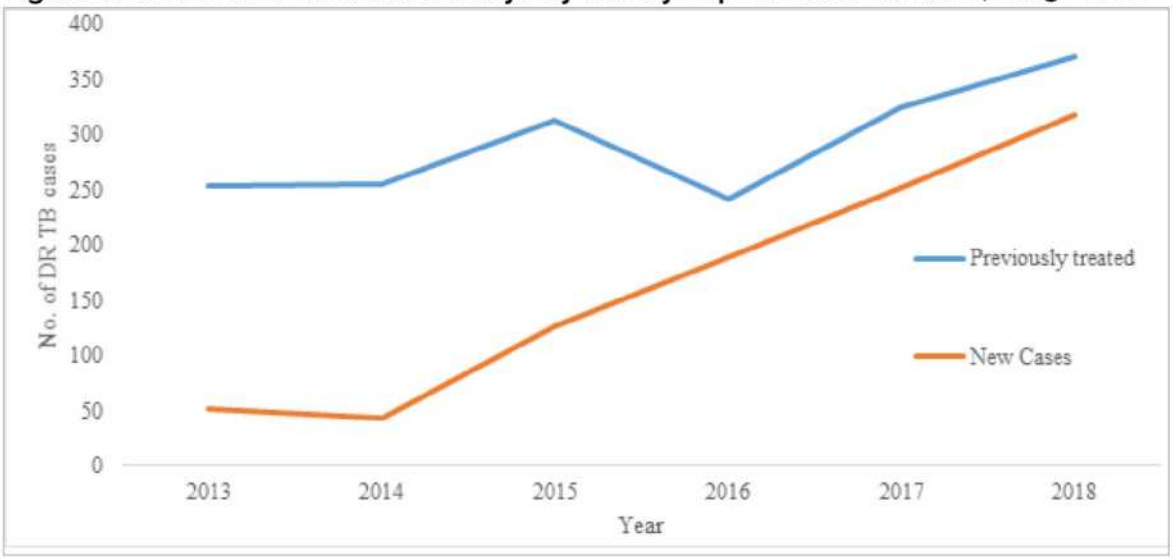
Case finding for DR-TB

Kenya remains a high burden country for both drug sensitive (DS) and drug resistant (DR) TB. There were 689 DR TB cases notified in 2018 (Figure 7: DR TB cases notified in Kenya, 2006 -2018). This was a 19% increase from cases notified in 2017. Despite the decline in case notification of drug susceptible TB (DS TB) cases that preceded the current increase, DR TB case detection cases have increased significantly since 2006. This can be attributed to increase in access to DST services and increased sensitization and capacity building of health care workers.

Figure 7: DR TB cases notified in Kenya, 2006 -2018)

The proportion of new DR TB cases has significantly increased over the years indicating primary DR TB cases due to community transmission (Figure 8: DR TB cases notified in Kenya by history of previous treatment, 2013 - 2018). All counties reported DR TB cases in 2018. This was the first year Wajir County reported DR TB cases despite neighboring Somalia, a country with a high number of refugee DR TB cases treated in Kenya, and some high burden DR TB counties.

Figure 8: DR TB cases notified in Kenya by history of previous treatment, 2013 - 2018



The number of genexpert machines has increased from 3 in 2011 to 223 in 2018. Of the 223 genexpert machines, 189 are in the public sector. There was also increased access to culture and both first line and second line DST, services at the NTRL in Nairobi and KEMRI laboratory in Kisumu.

The number of DR TB cases is expected to increase with increasing access to DST following the scale up of geneXpert machines and the increased capacity for 1st and 2nd line probe assay (LPA) in the country.

Surveillance and quality of care for DR TB remained a key area of focus for the program. The country aims to transition to universal DST among all TB patients. The country intends to expand TB reference DST capacity to 3 new laboratories while optimizing the sample reference system. However, due to DST capacity challenges, DR TB surveillance is prioritized among the following high risk groups;

1. Previously treated TB patients: treatment failures, relapses, treatment after loss to follow up
2. Drug resistant TB patient contacts
3. TB patients with a positive smear result at month 2 or month 5 of TB treatment
4. Patient who develops TB symptoms while on IPT or has had previous IPT exposure
5. Healthcare workers with TB symptoms
6. Prisoners with TB symptoms
7. Refugees with TB symptoms

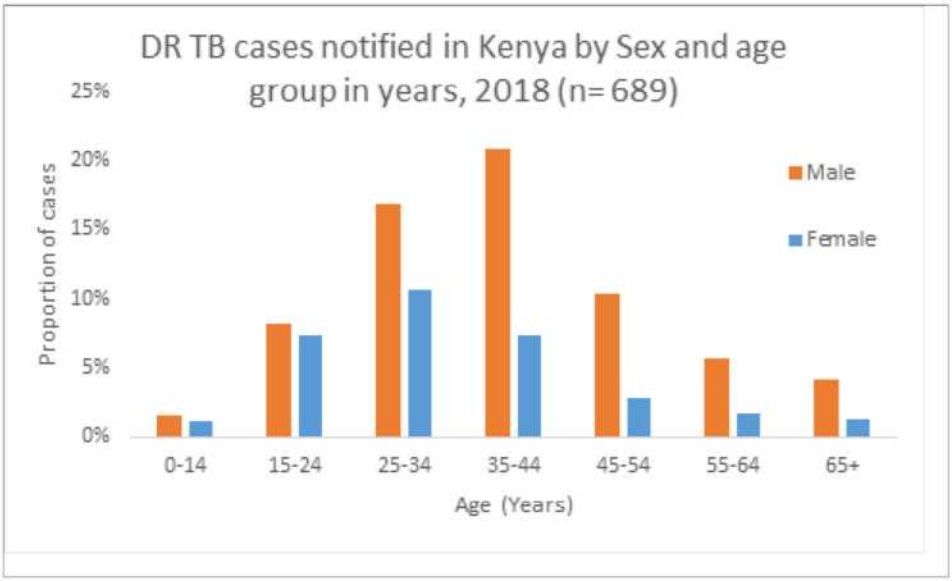
Males DR TB cases were 466 (67.6%) while the age group that had the most cases was 35-44 years. The median age group was 36 years (Range is 2.5 years to 85 years).

Table 4: Characteristics of DR TB cases notified in Kenya, 2018

Variable	Number	Percent
Males	466	67.60%
Site of disease		
Pulmonary	679	98.55%
Extra pulmonary	10	1.50%
DR-TB/HIV		
HIV co-infection	247	35.90%
ART uptake	234	94.74%
CPT uptake	240	97.17%
BMI for ≥18years		
<16	150	21.8%
16-18.4	201	29.2%
18.5-24.9	258	37.4%
25-29	19	2.8%
>=30	59	8.6%
Missing	2	0.3%
Z score for ≤ 18yrs		
-3	2	7.1%
-1	1	3.6%
1	2	7.1%
2	5	17.9%
3	14	50.0%
M	3	10.7%
Missing	1	3.6%
Model of care		
Community based	479	70.23%
Facility based	192	28.15%
Inpatients	11	1.61%
Sector		
Public	595	86.36%
Private	65	9.43%
Other Faith Based	17	2.47%
Prisons	12	1.74%
Resistance Patterns		
MDR/RR	485	70.39%
INH Mono	157	22.79%
PDR	16	2.32%
Pre-XDR	12	1.74%
E mono	4	0.58%
Z mono	3	0.44%
XDR	1	0.15%
Missing	11	1.60%

The age group that had most cases was 35-44 years. Males were consistently more than females across all age groups.

Figure 9: DR TB cases notified in Kenya by Sex and age group in years, 2018



Treatment outcomes for Drug Resistant TB Patients, 2016 Cohort

Treatment success rate for 2016 cohort was 68%. This was a 7% decline from 75% in 2015.

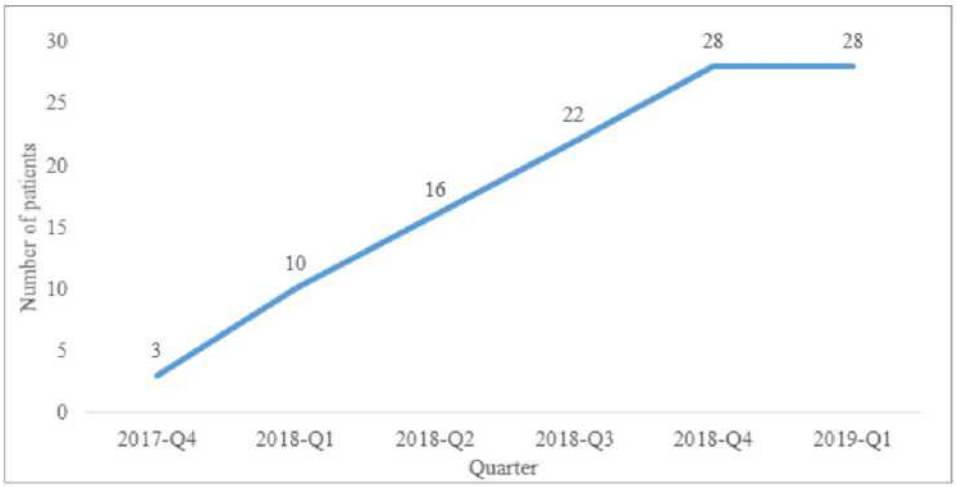
Table 5: Treatment outcomes DR TB cases in Kenya, 2016

Successful Outcomes	
Cured	38.0%
Completed treatment	30.0%
Unfavorable Outcomes	
Died	19.1%
LTFU	0.9%
Failed treatment	7.4%
Not Evaluated	4.6%
LTFU= Lost to follow up	

DR TB treatment in Kenya

The shorter term regimen (STR) was launched in Kenya in October 2017 for eligible MDR/RR TB cases. Patients who were ineligible for STR were put on individualized regimens based on a patients DST pattern and clinical profile. The individualized regimen were injection free and had the new drugs Bedaquiline and/or Delamanid as core drugs. This increased the uptake of this new drugs by 833%. With support from USAID through TB ARC activity, NTLD-P conducted County STR sensitizations in 10 high burden counties to enhance the capacity of clinical review teams at county and sub-county level on the STR and Bedaquilline/ Delamanid.

Figure 10: Number of patients using the new drugs (Bedaquiline and Delamanid), October 2017 - Dec 2018



In August 2018, WHO issued a rapid communication with key changes in the treatment of MDR/RR TB. Key among the changes was the use of safer, more effective regimens. Second line injectables capreomycin and kanamycin were no longer recommended. The use of STR was not dropped, however, Kanamycin was to be replaced by Amikacin for countries that would continue with the use of STR. Kenya decided to domesticate the recommendations and transit to the new oral regimens after PMDT TWG deliberations and discussions with experts and multiple stakeholders. A transition roadmap was developed and implementation began in September 2018. The country intends to roll out the new regimens in January 2020.

Technical assistance missions to Kenya

There were technical missions to the country in 2018 supported by the Stop TB Partnership GDF, USAID, Janssen and Janssen Pharmaceuticals and WHO joint rGLC/GDF mission.

1. GDF monitoring mission

The mission supported by GDF was carried out in the country from 26th February to 9th March 2018. The focus was on ensuring the availability of quality and sustained supply of TB medicines and diagnostics. There were visits to counties, NTRL, KEMSA, PPB, KNH and STOP TB Partnership.

2. Short term technical support to Kenya on implementation and scale up of newer drugs and STR

The mission was conducted between 25th April to 4th May 2018 with field visits to counties, NTRL, KEMSA, PPB and KNH. The purpose of the mission was for the MDR clinical consultant to provide technical support to the NTLD-P in the introduction of newer drugs within the context of the existing PMDT program. The consultant provided strategic and technical recommendations in the joint implementation of the shorter regimen, newer drugs, and aDSM through consolidated national PMDT guideline finalization, implementation planning, and capacity building via training and mentorship. The consultant was supported by USAID through TB ARC activity.

3. Janssen Situational/Gap analysis of the DR TB program in Kenya

The situational analysis was carried out in Kenya by a consultant supported by Janssen and Janssen pharmaceuticals. This was done to inform proper interventions to identified gaps. Field visits were conducted to 5 counties and KEMSA from 14th to 25th May 2018. A desk review of policy, strategies and relevant documents was carried out with the aim of identifying relevant information to inform the focus of discussions and interviews in the field, secondary analysis of programmatic data; including routine data, using the national, county and facility level data was done. Site visits and stakeholder interviews involving service providers, service users and partners were conducted.

4. WHO Joint rGLC/GDF mission

This was the first joint rGLC/GDF mission to the country. The mission was conducted from 26th November to 7th December 2018. The main purpose of rGLC was to assess the implementation of previous r-GLC recommendations and provide technical support to the NTLD-P in the DR-TB Care cascade in view of the scale up of new molecules.

GDFs missions objective included; review and updating the 2019-2020 quantification, and procurement and supply plan for TB commodities; strengthening staff capacity on the use of Quan TB for quantification and early warning system; reviewing the regulatory and importation processes; and to assess the overall PSM system for TB medicines. The mission was supported by the Global Fund with TB ARC providing technical and logistical support for the county and sub-county teams.

Description of deaths among TB patients in Kenya

Death is classified among unfavorable outcomes in tuberculosis control and prevention. High quality holistic medical and psychosocial care which includes early diagnosis, prompt treatment and post treatment support are key efforts that are required to reduce deaths due to TB by 95% by 2035. In Kenya, the set target for the proportion of deaths among TB patients in 2018 was <5%. The death outcomes analysed and described in this section are for the 2017 cohort.

The proportion of deaths among DSTB in 2108 accounted for 6.3% (5344/85, 189) while among DRTB 2016 cohort deaths accounted for 18.8% (83/441). Of the 47 counties in Kenya, 35 of them reported over 5% deaths among all forms of TB cases.

Fig 11: Trends of deaths among drug Susceptible TB Patients Notified in Kenya, 2017

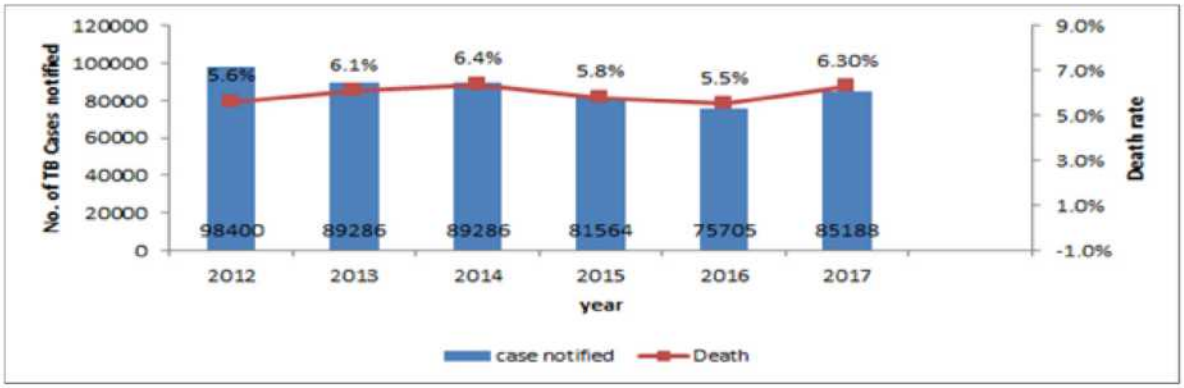
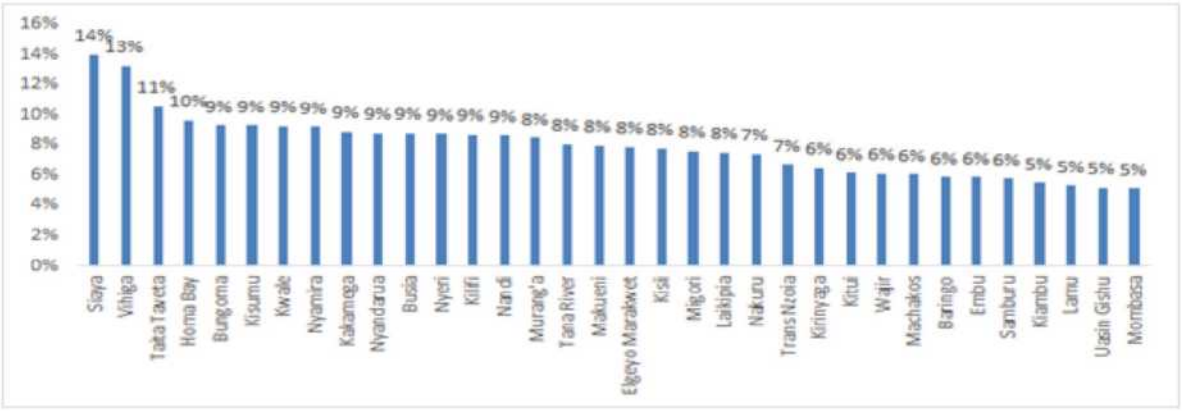


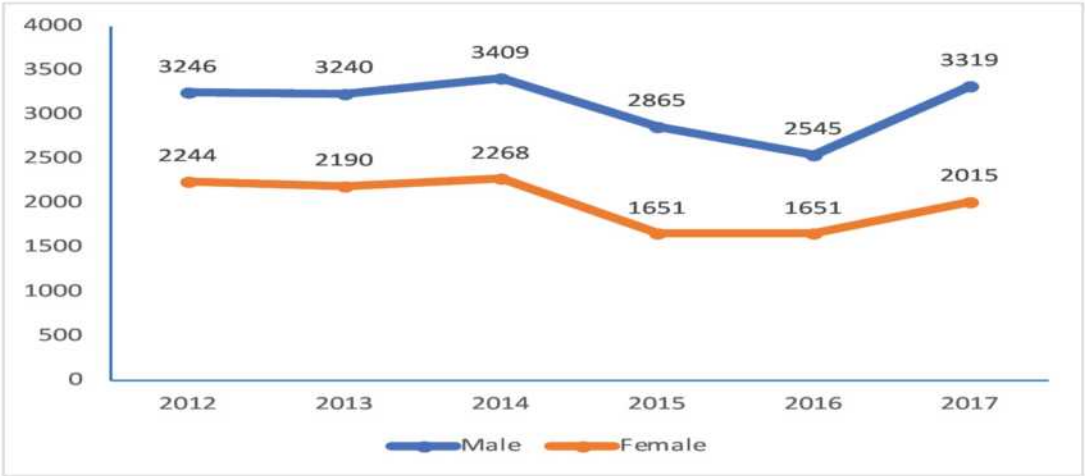
Fig 12: Counties Reporting >5% Deaths in 2017



Deaths by Sex

Males had the highest number of cases notified as well as deaths in 2017.

Figure 13: Shows the trend of death rate of TB patients by Sex, 2012 - 2017

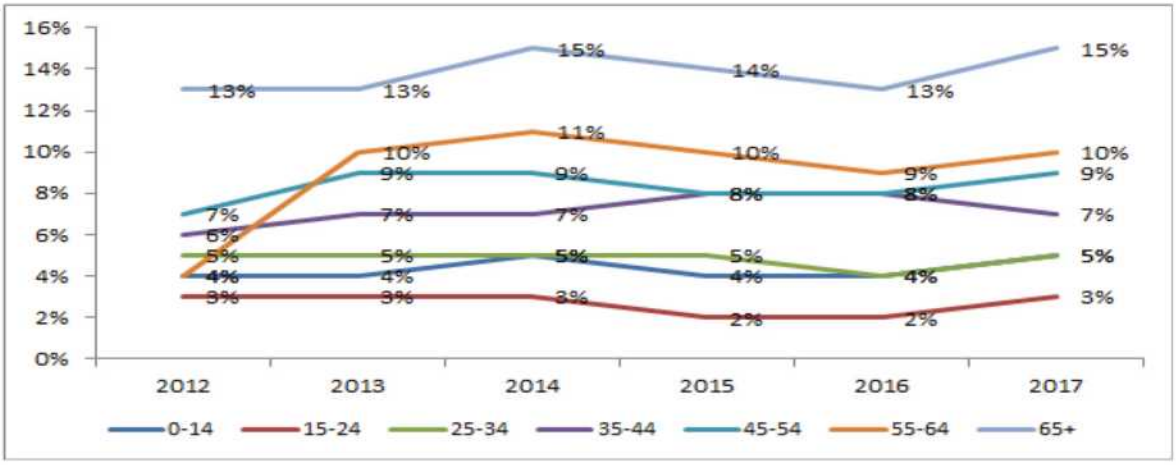


Deaths by age groups

The TB patients notified in age group 25-44 years accounted for 45% of the cases and among them 44% died. Patients aged >55 years accounted for 13% of cases notified and among them 24% died in 2018. There were 7% deaths among children <15 years of age against the 10.1% notified.

Figure 14: Pyramid comparing the distribution of patients notified by age group (in blue) against the distribution of deaths in each age category (in red), 2017.

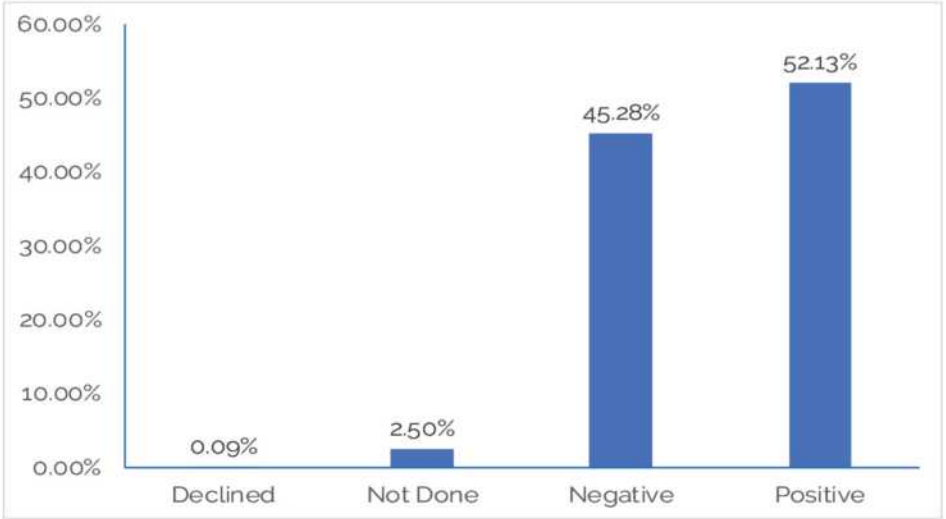
Figure 15: Trends of deaths among TB patients notified by age group, 2012-2017.



Deaths by HIV status

In 2017, TB caused an estimated 2,426 (45.3%) deaths among HIV-negative people and there were an additional 2793 (52.13%) deaths from TB among HIV-positive people.

Figure 16: Proportion of deaths by HIV status, 2017



Deaths by nutrition status

An estimated 1244 (23.8%) deaths among TB patients had normal BMI, 1255 (23.5%) were severely malnourished, 1168 (21.9%) had moderate malnutrition, 1030 (19.3%) did not have nutrition evaluation, 401 (7.5%) were obese and 216 (4.0%) were overweight. The highest proportion of deaths was among those with normal BMI

Figure 17: Proportion of TB deaths by their nutrition Status, 2017

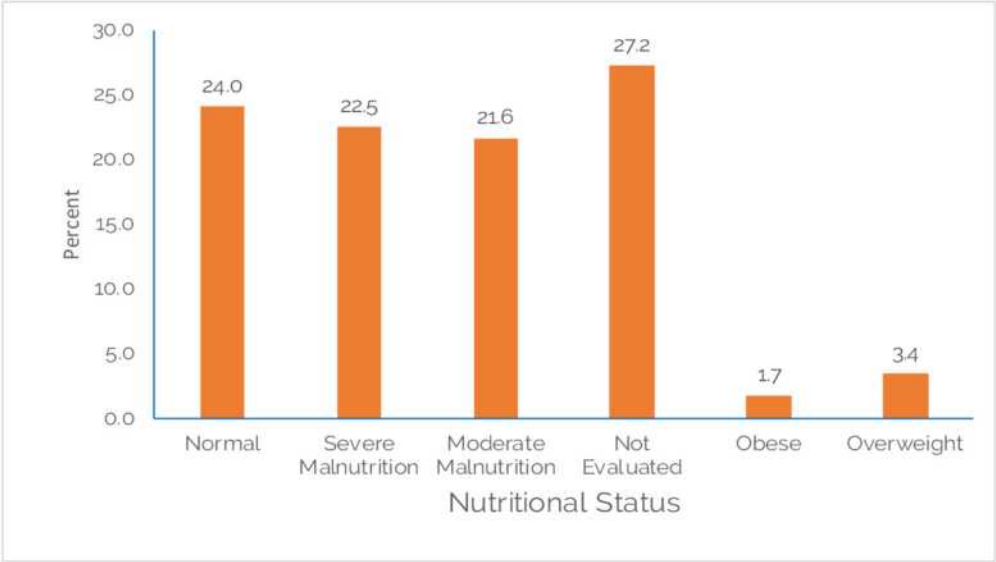
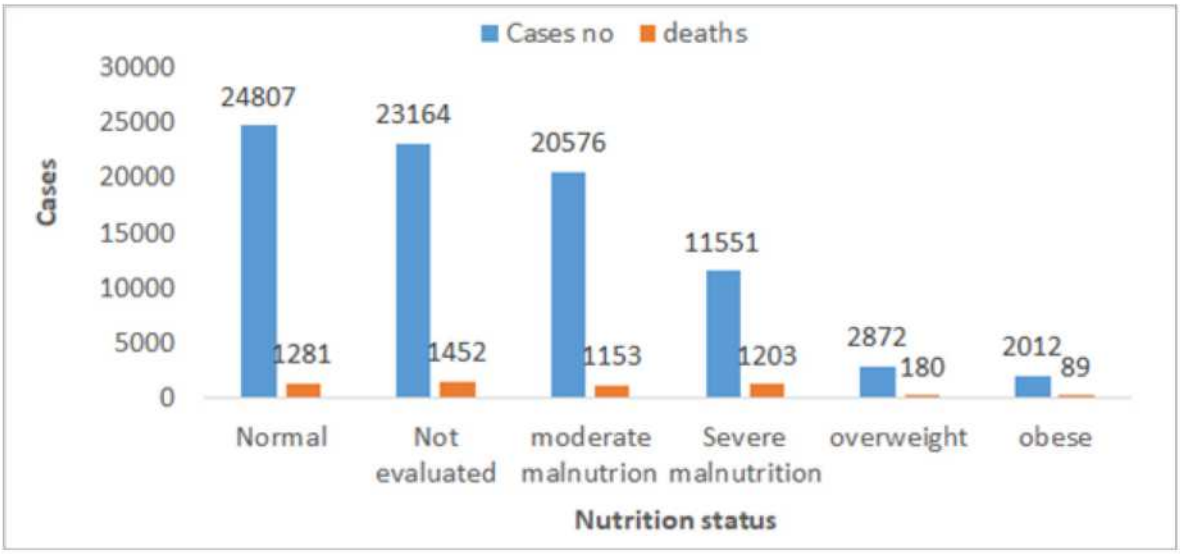


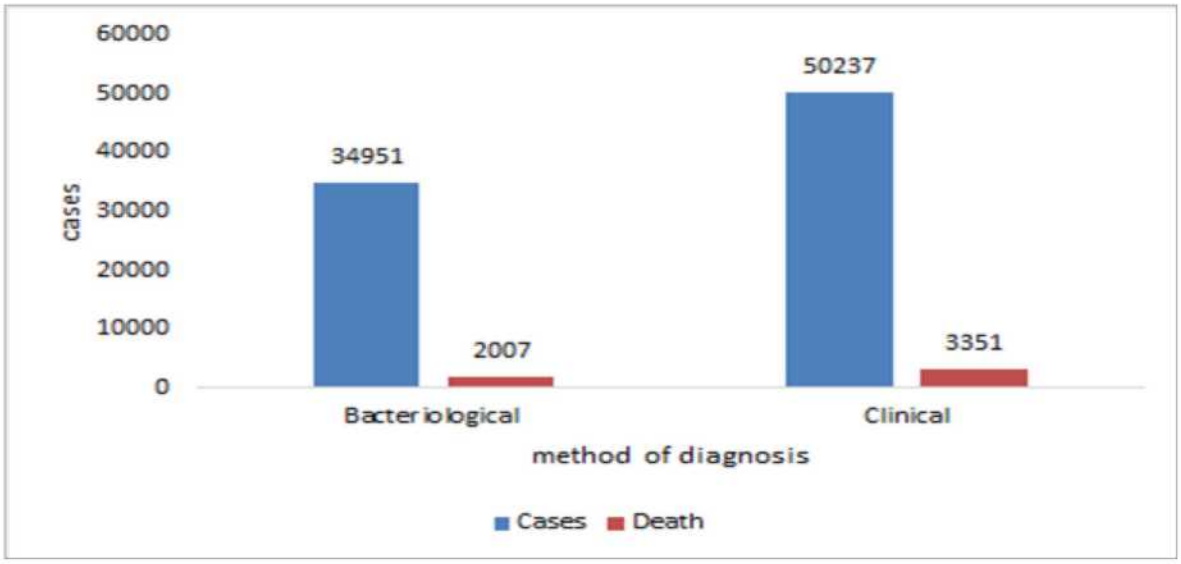
Figure 19: The Number of TB deaths by their nutrition class compared to the cases notified in 2017



Deaths by method of diagnosis

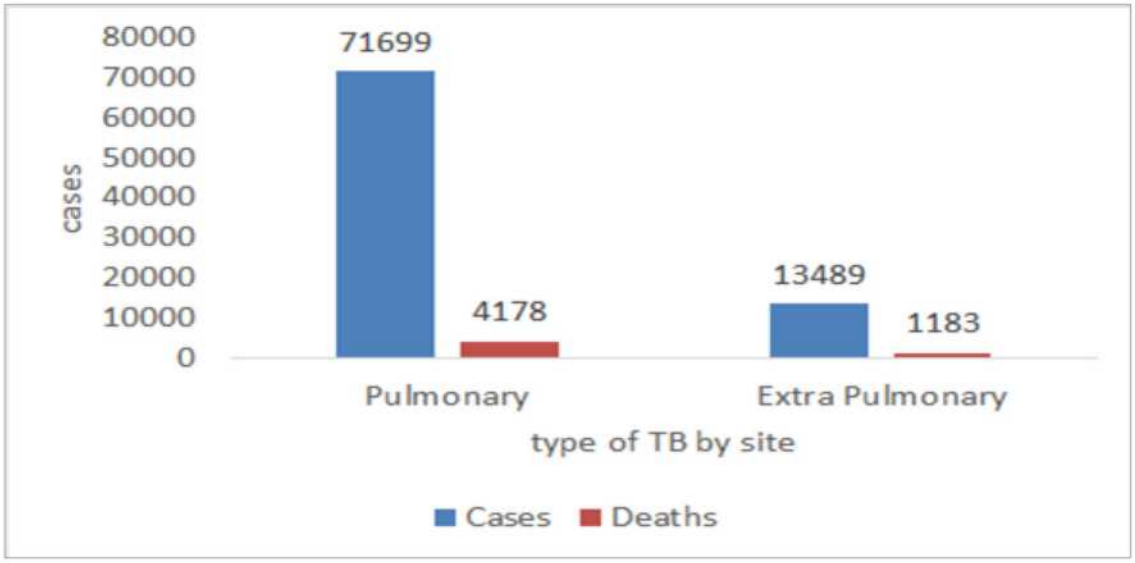
There were more clinically diagnosed TB patients, 50,237 (59%) compared to bacteriollogically confirmed, 34,951 (41%). Among the clinically diagnosed patients, 3,351 (6.7%) died in 2017 and 2007 (5.7%) deaths occured among the bacteriollogically confirmed.

Figure 20: Trends of proportion of deaths categorized by bacteriologically confirmed and clinically diagnosed, 2017



Deaths by type of TB by site

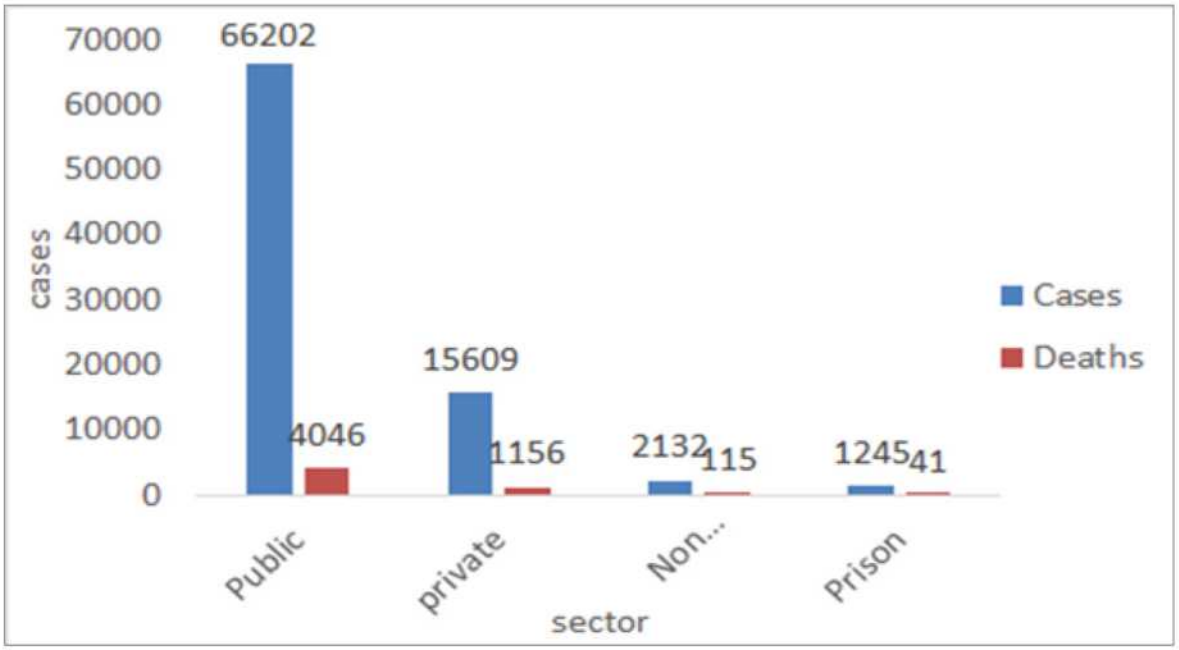
Figure 21: Shows the proportion of death by site of Tuberculosis, 2017



Deaths classified by sector contribution

The public sector contributed to the highest numbers of cases notified , 66,202 (77%) and the private sector contributed to the highest proportion of deaths, 16,609 (7.4%).

Figure 22: Deaths classified by sector contribution, 2017



2 STRATEGIES FOR FINDING MISSING PEOPLE WITH TB

Active Case Finding

Scale up of facility based ACF activities: Based on the experience from the pilot, the National Tuberculosis Leprosy and Lung Disease Program (NTLD-P), through the support of Global fund, scaled up facility based Active Case Finding (FB-ACF) to all the 47 counties. The scale up involved 2 high volume facilities from every 290 sub counties. The approach consists of a systematic screening for TB among all patients presenting to health facilities regardless of whether they present with TB symptoms or not.

Achievements

1. **Sensitization of the technical staff in NTP:** in order to build capacity among the national staff, ACF training was conducted for the NTP officers. The purpose was to sensitize the officers on ACF and build capacity to carry out training and support supervision during TA. In total, 7, 475 HCWs were trained
2. **Sensitization of the CHMT** - train the TOTs on ACF - 30 counties: Training of the CHMT is key for ownership and integration of ACF activities in the health facility. In addition, the activity is to capacity build the CHMT to carry out training for frontline HCWs. In total, 30 counties CHMTs were trained. This included the county and sub-county CHMT. The trained TOTs rolled out the ACF activities within the county and subcounty levels.
3. **Sensitization of HCWs:** The sensitization focused on frontline health care workers at county hospital and sub-county hospitals. The training focused on two high volume facilities across each sub-county. The trained CHMT members facilitated the sensitization. A total of 453 high burden facilities were supported to carry out quarterly facility ACF meeting. In addition, 141 (3 per county) linkage assistants were engaged to support facility ACF processes and given a monthly stipend.

HIGHLIGHTS OF 2018 ACHEVEMENTS

7, 475

Number of HCWs trained

453

Number of high burden facilities supported to carry out quarterly facility ACF meeting. In addition, **141 (3 per county)** linkage assistants were engaged to support facility ACF processes and given a monthly stipend

30

Number of counties where CHMTs were trained. This included the County and sub-county CHMT. The trained TOTs rolled out the ACF activities within the county and subcounty levels .

4. **ACF Technical assistance:** In order to monitor implementation of the ACF activities, TAs were conducted to 27 selected counties. It TA focused on the progress and closing the gaps identify.
5. **ACF knowledge sharing workshop:** the forum is to bring together health facilities to share experience in implementation of ACF activities. The activity was not carried out during the year under reporting and was postponed to first quarter of 2019.

Challenges in the implementation of ACF activities

System challenges: Knowledge gap and poor attitude among the health care workers on ACF. This resulted in low index of suspicion and thus leakage of ACF in the health facilities. In addition to these, incomplete documentation in the presumptive TB registers leading to leakage e.g. missing lab results was also noted during the implementation. Most of the facilities mentioned erratic supply of commodities especially GeneXpert cartridges, falcon tubes and breakdown of machine modules. Furthermore, shortage of staff and high staff turnover affected ACF implementation. In most of the counties there was Inability of patients to access X-ray services due to high cost and distance to the sites. Other notable challenges were low case finding in pediatric population based on under-utilized diagnostic algorithm and lack of skills on sample collection procedures. In addition, a bigger proportion of patients (50%) are being diagnosed clinically. Lack of support for school health programmes, missed opportunity especially out-patients who come after 5 pm are not screened because of over reliance on HTS.

Access challenges: Poor health seeking behavior of patients in the community i.e over the counter prescription, mushrooming medical clinics, religion and alternative medicine. Counties with pastoralist communities faced a challenge of sparse distribution of health facilities and vastness leading to poor access. This was worse during drought because of migration.

Community challenges: High stigma on TB among the community members and weak linkage of clients from community to health facility. Health care workers industrial action during the ACF implementation led to low turnout of patients to the facility hence reduced work load.

Recording and Reporting challenges: Shortage of ACF reporting tools-both facility summary and departmental summary tools. Poorly filled laboratory request forms affected transmission of lab results and this was cutting across the counties. Clinicians using EMR system found filling the request forms and presumptive registers cumbersome.

PPM challenges: There is limited involvement by private sector in active case finding.

Lessons Learnt

1. Sensitization of health care workers on ACF, team work and multi-disciplinary approach to ACF is the best strategy that increased the number of patients screened for and diagnosed with TB.
2. Finding missing people with TB cases is the responsibility of all cadres in the health care delivery system. The shifting of focus to screening for TB in the OPD, MCH and In-Patient department is of much importance as it is in the CCC Department.

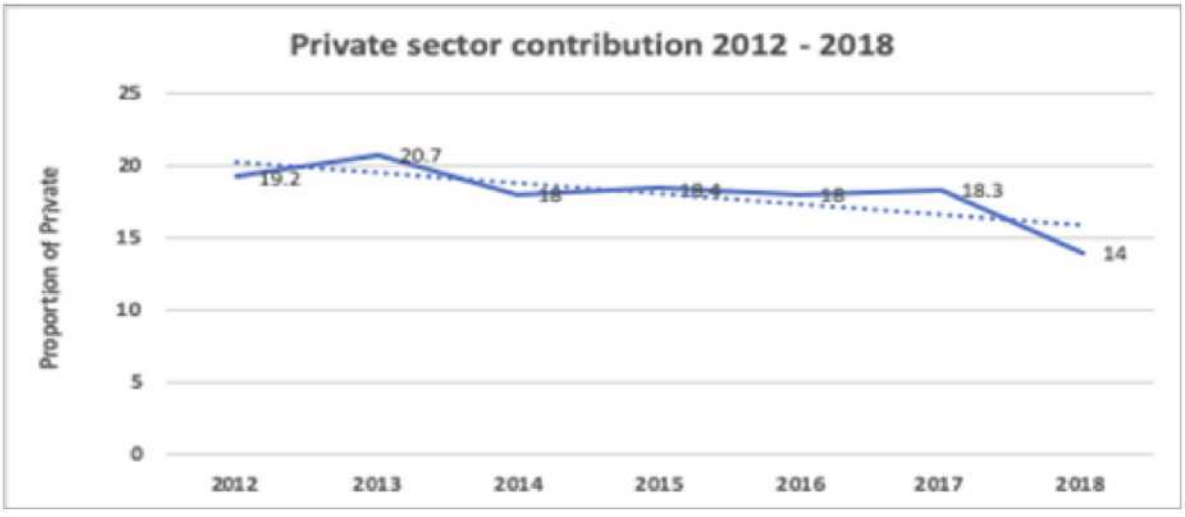
3. Presence of facility ACF focal person is key in its implementation. It was worth noting that in counties where hospital administrators, namely the medical superintendents, have been at the forefront of ACF implementation, there were impressive results.
4. Task shifting to non-technical staff (e.g. cough monitors) in the screening of patients increases the number of presumptive TB cases tested. This includes aggressive tracing of contacts for TB screening.
5. The process of ACF implementation has impacted on general Practical Approach to Lung Health (PAL) services because many cases presenting with cough and related signs and symptoms are evaluated accordingly for Tuberculosis and other lung diseases.
6. Integration of ACF questions in HMIS/EMR system is fundamental in the cascade of patient care. In counties where facilities have fully embraced automation of TB questions in the facility information management system had complete data on ACF cascade, especially capturing the number of patients screened for Tuberculosis.
7. Access to diagnostics through effective sample transportation possess excellent linkage and improve in number of patients with TB results.
8. ACSM is essential for improved ACF implementation at all levels. intensive awareness creation using mass media and local channels of communication is essential for community acceptance and ownership of ACF. There was also good experience in some counties that being proactive by creating a complementary and simplified data review mechanism provides a greater buy- in among stakeholders

Public – Private Mix (PPM)

The Prevalence Survey showed that 27% of the people with TB symptoms seek care from individual private providers while Patient Pathway Analysis which was launched in August 2018 with USAID support through TB ARC activity, showed that 42% seek initial care from private facilities.

The graph below shows trends in proportion of TB cases notified by private sector 2012-2018. A total of 2918 TB cases were notified by the private sector during the period. The treatment success rate among all forms of TB from the private sector was 84%.

Figure 23: Private Sector Contribution



PPM interventions, achievement and challenges in 2018

A. Effective leadership and stewardship of PPM through resource mobilization, active oversight/management, and coordination of PPM activities

Achievement

1. TWG in PPM representation formed. The TOR include memberships and responsibilities of the subcommittees clearly stipulated.
2. Held coordination meetings to strengthen linkages of TB initiatives between county TB teams and the diverse sectors in Mombasa, Nakuru and Machakos Counties (TB ARC)
3. The NTLD-P with USAID support through TB ARC activity strengthened engagement of corporate work places in Mombasa, Nakuru and Machakos counties. To ensure sustainability, the corporates were empowered to have workplace policies on TB with support from host counties. Sensitization meetings on how to support private sector for the county and sub-county health management teams on PPM prevention and care were also held in Meru and Kirinyaga counties attracting 59 participants.

Challenges

1. The annual PPM workplan has not been conducted as planned.
2. TWG meetings has been erratic due to competing priorities

B. Strengthening collaboration with professional associations and private sector partners

Achievement

1. Supported TB symposia held at annual scientific conferences of professional associations – KMA Scientific conference 2018 and KPA annual conference 2018. The conferences provided a platform to engage delegates to discuss issues around TB and disseminate guidelines and SOPs.
2. Engagement with Kenya Medical Association (KMA) to partner in the training of members through the KMA website and ECHO live or pre-recorded videos. An MOU has been developed.

C. Scale-up implementation of current service delivery PPM models and introduce innovative PPM models for TB care

a) **Private sector (institution and individual provider) model:** The interventions under the private sector model are aimed to improve access, equity, efficiency and quality TB care through structured and sustainable engagement of the formal private health sector.

475

Number of health care workers from private sector (big and medium level institutions) trained on TB diagnosis, case management and preventive therapy in the private sector.

197

Number of technical assistance and on-job training to private TB treatment facilities in 9 counties (Nairobi, Nakuru, Kisii, Kericho, Uasin Gishu, Kakamega, Bungoma, Migori and Kisumu)

2,257

Number of health care workers in the private health facilities screened for TB during the 2018 World TB Day (Nakuru and Nairobi). One HCW was diagnosed with TB in Nairobi.

Achievement in 2018

1. Training of 475 health care workers from private sector (big and medium level institutions) on TB diagnosis, case management and preventive therapy in the private sector.
2. Conducted 197 technical assistance and on-job training to private TB treatment facilities in 9 counties (Nairobi, Nakuru, Kisii, Kericho, Uasin Gishu, Kakamega, Bungoma, Migori and Kisumu).
3. TB Screening of 2,257 health care workers in the private health facilities during the 2018 World TB Day (Nakuru and Nairobi). One HCW was diagnosed with TB in Nairobi.

Challenges

1. Financial gap in expansion of this model which has restricted scale-up for effective implementation of TB care involving the formal sector.

b) **Scale-up the informal service provider model:** The informal service providers (ISP) in Kenya mainly consist of herbalists, drug sellers and vendors, village doctors, traditional healers and traditional birth attendant (TBA) among others. With support from USAID through TB ARC, the NTLD-P was able to engage ISPs in 7 counties. These ISPs were able to screen and refer persons symptomatic for TB for presumptive TB care with a 14.7% positivity rate among those referred.

Achievement in 2018

1. County entry meetings were conducted in Bungoma and Makueni counties. This was followed by mapping of 169 ISP of which 103 were sensitized and engaged. Sensitization and engagement was also conducted in Tharaka Nithi county for 57 ISPs.
2. Joint support supervision were conducted for Makueni and Mombasa counties.
3. Screening and referral of 359 presumptive cases (279 and 80 in Mombasa and Tharaka Nithi respectively).
4. Linkage was strengthened between identified informal providers to public health facilities, community health volunteers, and sub-county TB coordinators in Makueni, Bungoma and Mombasa.

c) **Corporate sector model:** There are a number of corporate organizations providing health services to their employees and dependents. The objective of the corporate model is to implement work-place interventions among the corporates/factories/ industries that employed poor and vulnerable groups.

Achievement in 2018

1. Workplace policy for TB was developed.
2. A high-level round table forum was held for stakeholder in the corporate sector to discuss Multi-sectoral approach towards TB control in Kenya. Representatives (44 CEOs) participated.
3. Mentorship aimed at enhancing advocacy skills and linkages for county TB teams on how to engage the corporate sector for integration of TB in the workplaces (Mombasa and Kiambu)
4. Conducted TB awareness and screening in Kiambu, Nairobi, Mombasa and Machakos counties.
5. Conducted private sector consortium in the workplace wellness programming, in 10 corporates within Nairobi and Machakos Counties.

Challenges

1. There is no corporate sector intervention planned or systematically implemented under the NSP work plan for 2015-18.
2. Weak involvement of County coordinators in corporate model of TB prevention and care.

d) **Pharmacy model:** Pharmacists are included in the array of providers, as people tend to seek medicines from them for their ailments. Strategic initiative under Global Fund is engaging pharmacist to promote identification of presumed TB cases and prompt referral to the network of NTLD providers.

Achievement

1. The process of engaging the SR to implement activities under this model was initiated in 2018 and the process has continued in 2019.

Challenges

1. Delayed in the implementation of the activities.

e) **Paediatric TB model:** Periodic consultation with the Kenyan Paediatric Association (KPA) has been only public-private partnership activities for childhood TB in the country.

Achievement:

1. Consultative meetings with KPA to design a working model for paediatric TB in 2018.

2. With USAID support through TB ARC activity, the NTLD-P was able to sensitize and engage 527 private paediatricians in 13 major urban areas (Busia, Isiolo, Kajiado, Kisii, Kisumu, Kitui, Muranga, Nairobi, Nakuru, Nandi, Nyamira, Siaya, Taita Taveta).

Challenges

1. Low engagement of paediatricians in finding missing people with TB.

f) Laboratory model: TB diagnostic services in the private sector is mainly through smear microscopy and GenXpert in the country. Linkages between public and private laboratories offering TB bacteriology services have been pursued to ensure that the TB laboratory service is quality controlled and quality assured.

Achievement

1. Availability of GeneXpert in private facilities (5 under TB Reach project and 10 under research program)

Challenges

1. There is no data to know the private laboratories involved in TB diagnosis (smear microscopy) and hence unclear how many TB cases were diagnosed by the private laboratories.

D. Enhanced quality of PPM implementation by standardising monitoring, recording and reporting of PPM activities

Achievement

1. In 2018, technical assistance missions were conducted in private health facilities. As part of integrated routine National TA activities. This includes data quality assessment to improve on TB surveillance in the private sector.

Challenges

1. Use of the standardized reporting tools in the private sector for PPM activities is weak. There is need to review the tools and customise them to the private sector.

E. Strengthened capacity building for PPM activities

Achievement

Highlighted under each model of care.

Challenges

Training on the integrated curriculum is a challenge due to the days required for the training. Need to customize the training into modules that can be adapted by private sector e.g. continuous medical education on thematic areas.

TB in prison

TB control activities were carried out in selected prisons. A total of 4 outreaches were carried out where 4557 inmates were screened for TB, 780 were presumptive and 17 were diagnosed with TB and started on treatment. A total of 6 meetings to sensitize the prison wardens on TB were carried out where a total of 180 prison wardens were sensitized. Screening of all prisoners on admission in Kenya using screening tool (PF10) ensures that all new inmates are screened before admission into the prison. In 2018, the prison sector contributed to 1.5% (1305/ 85,155) of whom 57.7% (753/1305) were bacteriologically confirmed.

3 LEPROSY

HIGHLIGHTS

109

Number of Leprosy cases notified in 2018 (CNR=0.27/100,000 population) in Kenya. Females were 43% (47/109) and children accounted for 4.6% (5/109)

25

Number of counties that reported at least one leprosy case with the highest cases reported in Kilifi and Kwale counties

87

Number of cases **(out of 109)** with Multibacillary (MB) type of Leprosy. Paucibacillary (PB) cases were **20.2%** (22/109).

Leprosy Situation in Kenya

Leprosy is an airborne disease caused by the bacteria *Mycobacterium leprae* and *Mycobacterium lepromatosis*. Kenya is classified by World Health Organization to be among countries in post elimination phase of leprosy after achieving a prevalence rate of less than 1 case per 10 000 persons in 1989. The leprosy endemic areas include Western, Nyanza, Eastern, Coast and Nairobi regions although sporadic cases are still reported in other parts of the country. Leprosy surveillance is well integrated in the health care system in Kenya. The county and sub county Tuberculosis and leprosy coordinators provide technical and supervisory role including aggregating data at the facility level and updating the case based electronic system.

Leprosy case finding

There were 109 cases notified in 2018 (CNR=0.27/100,000 population) in Kenya. Females were 43% (47/109) and children accounted for 4.6% (5/109) of the leprosy cases notified in 2018. Among the cases notified 85% (85/109) were HIV negative, 1% (1/109) were HIV positive and 21% (23/109) did not have HIV status recorded. Twenty-five (25) counties reported at least one leprosy case with the highest cases reported in Kilifi and Kwale counties.

Figure 24: Map of Leprosy Situation in Kenya, 2018

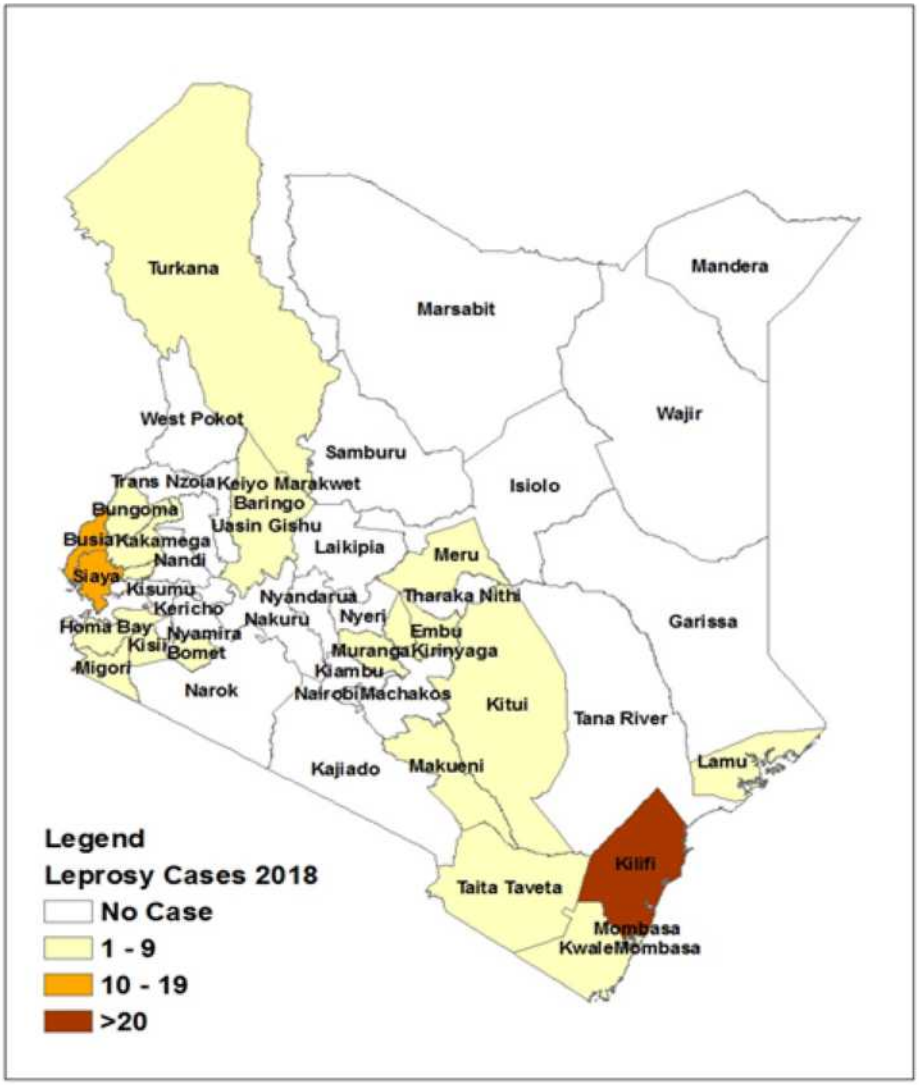
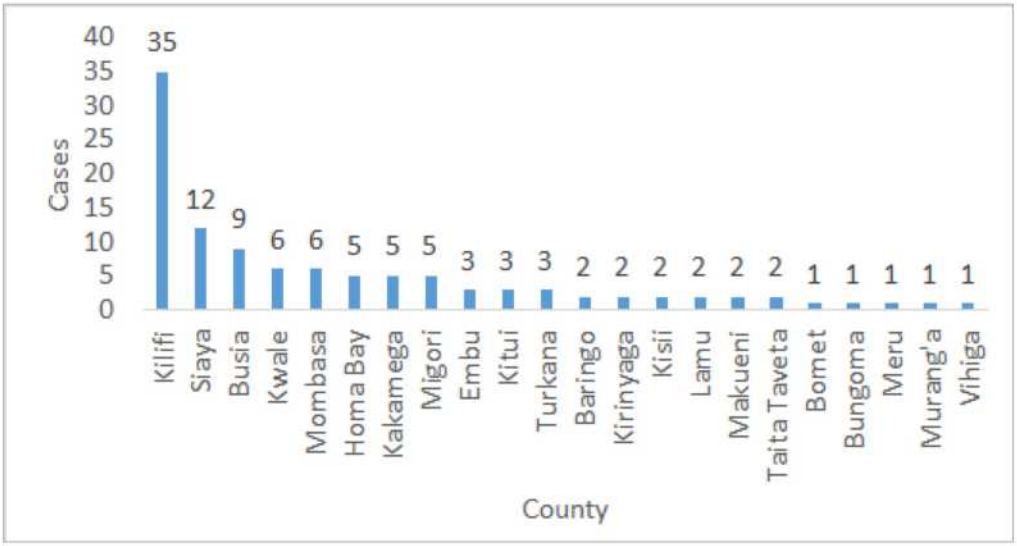
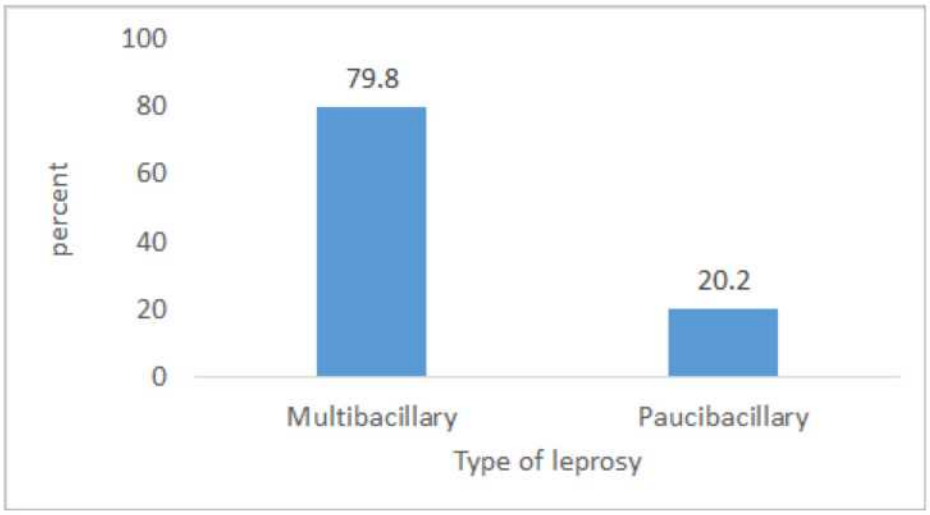


Figure 25: Leprosy case-finding in Kenya, 2018



According to the type of leprosy, paucibacillary (PB) cases were 20.2% (22/109) while multibacillary (MB) were 79.8% (87/109).

Figure 26: Proportion of leprosy cases notified in Kenya by type, 2018



Out of the patients with disability grading, patients with grade 2 accounted were 22.9% (25/109). Data on disability grading showed grade 2 disability highest in the feet (17%) and hand (17%). Out of the patients with disability grading, grade 1 was (35%) while grade 2 accounted for (17%).

Table 6: Disability grading among leprosy cases notified in Kenya, 2018

Disability grade	disability
	#(%)
0	54 (49.5)
1	27 (24.8)
2	25 (22.9)
Not evaluated	3 (2.8)


ZEISS
Primo Star
fluorescence
bright field

4 DIAGNOSTIC CAPACITY AND SURVEILLANCE OF TB IN KENYA

HIGHLIGHTS OF 2018 ACHEVEMENTS

189
Number of GeneXpert machines distributed across the country by the end of 2018.

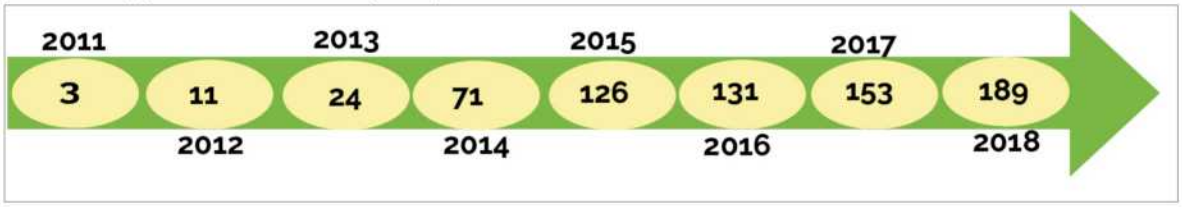
2,320
Number of microscopy diagnostic sites, a slight increase from the previous year **(2,270)** Majority of these **(1892/2,320)** were in public facilities.

74 DAYS
The average Turn Around Time (TAT) for the year 2018 days with a minimum average TAT of 68 days in the month of January 2018 and a maximum average TAT of 83 days.

GeneXpert implementation and performance

In 2011, Kenya adopted the use of GeneXpert, a molecular based technique, that greatly reduces the turnaround time for TB diagnosis and detection of Rifampicin resistance. By the end of 2018, there were 189 GeneXpert machines distributed across the country. The country has used a phased approach in GeneXpert placement as shown below.

phased approach in GeneXpert placement



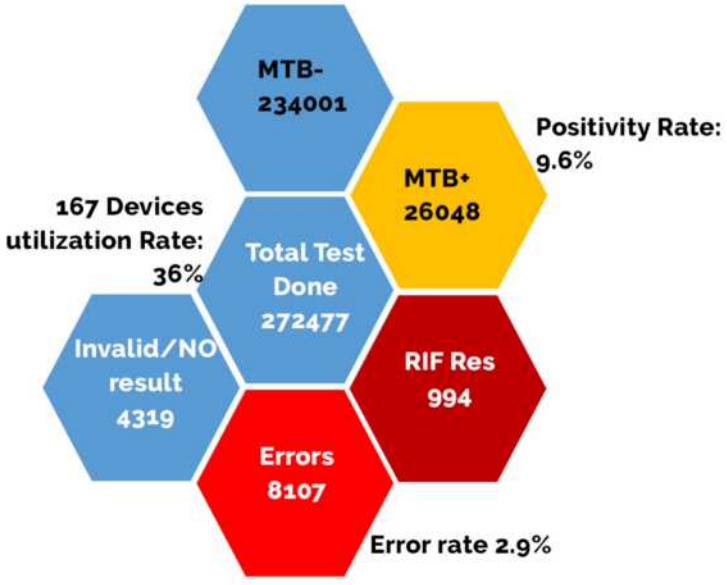
In the year 2018, the NTLD-P managed to place 26 new GeneXpert machines across the country. The criteria used for placement was on need basis determined by the average county's utilization rate. It is good to note that 5 of the 26 GeneXeprt machines were placed in private laboratories as part of the TB Reach project sites. The following table shows where these machines were placed.

Table 7: Placement of Gene-Xpert machines

Facility Name	County	Facility Name	County
Algadhir Medical Centre	Nakuru	Kiminini Cottage Hospital	Trans Nzoia
Butere District Hospital	Kakamega	Mariakani District Hospital	Kilifi
Cdc Ganjoni Dispensary	Mombasa	Moi Baracks	Uasin Gishu
Chepareria Sub District Hospital	West Pokot	Mosoriot Rural Health Training Centre	Nandi
Chepkorio Health Centre	Elgeyo Marakwet	Nazareth Hospital (Ruiru)	Kiambu
Cherangany Health Centre	Trans Nzoia	Ndaragwa Health Centre	Nyandarua
Ekerenyo Sub-District Hospital	Nyamira	Olenguruone Sub-District Hospital	Nakuru
Emuhaya Sub County Referral Hospital	Vihiga	Runyenjes District Hospital	Embu
Gatundu District Hospital	Kiambu	Sagana Sub-District Hospital	Kirinyaga
Gertrudes Childrens Hospital	Nairobi	Shalom Community Hospital (Machakos)	Machakos
Ifo Hospital	Garissa	St Mary Health Centre (Kiserian)	Kajiado
Keumbu Sub-District Hospital	Kisii	Suba District Hospital	Homa Bay
Kimilili District Hospital	Bungoma	Wamba Health Centre	Samburu

Gene Xpert Performance Indicators, 2018, in Kenya

GeneXpert machines are linked to a national web-based reporting system – GX LIMS with 167 out of the 170 machines reporting online resulting in 97% reporting rate in 2018. However usage of the system (completeness of data) stood at 45%.



In 2018, the overall GeneXpert utilization rate declined to 36% which was attributed to the following;

- Low uptake of the newly installed GeneXpert machines (26) that happened around July 2018.
- Inadequate sample transportation mechanisms from peripheral facilities to GeneXpert testing sites
- High turnover of staff resulting in challenges in reporting to the online platform
- High breakdown of GeneXpert modules in many of the testing sites
- Acute shortage of cartridges in the country between August and November 2018

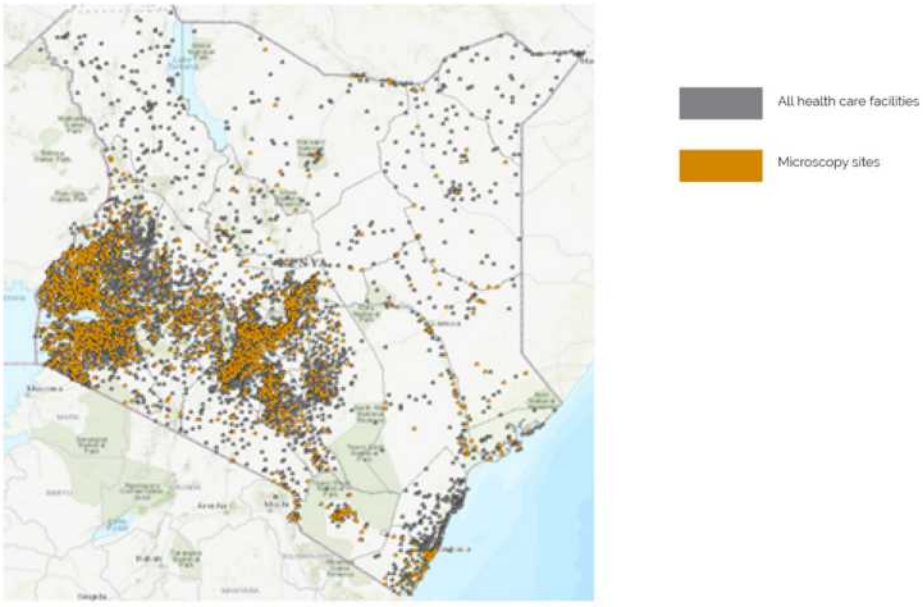
The above-mentioned causes could be mitigated by;

- Strengthening of sample networking and referral mechanisms for facilities within counties to GeneXpert sites
- Continuous GeneXpert on job training and refresher training to achieve quality results & completeness of data
- Frequent preventive maintenance of all the GeneXpert machines
- Ensure all sites report on commodities to ensure there is consistent availability of these commodities

TB microscopy services in Kenya

Sputum smear microscopy remains a common diagnostic tool in most laboratories. In 2018, microscopy diagnostic sites increased from 2,270 to 2,320, a slight increase from the previous year, the majority of these (1892/2,320) were in public facilities. The National TB Program introduced 57 additional LED Fluorescent microscopes in high volume facilities.

Figure 27: showing over 2000 TB microscopy facilities in Kenya



External Quality Assurance (EQA) Performance 2018

Sampling of slides by the CTLCs and SCTLCs has greatly improved. There was a significant improvement in quarterly EQA coverage with support from TB ARC. The error rate has remained below 5% and there is a consistent downward trend of all errors with an overall rate of less than 5%. The total number of laboratories that participated in EQA are 1,992 out of 2320 (86%), laboratories with no major errors reported were 1,792 resulting to a percentage concordance of 90%.

Trends in smear microscopy as shown below has declined due to GeneXpert test being used as an initial test for diagnosis.

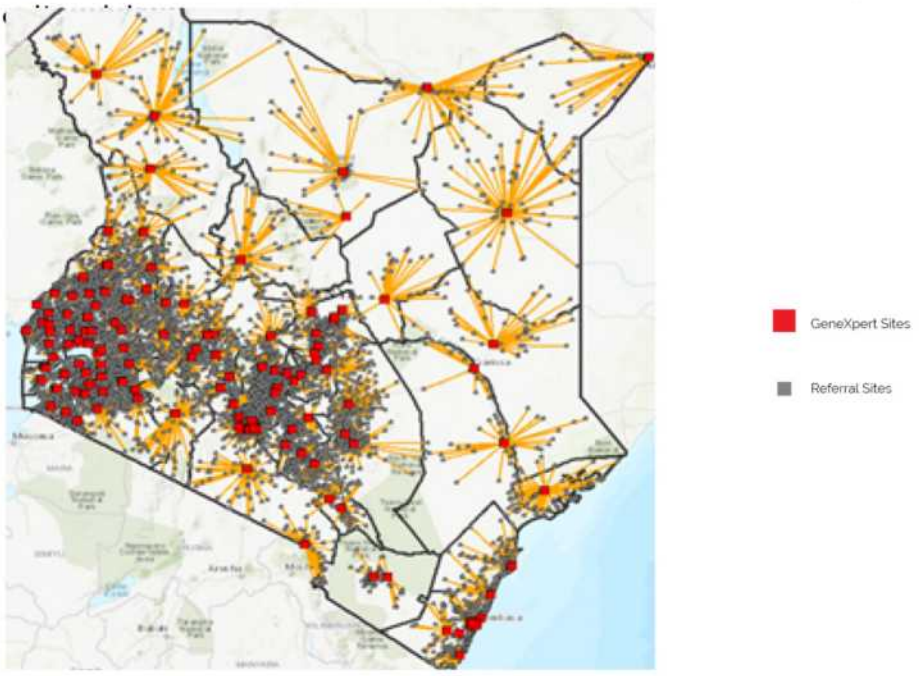
Trends in smear workload 2012 - 2018

Table 8: country smear workload in over the years

	Diagnosis	Follow-up	Total				
Year	Positives	Actual No	Negatives	Positives	Actual No	Negatives	
2012	80518	7,953	673,825	8,650	3,083	106,947	880,976
2013	65,846	5,984	556,905	6,841	2,187	79,883	717,616
2014	52,554	4,070	462,194	4,552	1,566	60,210	585,146
2015	28,923	5,916	481,420	5,646	1,700	79,216	602,821
2016	27,562	6250	492,168	6345	1561	82,809	616,695
2017	22,494	1814	231,620	2562	1222	43,186	302,898
2018	12,987	3,055	208,148	2420	2,082	47,493	256,185

Sample referral system in Kenya

Figure 28: Map showing the sample referral network to the GeneXpert sites and further to



In 2018, the National TB program in collaboration with partners (TB ARC and Aphias) have made strides to strengthen sample referral networking where peripheral labs from the counties refer samples to GeneXpert sites. Rifampicin resistant samples are then sent to the culture labs for routine surveillance of drug resistance.

Culture and drug susceptibility testing (DST)

The National Tuberculosis Reference Laboratory (NTRL) and KEMRI CDC TB culture (based in Kisumu) have a role in accelerating TB diagnosis by use of culture and DST. Their role is to perform surveillance for both drug susceptible and drug resistant TB through culture and drug susceptibility testing (DST) for 1st and 2nd line drugs. Additionally, 10377 samples from 4200 treatment facilities countrywide were transported to the NTRL for culture with USAID support through TB ARC.

KEMRI CDC TB culture laboratory based in Kisumu covers 17 counties mainly from the western region.

Figure 29: A picture showing culture slopes at NTRL

3.1 Workload in the culture reference labs in 2018

In 2018, the total number of samples received were 15,173 where NTRL received 11,993 (79%) while Kemri CDC Kisian received 3180 (21%). Out of 15,173, 89% (13,532) were cultured, while those that were tested for drug sensitivity were 3,270 (21%). Those that were identified as multi drug resistant were 152 (1%).

Figure 30: Showing distribution of workload in the 2 culture reference labs in the country
Workload at NTRL 2014 - 2018

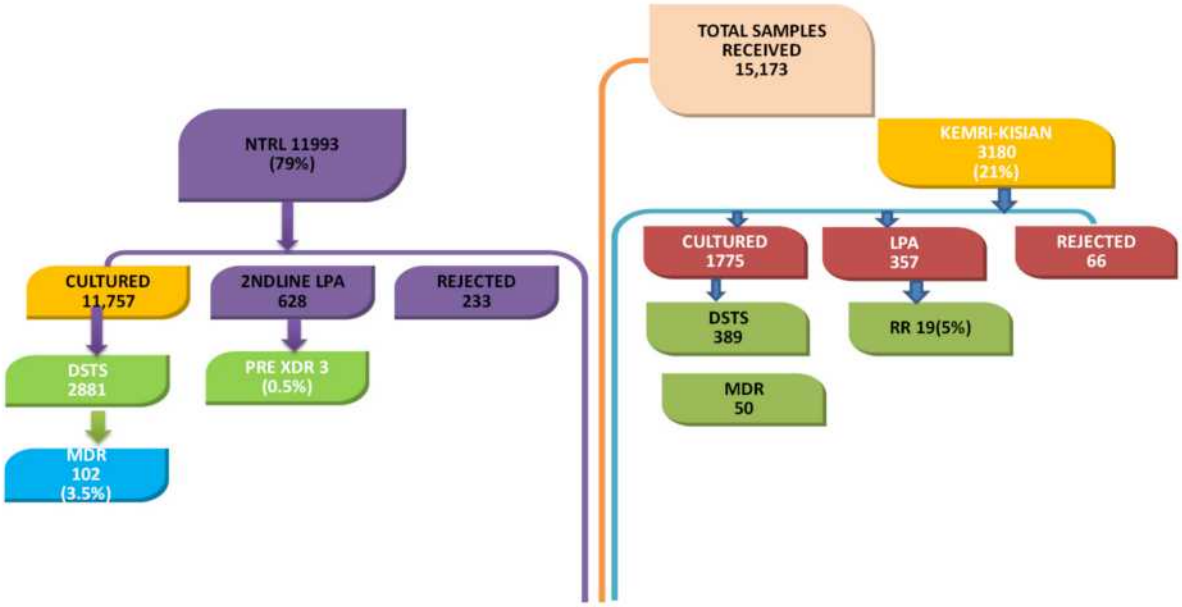
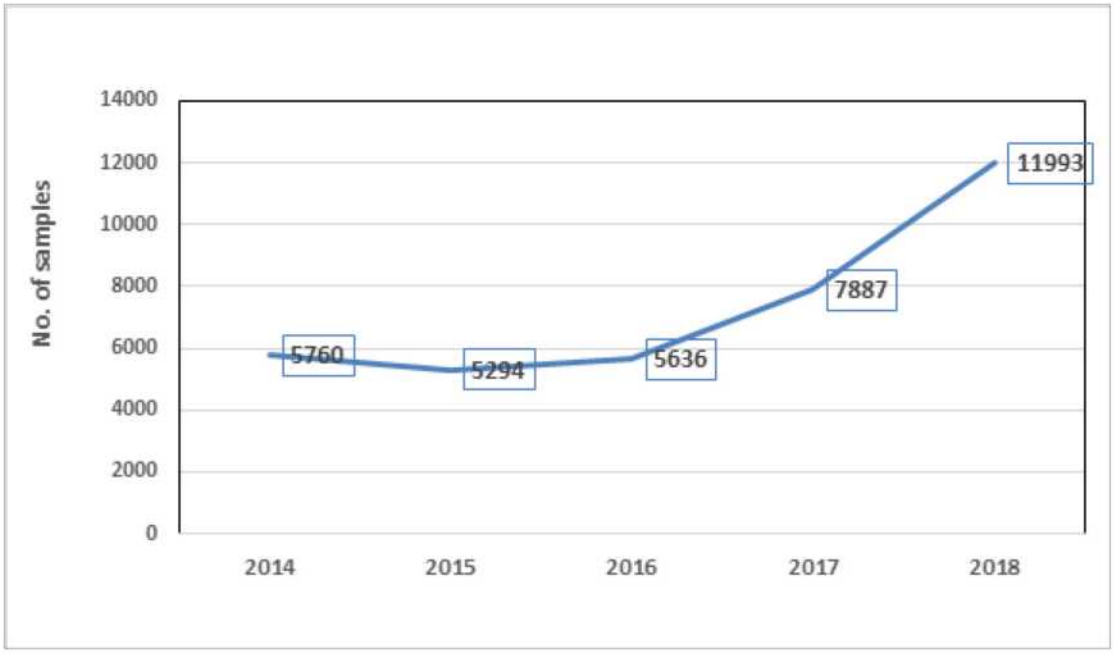


Figure 31: A graph showing gradual increase in workload in 2018

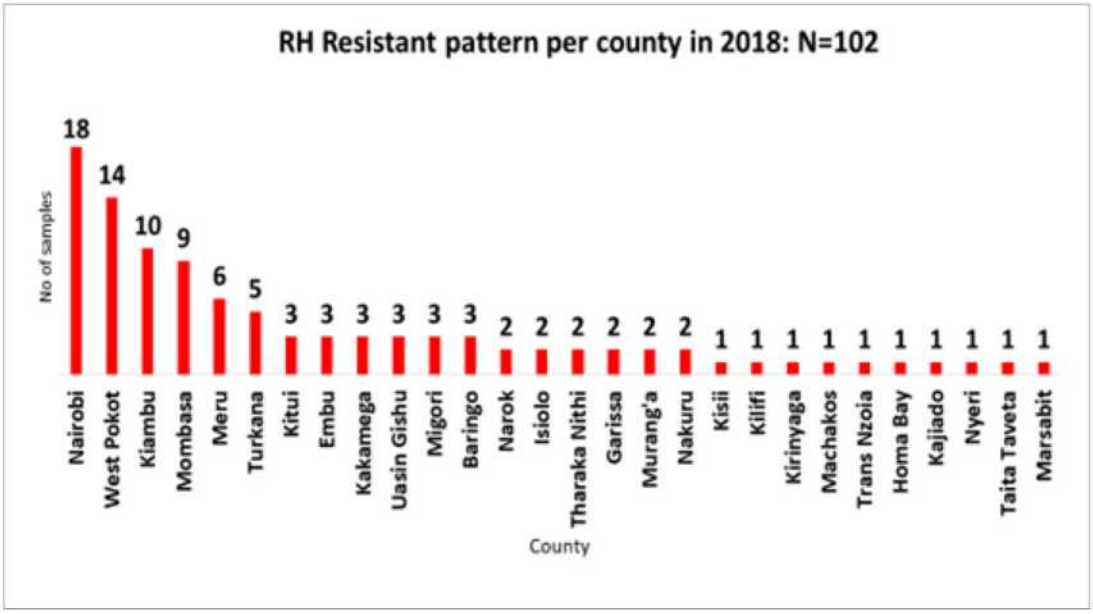


The increase in workload is attributed to improved drug resistance surveillance on early case detection among previously treated patients at NTRL

3.2 Drug resistance Patterns and Identification at NTRL

Out of all the samples submitted to NTRL in 2018, Nairobi county had the highest RH resistant patterns at 18 (17%), while Kisii, Kilifi, Kirinyaga, Machakos, Trans Nzoia, Homabay, Kajiado, Nyeri, Taita Taveta and Marsabit had 1 (0.9%) case each.

Figure 32: RH Resistant Pattern per county in 2018



Drug Resistance Patterns Analysed at NTRL 2018

Out of a total of 2,881 samples done for DST, Marsabit county had the highest percentage of INH at 67% drug resistance while Wajir, Nyandarua and Nyamira had no cases as shown below:

Figure 33: INH DST Patterns

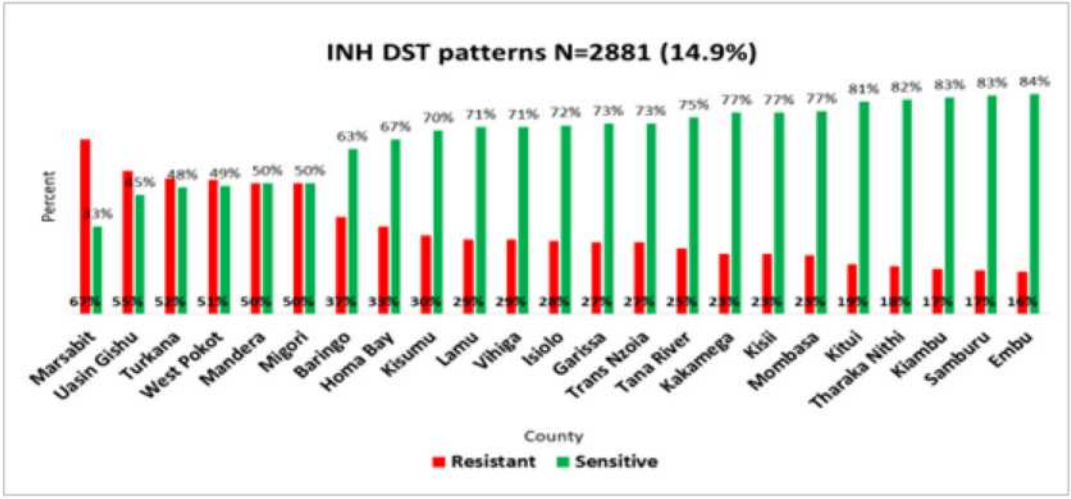
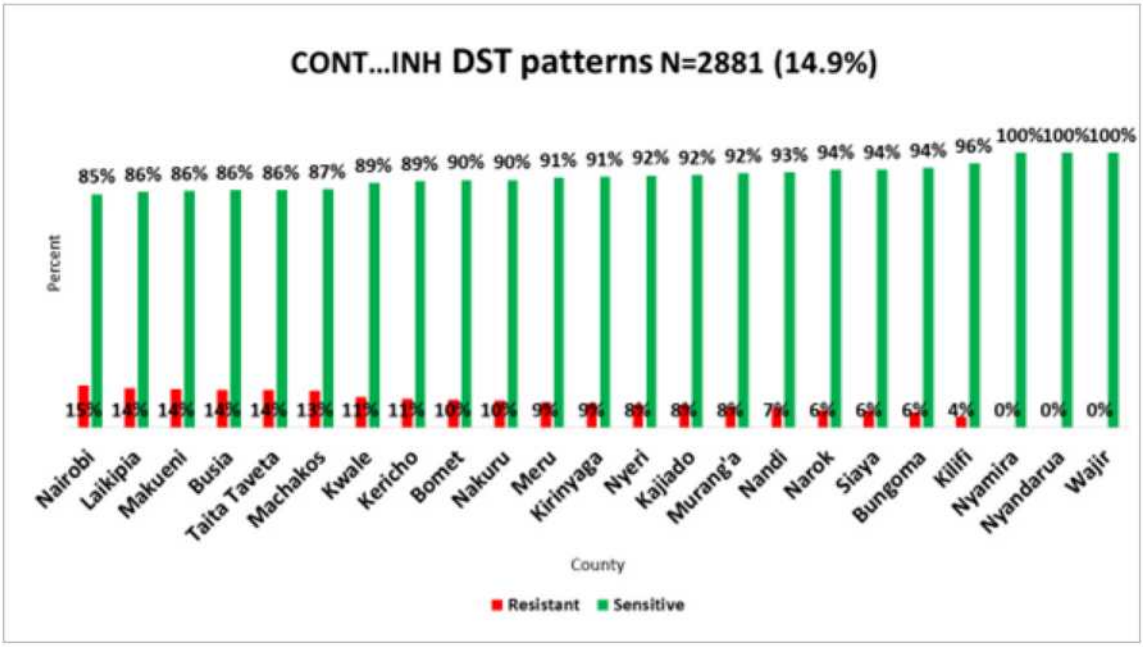


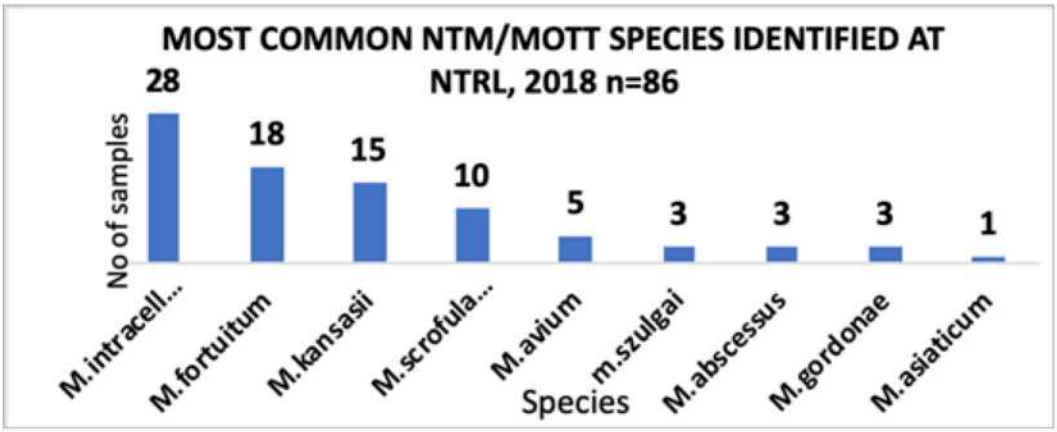
Figure 33: INH DST Patterns.



3.3Non Tuberculous Mycobacteria identification in 2018

The species from the figure below were isolated from all the samples that were submitted at the lab initially presumed to be MDR TB. The identified NTMs were the most common identified species already circulating among the general population in Kenya.

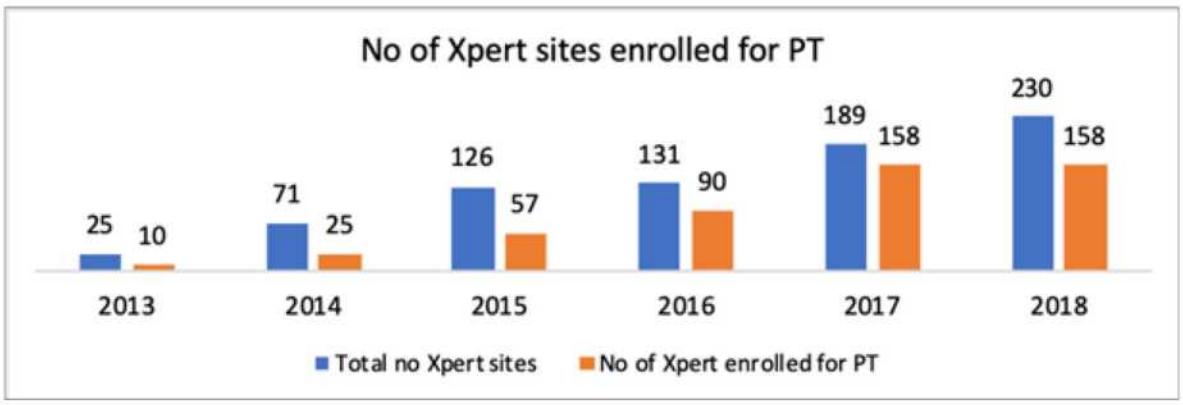
Figure 34: Most Common NTM/MOTT SPECIES IDENTIFIED



3.4Panel Testing by XPERT

The NTRL in collaboration with CDC Atlanta through the TB program started a program on EQA Panel Testing that is to be rolled out to all GeneXpert sites. This was a continuous stepwise approach process since 2013 to 2018. This shows so far NTRL has enrolled 158 GeneXpert sites with a projection of enrolling all the Xpert sites (226) in the Country.

Figure 35: Xpert sites for both public and private



3.5 Turn Around Time (TAT)

The average TAT for the year 2018 was 74 days with a minimum average TAT of 68 days in the month of January 2018 and a maximum average TAT of 83 days. The expected laboratory TAT range is a minimum of 60 days and a maximum of 90 days. The TAT observed at the NTRL was within the range as shown on the table below.

Test Menu (MON-FRI, 8.00am -5.00pm)	TAT	Comments
AFN Microscopy	<24hrs	Allspecimens (sputum & SOTs)
TB Culture -Solid culture	8 weeks 2- 8 weeks	Culture Negative Culture Positve
TB Culture - Liquid Culture	6 weeks 5-28 days	Culture Negative Culture Positve
TB drug susceptibility testing	7-14 days	MGIT DST
Molecular DST- FL -LPA Molecular DST-SL - LPA MTB spection	7 working days 7 working days 7 working days	Smear Positive All samples All samples
ISO 15189:2010 CERTIFIED		

Way Forward

1. There is an expansion plan to increase TB culture and drug sensitivity testing laboratories to other regions in Kenya, namely: Malindi, Machakos and Kitale county referral laboratories. By the end of 2018, procurement of consumables for the public health labs had commenced.
2. Strengthening sample referral system and ensuring all GXpert sites are enrolled on Panel Testing.
3. Integration of public and private facilities and linking them to sample referral hubs.


amref
health africa
MULIKA TB
MALIZA TB
SOCCER TOURNAMEN
Twaweza
2
Pesa

5 SOCIAL SUPPORT, HEALTH PROMOTION AND STAKEHOLDER ENGAGEMENT

Nutrition Situation

In 2017, the NTLD-P conducted a TB Patient Cost survey that indicated that between 27.1% and 53.7% of TB affected households experienced food insecurity due to TB. Additionally, the high costs among the DR-TB were largely attributed to nutritional supplement while among DS-TB patients, the main cost drivers in order of cost were hours lost, nutritional supplements and direct medical costs. In respect to this, all TB patients requiring nutrition interventions are provided for as demonstrated in this report.

Between 27.1% and 53.7% TB affected households experienced food insecurity to TB

Nutritional assessments for TB patients

In 2018, 40% of the diagnosed drug susceptible and 51% of drug resistant TB were found to be undernourished at the time of diagnosis.

HIGHLIGHTS

343,279

PACS of 300gm Fortified Blended Flour for treatment of TB patients with Moderate Acute Malnutrition procured by the National TB program.

KES 6,000

Stipend received per month by Drug resistant TB patients, in addition to nutritional support while on treatment.

26.5%

Percentage of Drug Sensitive TB, and **86.4%** of Drug Resistant TB affected households experiencing catastrophic costs *(TB cost survey 2018)*

Table 9: Nutrition status of drug susceptible TB patients in 2018

BMI Classification			Food Support	
	Number	Proportion	Number	Proportion
Normal	32,406	34%	2,640	8%
Moderate Acute Malnutrition	24,318	25%	11,627	48%
Severe Acute Malnutrition	14,241	15%	8,409	59%
Overweight	4,150	4%	318	8%
Obese	3,474	4%	566	16%
Not Evaluated	17,889	19%	4,711	26%
Total	96,478		28,271	29%

Table 10: Nutrition situation of DR TB patients in 2018

BMI Classification			Food Support	
	Number	Proportion	Number	Proportion
Normal	264	38%	92	35%
Moderate Acute Malnutrition	201	29%	144	72%
Severe Acute Malnutrition	152	22%	134	88%
Overweight	24	3%	7	29%
Obese	23	3%	5	2%
Not Evaluated	25	4%	4	16%
Total	689		303	44%

Table 11: Nutrition situation of children 2018

BMI Classification			Food Support	
	Number	Proportion	Number	Proportion
Normal	1,021	10%	353	35%
Moderate Acute Malnutrition	325	3%	140	43%
Severe Acute Malnutrition	903	9%	455	50%
Overweight	510	5%	171	34%
Obese	1,555	15%	353	23%
Not Evaluated	5,737	57%	1,918	33%
Total	10,051		3,390	34%

Activities carried out in 2018

Procurement: The National TB program procured 343,279/Pacs of 300gm of Fortified Blended Flour for treatment of TB patients with Moderate Acute Malnutrition

Distribution: Nutritional supplements feeds were distributed across all the 47 counties to all the deserving patients with KEMSA as the pipeline for both procurement and distribution.

Gaps

There are no trainings on nutrition in TB across counties based on needs assessment report therefore need for more training at least 2 per county to improve on service delivery. The first trainings focused mainly on the managers therefore need to train the health service providers in the TB sites to improve patient management.

Designed strategies for sustainability

a) Advocating for funding of nutrition activities through program

b) Continued OJT and mentorship through integrated work plan

Social Protection and Human rights

Social protection

In 2017, Kenya's NTLD-P conducted a TB patient cost survey which showed that 26.5% of DS-TB and 86.4% DR-TB affected households experience catastrophic costs. The median total cost borne by patients seeking diagnosis and treatment per TB episode was KES 25,874.00 and Kshs 145,109.53 for DS-TB and DR-TB respectively (TB Cost Survey, 2017). A dissemination meeting for the findings was held on 8th and 9th May 2018 in Nairobi. The meeting sought to engage key stakeholders, secure political commitment and inform the development of a national action plan to eliminate TB patient costs.

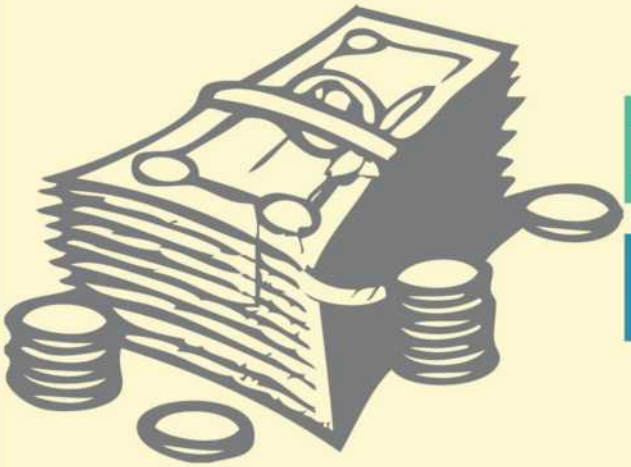
KES 25,874

The median total cost borne by patients seeking diagnosis and treatment per TB episode by **Drug Sensitive TB** patients (TB Cost Survey, 2017)

KES 145,110

The median total cost borne by patients seeking diagnosis and treatment per TB episode by **Drug Resistant TB** patients (TB Cost Survey, 2017)

Proportion of TB affected households incurring catastrophic costs due to TB



DSTB 26.1%

DRTB 86.4%

Following the findings, 'Kenya Social Protection Policy for Tuberculosis and Leprosy Patients 2018' was developed. The policy is aimed to reduce the proportion of affected families who face catastrophic costs due to TB and leprosy. The policy recognizes that social protection needs to be an integral part of TB and leprosy prevention and care to achieve zero catastrophic cost to TB and Leprosy patients. The comprehensive integrated social protection measure highlighted include: cash transfers, food assistance, health insurance and advocacy of social security legal frameworks that cover both formal and informal workers.

WHO urges all the 30 high TB burden countries to increase service coverage and reduce levels of catastrophic expenditures in order to reach UHC. NTLDP began enrolling all DRTB patients to the National Hospital Insurance Fund (NHIF) scheme in 2017 and 619 newly diagnosed drug resistant TB patients were enrolled in NHIF social support by end of 2018. Additionally, 832 DOT workers were supported to conduct DOT while 1,184 patients received cash transfer of KES 6,000 and through AMREF.

NHIF

689
Number of patients **eligible** for NHIF support

310 (46%)
Number of patients **on** NHIF support

1,184
Number of DRTB patients receiving **KES 6,000** cash transfer

832
Number of DOT Workers supported in 2018

Human Rights

Global strategies and key actors in the global TB response have explicitly acknowledged that reducing human rights-related barriers to TB services is essential to realizing TB goals. The global End TB Strategy includes protection and promotion of human rights, ethics and equity as one of its central principles towards ending TB. The NTLDP in partnership Amref Health Africa through the Global Fund (GF) support conducted sensitization of 76 lawyers on Tuberculosis and human rights in the months of November and December 2018. The sensitizations were done in three regions: Eastern/Nairobi, Coast and Western/ Nyanza. The aim was to sensitize legal practitioners on TB, the law in regards to TB and related human rights in order to influence and increase legal services for TB related issues in Kenya.

Universal Health Coverage (UHC)

The Kenyan government is committed to implementing Universal Health Coverage (UHC) as one of the Big Four agenda. UHC means that everyone – irrespective of their living standards – receives the health services they need without any financial hardship. This will ensure that all individuals and communities in Kenya have access to the quality essential health services they need without suffering financial hardship. Towards reaching this, the WHO urges all the 30 high TB burden countries to increase service coverage and reduce levels of catastrophic expenditures to reach UHC, consistent with findings from surveys of costs faced by TB patients and their households. Currently, TB services are covered under the primary health care services and further discussions are ongoing to ensure inclusion of all TB services in NHIF benefit package.


PATIENT PACK
ANTI - TB DRUGS

6 SUPPLIES MANAGEMENT AND PHARMACOVIGILANCE

HIGHLIGHTS OF 2018 ACHEVEMENTS

31

Selected subcounty stores renovated to modern storage requirements with ambient technology to maintain steady humidity and temperature conditions.

12

Commodity Security Committee meetings held in 2018

TB-Commodities Stocks Situation Analysis in 2018

Generally, 2018, NTLD-P commodities did not experience interrupted supply of TB medicines. This was due to efficiency of management structures.Thus the monthly commodities security meeting, CSM, and National Order Management team, NOMT, and tools for early warning systems.

Perfomance indicators:

- Zero percent out of stocks.
- Zero percent expiries.
- Hundred percent order fill rate.
- Hundred percent reporting rate with highest quality of the reports.
- Hundred percent detection and reporting of Adverse drugs reactions and

Accomplishments for this reporting period:

- Hundred percent regular monthly commodities security meetings with monthly outputs in form of reports and management actions points.
- Utilisation of the tools for monitoring and evaluation of commodities status.Thus the Quan-Tb tools and the 2-pager dashboard analysis.
- Monthly NOMT-TB meetings to rationalize all the medicines ,Nutritional and laboratory consumables orders and map a distribution plan with key deliverables being a distribution memo and NOMT report.
- Annual F&Q.
- Migration from LMIS reporting platform to DHIS reporting platform,that receives all the requisition orders from the facilities.

Stock monitoring and early warning systems tools:

Monthly of Quan-TB dashboards projections and 2-pager were introduced into our commodities security meetings as prerequisites for our monitoring.

- Our partners Clinton health Access Initiative (CHAI) have taken the role to support in development of monthly 2-pager report for the TB program.

DR-TB commodities and supply chain :

The program through collaboration with KEMSA, adopted a 48 hrs TAT for distribution of STR medicines

Policy guidelines in commodities:

- The program updated Kenya`s DR TB treatment guidelines in line with the August 2018 WHO rapid advice on DR TB treatment that will be effectively followed up by the expected WHO guidelines.

- Likewise, the program adopted the commodities input into TB national strategic plan for 2019-2023 aligned to the country's commitment at the United Nations High Level Meeting (UNLM) on TB of September 2018.

Procurement and distribution:

- NOMT-TB unit under commodities section was responsible for coordinating supply chain management of the NTLD-Program's commodities to provide uninterrupted supply of medicines as well as laboratory consumables, Nutrition, Xpert commodities.
- The key outputs of these meetings were monthly reports and distribution memo to KEMSA.

Commodity Security meetings:

A functional TB commodity security committee is in place at the national Level. This reporting period, we achieved 100% of the target meetings.The commodities security meetings occurred each month with at least 35 participants cutting through all the departments of commodities managers with our supporting partners.

- They are supported by Global fund for teas and lunches.The key outputs of these meetings are monthly minutes and approved dashboards alongside 2-pager reports with management actions.
- The meetings were held the first 2 weeks of each month from January 2018 to December 2018. 12 meetings in total in 2018.
- The committee provided an oversight role in the implementation of TB commodities management activities including monthly stock status monitoring, forecasting and procurement planning
- There has been a vast improvement in management of procurement, warehousing, and reporting through the monthly Commodity security Committee and National Order management team.

- This committee reviews the NTLD-Program's commodity status on a monthly basis and uses it for planning, decision-making and management actions points. The information is shared with the National Government, KEMSA, Counties, Global Fund and partners in the form of a dashboards and Monthly meeting Minutes.

NTLD-Program Forecasting, Quantification and Procurement Plans:

- These workshops achieved 100% of the targeted meetings target.
- Annual forecasting and quantification was conducted to determine the country's commodity requirement with biannual reviews to consider emerging issues.
- This exercise involved the use of Quan TB software, in quantification of the NTLD-Program's requirements (2018- 2019) for medicines and laboratory commodities.
- The forecast advised the quantities to be procured by the program while identifying sources of funds to support the procurement.

Quality Assurance for TB Medicines

- The NTLD-Program carried out joint post market surveillance in collaboration with the Pharmacy and Poisons Board (PPB),NQCL, NASCOP ,KEMSA and the Malaria Control Program
- Sampling was carried out and submitted to the National Quality Control Laboratory for analysis

DHIS Reporting Platform

- 100% facilities have migrated to DHIS-LMIS Platform.
- There has been an improvement in completeness, timely and quality reports.

Monthly Commodities Reporting rate.

- In 2018,there was a steady stable reporting rate at 87% that rested at 90% by September the same year.

Figure 36: National TB reporting rates

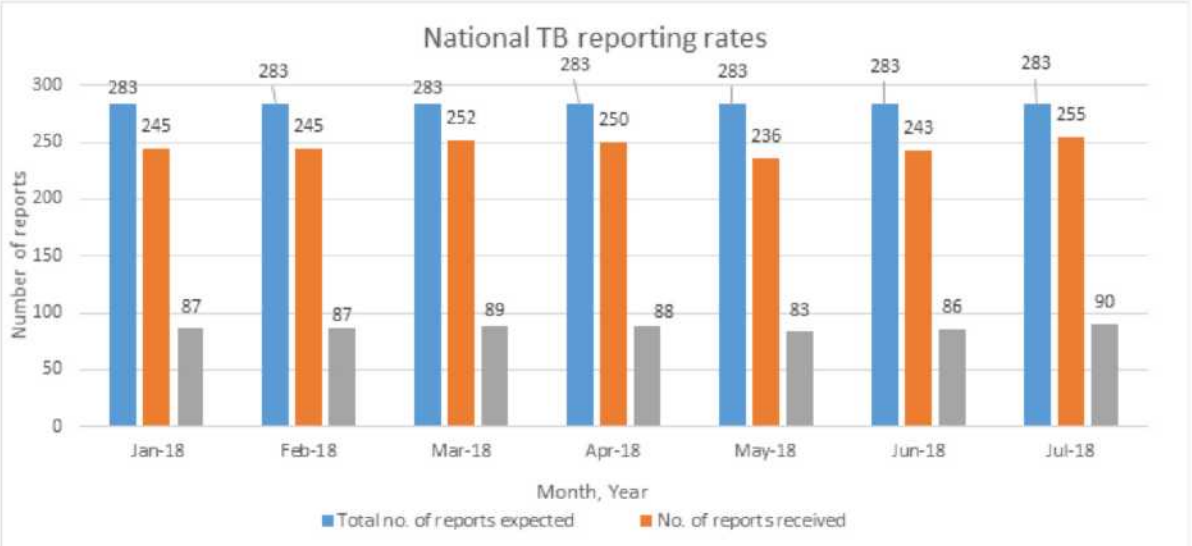
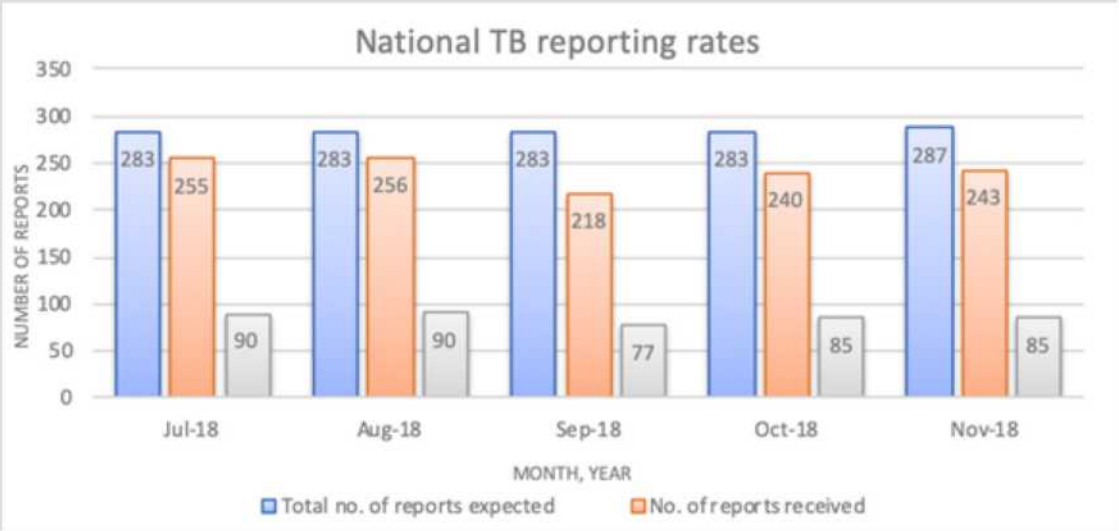


Figure 36b: National TB reporting rates



Note:

- Missing data sets in DHIS reporting tool continues to affect the overall reporting.
- Varying dates reporting timelines in both Excel and DHIS i.e. 10th and 15th.
- TB expected reporting sites increase from 283 to 287.

Storage and distribution achievements

- The country successfully transitioned the distribution of STR patient treatment packs from the
- NTLD-P to KEMSA, while maintaining the 48-hour turnaround time from notification of a new Patient to delivery of the required medicines to any part of Kenya.
- Global fund allocated funds to support in storage capacity in subcounty stores through AMREF. 31 selected subcounty stores were renovated to modern storage requirements with ambient technology to maintain steady humidity and temperature conditions.

Order management

The online TB medicine ordering and reporting module of the DHIS2 platform is now up and Running. Facilities can now submit medicine requests directly to DHIS2 for the Order Management Team (NOMT) to review and take appropriate action for immediate resupply.

No facility-level stock outs of TB medicines have been reported for nearly the whole of 2018, although some facilities had low stock levels of selected medicines.

Pharmacovigilance/aDSM Achievements

- A PMS strategy and protocol was developed and undertaken for TB medicines, antiretroviral, antimalarial and Antibiotics.
- An active drug-safety monitoring (aDSM) plan is in place, a roadmap and framework were completed.
- The program introduced ADSM as a standing agenda in thePMDT TWGs meetings. program has also integrated ADSM as a principal section in enhancing quality of care in the roll out of 11 CoEs for TB in the country.

Joint GDF/GLC Mission

The key objectives of the mission were to:

- Review and update the 2019–2020 quantification and procurement and supply plan for TB
- commodities (medicines and diagnostics), aligned with country policy decisions in response to new WHO rapid guidance on MDR-TB treatment and latent TB infection (LTBI) therapy;
- Strengthen capacity of the new procurement and supply management (PSM) staff, other TB programme staff and partners on how to use the Quan TB tool for quantification and as an early warning system (EWS) for TB, as well on GDF procurement procedures aiming to prevent stock outs and expiries in country;
- Assess/review along with the National TB, Leprosy and Lung Disease Program (NTLD-P) and partners the regulatory and importation processes, and discuss options to ensure timely access to quality-assured TB medicines and diagnostics;
- Assess the overall PSM system for TB medicines, including the patient and stock-related data collection systems, identify workable solutions, and note areas that require further capacity building and ongoing technical support

Recommendations

1. Conduct bi-annual supply chain indicator-based TB supply chain reviews identify and mitigate stock management challenges by:
    - Collecting/monitoring pharmaceutical supply chain indicators
    - Building capacity for management of TB medicines.

2. Institute early procurement to avert stock outs
    - Update Quan TB file monthly /quarterly with actual data
    - Initiate procurement or actions in line with outputs of the EWS.
3. KEMSA should fast-track the update of the procurement manuals to extend use of framework contracts for procurement of the TB commodities to reduce the procurement lead time and shipment scheduling to reduce stock piles.
4. The NTP need to institute reporting of patient per regimen during quarterly country/sub county TB review meetings so that the trend can be available to inform decision making and for quantification review meetings.
5. Institute a functional mechanism for the continuous engagement of the County and Sub/County Pharmacists to improve integration of TB commodities management into the routine supply chain.
6. Work with the CTLCs to transition all facilities to the new LMIS tools (DAR, R&R, etc) to improve quality of logistics data and conduct required capacity building.

Challenges experienced /gaps in commodities and Supply chain Section

1. Lack of funding for commodities management activities.
2. Pharmacovigilance reporting and ADSM activities still dormant due to lack of funding for coordination and mentorship.
3. Quality of data from facilities still wanting due to inadequate supply chain audits and data mentorship trainings.

7 HEALTH PROMOTION, COMMUNITY AND STAKEHOLDER ENGAGEMENT

Introduction

The Prevention, Health Promotion and Community Engagement Section, is charged with responsibilities of Advocacy, Communication, Social Mobilization and Community Engagement.

In 2018, the section received additional staff to strengthen its capacity in advocacy, communication, community engagement, infection prevention, school health and health promotion. The PHP and Community Engagement section works closely with other stakeholders namely Amref Health Africa in Kenya, CHS through TB ARC, Stop TB Partnership - Kenya, KELIN, AHF, KAPTLD, KANCO, World Health Organization, Kenya Country office and County governments among others.

Advocacy

a) High Level Meeting & Resource Mobilization

The NTLD-P has been engaging the Stop TB Partnership-Kenya in advocacy for increased resources for TB prevention, treatment and care in line with the Program's Strategic Plan 2014/2018.

- One of the strategies has been to engage Members of Parliament in TB advocacy for increased resources. The Stop TB Partnership mobilized MPs to increase their commitment towards Ending TB Kenya, in with the global strategy to end TB by 2035.
- Kenya, joined the rest of the world in September 2018 for the UN High Level meeting New York, where His Excellency the President committed the country to ending TB by 2030, in line with Kenya Vision 2030 and Sustainable Development Goals.

HIGHLIGHTS

5,309
Number of CHVs Sensitized on Tuberculosis

50
Number of county-based journalists from far to reach areas trained by NTLD-P on TB coverage and reporting.

SEPTEMBER 2018
When Kenya joined the rest of the world for the UN High Level meeting in New York, where His Excellency the President committed the country to ending TB by **2030**, in line with Kenya **Vision 2030** and Sustainable Development Goals.

b) Stop TB partnership - Kenya: Engaging elected leaders & former patients in TB advocacy

STP-Kenya through TB ARC support has been able to conduct the following activities;

- STP-K mobilized and organized a Civil Society update and capacity building meeting with 30 members of different local CSOs in the Country- Useful for building capacity of the advocates on matters TB as there a new advocates and patient representatives present.
- Advocacy in collaboration with several CSOs against the detention of a minor DR TB patient and levying charges on DR-TB inpatients in the KNH Isolation ward- Protest letter endorsed by several CSOs written to KNH management and copied to NHIF CEO, CS Health, DMS Health, and Head NTLD-P- As a result CEO AMREF Dr Githinji Gitahi offered to buy the oxygen concentrator for patient Joyce.

Recruitment and development of 3 new advocates done;

- Jerop Limo
- Angela Munene
- Joyce Wangeci's mother

Engaging the Parliamentary Health Committee in TB response during a Breakfast meeting in line with the WTBD theme: Wanted: Leaders for a TB free world: You can make history-10 MPs attended including Esther Passaris- Nairobi Women's Representative

Communication

The unit has been able to strengthen and integrate digital media which is part of communications plans of NTLD-P. The website has been active and up to date with current TB resources and information. Social media continues to drive much of program's conversation and activities. There has been an increased engagement on the programs' social media platforms which include Facebook and Twitter accounts. Key stakeholders including the public are now more informed through regular posts and tweets on programs' activities like technical assistances, quarterly review meetings and stakeholder's engagement on the developments undertaken.

Brand messaging within and external to the community has also improved tremendously since September 2018. The review and creative designs of IEC materials with enhanced high resolution NTLD-P logo and brand colours has improved the programs' identity among key stakeholders and the public.

The unit quantified and reported on successes of the undertaken programs and campaigns by working with other sections. The publishing of 'TiBa', the official NTLD-P Newsletter was a milestone for the Program. Though still and online publication, TiBa captures key activities undertaken by the program and our partners and the successes of the program as well.
A number of trainings were organized by the communications unit. Journalists from far to reach areas like Mandera etc. were trained in December last year in Nakuru and Machakos counties. The training was geared towards empowering media reporters on health reporting particularly TB related issues.

The acquisition of a semi-professional camera also improved the packaging of NTLD-P's messages tremendously. Activities were well documented through quality photography which enhanced the program's professionalism and visibility.

TV and Radio Adverts

A number of television and radio campaigns supported by the Centre for Health Solutions under the TB ARC were undertaken by the unit before and after the WTBD. There were however challenges with the approvals and procurement for TV and Radio spots supported by the Global Fund.

Training

The program also trained a total of 50 county-based journalists from far to reach areas on TB coverage and reporting.

Stop TB Partnership Media Engagement

Media engagements were further enhanced through talk shows where doctors from the program, patients and supporting partners like Stop TB Partnership Kenya were interviewed on TB related issues.

Media engagement leading to World TB Day. Stop TB Partnership Kenya (STP-K) and TB Champions developed by STP appeared in the shows.

- STP-K-Chief National Coordinator appeared on KTN, KBC
- Eliud Chichi on Ebru TV
- Steve Otieno on KTN and Radio Station in Homabay
- Limo Jerop—appeared twice on KTN, once with Evaline.

STP-K mobilized for Homabay County WTB Day activities worth 250,000/= for 100 T-shirts, IEC Material and banner and the procession through AHF Kenya.

World TB day 2018 commemoration

Chief guest during the 2017 WTB, Cabinet Secretary for Health, Mrs. Cecily Kariuki, Robert F. Godec former USA Ambassador to Kenya, Dr Rudolf Richard Eggers WHO Country Representative, Dr. Kamene Kimenyi, former Head, TB program and other dignitaries

Kenya joined the rest of the world in commemorating 2018 World TB day. The global theme was *"Wanted: Leaders For a TB-Free World, You can make history. End TB"* with yearly campaign *"Light up the World for TB"*. This theme and campaign slogan was adopted and domesticated to align with Kenya goals and target to *"Lead and Unite to End TB for a*

TB free generation" with its yearly campaign tagline *"Mulika TB! Maliza TB!: I will lead to End to TB, it's my Responsibility"* Translated, *"Mulika TB!, Maliza TB! Ni Wajibu wangu kuongoza".* The theme was meant to rally the public to unite in accelerating TB case detection and to ensure that all missed TB cases are identified for testing, diagnosis and put on treatment.

The year 2018 commemoration was held in Embakasi East, MYA Stadium, Nairobi County. The following activities were carried out including TB screening, a youth football tournament and health education/Pubic *Baraza*. The objective of this activity was to promote engagement of the youth, especially young men, who are more vulnerable to TB. Educational materials and messages were developed shared.

The main event of the World TB 2018 was graced by the Health Cabinet Secretary, Sicily K. Kariuki (Mrs) EGH, (the then) US Ambassador to Kenya, Mr Robert Godec, WHO Country Representative, Dr Eggers Rudi, (the then) County Executive Committee Member for Health, Dr. Hitan Majevdia and AMREF Health Africa in Kenya Country Director Dr Meshak Ndirangu, among others invited dignitaries.

The 'Mulika TB Tournament' sponsored by AHF saw local football teams play and promote TB messages. by the Health CS as TB and HIV screening was conducted with the support of partners like CHS through the USAID funded TB ARC. The tournament aimed to create public awareness that TB is preventable, treatable and curable.

Community Engagement

Civil Society Organizations (CSOs) TB control activities at the Community Level

AMREF Health Africa, the non-state actor principal recipient of Global Fund sub-granted 29 Civil Society Organizations (CSOs) to implement Community TB control activities in all the 47 counties in Kenya. The activities included: Capacity Building of the CHVs to carry out Community TB activities, contact investigation, tracing of treatment interrupters, outreaches, screening in prisons, strengthening of facility Active Case Finding (ACF), Sensitization of CHVs and CHEWs on community TB care, among others.

Capacity Building of the Community Health Volunteers (CHV)

CHVs plays a key role in TB treatment, contact tracing and treatment interrupters tracing. Capacity building of the CHVs was carried out across all the counties by the CSOs.

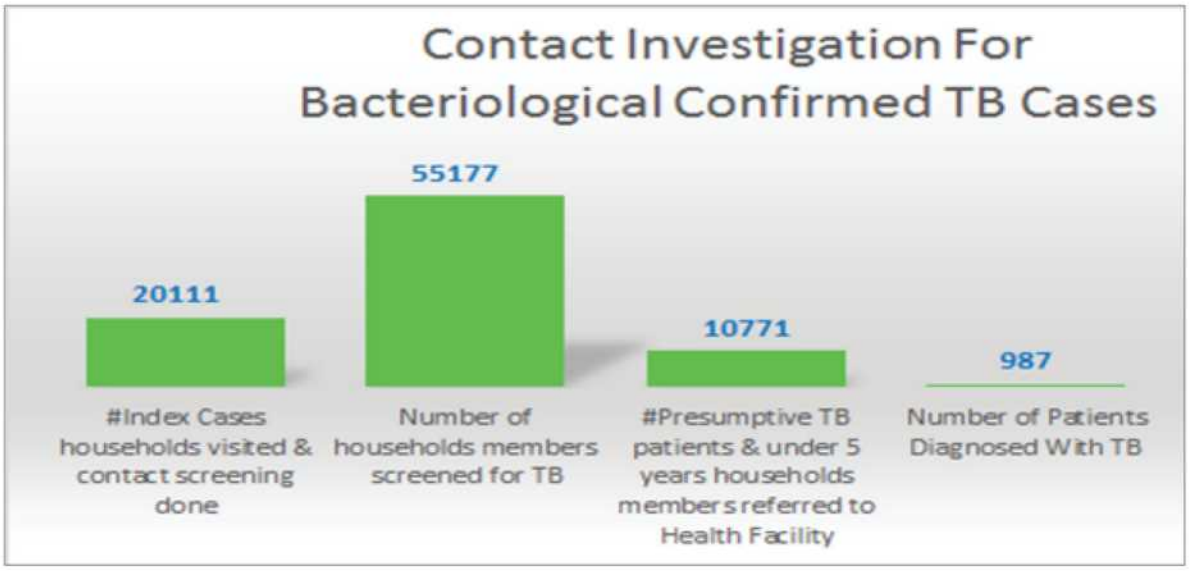
205
Number of CHVs Sensitization Meetings held

5,309
Number of CHVs Sensitized on Tuberculosis

Contact Investigation

Tuberculosis (TB) contacts are people who have close contact with patients with infectious TB and they are at high risk for infection. In line with the End TB strategy, TB contacts should be investigated systematically and actively for TB infection and disease to enhance early identification of active TB, reduce transmission and identification of latent TB infection (LTBI) for preventive measures.

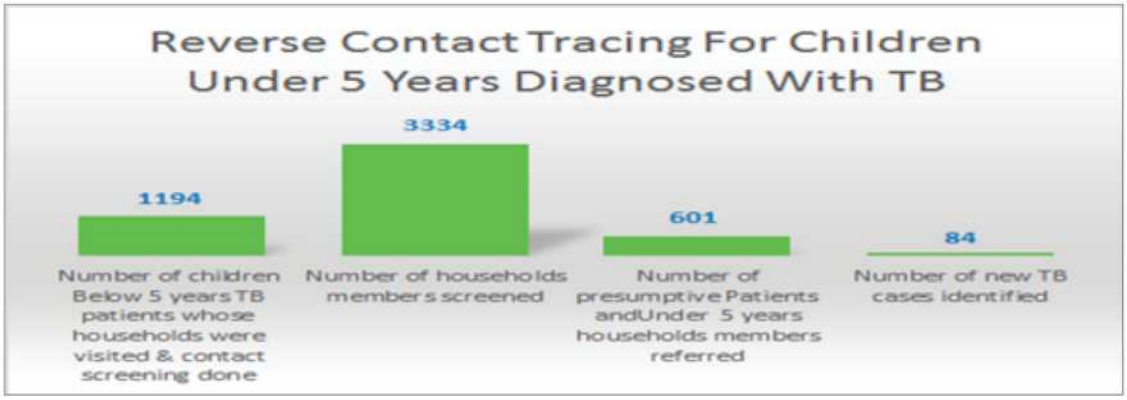
Figure 37: Number of Index Cases and Contacts Screened



Reverse Contact Tracing

It is recommended that Contact screening should be done to household members of children presenting with active tuberculosis. This is because most children contract tuberculosis from an adult with the disease with whom they have had close contact. With reverse contact tracing, attempts are made to identify the adult who is the source of the infection.

Figure 38: Reverse Contact Tracing for Children under 5 Years Diagnosed with TB



Treatment interrupters tracing through calling and physical tracing

Completion of TB treatment is key to favorable treatment outcomes. To improve treatment completion Health Care Workers (HCWs) working in the chest clinic were provided with airtime to call patients who failed to come for their appointment. Community Health Volunteers were also supported to carry out physical tracing of treatment interrupters.

Report on targeted outreaches

The following are the sites which benefited from the digital mobile x- ray machine services in 2018

Table 12: Sites with digital X-ray machines

	County	Area	Target Population	SUPPORTING PARTNER	No. of Persons Reached	No. of Presumptive TB	No of Positive TB
1	Meru	Tigania East, Kageta Area	Miraa Farmers	CHS-TB ARC			
2	Kiambu	Flower farms-Thika	Factory workers	NTLDP			
3	Nairobi	Gikomba	General traders	NTLDP			
4	Machakos	Mlolongo	Factory workers	CHS-TB ARC			
5	Nairobi (Labour Day Celebrations)	Uhuru Park	General Population	Amref	120	51	0
6	Kilifi	Malindi, Mtwapa	PIWDs	KRCS			
7	Mombasa	Mvita	PIWDs	KRCS			
8	Kwale	Ukunda	PIWDs	KRCS			
9	Kisumu	Kodiaga Maximum Prison	Prisoners	Amref			
10	Nakuru	Naivasha	Flower farms,	CHS-TB ARC			
11	West Pokot	All subcounties	Schools, urban market communities	Amref			
12	Kakamega	Kakamega Prisons	Male and Female Prisons	Amref			
13	Kakamega	Kakamega urban slums	Touts and urban dwellers	Kakamega County government			
14	Nakuru	Prisons	Male and Female Prisons	Amref			
15	Makueni	Matiliku	Urban dwellers	CHS-TB ARC			

School health program

The National TB program in conjunction with TB ARC pursued the multi sectoral approaches towards Ending TB in Kenya through County Engagement e.g. Reaching out to the Ministry of Education for integration of TB in the school health programme.
As part of the pre world TB day, they were several activities planned among them were:

- Sensitization school teachers on basic TB facts
- Production of IEC materials for schools

8 PROGRAM MANAGEMENT, MONITORING, EVALUATION AND RESEARCH

HIGHLIGHTS OF 2018 ACHEVEMENTS

USD62 M

Global Fund grant to Kenya running from January 1st 2018 to 30th June 2021

80%

Approximate activities successfully implemented as set out in the NTLD-P Workplan for 2018, while around **12%** were in progress as at end of year and **8%** were not initiated completely and were moved to January 2019.

8,000

Number of xpert DR TB request forms printed and distributed by NTLD-P in addition to **500** lab request EQA forms, through the support of USAID under the TB ARC activity .

The Global Fund Against HIV, TB and Malaria (GFATM) GRANT

The country begun implementation of a new Global Fund grant in January 1st 2018 to run up to 30th June 2021 after successful application and negotiations with the Global Fund. This was a culmination of an elaborate country dialogue process and reviews by local fund agent (PWC) and The Global Fund. The total amount signed was USD 62M to be implemented by two principle recipients namely The National Treasury (TNT) known as PR1 (USD 30M) for state actors and AMREF Health Africa as PR1 (USD 32M) for non-state actors as per GF policy of dual tranche financing.

Figure 39: GF TB Grant 2018-2021 per module

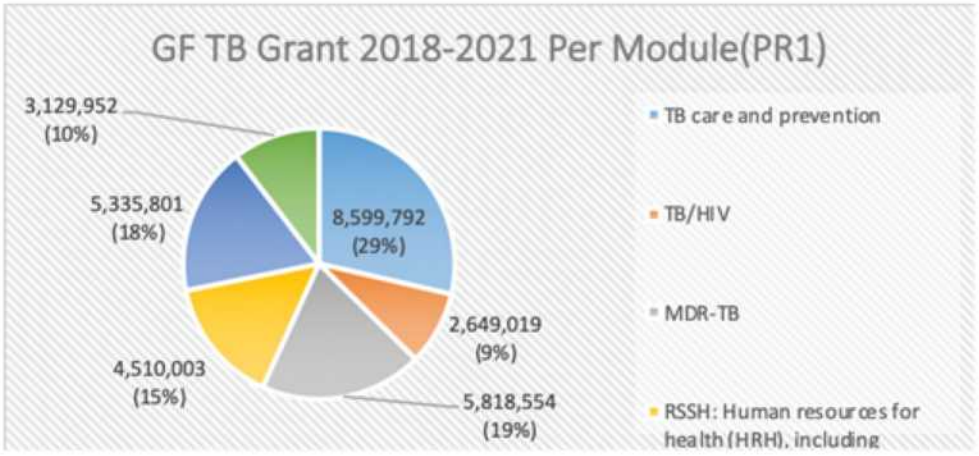
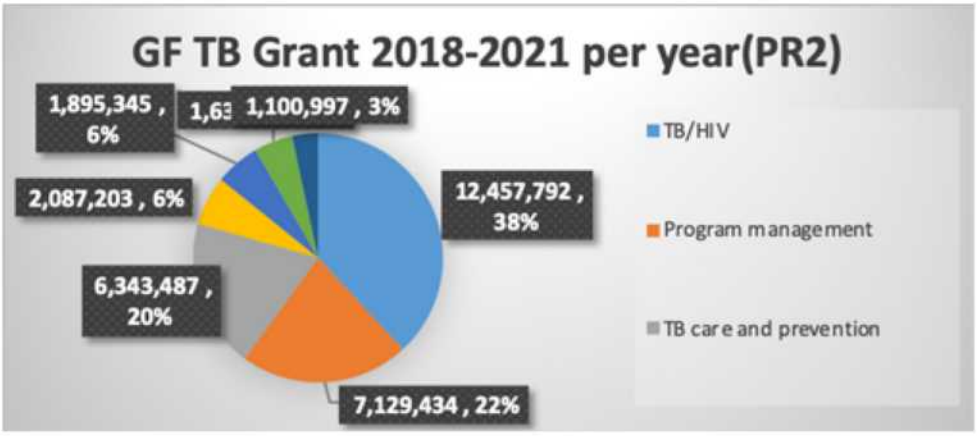


Figure 39: GF TB Grant 2018-2021 per year



This grant was developed to address the challenges that were identified by the National TB Prevalence 2017 and the program review done during the same year. The main challenge that the country is facing is missed people with TB which is estimated at about 50%. In order to respond to these needs; Global Fund allocated funds to implement special key initiatives namely;

- Scale up of facility based active case finding building on the pilot which was done through the support of USAID through TB ARC activity in 2017 in 13 counties. This was to enable the program to roll out ACF in the entire country.
- KIC TB challenge which was to look for innovative ways of finding more people with TB and started them on treatment.
- Public private mix (PPM) to catalyze the facilities in private sector to participate in active case finding
- Pay for performance (P4P) to incentivize facilities to up take and sustain active case finding.
- Support for technical assistance to the country to support implementation of the special initiatives.

In 2018, only active case finding was carried out in a number of counties while, for those that were delayed plans were under way to begin implementation. The delays were largely due to lengthy processes of engaging implementers.

By the end of 2018, the program had already submitted two progress reports and as per the report for end of June 2018, the performance rating was A2 and December's rating was B1. The reason for the drop in rating was because of in complete data occasioned by data disruption in TIBU.

Programmatic Monitoring, Evaluation and Research

National Tuberculosis program has a robust national M&E system which has been built over time. Currently the program has a case-based reporting system (TIBU) rolled out throughout the country and also fully integrated with DHIS. With the support of the Global Fund and the Ministry of Health, the M&E unit within the program has engaged M&E officers, statisticians, epidemiologists and ICT officers to assist the program in data collection, analysis and utilization.

Research

a. On-going research

A number of operations research activities began in 2018 even though none was completed during the same period. Some of the studies were; Value TB, IPT assessment, TB/HIV integration assessment. Other planned research activities during the year included start of the DR TB sentinel surveillance and assessment of barriers to access of TB services.

b. Completed in 2018

Dr. Enos Masini (GF), Ann Masese (TB ARC), Patrick Angala (TB ARC), Dr. Kamene Maurene (MOH), Dr. Paul Wekesa (C.E.O, CHS), Dr. Brenda Mungai (Chief of Party, TB ARC). Seated - Eveline Kibuchi (Stop TB-K), Jackson Kioko, (MOH), Hon. Esther Pasaris (Women Rep.,Nairobi County), Dr. Joseph Sitienei (MOH)

TB REACH Fikia Project: **"Finding the Children: Paediatric TB in Kenya project"** also known as FIKIA was a one year project funded by Stop TB Partnerships' TB REACH initiative funded by the Government of Canada and the Bill & Melinda Gates Foundation. The project was a collaborative effort implemented in partnership with TB ARC. The project was implemented in selected facilities in nine (9) high TB burden counties in Kenya. These included Nairobi, Machakos, Makueni, Mombasa, Kirinyaga, Garissa, Meru, Siaya, and Kericho. The main aim of the project was to increase case finding among children. Other specific objectives were to increase uptake of Isoniazid Preventive Therapy (IPT) for all eligible children under five years and to improve cohort outcomes for both children on TB treatment and IPT. The project contributed to an increase in paediatric case finding and IPT initiation.

The FIKIA project used innovative approaches to increase paediatric case finding in the following areas: Paediatric Presumptive TB Identification and Child Contact Management (CCM). Overall, the project reported an increase in the number of children initiated on preventive therapy. There was also a significant yield of cases diagnosed (6%) from child contact management. The project demonstrated that the NPA and NGA techniques are feasible to perform in the outpatient setting even by the nursing staff. However, in children under 5 years, bacteriologic yield remained low, even with GeneXpert testing (only 5% of samples tested yielded). This underscores the need to evaluate other specimens for improving bacteriologic yield e.g. stool and other point of care biologic markers. Use of the Child Contact Management (CCM) register is critical for the identification of gaps in the CCM cascade. Child contact management should begin in the clinic at the point of diagnosing a bacteriologically confirmed index case. Chest X-ray played a critical role in the diagnosis of children with TB.

c. Completed earlier and results disseminated in 2018

Patients cost survey: Results of the catastrophic costs due to TB to the patients were launched at Crown Plaza. The survey was conducted national where a total of 1,071 drug susceptible TB and 282 drug resistant tuberculosis patients were interviewed in 30 counties. The finding showed that 26.5% of the DS TB households and 86.4% DR TB households experienced catastrophic costs due to TB illness. Median total cost per TB episode was about KES 25,874 and 145,109.53 per DR TB episode. As a result of the survey a number of recommendations were proposed; linking TB affected households to existing social schemes, alignment of food support to include moderate and severe malnutrition and malnourished children in the households, expansion of NHIF package to include all TB components, implementation of laws and policies to eliminate discrimination and assure job security for those affected by TB, engagement of all care providers and establishment of multi stakeholder engagement to implement end TB strategy in order to meet the strategy for zero catastrophic costs due to TB. The comprehensive report for cost survey that was the first of its kind in Kenya can be accessed in the National Tuberculosis website *(www.nltp.co.ke)*

d. Launched in 2018

Cap TB Project: The Elizabeth Glasier Paediatric AIDS Foundation (EGPAF), through the Catalyzing Pediatric TB Innovation Project (CaP TB) aims to strengthen TB screening in pediatric care entry points such as MCH, OPD, nutrition clinic and pediatric inpatient ward. The project is being implemented in Homa Bay and Turkana counties in selected health facilities. The activities undertaken to strengthen paediatric case finding included capacity building of healthcare workers on paediatric TB screening, diagnosis and treatment, training on sputum induction and gastric aspirates, use of cough monitors in facilities and targeted community screening and active case finding.

Launch of the CaP TB Project in Turkana Cutting the cake. Left-Right: Daniel Ndugire—Stop TB Partnership, Dr.Stephen Muleshe—NTLDP, Mary Ngugi—EGPAF Global, Dr. Eliud Mwangi—Country Director EGPAF, Hon .Jane Ajele—CEC-Health Turkana County, and Lucy—NEPHAK

Data quality Assurance Mechanisms

Data quality Assessment: The program undertook data quality assessment in 6 counties namely; Busia, Kirinyaga, Nyandarua, Tharaka Nithi, Uasin Gishu, and Wajir. In each county at least two sub counties where all facilities offering TB services were assessed for data quality. The report indicated that in all the facilities visited 11% of the cases were not notified. The level of agreement between TIBU and TB4 register for all forms of TB was 89% down from the previous DQA which was 92%. The program developed a comprehensive DQA report with key findings and recommendations. One of the key recommendation was for the program to develop a data quality improvement plan to be used at levels of reporting to address data quality challenges. The report can be accessed through the program website *(www.nltp.co.ke)*

National Strategic Plan 2019-2023

The National TB program embarked on the process of developing the strategic plan for 2019-2023. With a view to developing an evidence-based and prioritized strategic plan, the program adopted *"People-Centred Planning Framework"* This process begun with a review of all available evidence mapped to the patient care continuum. The workshop included over 50 international, national and local stakeholders who were engaged to discuss relevant study results applied to three unique planning steps: (1) Problem Prioritization, (2) Root Cause Analysis, and (3) Strategic Intervention Optimization. In addtion, 2 county consultative forums and 2 drafting workshops for the NSP 2019-2023 were held with support from USAID through the TB ARC activity.

Funding for NSP

STEP 1:

- Problem Prioritization
- Identification of priorities based on data
- Tracking of gaps in the evidence
- Consensus-based priorities at national level
- Priorities review with stakeholders from 47 Counties
- Documentation of Sub-national differentiated document.

STEP 2:

- Root Cause Analysis
- Determination of socio-economic, health system and clinical factors
- Listing of possible interventions that could impact the lifecycle of TB epidemic
- Stakeholders engagement to include the role of non-clinical actors e.g. nutritionists, education and poverty alleviation efforts.

STEP 3:

- Strategic Intervention Optimization
- Assessment of potential strategic interventions
- Mapping of feasibility and potential impact of different interventions
- Engagement of health and non-health sector stakeholders
- Costing of the NSP through mathematical and cost models
- Optimization of interventions based of available resources.

The NTLD-P considered three resource scenarios; e.g. existing funding level 25% increase in funding, and an aspirational/fully financed budget. Under each scenario, the package of interventions that most effectively and efficiently target root causes and priority problems. The budget with existing funding was considered for immediate action, while the other budget tier was considered the basis for future funding requests.

The outcome of this robust stakeholder's engagement was endorsement of the NSP by January2019. The next steps as at December 2018 was to launch the NSP and further engage the Counties to develop their operational plans.

NTLD-P Work Plan

The program implements its activities based on annual, semi-annual and quarterly work plan. The work plan for 2018 was developed semi-annually in January and May respectively comprising of activities from GF, CHS/TB ARC, WHO, AMREF, KAPTLD and TB reach grants. Towards the end of the year, a joint work planning meeting was also held between CHS/TB ARC II, NTLD-P technical officers and partners to optimize the allocation of resources, enhance synergies, and eliminate double funding with the overall objective of strengthening operational budgeting, resource allocation and resource management to enable smooth program implementation of USAID funded TB ARC II activity. As per the work plan review, approximately 80% of the activities were successfully implemented while around 12% were in progress as at end of year and 8% were not initiated completely and were moved to January 2019.

Policies and Guidelines Development and Review

A number of policies were developed and disseminated which include TB isolation policy, IPT job aids & SOPs and communications strategy addendum. The program also initiated the development of a comprehensive screening and diagnostic policy and algorithm, injection free regimen for DRTB and pediatrics friendly second line medicines.

Capacity Building

TB Integrated Curriculum roll out trainings for HCWS:

As part of the program efforts to equip health care workers in the fight against TB, an integrated curriculum incorporating TB, lung health and Leprosy was developed in 2016 to ensure a standardized approach of the trainings. In 2018, the main focus was to train TOTs at the County level who would thereafter be involved in training 1,000 HCWs as per the GF work plan. A total of 250 TOTs were trained from 20 Counties comprising of CTLCs, SCTLCs, medical lab technologists, pharmacists and nutritionists.

Roll Out of TIBU Phase III B

As part of addressing the initial scope of digital surveillance for the program, TIBU system was expanded to address other programmatic areas for data collection and management. To achieve the entire program scope, the development of TIBU and roll out has been phased and TIBU phase III B was launched in 2018. Areas covered in TIBU Phase III B include;

- Advocacy reports
- Communication reports
- Pharmacovigilance
- Active Case Finding
- Lab integration (NTRL and GX LIMs)
- On-boarding of Global Fund TB into TIBU Cash
- Asthma Data and Reports
- TIBU Dashboards

Uptake of the new modules has been low due to funding constraints for roll out and trainings. Nairobi, Siaya, Homa Bay, Kisumu, Migori, Kisii and Nyamira counties have been capacity built and are fully utilising the new modules. Other counties have attempted to use the modules as a result of ECHO trainings, though the uptake is still low among them. Weekly ECHO sessions are ongoing to address the uptake challenges.

Updates on Data security and recovery

The NTLD-P was engaged in a data recovery exercise towards the end of 2018 and early 2019. This was occasioned by the accidental data decommission in November 2018. The data recovery exercise involved scripting data inserts from TIBU backups, customized uploads from CSV/excel and data entry efforts from the sub-county coordinators. These efforts were finalized in January 2019. As a result of this restoration activity, the program has instituted measures to ensure that restored data meets the desired quality and standard as was set for TIBU by the NTLD P. The restoration involved the following steps;

1. Internal ICT Efforts

The NTLD-P ICT team took note of the erroneous decommission and immediately instituted measures to bridge any anticipated data gaps. The measures included developing a restoration plan, preparing communication and instructions to users and devising a mechanism that would aid in quick acquisition of tablet back up files. These measures led to developing a sync app version of TIBU to aid in quick acquisition of tablet backups.

Roll out to all users (which involved guiding over 350 users on how to install and use the version of the app to sync) was done by the ICT team. Past installation, the ICT team reconstructed the tablet masters to cater for any changes that may exist in the tab back ups but was missing in the cloud server backup used in the restoration which included user masters, facility masters, zone masters, payment masters. The team had to also audit the synced backups to determine viability for use in data restoration.

The ICT team also revised the API settings to accommodate changes as a result of the data restore to sustain data exchange between PMS and TIBU Cash / DHIS.

2. Collection of Tablet back ups

In order to restore the pms system, tablets were required to sync all their data which included 2016, 2017 and 2018 data sets for TB, DRTB, Leprosy, IPT and Supervision datasets.

This exercise was supported by field officers who committed time to do the ultimate sync of data. The tablets took an average of two days to complete the sync therefore interfering with patient notification and supervisory visits for the County and Sub county coordinators in 2018 Quarter 4.

Equally, the process created a data gap that has led to more supervisory and data entry visits to the facilities to resolve the said gaps. Over 80,000 records which had treatment outcomes for the year 2016/2017 were affected

3. Data Entry exercise

As tablet backups were being obtained, the NTLD ICT team took note of missing backups from the tablets. Up on following up with the user, it was noted that either the tablets were lost or backups had been deleted by the user without their knowledge.

This therefore meant that no existing copy of the data was available for these users. The ICT team notified management of the same and a decision was made to hire data entry clerks to carry out a retrospective data entry exercise.

The exercise was carried in 6 control zones for 14 days by 3 data clerks each being an amount indicated in the budget. Further to this, the exercise was completed for IPT and Leprosy data in Quarter 4 for 2018 by SCTLCs nationally.

4. Reviving GX Alert Service for SMS and Emails

NTLD-P through support from the USAID/TBARC and System One (Vendor) in the recent past put immense efforts to ensure the GxAlert service is up and running by setting up the new server and ensuring the system is installed and configured.

All the 153 GeneXpert machines were configured to push data to the new server with lot of efforts directed into installation on the central server and engaging Super Users at the counties to ensure their devices are configured with the new setting. This was also affected by the deletion of the server

All the 47 super users have been requested to visit where the machines are situated so as to put in the configurations.

Quarterly Review Meeting

Quarterly data review meeting is a strategy used by the National Tuberculosis, Leprosy and Lung Disease Program (NTLDP) to improve data quality both at national and county levels. It is conducted on a quarterly basis where counties are clustered based on their epidemiological zones as well as a blend in strengths and challenges. Data quality is improved through simple data processes such as data cleaning, validation, sharing of key interventions in patient management at the county level and updates on partner support in TB implementation.

The reviews meeting forms part of routine monitoring and evaluation exercise which aims to validate data for use in planning and decision making by all stakeholders.

- In 2018 program conducted four quarterly review meeting for 47 counties and the national government.

- During reviews each county was represented by key TB control stakeholders, which include CDH, CTLC, SCTLC, CMLC, SCMLC, CP and partners.
- Due to resource constraints the meeting took place in two days unlike previously when the meeting used to take three days
- As a result few days, few presentations were done without adequate time to share good performance and discuss challenges.

Performance Review meetings

CHS through the USAID funded TB ARC activity supported NTLD-P to conduct a performance review towards the end of the year in 2018 to evaluate the country performance for 2018, this helped in evaluating all the 47 Counties based on all indicators to identify strengths and challenges that were experienced by specific Counties. This exercise provided:

- Avenue through which these challenges were addressed and counties to learn from each other
- Setting up of goals for the coming year to measure the program impact and
- Help in determining the county training need that is required by County TB Coordinators.
- National TB program also assisted the counties to adopt a clear Work plan and a detailed M&E framework that would be tracked periodically in the following year to realize the specific objectives identified and desired outcomes to the patients.

9 FINANCE & ADMINISTRATION, HUMAN RESOURCE AND CAPACITY BUILDING

Support for Printing and Distribution of Tools

Proper data collection and timely reporting is important to inform program decision-making and planning. TB ARC through the support of USAID has closely worked with NTLD-Program to adopt a robust system for ensuring continuous surveillance of TB and Leprosy diseases. This system is made up of a combination of both manual and electronic data collection and reporting tools which include; commodity recording and reporting tools, facility diagnostic and treatment tools and TIBU reporting electronic system. The program has continued enhancing the recording and reporting system through provision of updated tools and equipment at all levels of service delivery. In 2018 NTLDP printed and distributed 8,000 xpert DR TB request forms and 500 lab request EQA forms through the support of TB ARC which also supported distribution of tools that were printed through the support of Global fund to 17 counties.

Finance and Administration

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 (Center for Health Solutions, KAPTLD and CHAI). However, the funding gap has not been sufficiently been filled as documented in the NSP.

Table 13: Actual Expenditure 2018-2019 Table 14:

Budget Required
65,553,910 (USD)

Funding Gap
39,278,050 (USD)

HIGHLIGHTS

53

Total staff establishment of the National TB Program; **24** GoK, **15** GFATM supported, **5** FELTP, 6 Interns and **3** seconded by CHAI to NTLD-P.

141

Total number of county-based staff supported through the GFATM TB grant out of which **108** are laboratory technicians and **33** are Clinical Officers.

23

Number of vehicles that NTLD-P owns (through support by partners and GFATM), out of which **15** are used to support program implementation at national level and **8** vehicles are at county level.

Budget 2019-2020

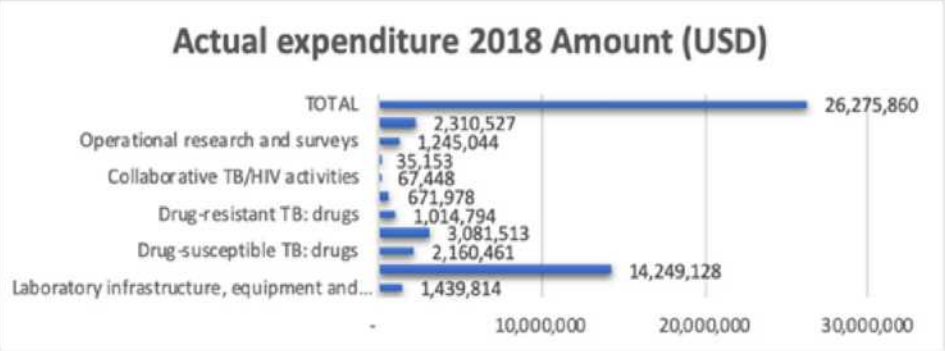
Expenditure 2018-2019	
Funding source	**Amount (USD)**
Domestic (GoK)	15,411,557
Global Fund	6,513,419
USAID	4,350,884
Other sources (TB Reach)	-
Total expected funding	26,275,860
Percentage Funding	40%
Budget Required*	**65,553,910**
Funding Gap	(39,278,050)

Funding source 2019-2020	
Funding source	**Amount (USD)**
Domestic (GoK)	17,672,714
Global Fund	8,045,384
USAID	4,157,091
Other sources (TB Reach)	349,000
Total expected funding	29,875,190
Percentage Funding	62%
Budget Required**	**48,078,246**
Funding Gap	(18,203,056)

* **NSP 2014-2018;**

** **NSP 2019-2023**

Figure 40: Actual Expenditure per Intervention 2018-2019



Human Resources

The National TB Program has a total staff establishment of 53; 24 GoK, 15 GFATM supported, 5 FELTP, 6 Interns and 3 seconded by CHAI to NTLD-P. The GFATM TB grant continued to support a total of 141 county-based staff out of which 108 are laboratory technicians and 33 are Clinical Officers.

There were 10 additional staff recruited (9 Laboratory Technicians and 1 Communication Officer) under the GFATM grant to support expansion of DST sites as well as to enhance TB communication and visibility activities.

Table 15: Staff Distribution

Row Labels	CHAI	FELTP	GF	GOK	Intern	Grand Total
Admin & Finance			7	4		11
Care & Support		6	11		4	21
Commodity & Logistics			1			1
Head of Program			1			1
MER	1	6	2	2	1	12
PHP		1	2			3
Policy & Planning		2	1	1		4
Grand Total	**1**	**15**	**25**	**7**	**5**	**53**

Capacity Building

For the year 2018-2019, there were various TB capacity building activities undertaken in the country supported by Global Fund. The program undertook training of Media Journalists on coverage and reporting for Tuberculosis, the program has also embarked on conducting facility-based sensitizations of health care workers on active case finding, infection prevention and control and NGA/NPA.

Table 16: Capacity Building Trainings

Training	No. of Pax
Childhood TB trainings	200
AFB refresher training	200
GeneXpert refresher training	100
Train media in coverage and reporting for TB	50
DMTB training	200
Training for 2nd line DST for MGIT (2 staff) international training	4
Training of HCWs on DR TB case detection and diagnosis	200
ToT on IPC risk assessment and development of Facility TB infection control plans	75
TIBU Training	50
Conduct training on D4D	75
Medical Certification and use of ICD 10 Trainings	75
Short Courses - Local	12
Short Courses - Foreign	1
International Conference	8
Total	**1,250**

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 17: Vehicle Fleet

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

Milestones under the USAID funded TB ARC activity support

47
Supported Counties

140, 444
Children Screened for TB

1, 543
Children put on TB treatment

173
GeneXpert Machine Scale -up from 2013 to 2018

257, 773
GeneXpert test done

12, 025
Drug resistant TB lab monitoring support

732, 800
Patients initiated on IPT

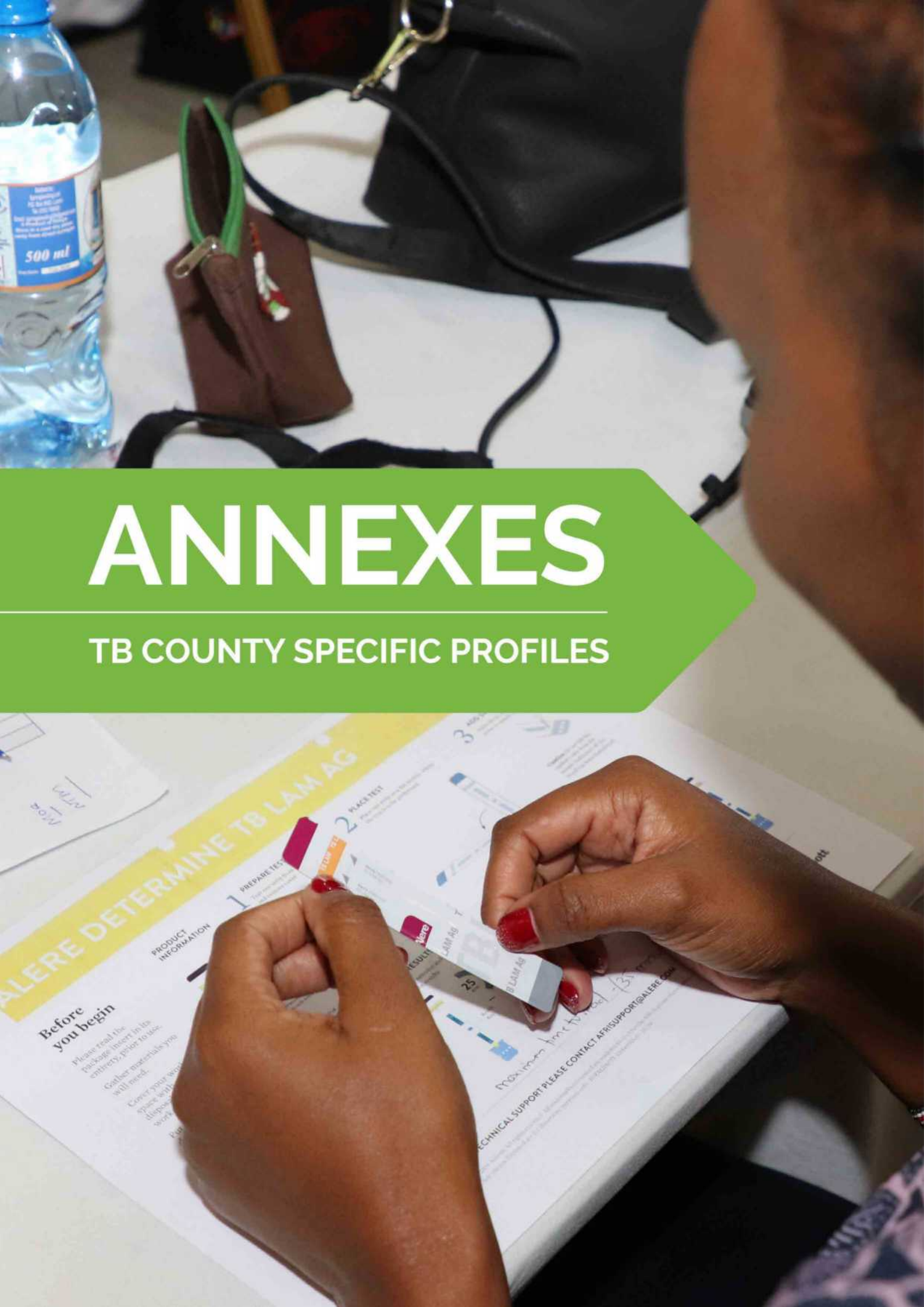
29, 188, 911
Investment as of September 2018

TB Data4Action training

The USAID funded TB ARC and the National Tuberculosis Leprosy and Lung Disease Program (NTLD-Program) In collaboration with the International Union Against Tuberculosis and Lung Disease (The Union) has conducted trainings on Principles of TB Care and Prevention: Translating Knowledge to Action training for County and Sub County TB coordinators popularly known as TBData4Action training. The TBData4Action trainings focus on data-driven supervision techniques. The trainings are aimed at capacity building the participants to understand the bacteriological and epidemiological basis for the principles of effective TB patient care and programme management. It also aims at empowering participants with skills for monitoring and evaluation of TB program activities at different levels and providing support and supervision to health providers.

102 participants from 15 counties were trained in 2018. Cumulatively 186 participants from 22 counties had been trained since 2017. The achievements realized led to development of the ECHO TBData4Action concept which is to be implemented in 2019

TB ARC activity and the FIKIA project "Finding the Children: Paediatric TB in Kenya project" launched the first TB ECHO on peadiatrics targeting Nairobi, Machakos, Makueni, Mombasa, Kirinyaga, Garissa, Meru, Siaya, and Kericho counties where the FIKIA activities were implemented



ANNEXES

TB COUNTY SPECIFIC PROFILES

BARINGO COUNTY

DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	498	408	405	297	283
New Clinically Diagnosed	165	77	88	141	124
Previously Treated	60	55	44	54	58
Extra Pulmonary	118	108	108	128	133
TB among children all forms (< 15)	73	51	51	58	68

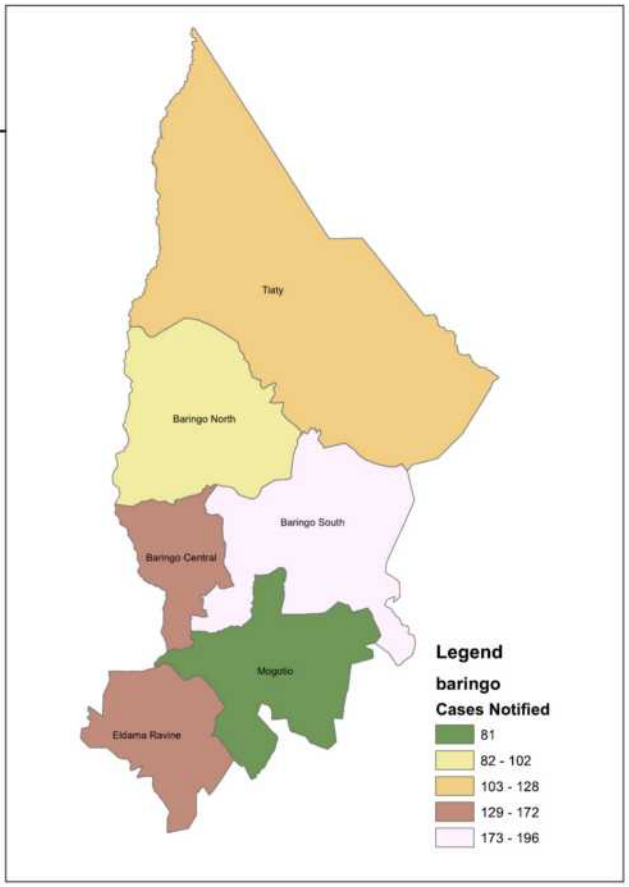
TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	88.2	91.6	85.5	88.8	92.3
TB / HIV Co-infection rate	21.7	25.8	19.5	17.5	17.7
ART uptake	86.9	94.3	95.2	99.1	93.9
CPT Uptake	100	98.7	100	99.1	96.6

Nutrition Status among DSTB (All forms) (%) 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion malnourished	48.3	50.3	46.3	50.4	54.5
Proportion on food support	25.4	35.4	23.7	29.6	32.6

DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
RR (Including MDR)	2	3	6	10	5
Mono Resistant	0	1	2	1	0
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

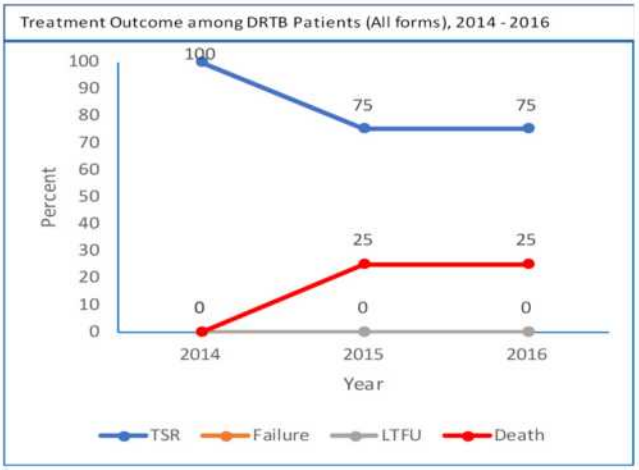
IPT among <5 exposed to bact confirmed PTB, 2014 – 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	330	339	443	453	539
Number of <5 on IPT	1	35	103	49	39
IPT Uptake among <5 (%)	0.3	10.3	23.2	10.8	7.2

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	0	1	0	0	2



Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector, 2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by PS (%)	1.8	2.4	2.4	2.9	4.3

BOMET COUNTY

DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	885	895	657	624	645
New Clinically Diagnosed	524	352	368	465	685
Previously Treated	105	91	37	44	74
Extra Pulmonary	255	209	260	326	350
TB among children all forms (<15)	183	132	113	134	208

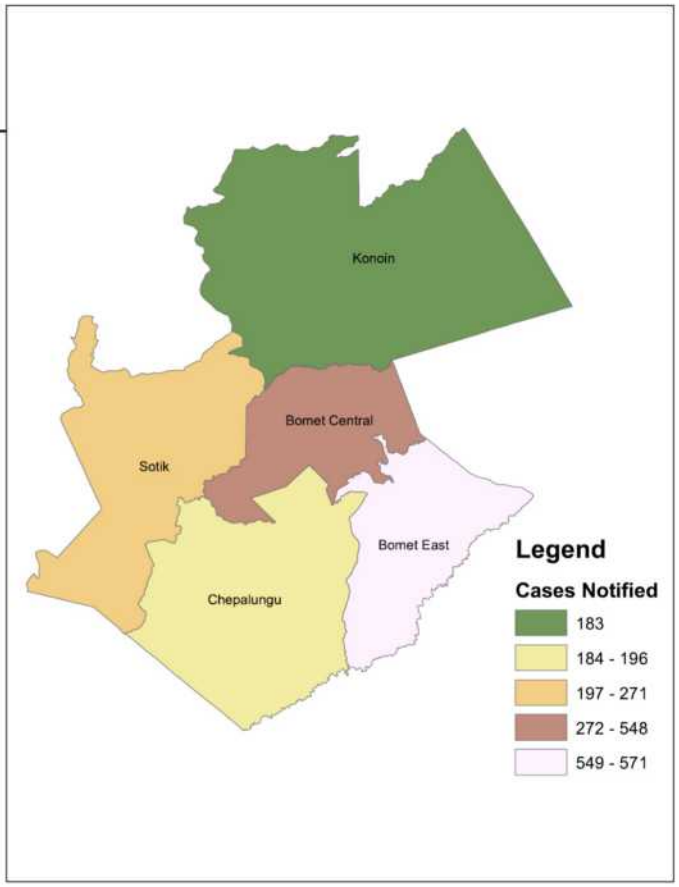
TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	94.4	97	94.1	96.7	97.2
TB / HIV Co-infection rate	24.9	24.1	22.6	18.4	21.7
ART uptake	88.3	93.2	95.9	97.9	95.8
CPT Uptake	99.3	99.1	100	99.6	99.2

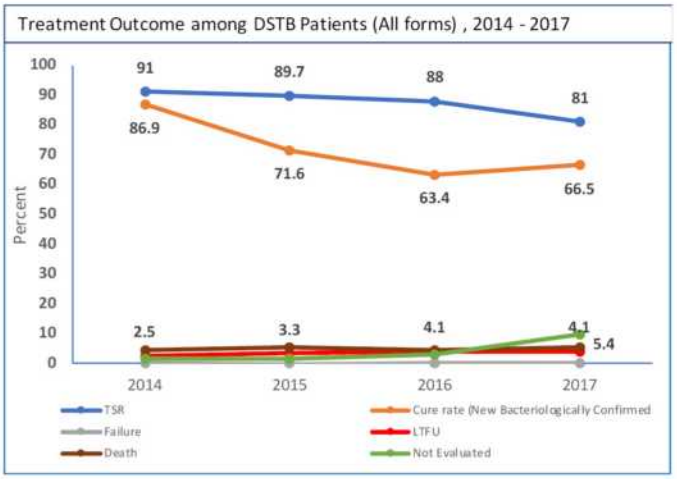
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion Malnourished	39.5	40.5	41.7	43.6	39.8
Proportion on food support	20.5	20.3	21.6	41.6	32.8

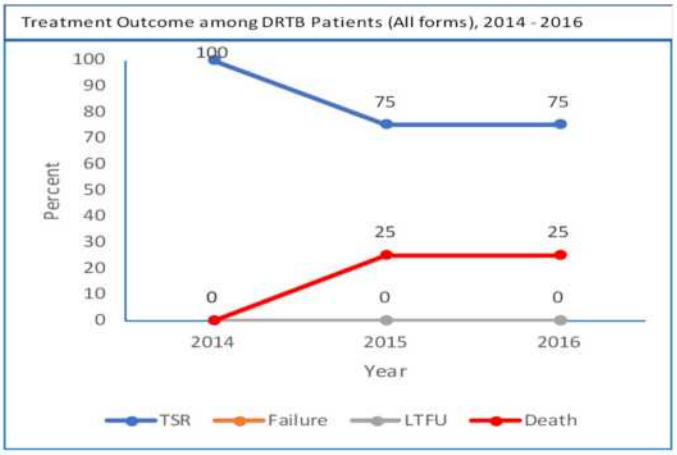
DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
RR (Including MDR)	0	5	2	5	7
Mono Resistant	1	0	0	2	5
Pre XDR	0	0	0	0	0
PDR	0	1	0	1	0
XDR	0	0	0	0	0

IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	688	648	678	959	956
Number of <5 on IPT	7	11	121	311	188
IPT Uptake among <5 (%)	1	1.6	17.8	32.4	19.6

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	1	0	0	0	1







Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by PS (%)	4.3	4.1	4.1	4.9	3.5

BUNGOMA COUNTY

DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	930	908	947	646	659
New Clinically Diagnosed	699	683	442	422	771
Previously Treated	135	155	140	114	180
Extra Pulmonary	285	337	318	329	243
TB among children all forms (Under 15)	223	244	186	172	218

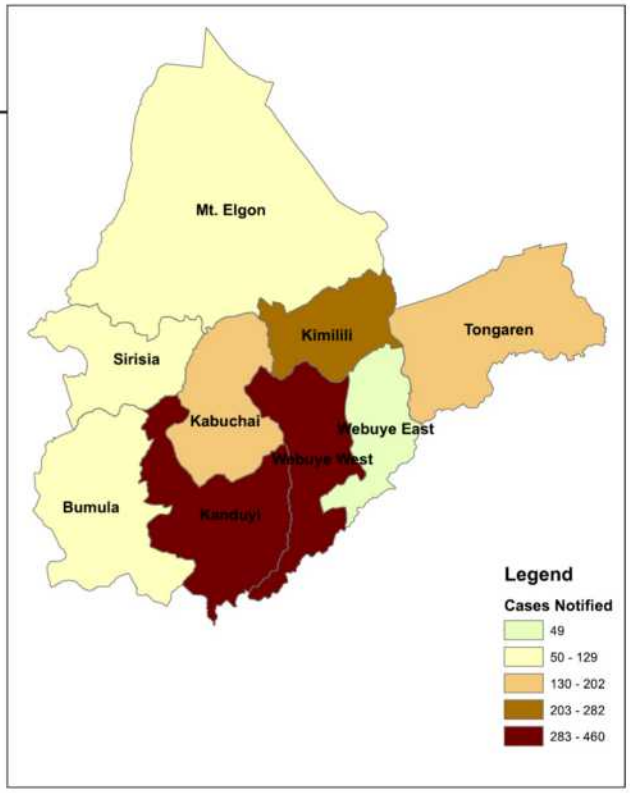
DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	3	3	6	7	9
Mono Resistant	0	2	4	2	3
Pre XDR	1	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

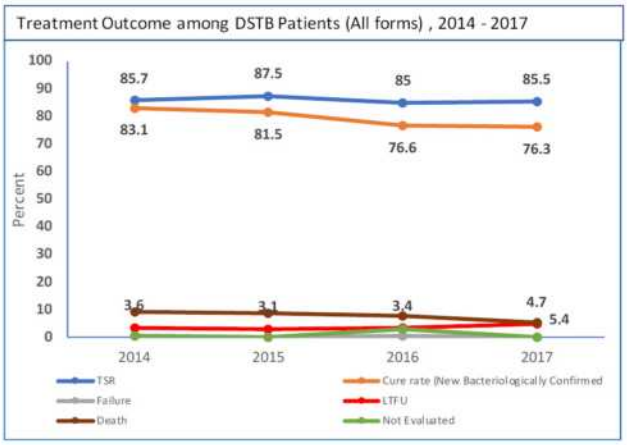
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnourished	35.8	42.1	39.2	36.6	35.3
Proportion on food support	17.8	19.7	19.7	23.3	27.1

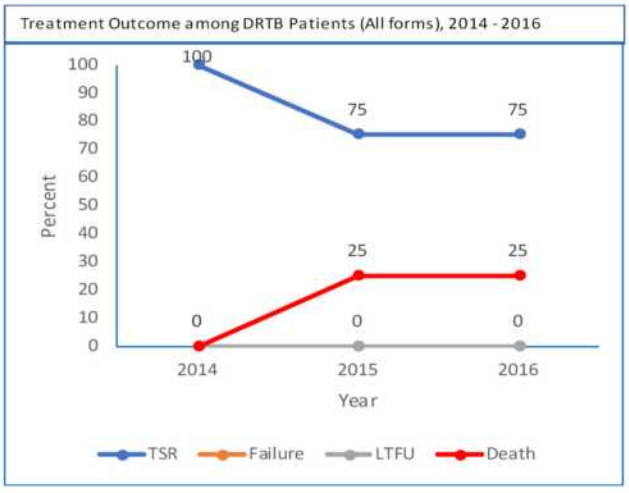
TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	97.4	98.4	97.2	97.7	98.1
TB / HIV Co-infection rate	34.4	31.1	29.1	27.2	25
ART uptake	96.4	97.6	96.4	97.8	94.5
CPT Uptake	100	100	99.6	99.6	97.8

IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	757	737	1046	988	1006
Number of <5 on IPT	98	107	252	236	250
IPT Uptake among <5 (%)	12.9	14.5	24	23.8	24.8

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	6	2	1	6	1

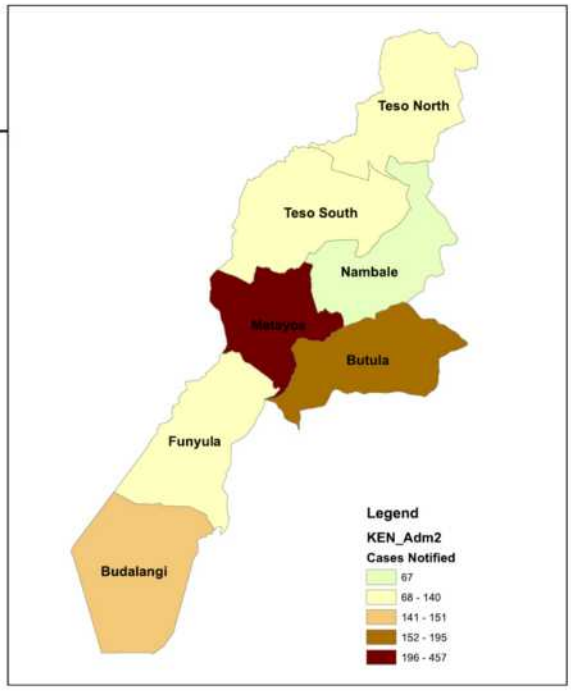






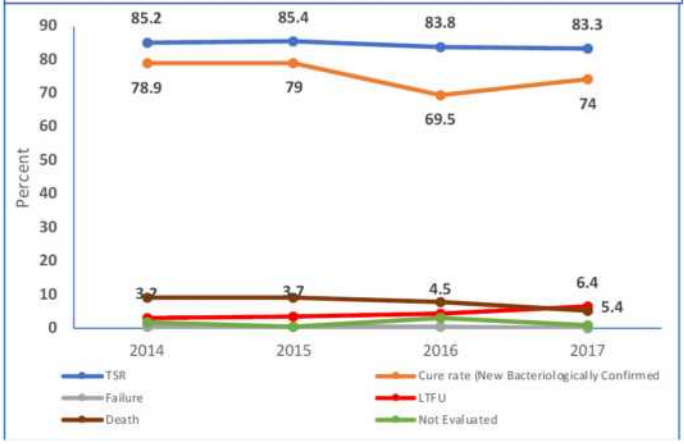
Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	3.8	3.9	2.9	4.8	3.7

BUSIA COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	588	663	476	425	485
New Clinically Diagnosed	447	392	253	427	588
Previously Treated	96	80	68	120	179
Extra Pulmonary	154	165	144	213	281
TB among children all forms (Under 15)	137	130	93	112	202

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

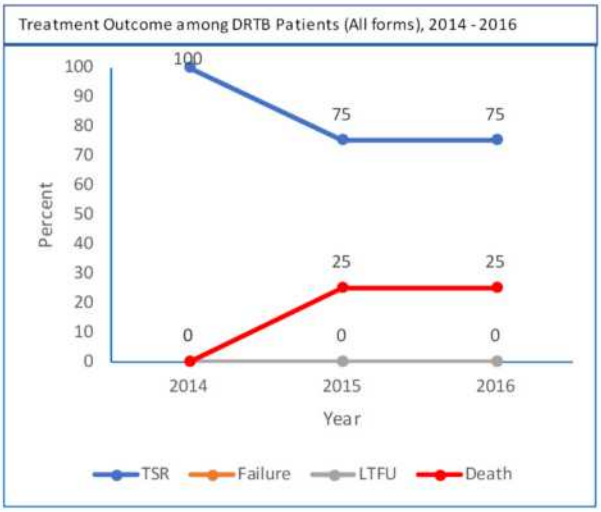


TBHIV Care Cascade among DSTB (All forms)(%), 2014- 201					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	97	99	96.4	98.6	98.7
TB / HIV Co-infection rate	46.9	46.4	43.5	41.4	40.6
ART uptake	96.1	98.9	98.5	99.8	98
CPT Uptake	99.5	99.4	98.7	99.8	99.2

Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnorished	35.8	40.7	41.2	31.7	35.1
Proportion on food support	30.3	29.7	33.4	40.8	33.6

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	1	3	3	5	6
Mono Resistant	0	1	5	2	0
Pre XDR	0	0	0	0	0
PDR	1	1	0	0	1
XDR	0	0	0	0	0

Treatment Outcome among DRTB Patients (All forms), 2014 - 2016

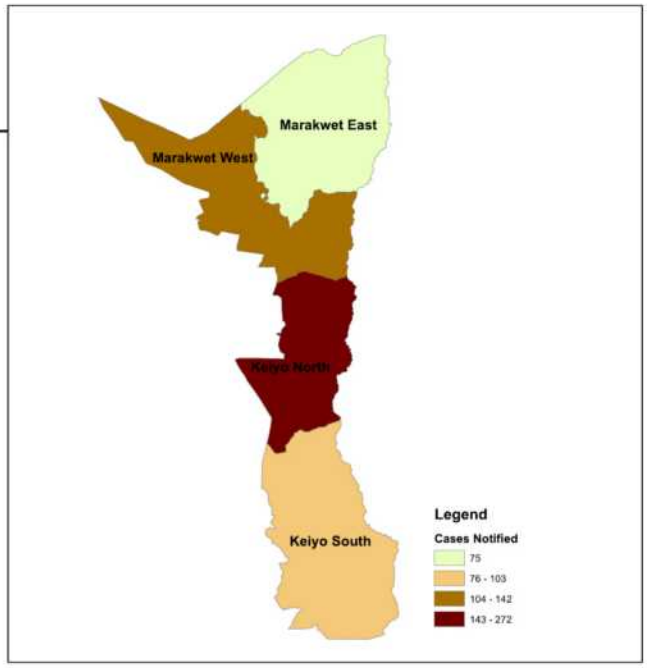


IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	568	479	524	713	639
Number of <5 on IPT	152	129	165	254	157
IPT Uptake among <5 (%)	26.7	26.9	31.4	35.6	24.5

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	10	6	6	10	9

Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	9.5	10.8	15	17	10.3

E/MARAKWET COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	274	340	245	249	223
New Clinically Diagnosed	152	107	134	131	171
Previously Treated	38	27	24	25	30
Extra Pulmonary	128	112	111	100	98
TB among children all forms (Under 15)	64	48	59	54	62

TBHIV Care Cascade among DSTB (All forms)(%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	86.7	95.8	98.8	98.6	97.8
TB / HIV Co-infection rate	23.7	22.5	20.2	21.1	18
ART uptake	84.6	95.6	100	98.3	97.1
CPT Uptake	100	99.1	99	99.1	99

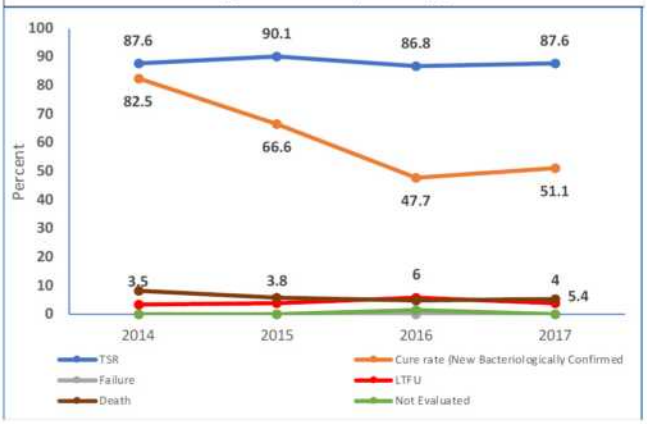
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnourished	32.5	49.7	52.7	48.2	51.6
Proportion on food support	9	27.5	26.8	36.3	36.1

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	1	2	1	2	2
Mono Resistant	2	1	1	1	0
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

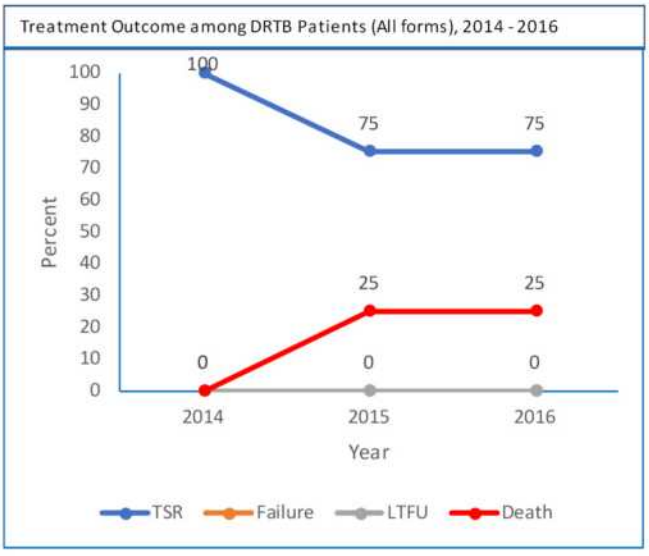
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	243	269	268	364	305
Number of <5 on IPT	0	111	68	81	44
IPT Uptake among <5 (%)	0	41.2	25.3	22.2	14.4

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	0	0	0	0

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

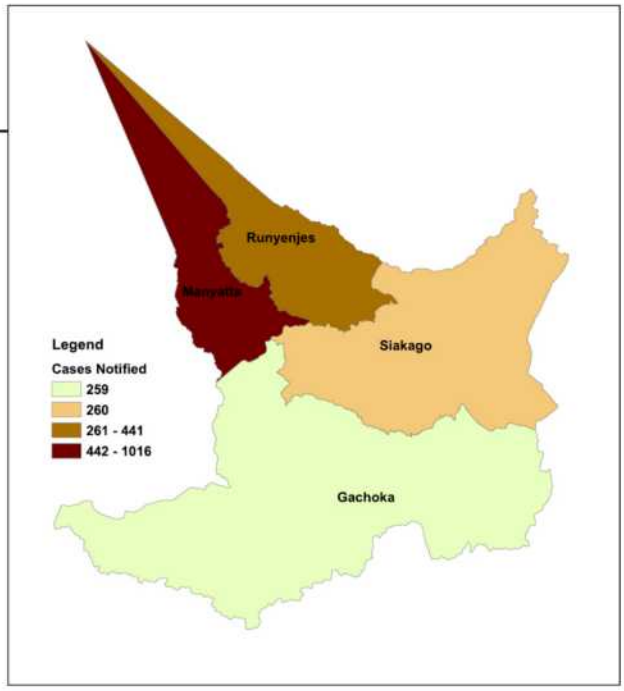


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	1.5	1.7	2.3	1	1.5

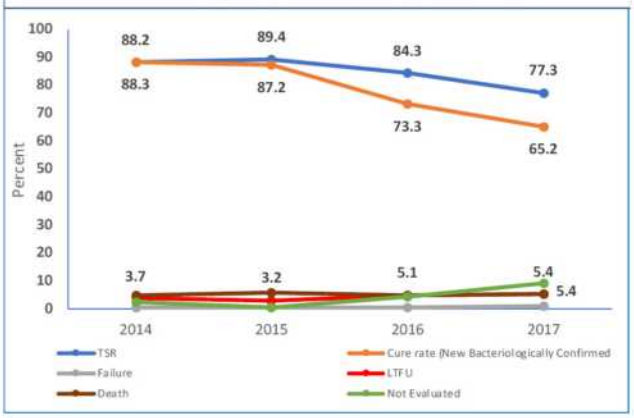
EMBU COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	763	801	768	754	582
New Clinically Diagnosed	880	479	300	471	544
Previously Treated	117	112	56	81	96
Extra Pulmonary	216	228	182	177	141
TB among children all forms (Under 15)	387	198	137	192	233

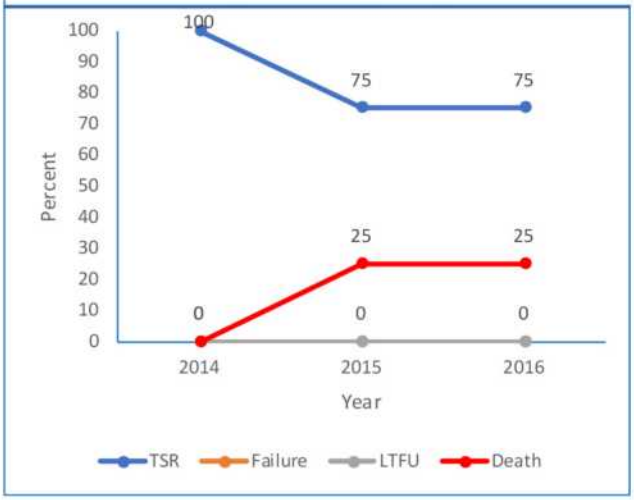
TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	97.7	97.3	95.5	90.8	92.6
TB / HIV Co-infection rate	22.1	19.5	18.8	15.8	15.1
ART uptake	93	95.5	99.1	91.4	92.3
CPT Uptake	99	99.6	99.5	96.4	91.9

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017



Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnorished	39.7	41.7	42.2	26.2	37.6
Proportion on food support	7.9	9.3	19.4	22.2	20.5

Treatment Outcome among DRTB Patients (All forms), 2014 - 2016

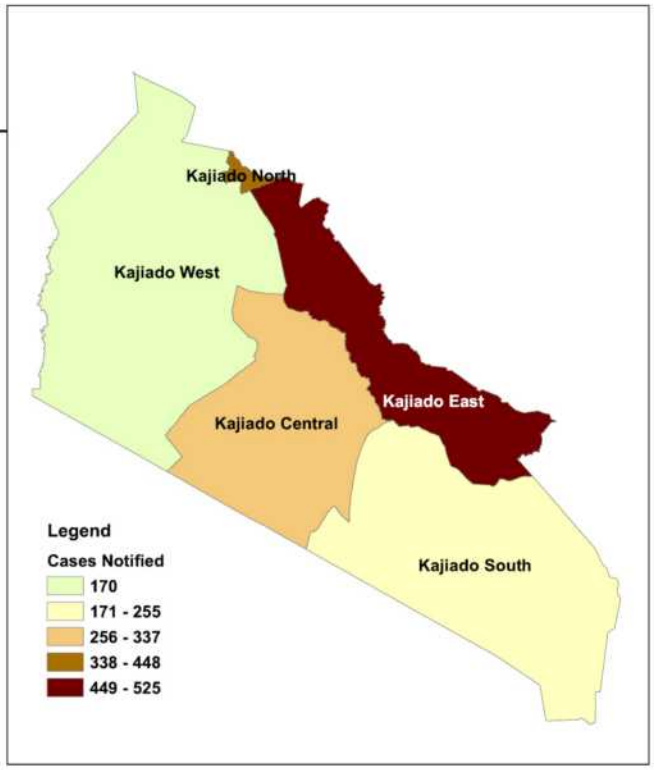


DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	3	5	7	5	8
Mono Resistant	1	3	3	8	8
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	1
XDR	0	0	0	0	0

IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	660	818	816	883	850
Number of <5 on IPT	6	323	51	82	42
IPT Uptake among <5 (%)	0.9	39.4	6.2	9.2	4.9

Contribution of Notified Cases by Private Sector, 2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	6.1	7.9	9.2	11.7	6.7

KAJIADO COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	810	831	769	755	693
New Clinically Diagnosed	605	477	433	490	597
Previously Treated	108	90	89	100	123
Extra Pulmonary	212	175	200	258	235
TB among children all forms (Under 15)	224	159	137	171	203

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	95.3	96.3	96.5	98.9	98.7
TB / HIV Co-infection rate	29	29.6	29.4	27.7	28.2
ART uptake	86.6	95.1	95.6	97.9	96.5
CPT Uptake	99.7	99.5	99.7	98.8	98.9

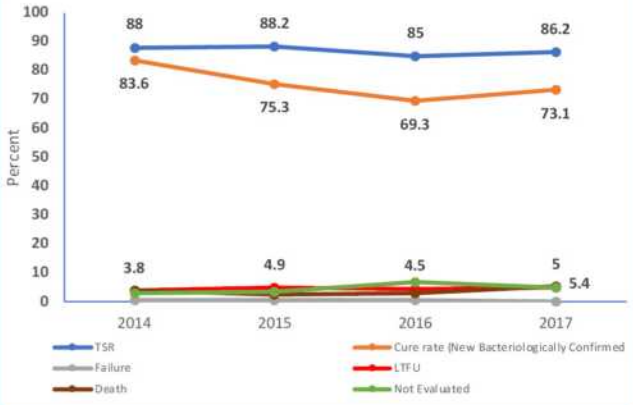
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnorished	36.6	40.7	41.1	40.2	41.4
Proportion on food support	19.2	18.9	18.1	24	24.8

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	5	2	6	7	4
Mono Resistant	1	2	2	1	1
Pre XDR	0	0	0	1	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

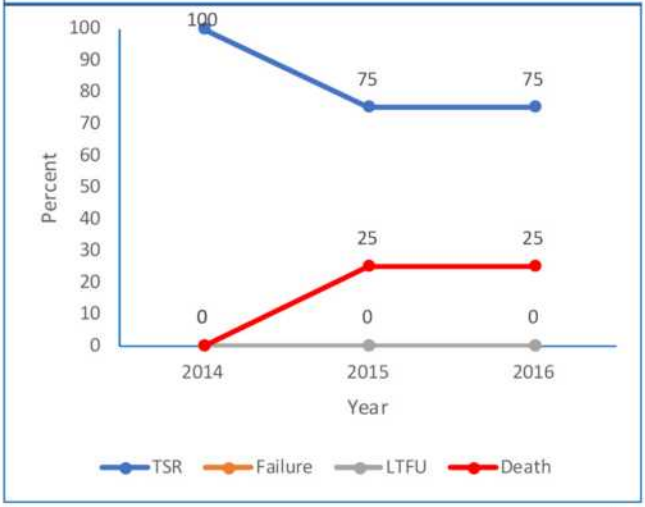
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	755	817	831	882	866
Number of <5 on IPT	8	19	39	135	61
IPT Uptake among <5 (%)	1	2.3	4.6	15.3	7

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	1	0	0	0

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

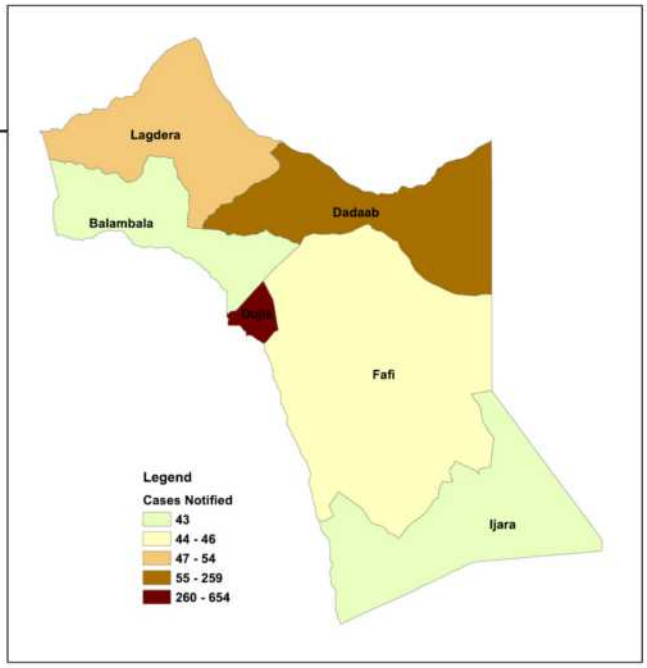


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	15.4	17.5	23.8	22	15.1

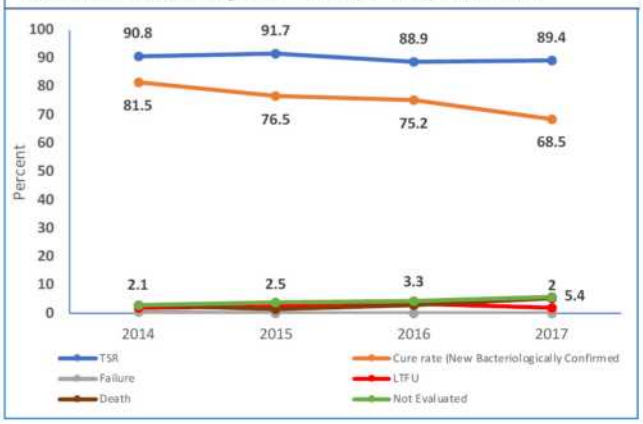
GARISSA COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	462	385	433	392	440
New Clinically Diagnosed	313	272	188	210	393
Previously Treated	42	39	40	28	73
Extra Pulmonary	239	232	203	210	239
TB among children all forms (Under 15)	144	129	109	136	190

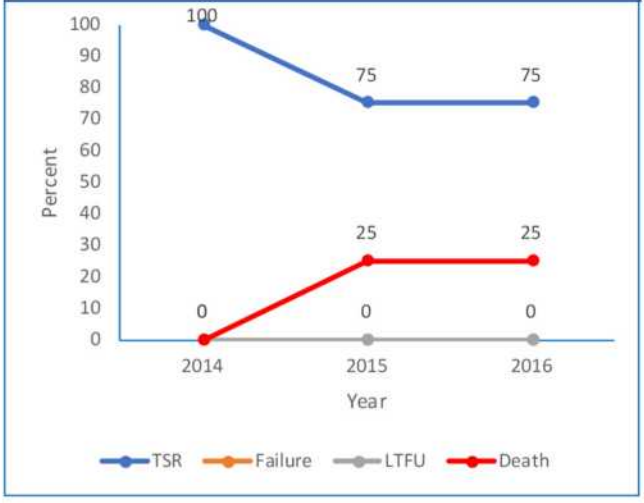
TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	100	86	97.9	96.9	90.5
TB / HIV Co-infection rate	3.9	5.1	3.7	3	2.9
ART uptake	95.5	69.7	96.8	89.2	87
CPT Uptake	100	95.3	100	100	96.7

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017



Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion Malnorished	49.7	49.2	48.9	45.6	47.9
Proportion on food support	41.3	54.1	38	38.2	30.2

Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



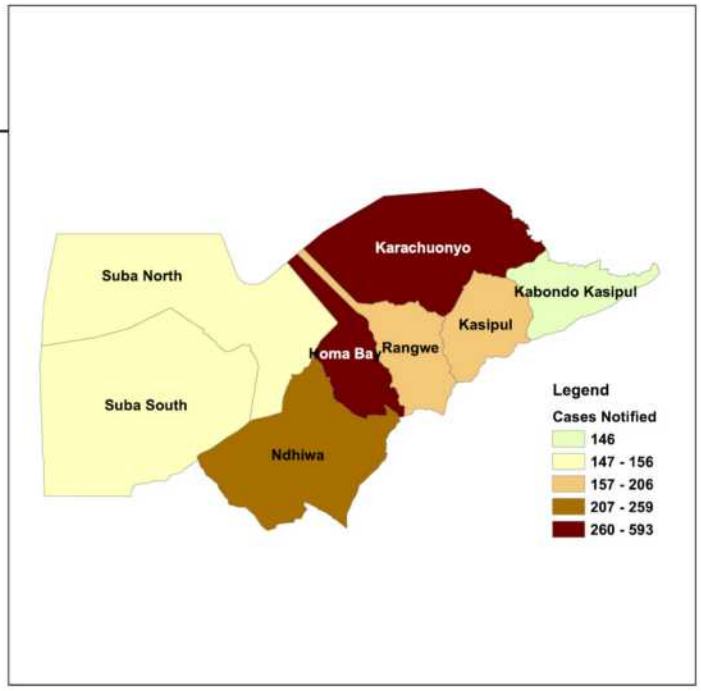
DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
Rifampicin Resistant (Including MDR)	47	40	2	4	6
Mono Resistant	0	29	2	1	0

IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	467	411	459	408	485
Number of <5 on IPT	178	42	125	76	54
IPT Uptake among <5 (%)	38.1	10.2	27.2	18.6	11.1

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	2	0	0	0	0

Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by Private Sector (%)	38.5	37.6	36.6	33.6	25.6

HOMA BAY COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	846	920	910	943	899
New Clinically Diagnosed	819	667	572	617	1255
Previously Treated	137	138	91	126	203
Extra Pulmonary	440	422	405	463	552
TB among children all forms (Under 15)	205	200	174	169	249

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	99	99.9	99.6	99.7	99.9
TB / HIV Co-infection rate	65.9	69.1	63.5	60.8	59.4
ART uptake	89.1	99.2	98.4	99.2	99.5
CPT Uptake	99.4	99.6	100	99.5	99.9

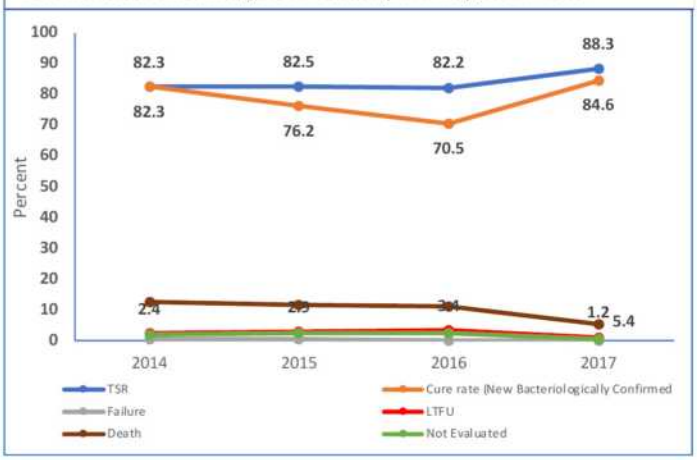
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnorished	38.1	41.1	40.6	37.9	37.5
Proportion on food support	25.3	27.8	35.5	47.9	43.5

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	8	10	8	9	9
Mono Resistant	0	5	3	0	1
Pre XDR	0	0	0	0	0
PDR	1	0	0	0	0
XDR	0	0	0	0	0

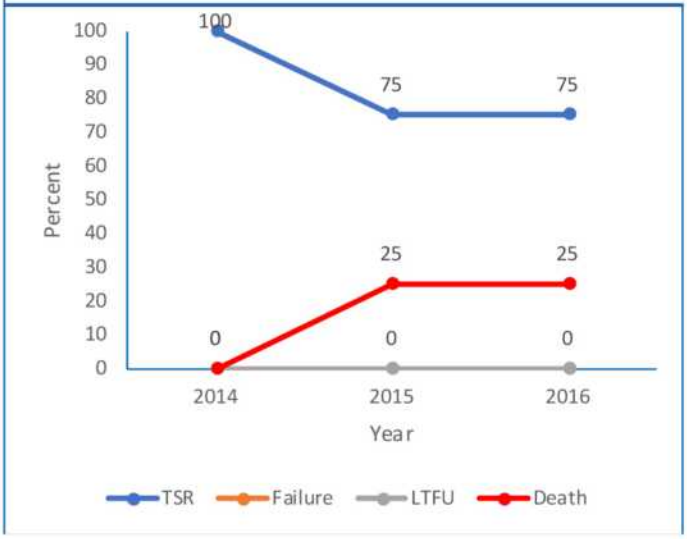
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	1010	1028	966	997	919
Number of <5 on IPT	213	717	155	438	331

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	10	8	8	4	5

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

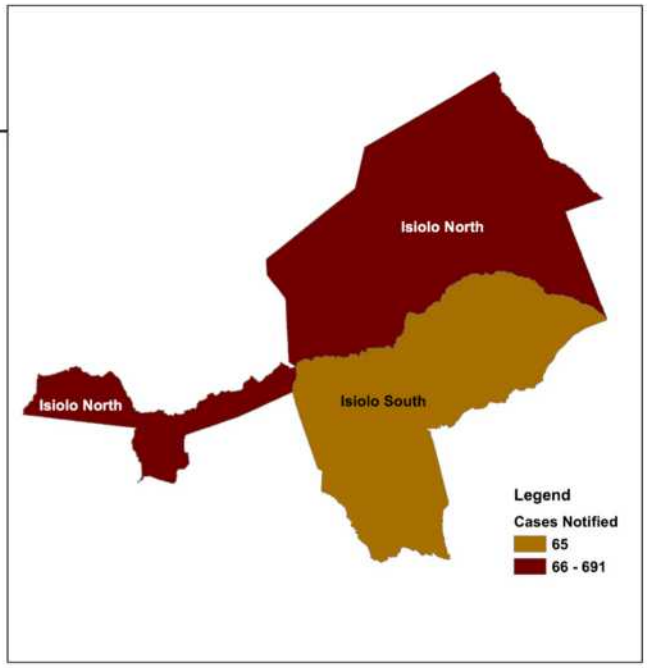


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	17.9	21.1	19.4	19.9	15.4

ISIOLO COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	264	284	270	217	192
New Clinically Diagnosed	377	177	107	119	203
Previously Treated	66	14	24	25	41
Extra Pulmonary	49	147	126	183	146
TB among children all forms (Under 15)	87	73	64	83	75

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	97.5	90.2	95.6	89.5	96.2
TB / HIV Co-infection rate	25.2	25.3	21.2	14.7	18.1
ART uptake	97.2	97.1	100	98.9	98.5
CPT Uptake	100	98.5	99.1	98.9	99.2

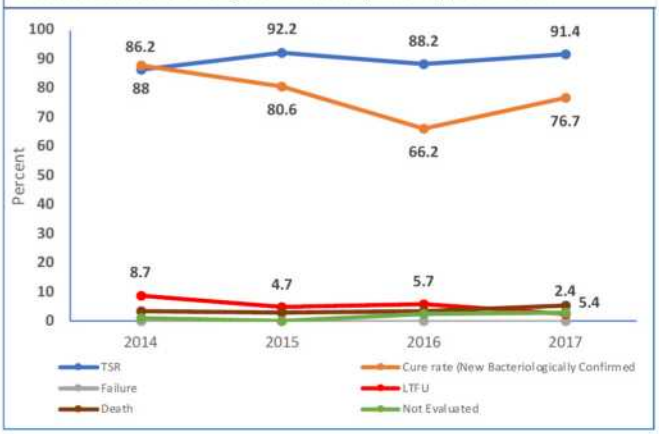
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnorished	51.2	48.7	55.4	51.6	36.3
Proportion on food support	43.2	45	48.9	41.9	41.4

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	1	3	1	2	0
Mono Resistant	3	1	4	3	5
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

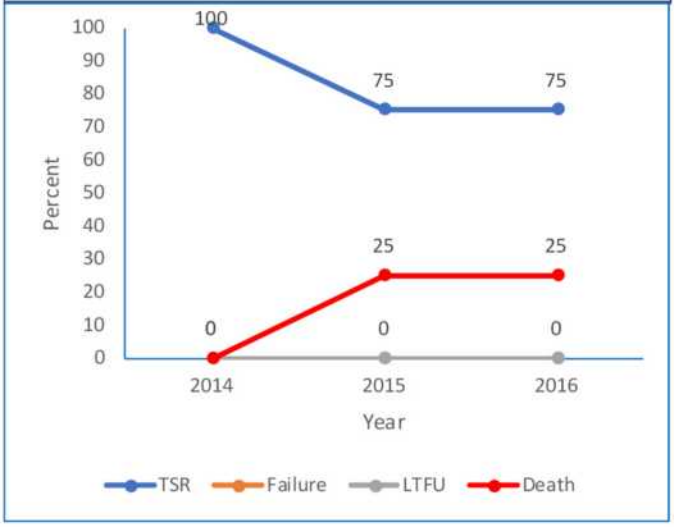
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	204	224	283	292	292
Number of <5 on IPT	15	0	43	44	81
IPT Uptake among <5 (%)	7.3	0	15.1	15	27.7

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	0	0	0	0

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

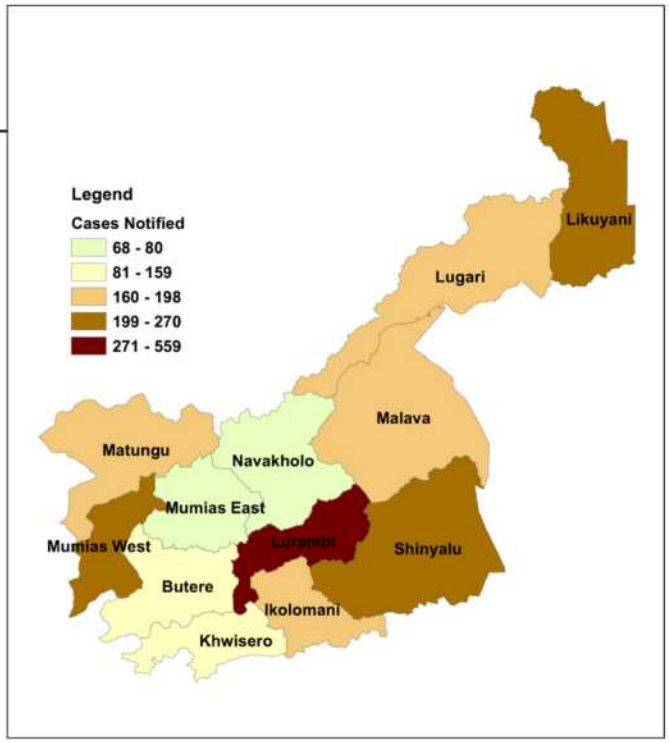


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	1.3	6.2	9.2	11	5.9

KAKAMEGA COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	1053	1091	987	900	858
New Clinically Diagnosed	1068	885	496	768	807
Previously Treated	162	143	66	150	210
Extra Pulmonary	252	317	255	378	463
TB among children all forms (Under 15)	248	244	149	210	235

TBHIV Care Cascade among DSTB (All forms)(%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	97.5	98.1	98	99.3	99.3
TB / HIV Co-infection rate	36	35.2	36.4	33.6	32.5
ART uptake	94.4	96.2	98.3	99.3	99.2
CPT Uptake	100	99.4	99.8	99.5	99.7

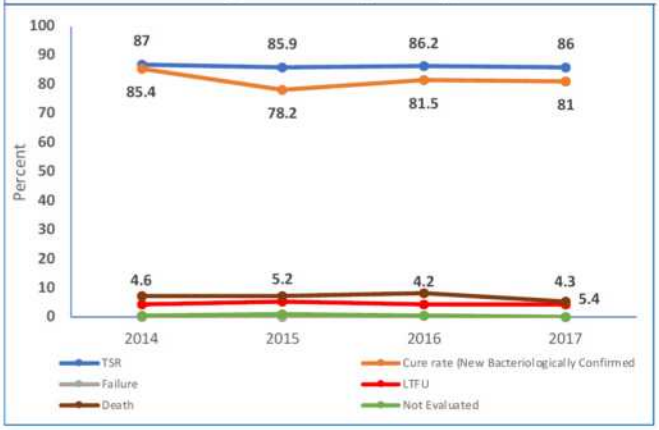
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnorished	37.7	38.2	40.2	27.8	31.7
Proportion on food support	28.3	22.9	28.8	30.8	29

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	1	3	12	9	14
Mono Resistant	1	1	2	1	1
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	1
XDR	0	0	0	0	0

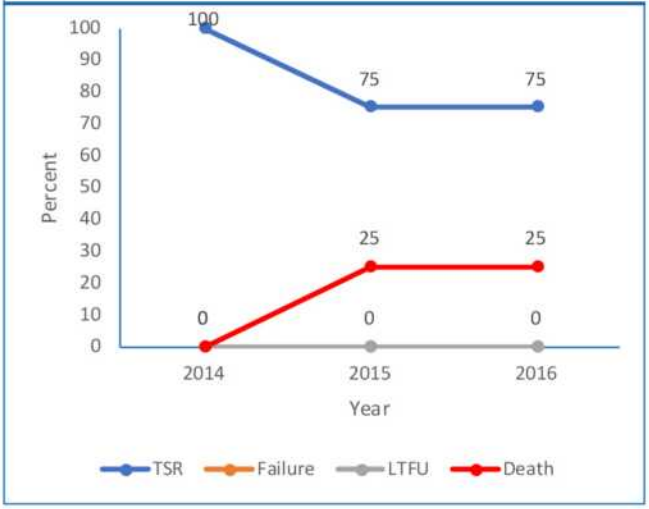
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	993	1000	1031	1174	1137
Number of <5 on IPT	23	95	358	148	113
IPT Uptake among <5 (%)	2.3	9.5	34.7	12.6	9.9

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	2	3	2	5

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

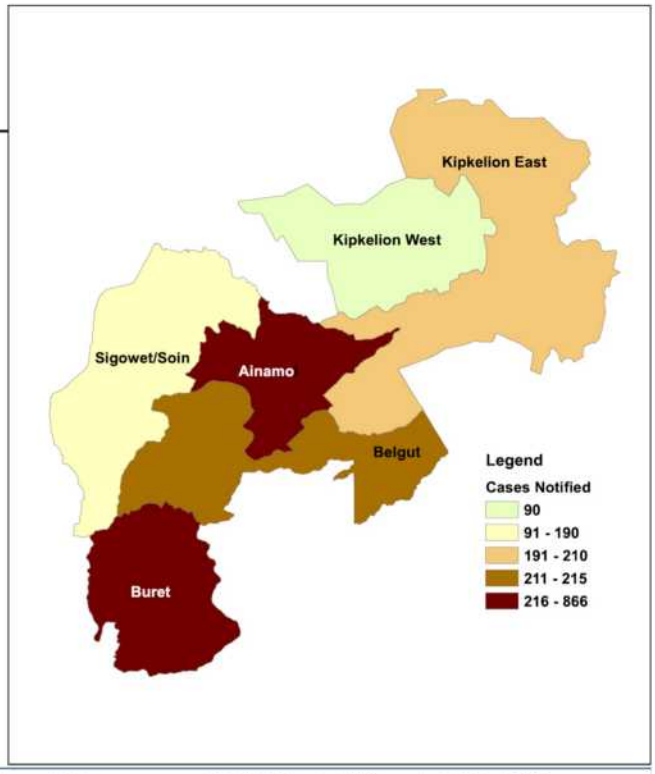


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	14.2	12.2	16.1	19.2	14.6

KERICHO COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	1161	1126	900	939	838
New Clinically Diagnosed	795	351	336	431	612
Previously Treated	101	65	59	71	116
Extra Pulmonary	177	181	136	259	276
TB among children all forms (Under 15)	224	116	126	149	174

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	96.2	98.7	96.9	96.6	97.4
TB / HIV Co-infection rate	28.8	29.1	24.3	24.8	23.8
ART uptake	89.2	94.1	94.8	91.1	95.8
CPT Uptake	99.8	99.7	99.7	99.5	99.4

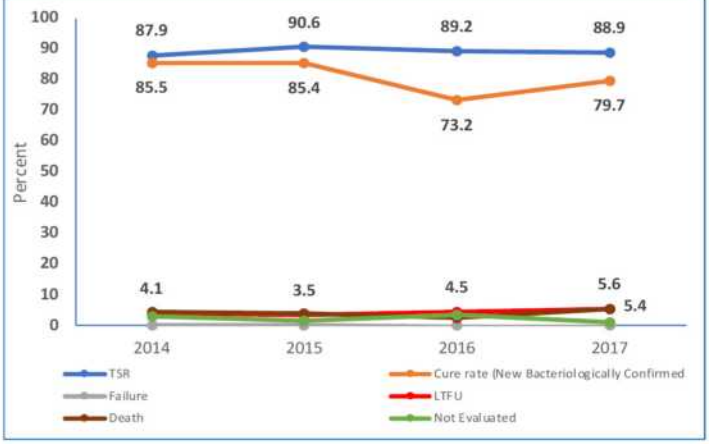
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnorished	43.5	46.2	45.7	41	40.5
Proportion on food support	31.2	35.1	35.1	35.5	29

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	3	2	2	4	2
Mono Resistant	2	2	0	2	1
Pre XDR	0	0	0	0	0
PDR	0	1	0	0	0
XDR	0	0	0	0	0

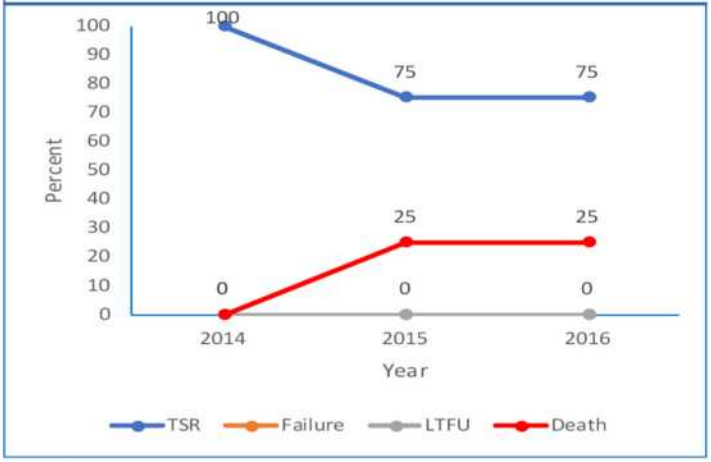
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	920	1003	946	1178	1229
Number of <5 on IPT	227	52	235	342	225
IPT Uptake among <5 (%)	24.6	5.1	24.8	29	18.3

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	0	0	0	0

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

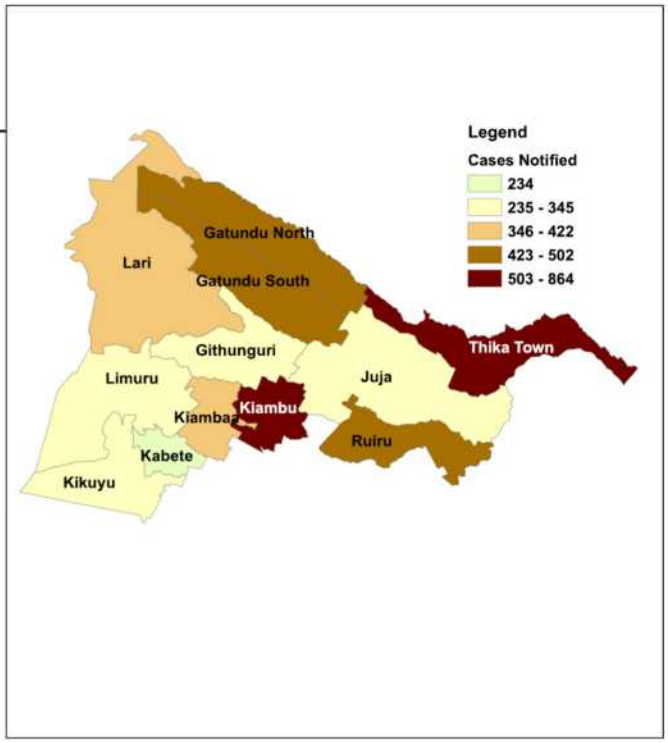


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	9.2	6.2	6	4.8	5.4

KIAMBU COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	2365	2317	2518	1676	1606
New Clinically Diagnosed	1462	1061	717	1107	1387
Previously Treated	350	243	211	340	368
Extra Pulmonary	809	717	604	575	667
TB among children all forms (Under 15)	461	321	272	215	320

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	95	97.7	91.8	98.3	98.4
TB / HIV Co-infection rate	31.6	28.9	25.5	26.7	24.8
ART uptake	88.9	94.5	82.3	93.3	93.6
CPT Uptake	99.8	99.8	89.8	99.6	99.5

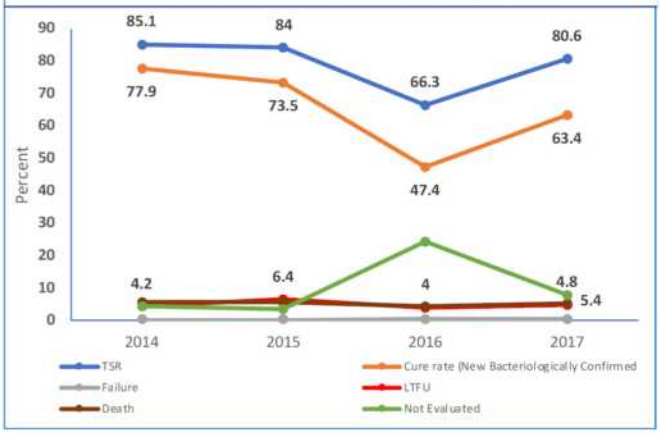
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnorished	37.1	40.2	30.5	36.9	35.8
Proportion on food support	12.4	9.7	7.7	21.3	21.4

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	2	9	10	8	24
Mono Resistant	5	2	6	7	9
Pre XDR	0	0	0	0	0
PDR	1	0	0	0	0
XDR	0	0	0	0	0

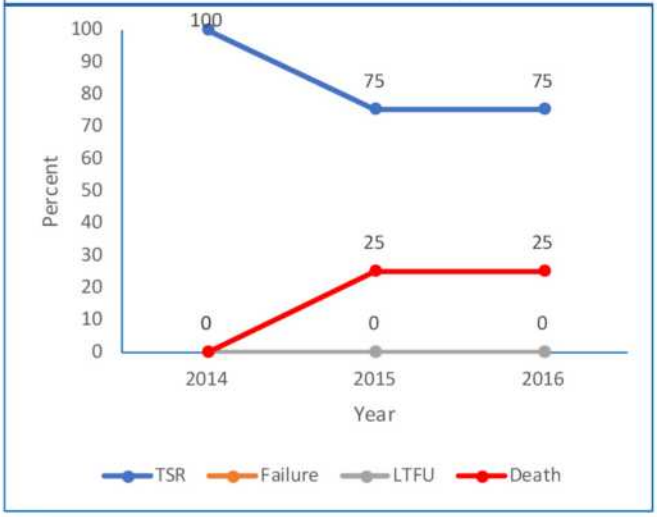
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	1766	1861	2671	2485	2600
Number of <5 on IPT	149	96	148	426	292
IPT Uptake among <5 (%)	8.4	5.1	5.5	17.1	11.2

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	0	0	1	0

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

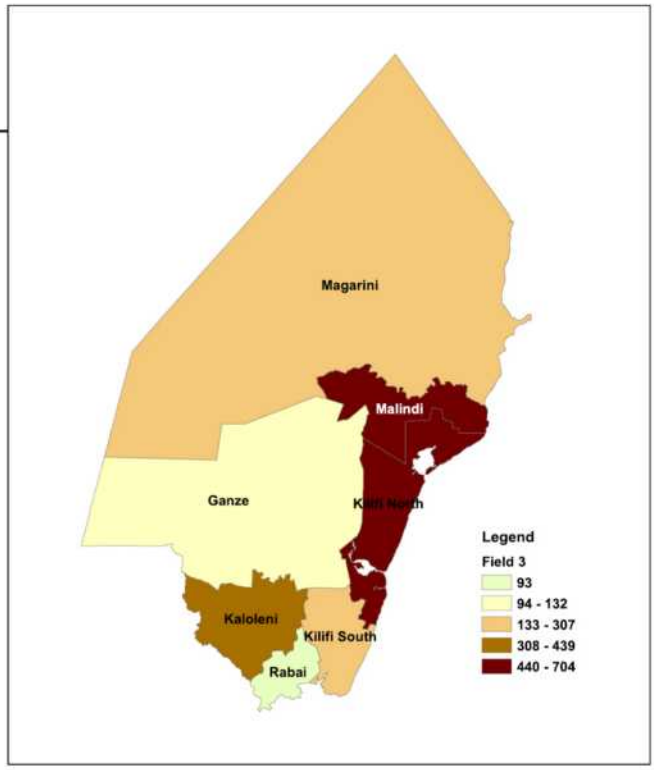


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	24.8	23.4	22.1	27.5	24.3

KILIFI COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	927	898	836	914	790
New Clinically Diagnosed	1175	652	506	582	1101
Previously Treated	187	141	124	169	189
Extra Pulmonary	282	206	236	228	295
TB among children all forms (Under 15)	332	216	186	183	284

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	97.8	99.5	99.2	99.4	99.5
TB / HIV Co-infection rate	32.4	28.2	30.4	25.5	27.4
ART uptake	94.6	98.5	97.6	98.1	99.5
CPT Uptake	99.3	99.6	99.8	99.3	99.8

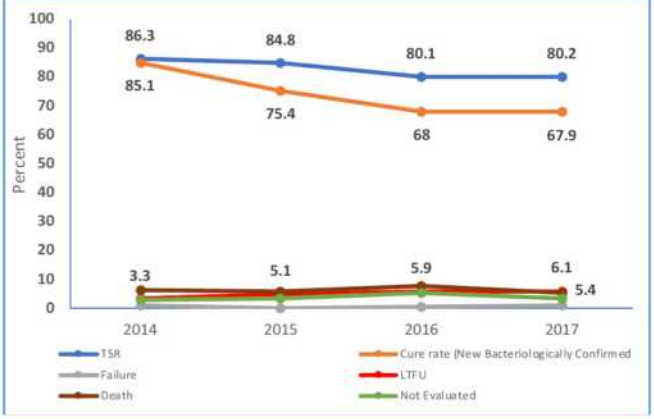
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnorished	39.6	43.7	46.3	42.2	39.7
Proportion on food support	18.6	22.6	21.8	33.4	29.6

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	5	7	10	9	7
Mono Resistant	0	3	2	5	5
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	1
XDR	0	0	0	0	0

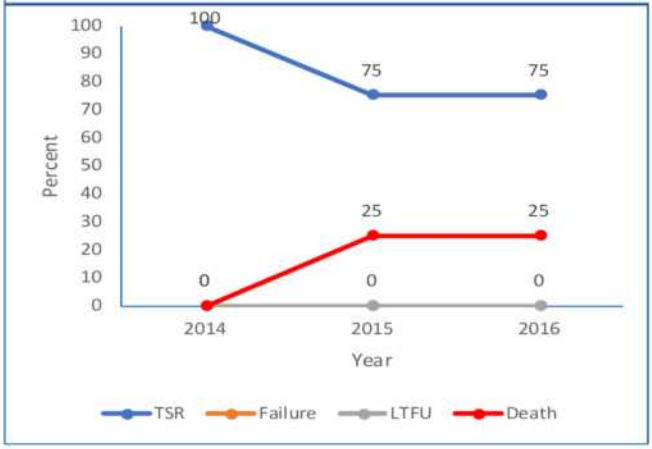
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	892	1019	918	984	1009
Number of <5 on IPT	81	171	172	300	212
IPT Uptake among <5 (%)	9	16.7	18.7	30.4	21

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	24	28	28	26	35

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

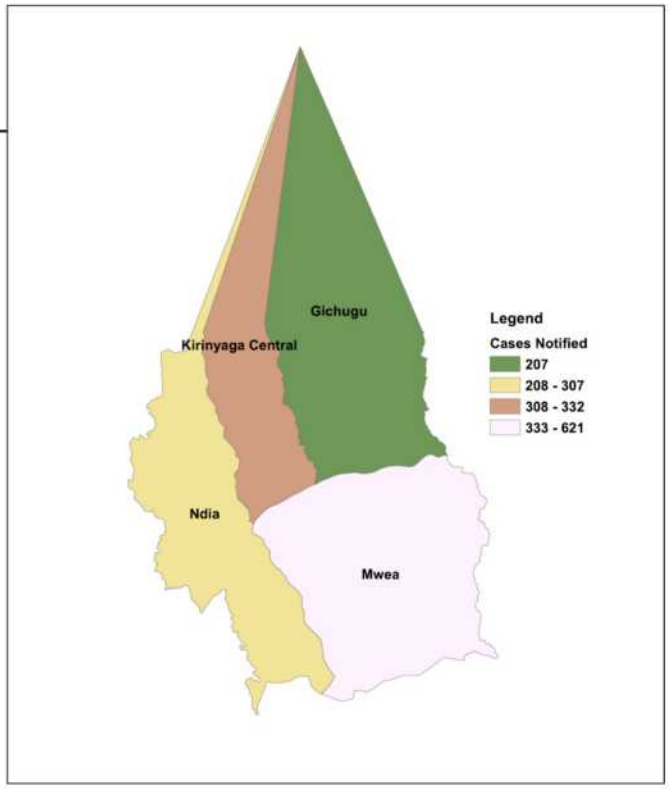


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	21.2	23.2	22.2	20.9	15.7

KIRINYAGA COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	689	650	696	767	680
New Clinically Diagnosed	472	400	241	246	439
Previously Treated	153	130	94	152	166
Extra Pulmonary	153	179	126	176	181
TB among children all forms (Under 15)	198	170	82	102	167

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	99.5	99.9	99.8	99.6	98.5
TB / HIV Co-infection rate	21.8	19.8	18.7	16.7	16.8
ART uptake	97.5	98.1	96.3	95.1	98.3
CPT Uptake	99.6	99.6	100	99.1	97.9

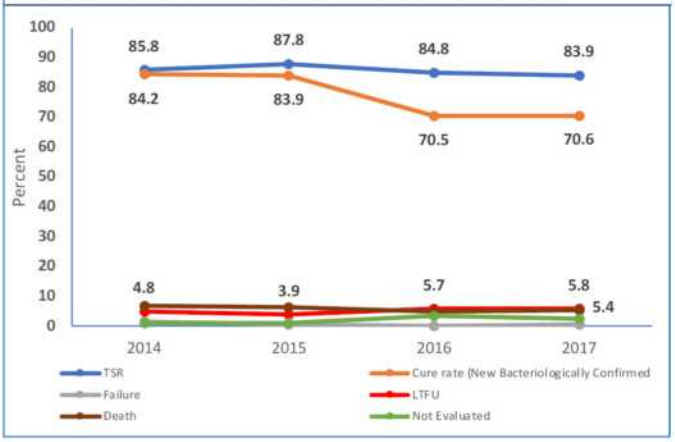
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnorished	47.2	49.8	48.9	41.7	38.3
Proportion on food support	17.1	19.5	24.2	22.8	15.9

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	7	6	8	5	7
Mono Resistant	2	3	1	9	7
Pre XDR	0	0	0	0	0
PDR	0	1	0	2	1
XDR	0	0	0	0	0

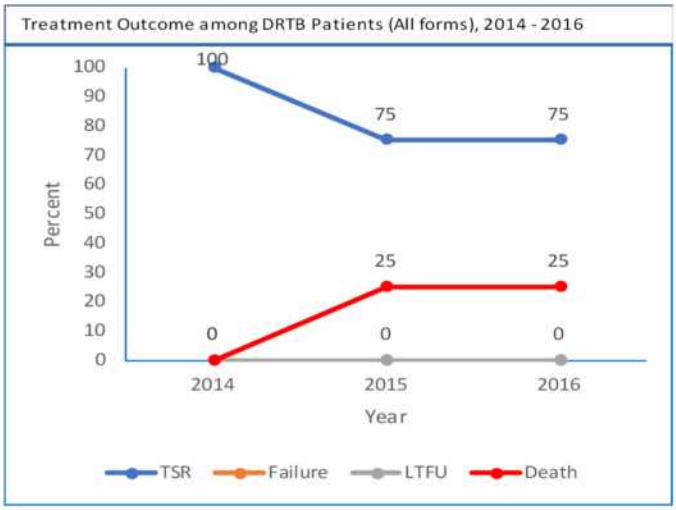
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	789	897	771	744	788
Number of <5 on IPT	39	80	104	161	143
IPT Uptake among <5 (%)	4.9	8.9	13.4	21.6	18.1

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	0	0	0	2

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

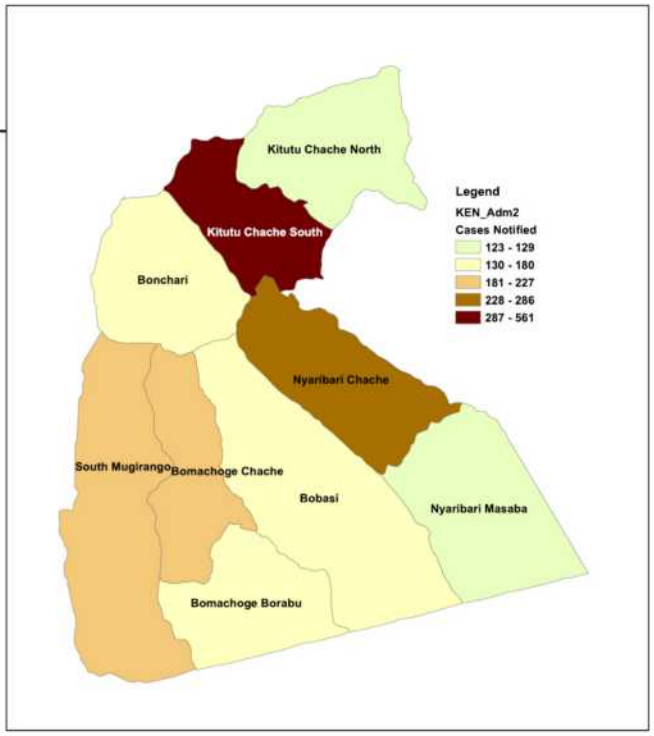


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	13.5	12.1	11.2	15.6	12

KISII COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	1024	971	844	887	829
New Clinically Diagnosed	680	602	428	519	721
Previously Treated	106	60	55	79	116
Extra Pulmonary	195	217	186	174	156
TB among children all forms (Under 15)	160	149	129	115	143

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	98.9	99.8	99.9	99.7	98.8
TB / HIV Co-infection rate	36.3	35.8	35.2	35.2	30.9
ART uptake	97.1	99.1	99.4	99.6	98
CPT Uptake	100	100	99.8	100	99.8

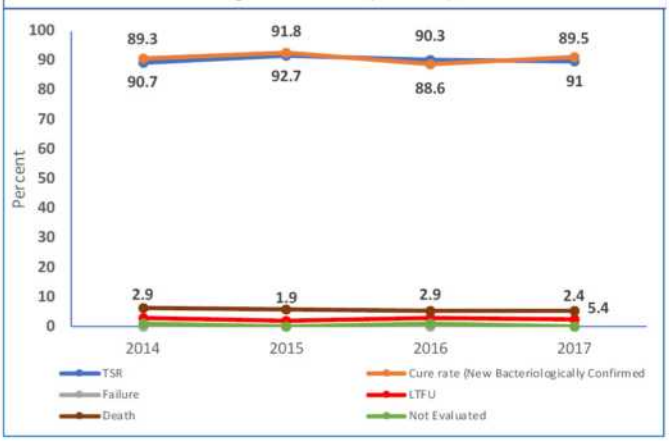
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnourished	39.1	44.8	42.5	40.2	37.4
Proportion on food support	14.9	26	24.3	22.5	24.4

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	6	9	3	8	7
Mono Resistant	3	2	1	1	4
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

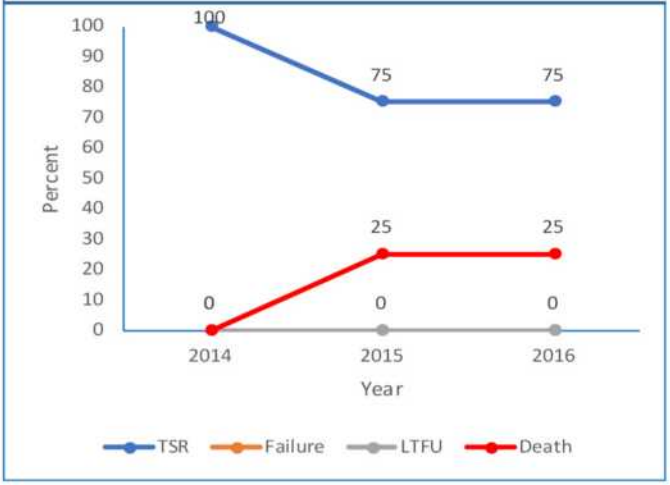
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	900	947	887	1013	1101
Number of <5 on IPT	8	97	226	311	208
IPT Uptake among <5 (%)	0.8	10.2	25.4	30.7	18.8

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	0	2	1	2

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

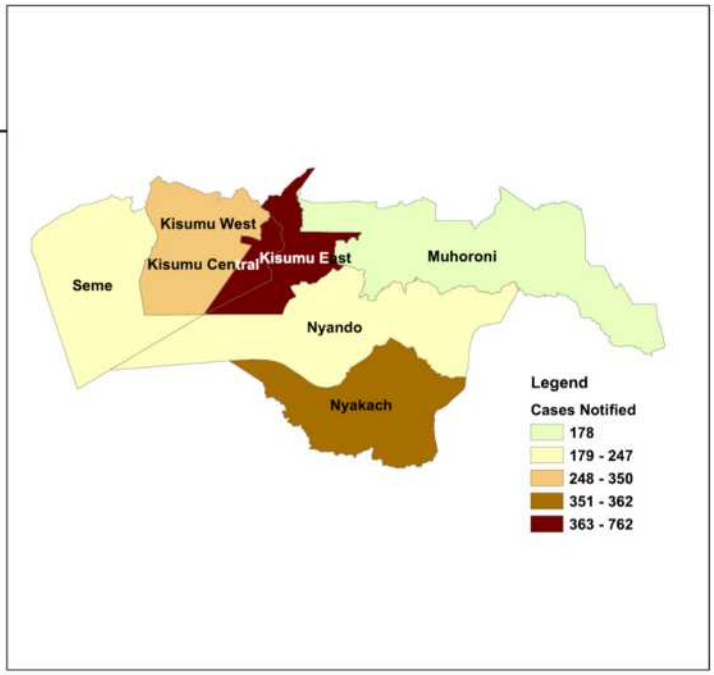


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	8.9	11.3	9.9	15.9	13.2

KISUMU COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	1167	1302	1374	1462	1334
New Clinically Diagnosed	1275	940	712	806	1238
Previously Treated	214	130	155	240	289
Extra Pulmonary	234	242	340	423	507
TB among children all forms (Under 15)	241	156	175	239	294

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	96.9	97.8	97.7	94	97.5
TB / HIV Co-infection rate	62	61.7	59	51.6	49.6
ART uptake	94.5	93.8	92.7	96.1	94.9
CPT Uptake	99.4	99.6	99.7	98.5	98.1

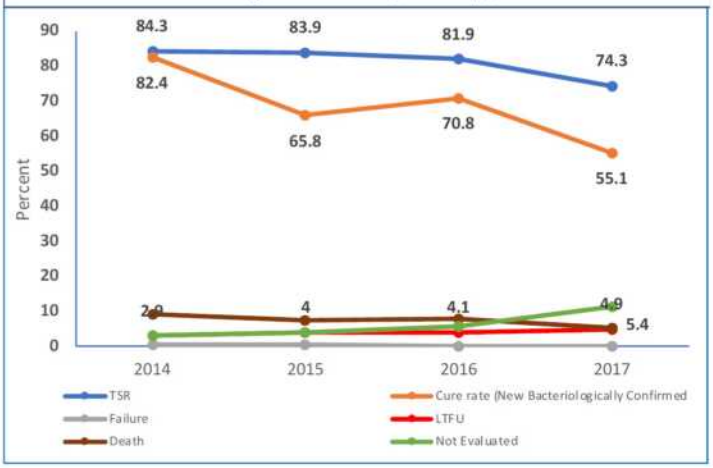
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnourished	45.6	43.8	43.7	39.4	37.2
Proportion on food support	15.9	15.2	14.8	12.9	21.7

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	10	10	7	7	3
Mono Resistant	1	5	10	6	2
Pre XDR	0	0	0	0	0
PDR	1	1	0	0	0
XDR	0	0	0	0	0

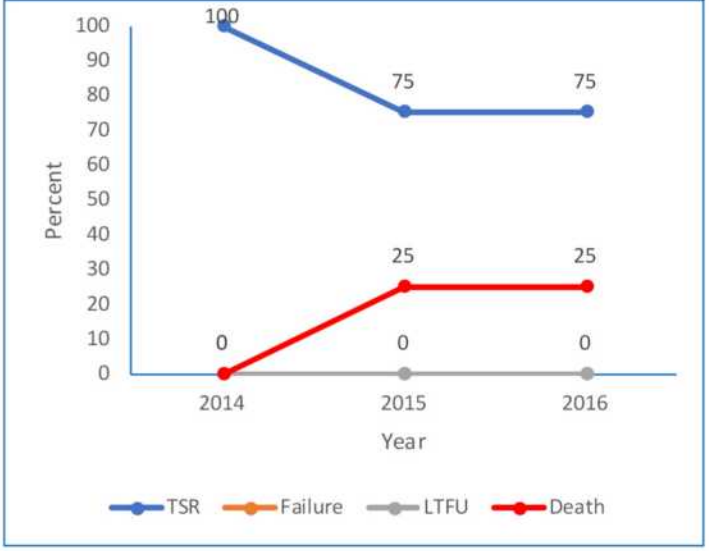
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	1524	1626	1494	1380	1286
Number of <5 on IPT	166	143	215	372	169
IPT Uptake among <5 (%)	10.8	8.7	14.3	26.9	13.1

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	11	10	2	3	0

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

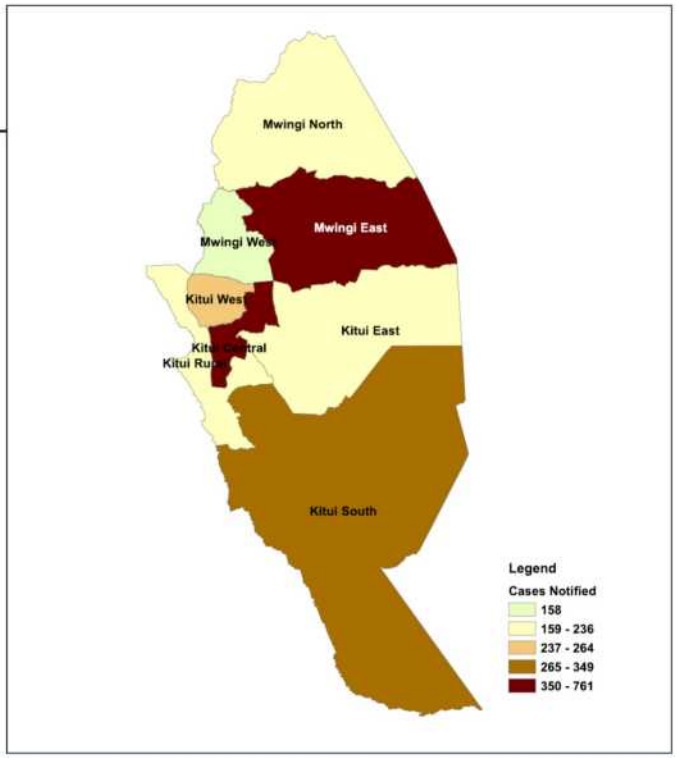


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	29.7	30.1	29.5	33.8	30.5

KITUI COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	1361	1402	1216	1078	986
New Clinically Diagnosed	759	381	197	396	532
Previously Treated	170	115	103	145	201
Extra Pulmonary	517	346	268	377	329
TB among children all forms (Under 15)	206	122	112	129	139

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	99.8	99.7	99.7	99.9	99.8
TB / HIV Co-infection rate	28.7	25.8	22.3	21.5	22.7
ART uptake	98.1	99.4	99.2	99.3	99.6
CPT Uptake	100	99.8	100	99.7	99.8

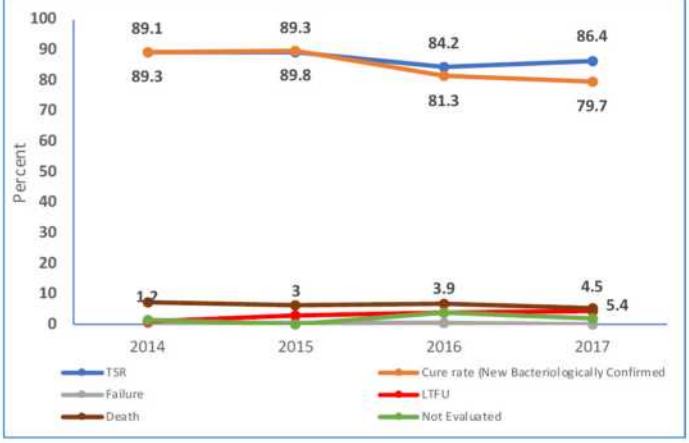
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnorished	53.8	53.8	58.1	47.8	55.9
Proportion on food support	20.6	13.9	16.3	29.6	37.1

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	5	9	6	7	15
Mono Resistant	2	2	3	4	7
Pre XDR	0	0	0	0	0
PDR	0	1	0	0	1
XDR	0	0	0	1	0

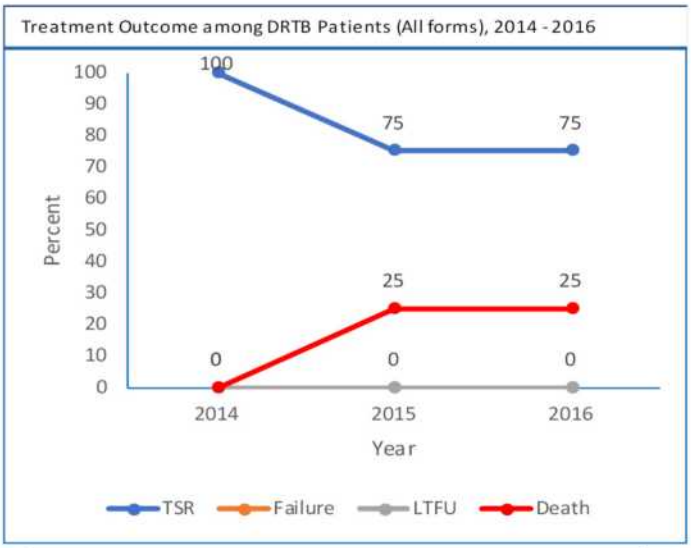
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	1104	1189	1309	1499	1477
Number of <5 on IPT	39	215	211	406	283
IPT Uptake among <5 (%)	3.5	18	16.1	27	19.1

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	1	8	2	3	3

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

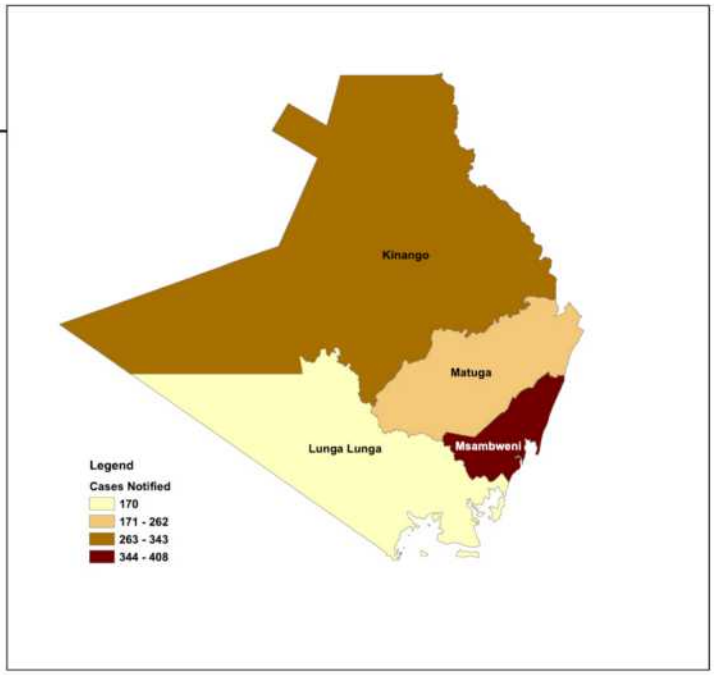


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	8.3	8.6	10.4	11.8	8.9

KWALE COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	409	389	426	431	387
New Clinically Diagnosed	582	362	394	460	461
Previously Treated	74	37	74	71	92
Extra Pulmonary	118	110	184	192	232
TB among children all forms (Under 15)	169	127	127	134	122

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	91.3	95.7	95.6	95.4	95.8
TB / HIV Co-infection rate	25.4	27.3	24.2	22	22.8
ART uptake	76.1	92.7	88.5	92.4	95.1
CPT Uptake	94.9	97.7	97.3	98.4	97.7

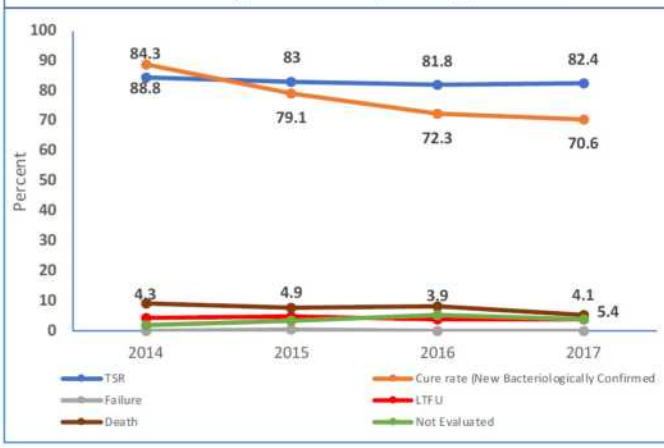
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion Malnorished	37.7	37.3	41.6	29.2	36.6
Proportion on food support	14	8.8	11.3	28	22.5

DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
Rifampicin Resistant (Including MDR)	0	4	4	2	5
Mono Resistant	0	0	1	0	2
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

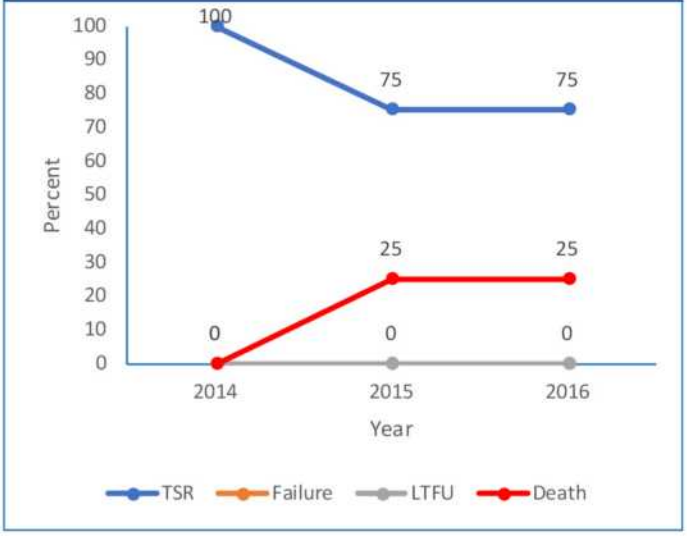
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	422	451	462	400	439
Number of <5 on IPT	129	30	83	72	54
IPT Uptake among <5 (%)	30.5	6.6	17.9	18	12.3

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	49	24	8	16	6

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

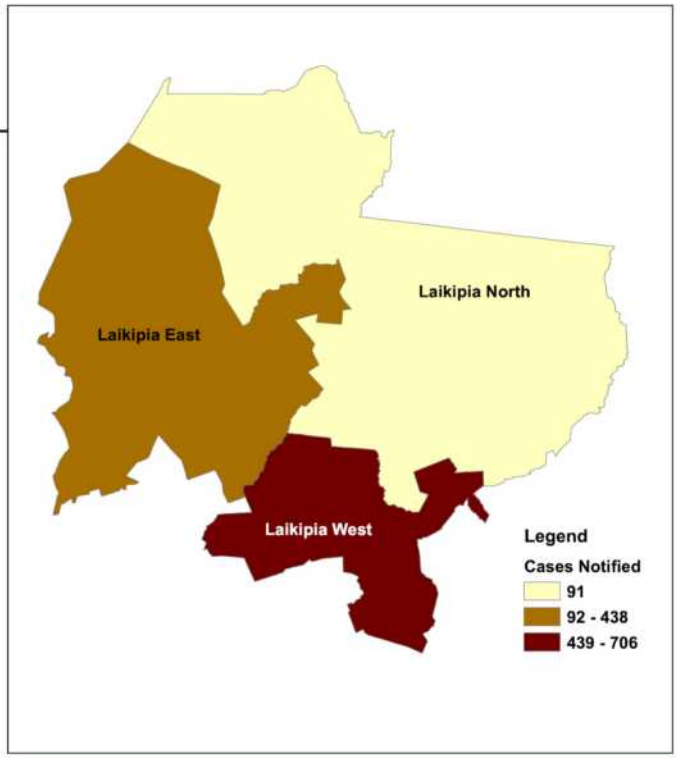


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by Private Sector (%)	8.1	7.9	8.3	8.9	7.6

LAIKIPIA COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	603	530	400	390	322
New Clinically Diagnosed	438	286	172	172	267
Previously Treated	69	74	69	65	72
Extra Pulmonary	125	110	102	103	119
TB among children all forms (Under 15)	156	93	74	51	52

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	98.8	99	99	98.5	98.2
TB / HIV Co-infection rate	35.3	28.3	30	22.8	25.8
ART uptake	84.7	96.1	98.6	98.6	97.1
CPT Uptake	100	100	100	98.6	99

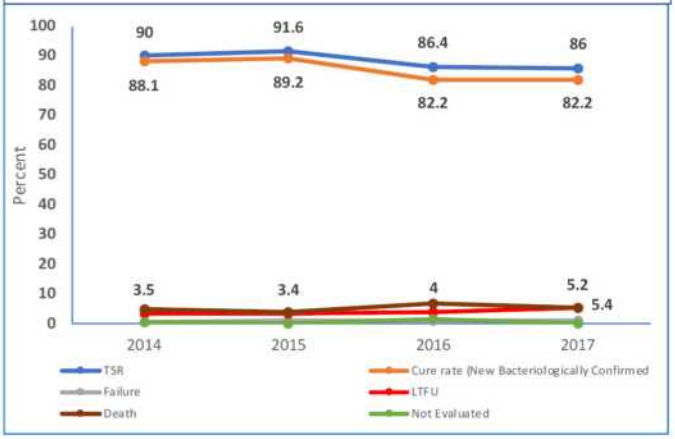
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnorished	40.6	50.4	45.2	45.4	40.5
Proportion on food support	24.2	19.4	27.9	27.3	27.8

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	0	4	5	7	4
Mono Resistant	0	0	3	3	2
Pre XDR	0	0	0	0	0
PDR	0	1	0	0	0
XDR	0	0	0	0	0

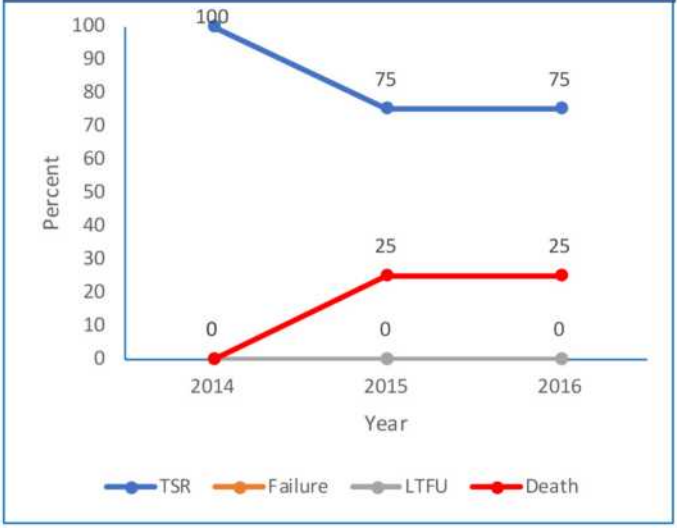
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	361	442	453	574	642
Number of <5 on IPT	0	54	80	119	172
IPT Uptake among <5 (%)	0	12.2	17.6	20.7	26.7

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	0	0	0	0

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

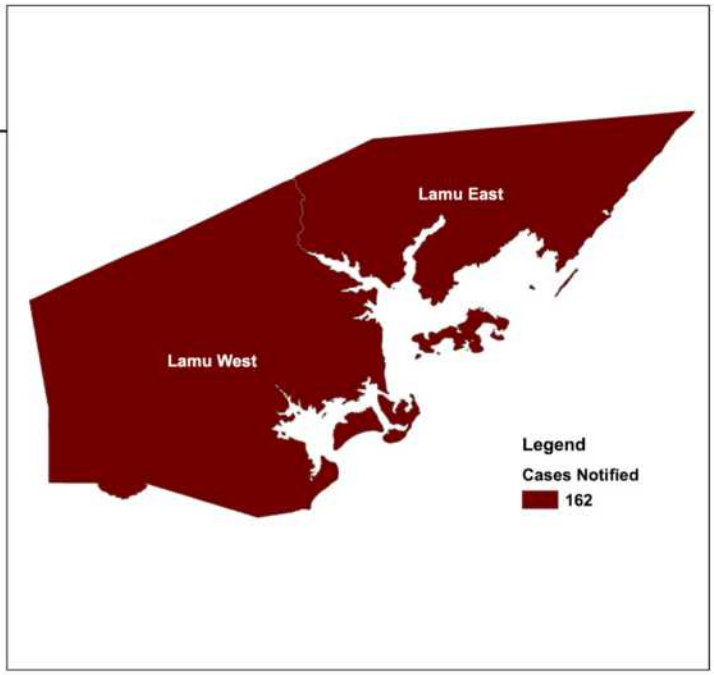


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	17.1	12.8	16.8	16.5	11.6

LAMU COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	103	138	112	121	111
New Clinically Diagnosed	154	136	118	52	63
Previously Treated	16	10	12	10	19
Extra Pulmonary	51	37	41	27	30
TB among children all forms (Under 15)	52	46	55	16	11

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	99.1	99	98.9	99	99.3
TB / HIV Co-infection rate	18.3	23.3	15.5	13.3	11.7
ART uptake	95.1	95.9	100	97.6	97.3
CPT Uptake	95.1	97.9	100	100	97.3

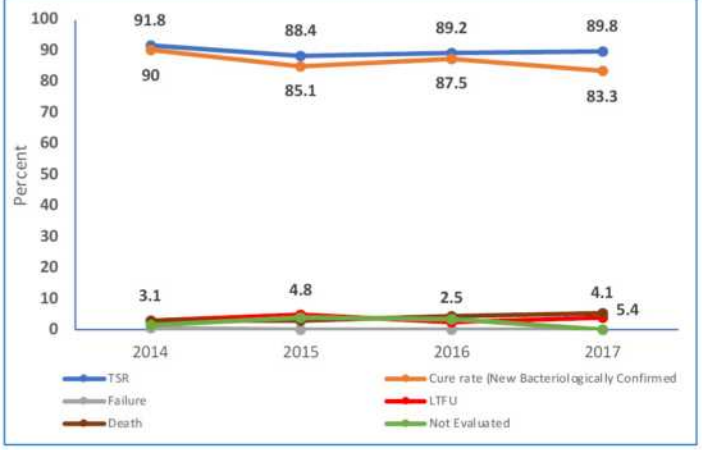
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion malnourished	49.3	51.9	43.8	40.4	26.8
Proportion on food support	17	21.9	30.7	43.9	33.9

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	1	1	0	1	1
Mono Resistant	0	0	0	0	2
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

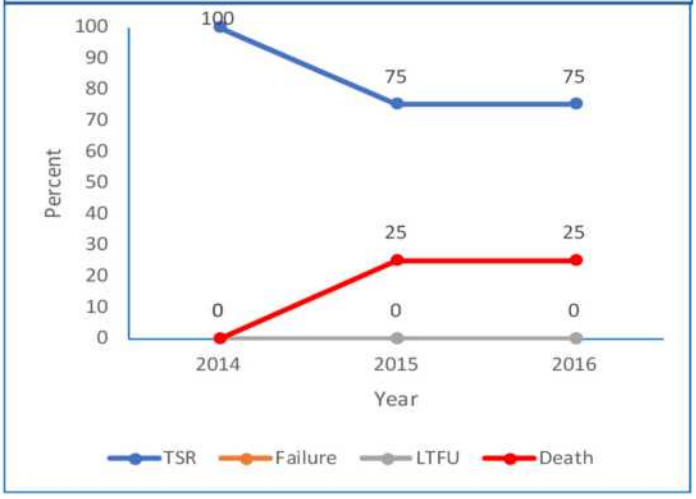
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	124	128	118	145	115
Number of <5 on IPT	0	19	172	138	23
IPT Uptake among <5 (%)	0	14.8	146	95.1	20

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	1	1	0	1	2

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

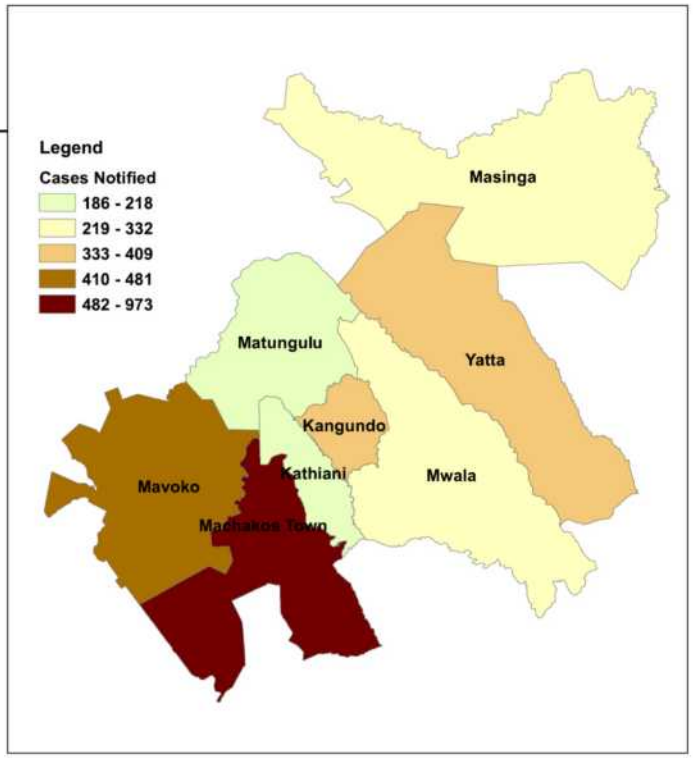


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	1.3	1.9	1.7	4	4.3

MACHAKOS COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	1675	1587	1376	1214	1161
New Clinically Diagnosed	788	402	247	418	568
Previously Treated	251	176	103	145	178
Extra Pulmonary	539	474	400	446	529
TB among children all forms (Under 15)	302	128	128	125	133

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	99	99.5	98.9	98.3	99.1
TB / HIV Co-infection rate	28.8	26.6	23.4	24.2	25
ART uptake	96.4	96.6	96.9	99	97.5
CPT Uptake	100	99.4	99.5	100	99.3

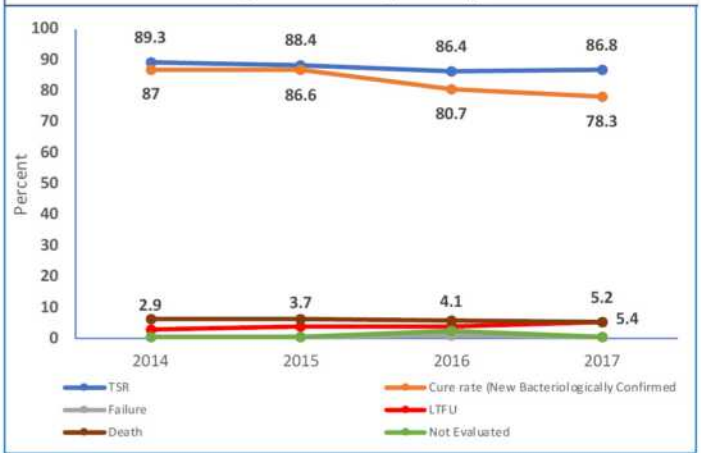
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion Malnourished	45.5	47.4	48.5	47.9	47.2
Proportion on food support	32.5	22.4	30.1	36.6	39.3

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	8	5	12	11	16
Mono Resistant	3	2	3	8	19
Pre XDR	0	0	0	0	0
PDR	2	0	0	0	0
XDR	0	0	0	0	1

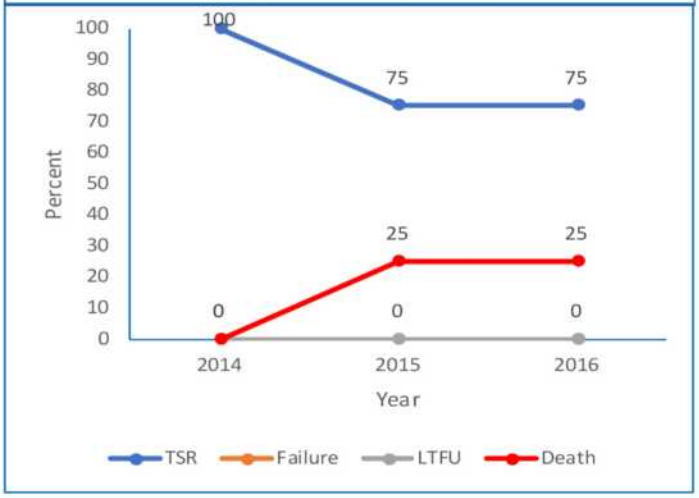
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	1289	1318	1465	1735	1857
Number of <5 on IPT	379	383	205	309	256
IPT Uptake among <5 (%)	29.4	29	13.9	17.8	13.7

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	1	1	0	0

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

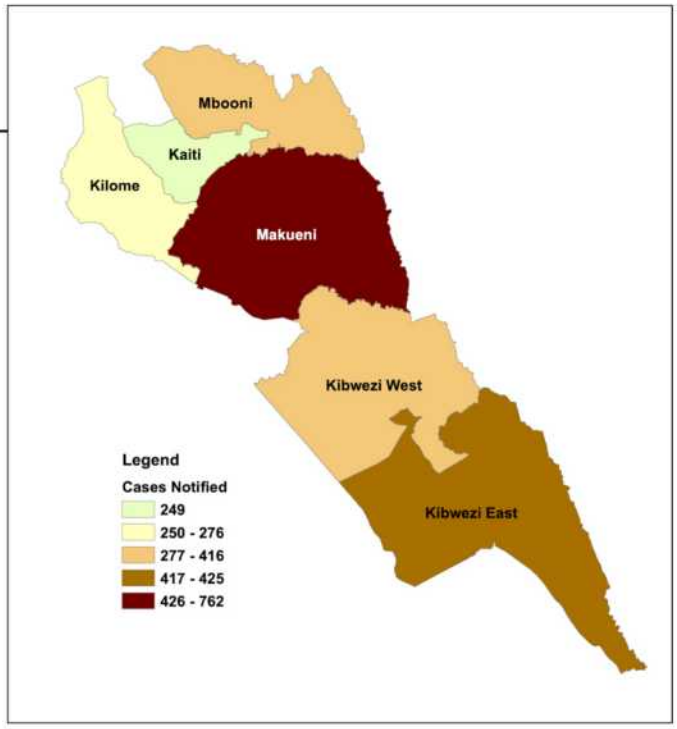


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,20 14 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	8.7	8	8.7	12.3	9.6

MAKUENI COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	1155	1041	909	867	739
New Clinically Diagnosed	909	316	194	381	511
Previously Treated	143	107	82	129	153
Extra Pulmonary	330	240	272	248	203
TB among children all forms (Under 15)	197	88	76	88	133

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	97.6	98.8	98.6	98.5	98.6
TB / HIV Co-infection rate	28.2	27.8	28	26.1	24.5
ART uptake	96.2	97.3	97.5	98.8	99
CPT Uptake	99.5	99.1	99.5	99.7	100

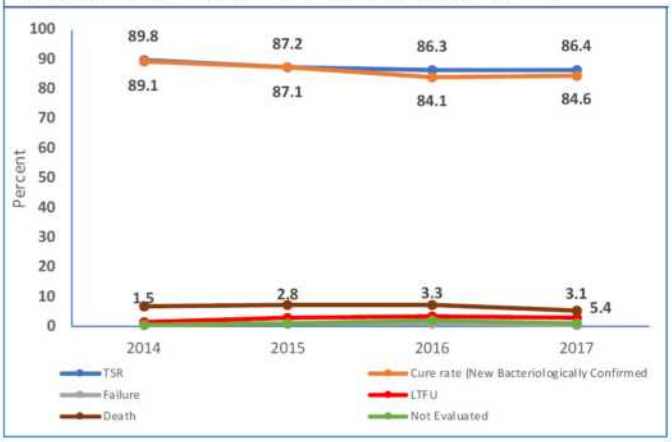
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion malnourished	48.6	53.2	51.7	49.5	50.8
Proportion on food support	25.9	28	29.3	40	39.5

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	0	5	7	9	13
Mono Resistant	0	2	0	7	5
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

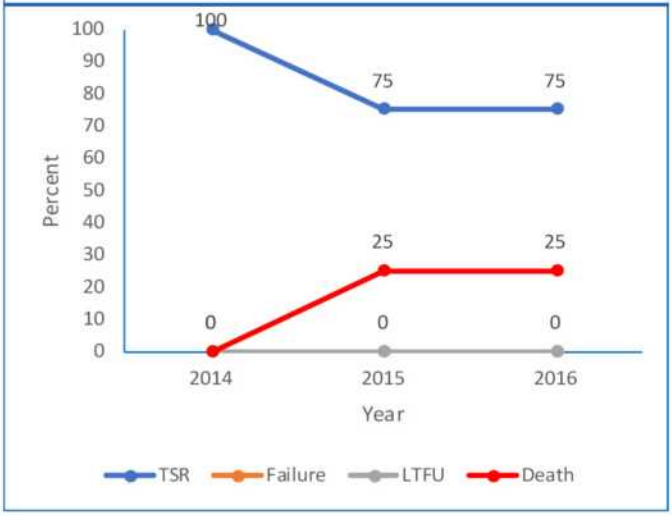
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	833	955	974	1128	1237
Number of <5 on IPT	708	203	134	353	209
IPT Uptake among <5 (%)	84.9	21.2	13.7	31.2	16.8

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	4	1	0	2

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

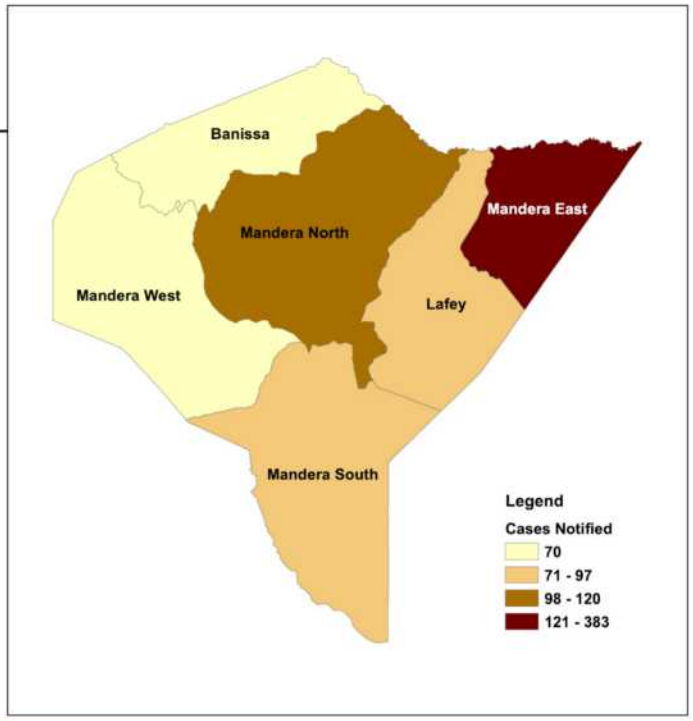


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	5.5	4.1	4.6	3.6	2.3

MANDERA COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	268	250	232	247	213
New Clinically Diagnosed	209	203	158	196	254
Previously Treated	22	20	13	34	50
Extra Pulmonary	171	128	145	130	117
TB among children all forms (Under 15)	113	85	85	77	70

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	99.5	88.6	97.4	98.3	98.3
TB / HIV Co-infection rate	2.6	1.1	1.6	2.6	3.5
ART uptake	88.2	100	77.7	100	100
CPT Uptake	100	100	100	93.7	100

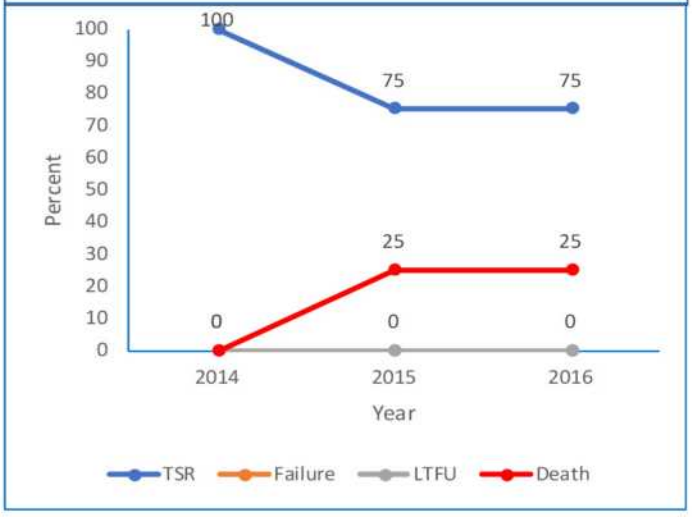
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion malnourished	63	57.4	53.6	46.4	41.7
Proportion on food support	38.4	59.8	43.6	59.2	51.9

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	0	0	0	1	4
Mono Resistant	0	0	0	1	0
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

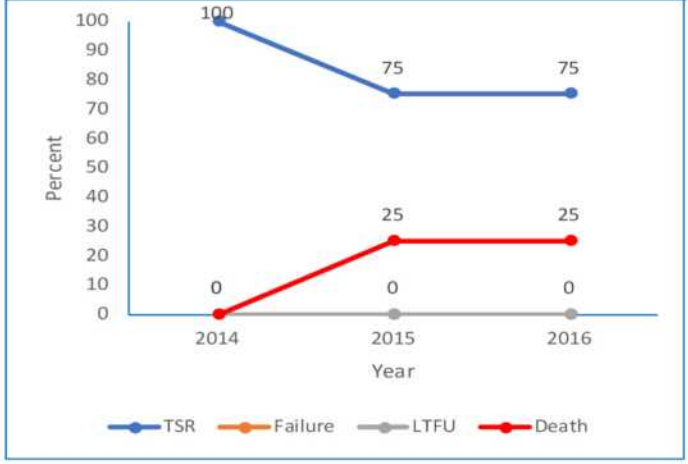
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	223	258	238	256	280
Number of <5 on IPT	1	0	6	31	104
IPT Uptake among <5 (%)	0.4	0	2.5	12.1	37.1

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	0	0	0	0

Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	0.1	0	0.1	0	0.1

MARSABIT COUNTY

DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	378	411	322	310	295
New Clinically Diagnosed	234	176	171	234	241
Previously Treated	34	30	14	23	31
Extra Pulmonary	88	76	56	78	96
TB among children all forms (Under 15)	86	81	56	63	75

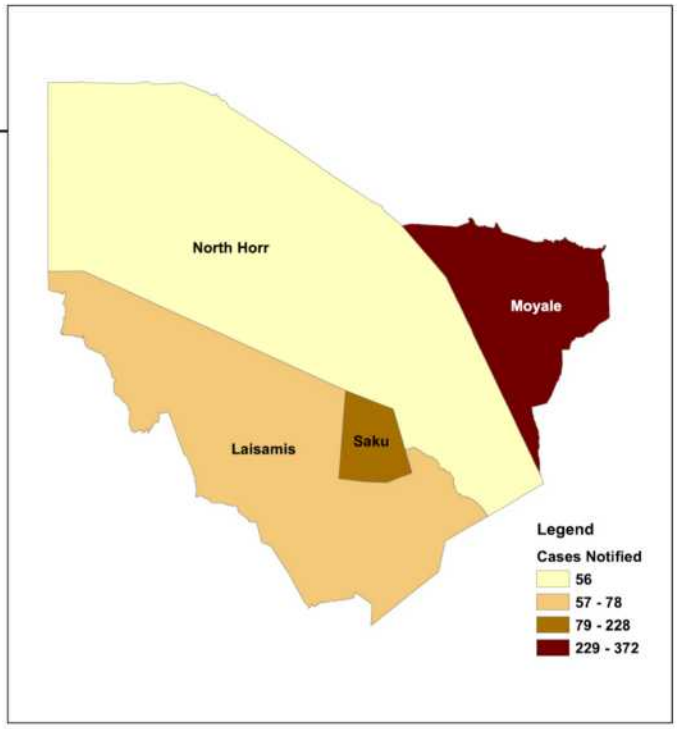
TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	97.8	85.8	86.6	91.7	96.1
TB / HIV Co-infection rate	9.3	8.2	10.1	11.3	8.1
ART uptake	98.3	96.2	100	94.9	98.3
CPT Uptake	100	100	100	97.4	100

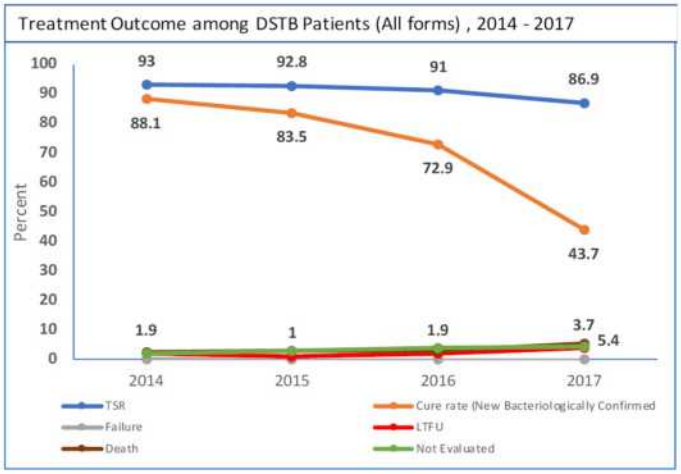
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion malnourished	61.9	53.9	54.3	41.1	56.2
Proportion on food support	22.7	18.7	12.6	24.5	51.9

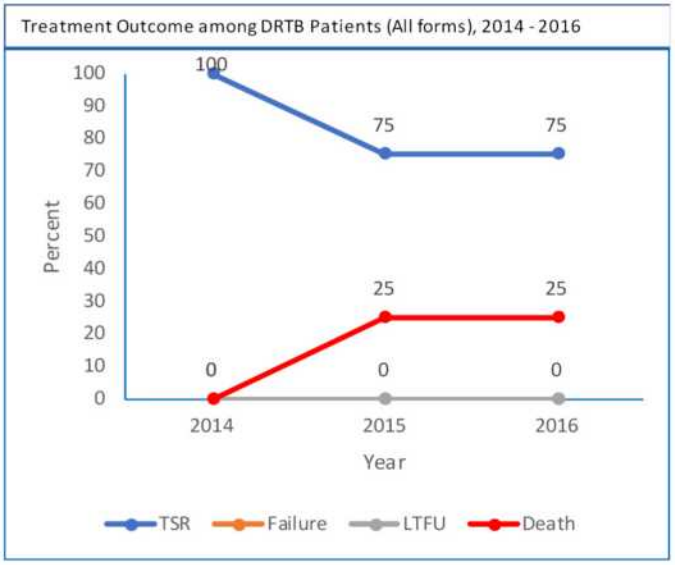
DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	0	2	3	1	8
Mono Resistant	0	1	1	0	0
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	316	328	332	429	392
Number of <5 on IPT	0	16	27	75	99
IPT Uptake among <5 (%)	0	4.8	8.1	17.4	25.2

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	0	0	0	0

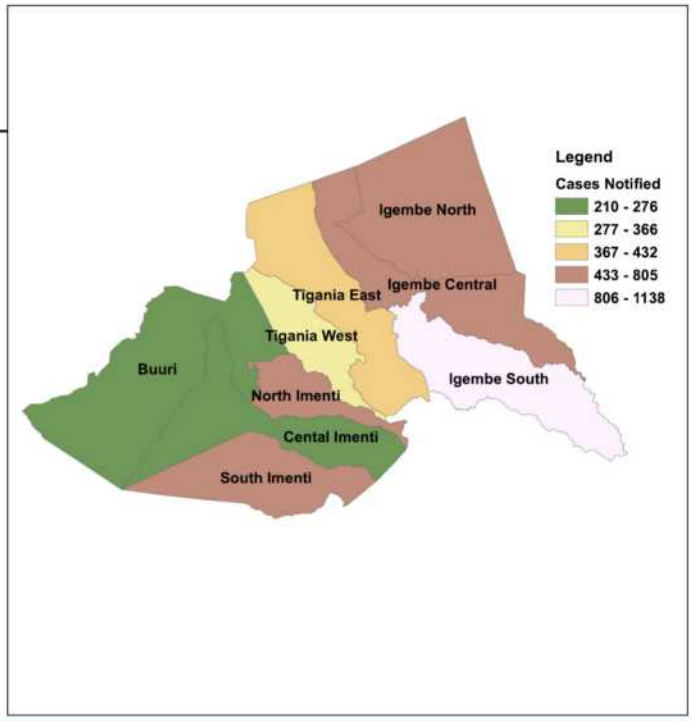






Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	16.4	18.2	11.5	13.7	11

MERU COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	2519	2593	2191	2212	1946
New Clinically Diagnosed	1202	677	385	439	827
Previously Treated	402	287	167	228	315
Extra Pulmonary	578	588	441	544	529
TB among children all forms (Under 15)	437	283	302	249	303

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	97.5	98.5	98.7	95.9	98
TB / HIV Co-infection rate	18.8	16.7	17.5	17.9	16.1
ART uptake	87.4	96	94.2	95.5	94.7
CPT Uptake	98.5	99.3	98.2	98.6	98.4

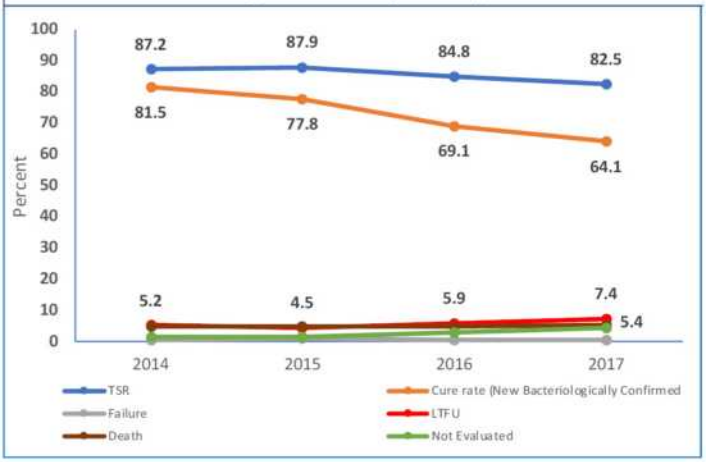
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion Malnourished	48.3	51.2	52.1	49.6	45.4
Proportion on food support	9.9	11	11.5	18	24.3

DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
Rifampicin Resistant (Including MDR)	3	5	19	15	29
Mono Resistant	1	3	2	13	11
Pre XDR	0	0	0	0	4
PDR	1	0	0	0	1
XDR	0	0	0	0	0

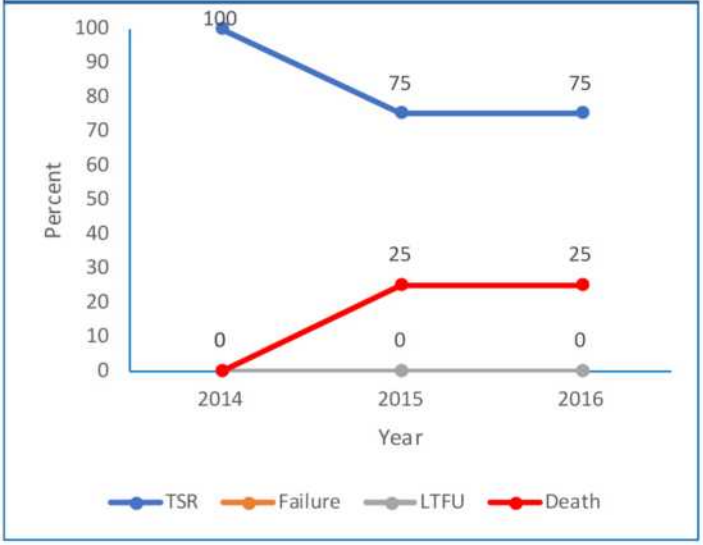
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	2159	2403	2351	2830	2809
Number of <5 on IPT	201	460	359	511	545
IPT Uptake among <5 (%)	9.3	19.1	15.2	18	19.4

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	0	0	0	1	1

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

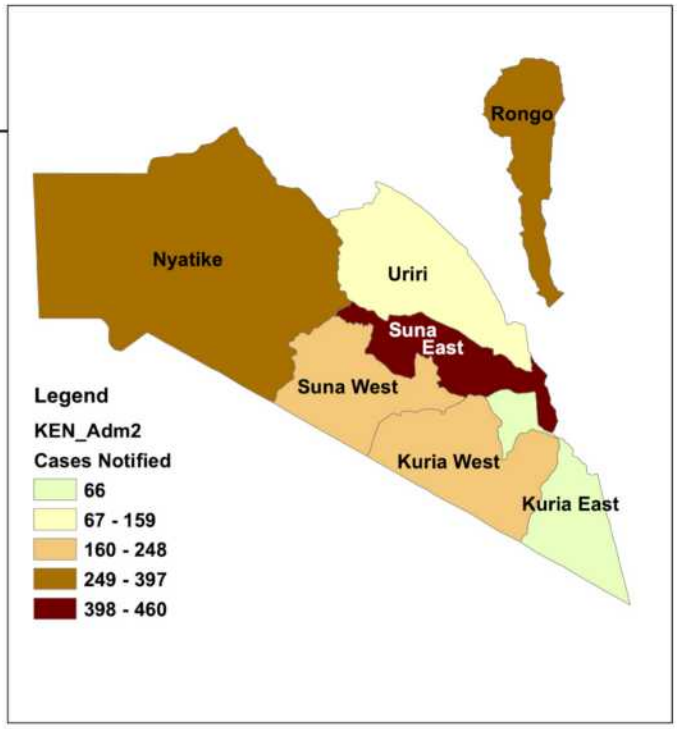


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by Private Sector (%)	17.8	15.4	17.1	21.6	16.6

MIGORI COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	828	790	812	754	718
New Clinically Diagnosed	661	412	515	784	1166
Previously Treated	72	58	21	81	123
Extra Pulmonary	314	261	307	308	360
TB among children all forms (Under 15)	171	116	129	144	187

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	99.1	99.7	99.6	99.6	99.2
TB / HIV Co-infection rate	56	53.8	51.9	47.5	44
ART uptake	91.1	98.3	98.6	99.7	99
CPT Uptake	99.8	99.9	100	99.8	99.7

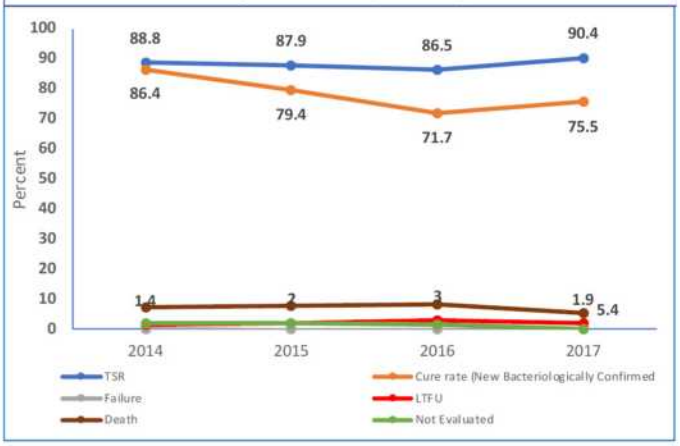
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion malnourished	35.9	40	39.4	37.7	30.5
Proportion on food support	44.1	44.8	46.2	32.2	18.7

DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
Rifampicin Resistant (Including MDR)	2	7	8	15	8
Mono Resistant	0	0	2	1	1
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

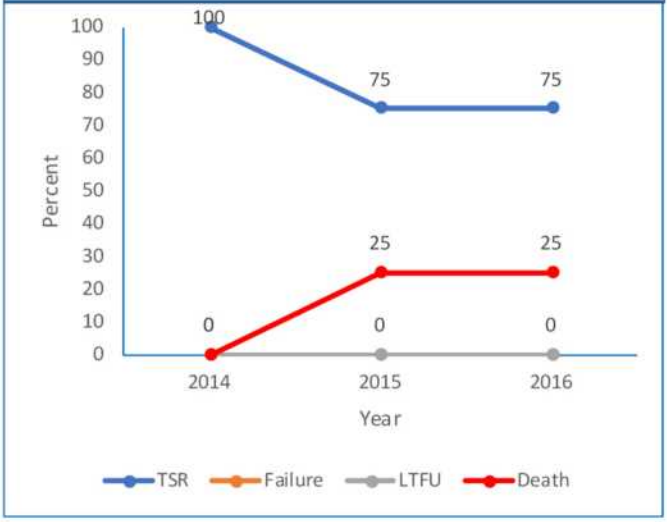
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	777	795	822	828	869
Number of <5 on IPT	0	15	254	369	84
IPT Uptake among <5 (%)	0	1.8	30.9	44.5	9.6

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	3	2	1	0	5

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017



Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by Private Sector (%)	15.3	13.4	12.8	18	14.1

MOMBASA COUNTY

DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	2028	2282	2130	2090	1993
New Clinically Diagnosed	975	677	645	913	1115
Previously Treated	378	340	245	468	607
Extra Pulmonary	508	536	586	752	827
TB among children all forms (Under 15)	287	229	227	311	355

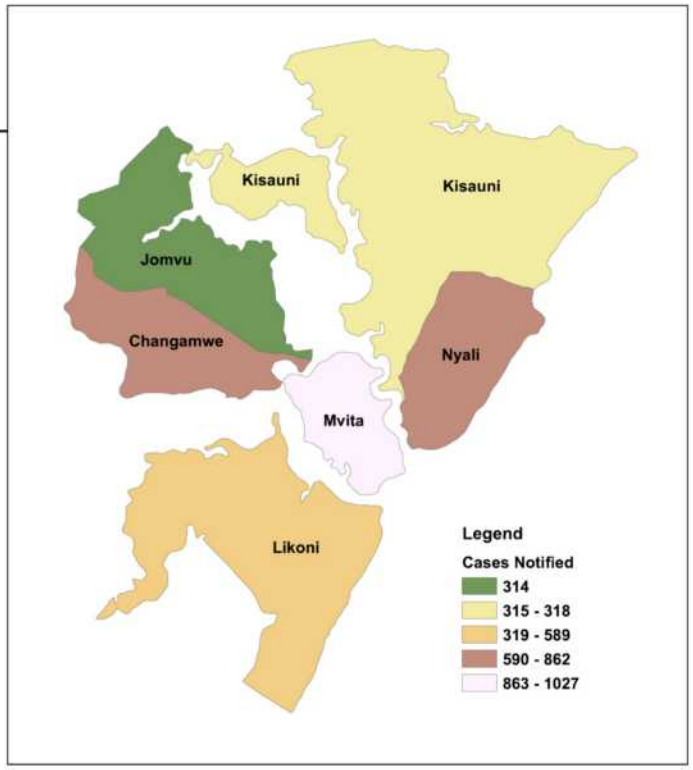
TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	96	97.4	97	97.8	97.7
TB / HIV Co-infection rate	29.3	28.1	29	28.5	27.8
ART uptake	95.4	98	97.6	97.6	97.5
CPT Uptake	99.4	99.4	99.4	99.1	99

Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion malnourished	36.5	38.2	39.3	21.9	37.4
Proportion on food support	7.3	7.6	8.7	19.9	33.5

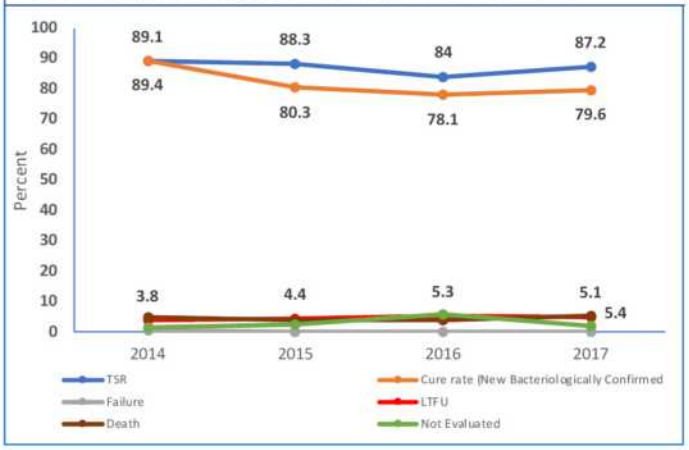
DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	9	14	13	20	31
Mono Resistant	4	2	7	3	10
Pre XDR	0	0	0	0	1
PDR	1	1	0	0	0
XDR	0	0	0	0	0

IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	2329	2419	2309	2513	2253
Number of <5 on IPT	100	223	264	247	277
IPT Uptake among <5 (%)	4.2	9.2	11.4	9.8	12.2

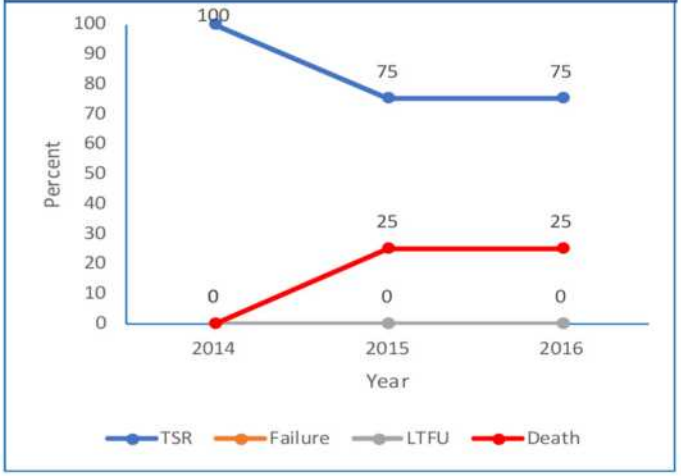
Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	10	9	18	4	6



Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

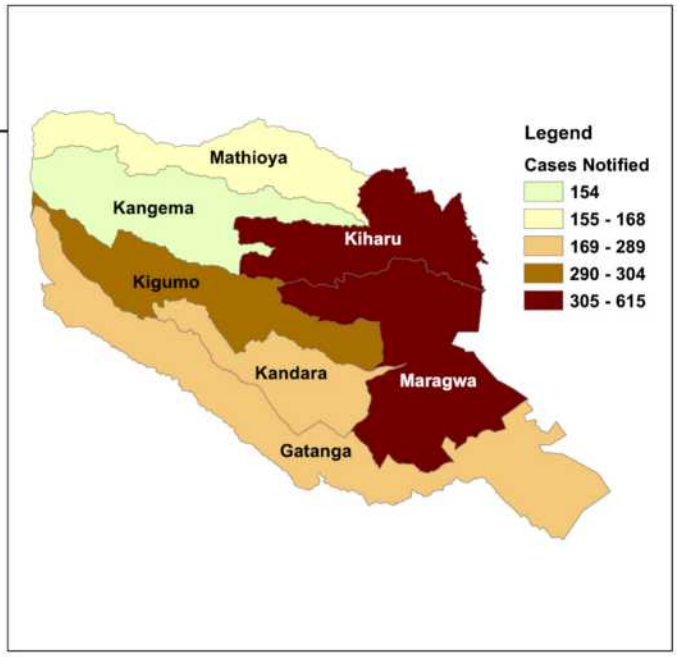


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	29	27.4	27.3	30.8	26.8

MURANG'A COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	1081	1129	934	1071	912
New Clinically Diagnosed	768	519	225	366	669
Previously Treated	211	165	106	170	189
Extra Pulmonary	255	226	222	263	268
TB among children all forms (Under 15)	237	170	98	88	143

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	98.4	99.5	99.5	98.4	99
TB / HIV Co-infection rate	26.9	23.2	22.2	19.3	20.6
ART uptake	95	96.7	98.1	98.4	96.6
CPT Uptake	99.8	100	99.3	99.2	98.9

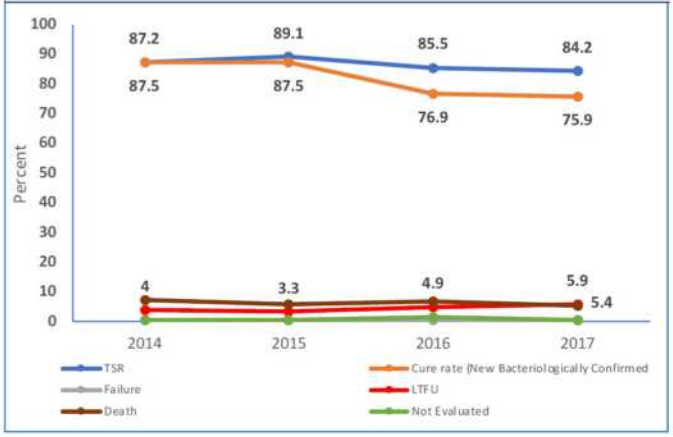
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion malnourished	48.3	51.6	49.5	33.5	43.5
Proportion on food support	32.4	30.8	28.9	26.9	23.4

DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
Rifampicin Resistant (Including MDR)	2	6	14	9	13
Mono Resistant	3	2	4	4	4
Pre XDR	0	0	0	0	0
PDR	0	3	0	0	0
XDR	0	0	0	0	0

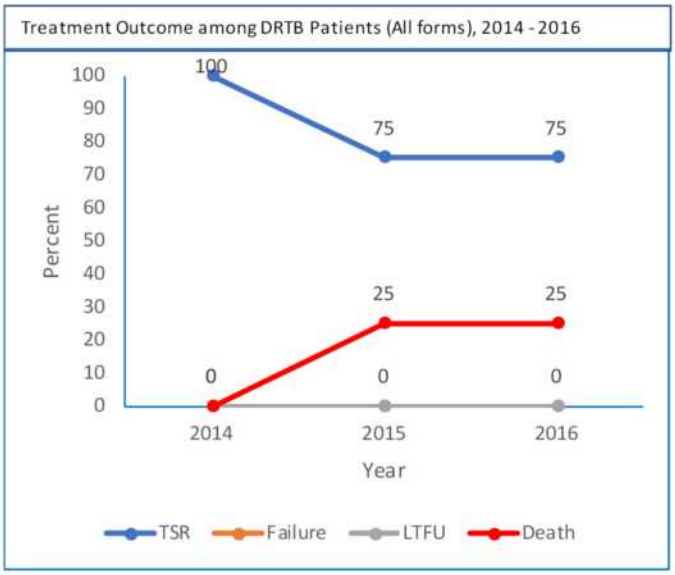
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	1008	1205	1020	1260	1213
Number of <5 on IPT	389	163	131	263	168
IPT Uptake among <5 (%)	38.5	13.5	12.8	20.8	13.8

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	0	0	0	1	1

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017



Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by Private Sector (%)	9.8	9.3	9.9	14.9	11.4

NAIROBI COUNTY

DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	6040	6009	5673	5414	5269
New Clinically Diagnosed	3507	2760	2949	2939	3667
Previously Treated	1120	837	849	1131	1497
Extra Pulmonary	3030	3197	3173	2941	3406
TB among children all forms (Under 15)	1169	882	947	805	1044

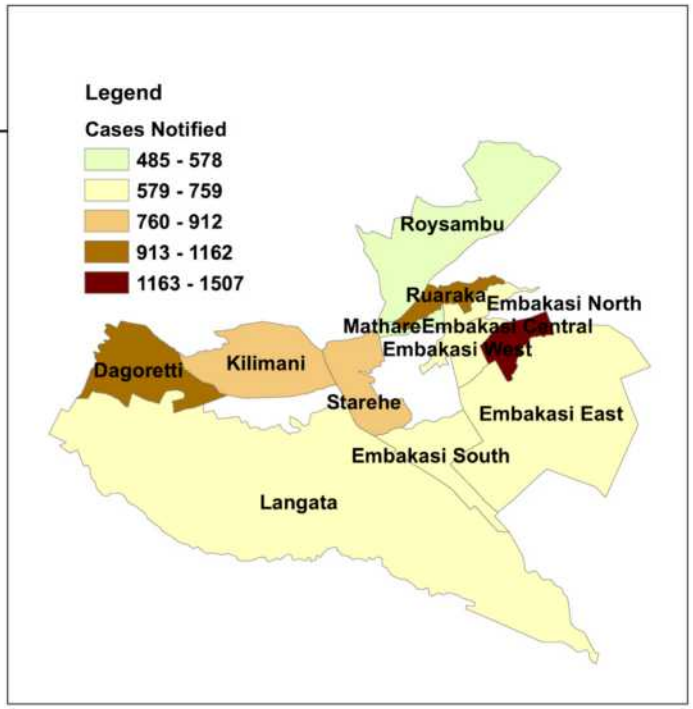
TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	90.8	96	92.8	94.1	96.5
TB / HIV Co-infection rate	34.8	34.5	32.3	30.4	29.5
ART uptake	80.8	93.6	92.6	92.9	95.4
CPT Uptake	98.6	99.2	97.2	97.5	98.3

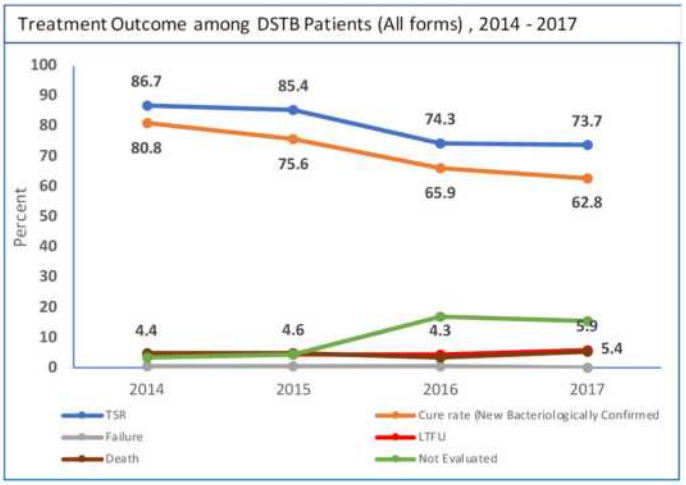
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion malnourished	30.2	31.5	29.7	28.3	32
Proportion on food support	15.5	12.6	12.8	15.1	19.9

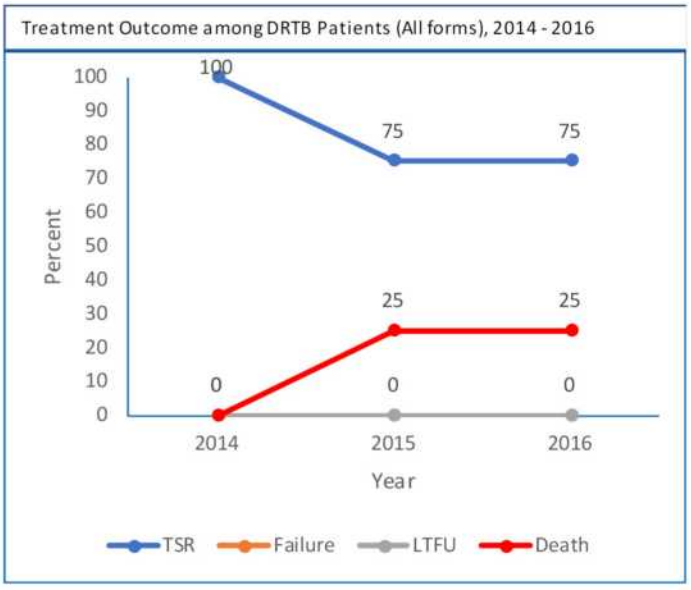
DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
Rifampicin Resistant (Including MDR)	62	56	41	57	61
Mono Resistant	7	21	15	9	20
Pre XDR	0	1	1	1	0
PDR	3	8	2	0	2
XDR	1	1	1	1	0

IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	6150	6167	6280	6634	6802
Number of <5 on IPT	553	349	801	1083	1135
IPT Uptake among <5 (%)	8.9	5.6	12.7	16.3	16.6

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	2	1	3	0	0

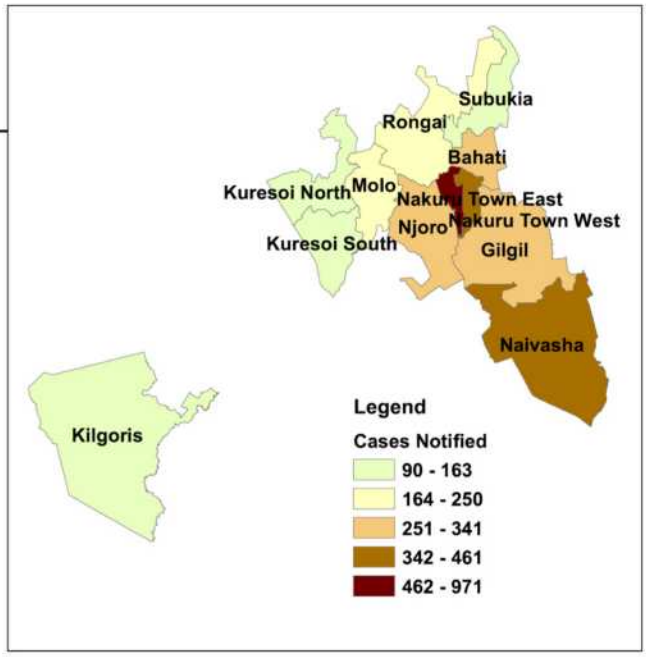






Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by Private Sector (%)	28.5	30.3	27.6	27.3	25.4

NAKURU COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	1882	1661	1557	1620	1498
New Clinically Diagnosed	1022	1010	828	1142	1764
Previously Treated	248	224	211	302	336
Extra Pulmonary	482	543	573	569	775
TB among children all forms (Under 15)	220	256	197	263	421

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	94.1	97.5	97.9	99.6	99.3
TB / HIV Co-infection rate	36.6	36	32.2	30.4	27.9
ART uptake	86	94.6	98	99.1	99.4
CPT Uptake	99.9	100	99.7	99.8	99.7

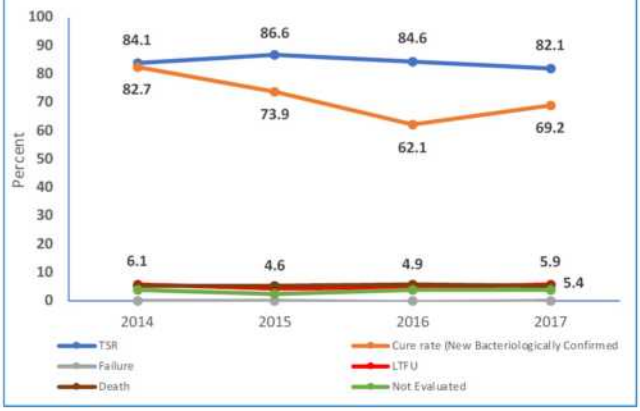
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion malnourished	37	39.9	40.2	37	35.1
Proportion on food support	25.3	20.2	23.7	26.7	29.6

DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
Rifampicin Resistant (Including MDR)	3	13	11	20	14
Mono Resistant	1	4	4	11	9
Pre XDR	0	0	0	0	0
PDR	0	1	0	1	0
XDR	0	0	0	1	0

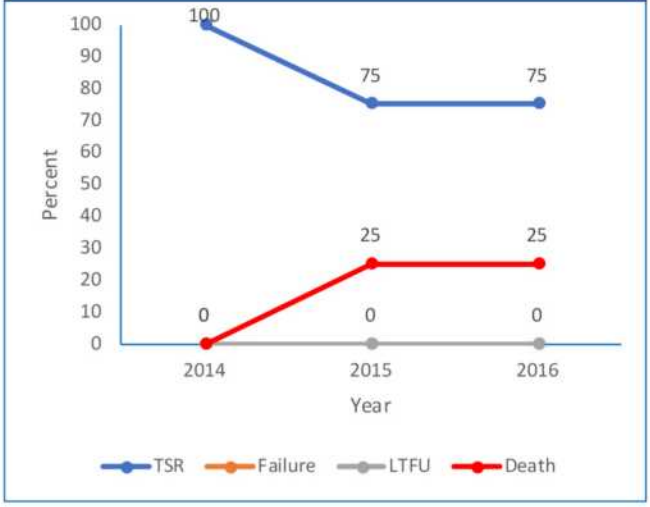
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	1658	1806	1688	1790	2039
Number of <5 on IPT	8	446	1224	445	183
IPT Uptake among <5 (%)	0.4	24.6	72.5	24.8	8.9

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	0	0	1	1	0

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

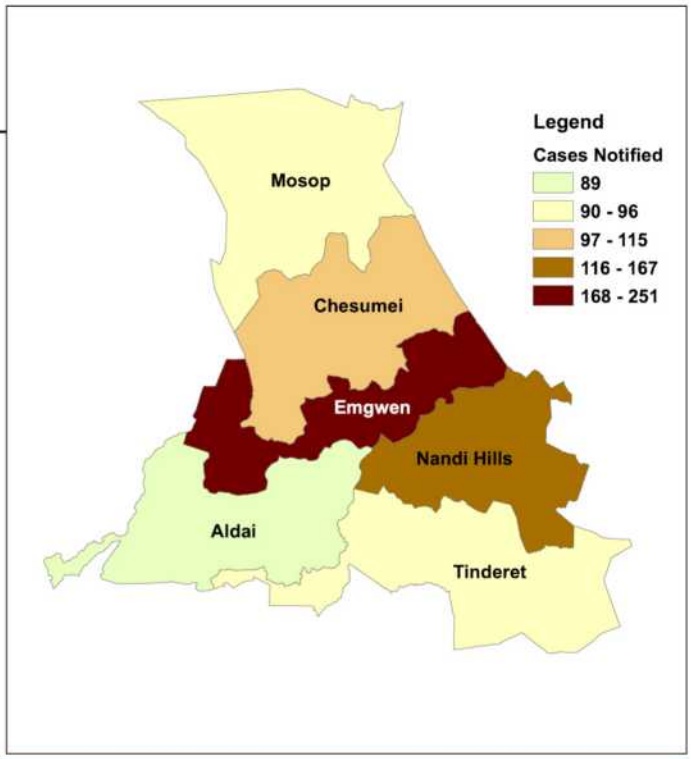


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by Private Sector (%)	12	11.7	13.3	13.8	9.2

NANDI COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	386	435	422	391	329
New Clinically Diagnosed	264	227	228	231	364
Previously Treated	33	27	27	21	39
Extra Pulmonary	65	71	97	90	76
TB among children all forms (Under 15)	44	50	46	45	61

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	98.1	99.5	99.3	99.8	99.8
TB / HIV Co-infection rate	36.2	37.3	35.4	33	31.6
ART uptake	94.8	98.1	99.6	100	99.5
CPT Uptake	100	100	100	100	99.5

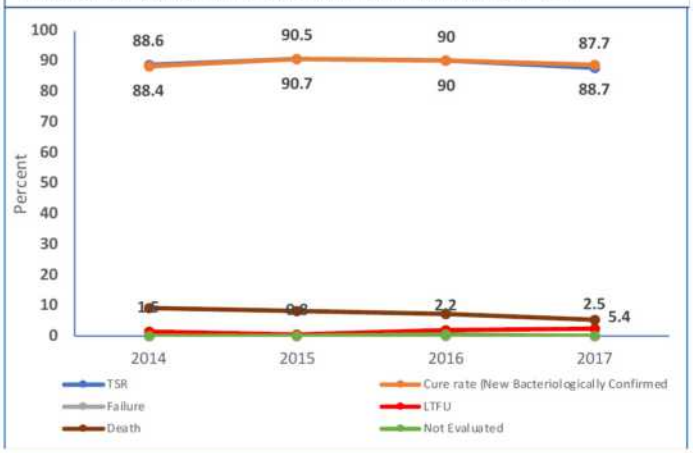
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion malnourished	31.9	39	36	36.1	37
Proportion on food support	19.9	17	20.8	40.9	34.6

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	3	5	1	4	6
Mono Resistant	0	0	2	1	0
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

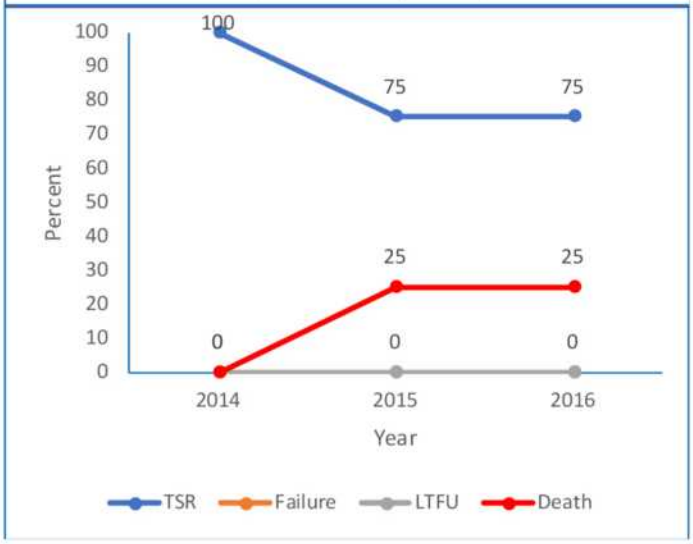
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	350	404	446	456	412
Number of <5 on IPT	19	40	111	149	84
IPT Uptake among <5 (%)	5.4	9.9	24.8	32.6	20.3

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	0	0	1	0

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

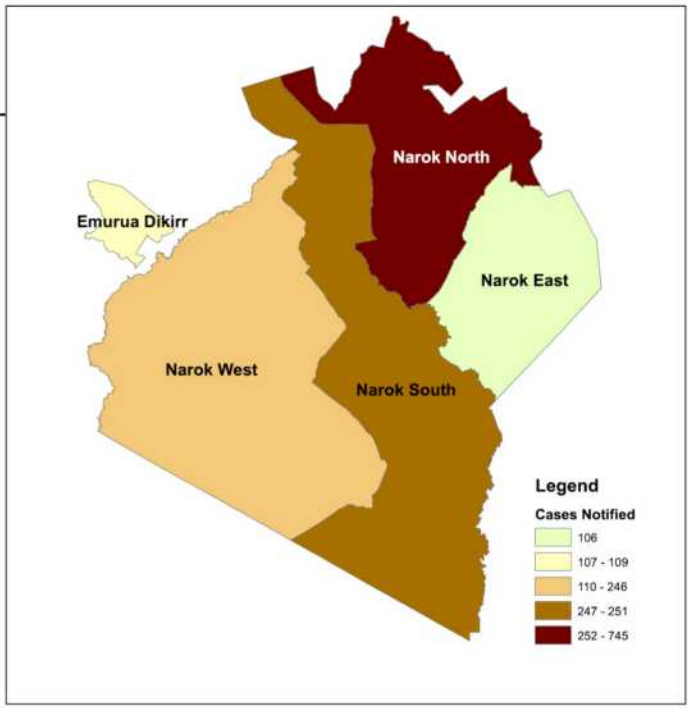


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	6.4	6.8	2.9	8.8	7.4

NAROK COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	722	746	674	739	543
New Clinically Diagnosed	623	426	392	574	607
Previously Treated	116	89	59	75	100
Extra Pulmonary	203	181	211	236	186
TB among children all forms (Under 15)	232	183	156	187	197

TBHIV Care Cascade among DSTB (All forms)(%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	95.5	97.8	97.2	97.6	98.4
TB / HIV Co-infection rate	30.2	26.9	24.2	20.3	20.2
ART uptake	83.2	93.3	95.6	96.9	94.3
CPT Uptake	99	98.8	99	99.6	98.5

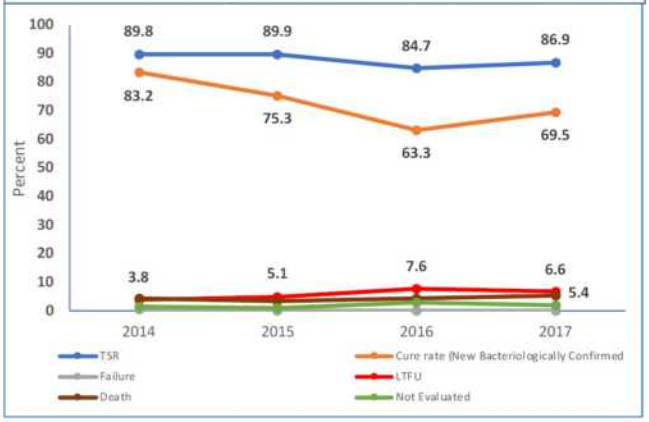
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion malnourished	42.2	45.9	42.8	33.2	36.2
Proportion on food support	26.1	16.8	30	28.2	28

DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
Rifampicin Resistant (Including MDR)	2	1	7	4	9
Mono Resistant	3	8	1	4	3
Pre XDR	0	0	0	0	0
PDR	0	3	1	0	0
XDR	0	0	0	0	0

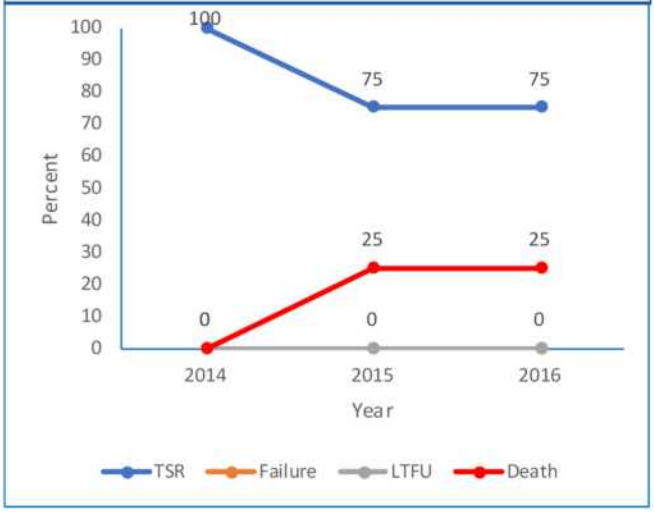
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	588	786	710	798	778
Number of <5 on IPT	2	51	241	117	124
IPT Uptake among <5 (%)	0.3	6.4	33.9	14.6	15.9

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	0	0	0	0	0

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017



Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by Private Sector (%)	9.8	6.6	6.5	5.2	4.8

NYAMIRA COUNTY

DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	386	435	422	391	329
New Clinically Diagnosed	264	227	228	231	364
Previously Treated	33	27	27	21	39
Extra Pulmonary	65	71	97	90	76
TB among children all forms (Under 15)	44	50	46	45	61

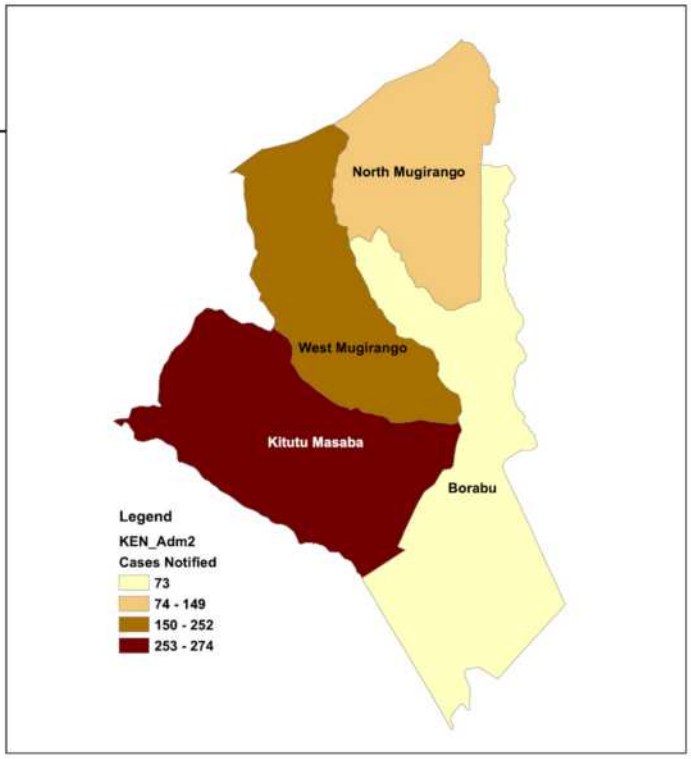
TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	98.1	99.5	99.3	99.8	99.8
TB / HIV Co-infection rate	36.2	37.3	35.4	33	31.6
ART uptake	94.8	98.1	99.6	100	99.5
CPT Uptake	100	100	100	100	99.5

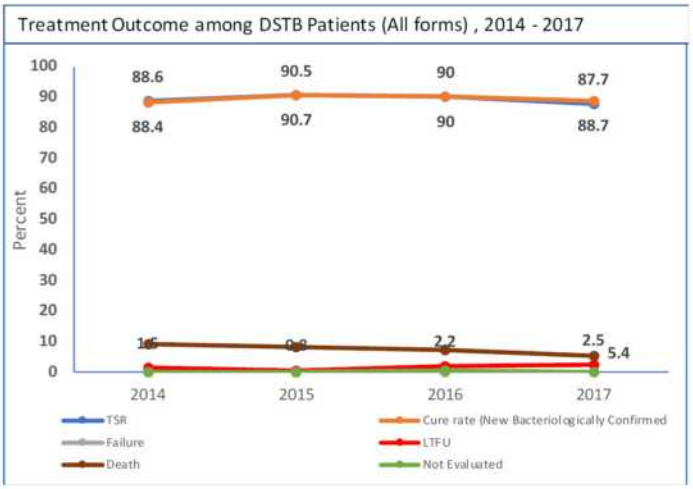
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion malnourished	31.9	39	36	36.1	37
Proportion on food support	19.9	17	20.8	40.9	34.6

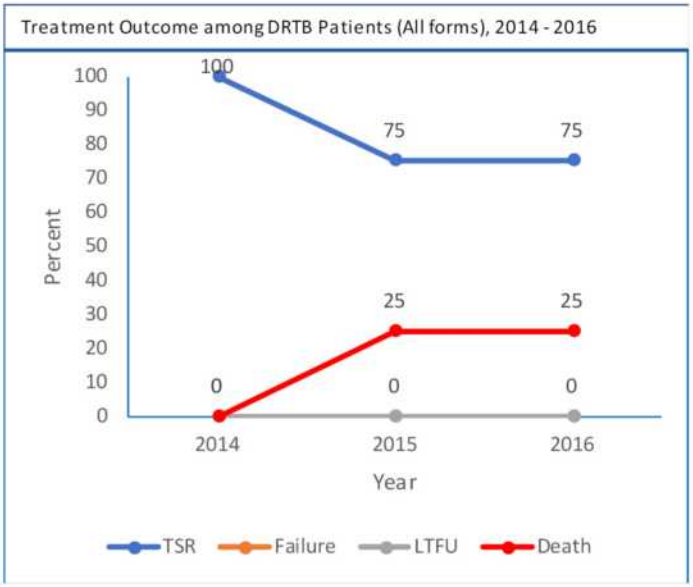
DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	3	5	1	4	6
Mono Resistant	0	0	2	1	0
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	350	404	446	456	412
Number of <5 on IPT	19	40	111	149	84
IPT Uptake among <5 (%)	5.4	9.9	24.8	32.6	20.3

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	0	0	1	0







Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	6.4	6.8	2.9	8.8	7.4

NYANDARUA COUNTY

DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	321	327	329	314	291
New Clinically Diagnosed	312	295	165	221	312
Previously Treated	50	50	35	63	72
Extra Pulmonary	119	137	110	144	130
TB among children all forms (Under 15)	97	94	51	53	61

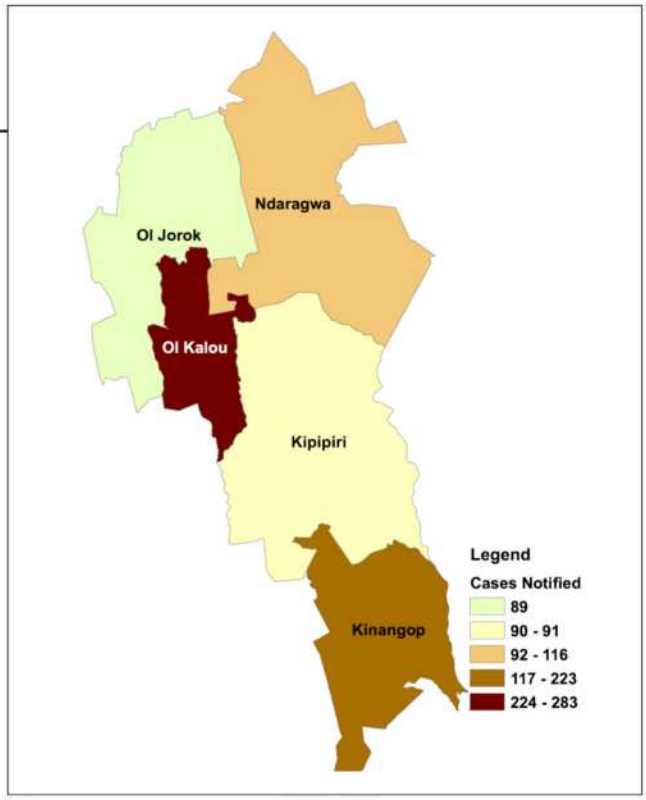
TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	99.2	99.8	99.3	99.7	99.5
TB / HIV Co-infection rate	35.4	37.6	33.4	31.5	24
ART uptake	92.6	97.1	99	94.9	95.8
CPT Uptake	99.6	100	100	99.6	99.4

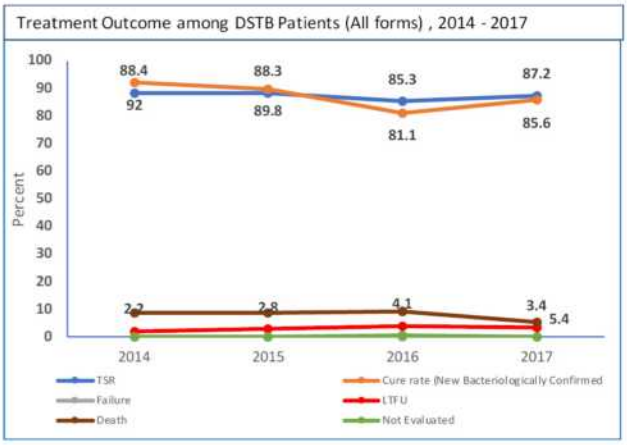
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion malnourished	36.5	38.1	38	36.9	35.1
Proportion on food support	9.9	12.5	36.6	37.8	37.5

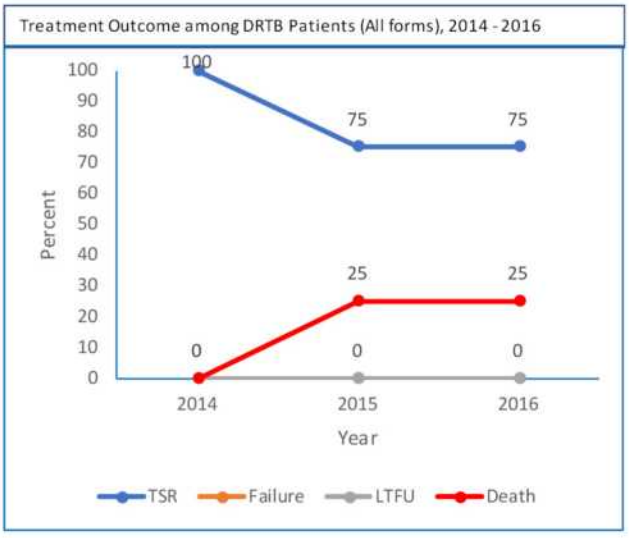
DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
Rifampicin Resistant (Including MDR)	0	5	2	2	3
Mono Resistant	0	0	0	1	1
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	324	347	357	361	348
Number of <5 on IPT	20	17	170	113	50
IPT Uptake among <5 (%)	6.1	4.8	47.6	31.3	14.3

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	0	0	1	1	0







Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by Private Sector (%)	17.5	16.8	10.4	11.8	7.2

NYERI COUNTY

DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	627	682	585	592	498
New Clinically Diagnosed	623	332	164	313	483
Previously Treated	143	115	92	162	127
Extra Pulmonary	191	165	177	253	234
TB among children all forms (Under 15)	185	137	59	66	80

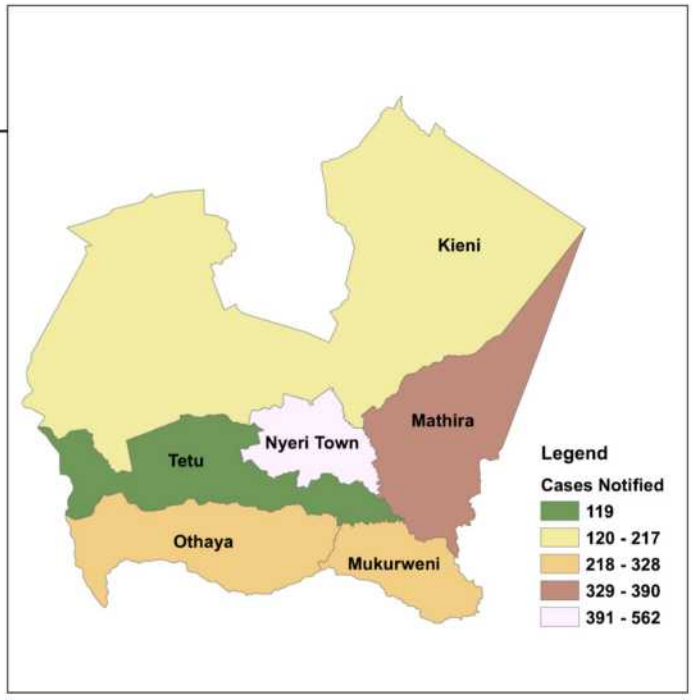
TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	97.6	98.6	98.4	98.2	98.4
TB / HIV Co-infection rate	31.8	30.1	29.2	28.5	22.2
ART uptake	92.5	93.7	94.2	95.9	95.1
CPT Uptake	99.2	99.2	97.9	97.8	97.4

Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion malnourished	41.2	44.7	42.2	39.4	33.2
Proportion on food support	24.6	16.8	15.6	19	16.7

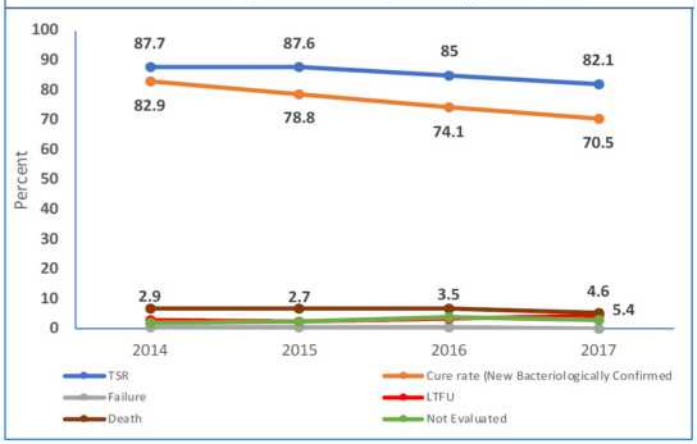
DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
Rifampicin Resistant (Including MDR)	2	3	6	11	9
Mono Resistant	1	2	0	10	3
Pre XDR	0	0	0	0	0
PDR	2	0	0	0	1
XDR	0	0	0	0	0

IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	563	708	658	747	707
Number of <5 on IPT	35	130	81	145	60
IPT Uptake among <5 (%)	6.2	18.3	12.3	19.4	8.4

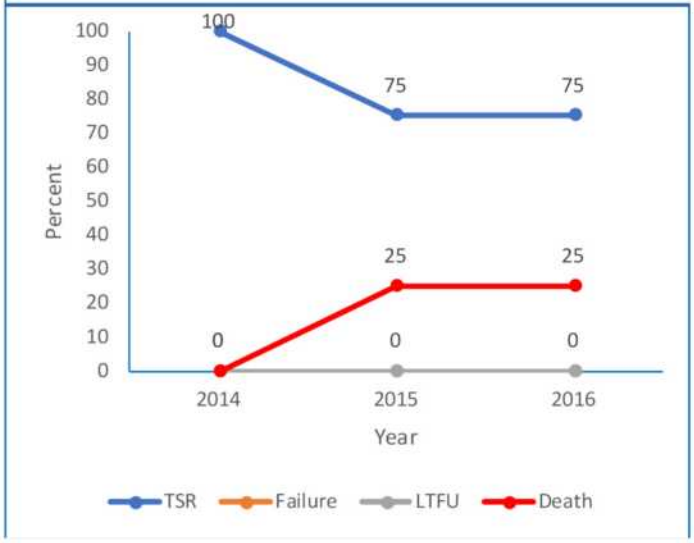
Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	0	0	0	1	0



Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

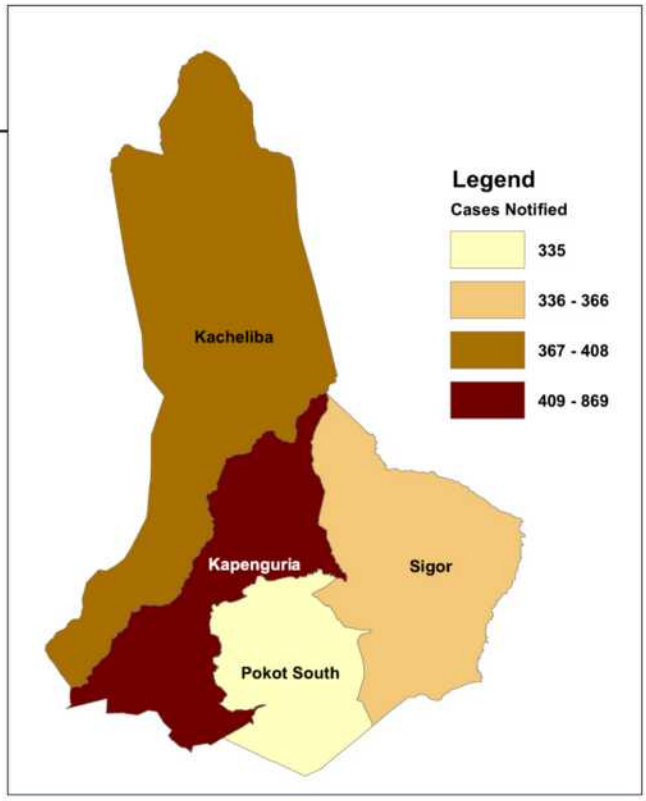


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by Private Sector (%)	21.2	20	18.7	19	13.9

WEST POKOT COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	943	829	709	609	577
New Clinically Diagnosed	559	357	346	384	325
Previously Treated	147	145	94	130	119
Extra Pulmonary	329	255	237	268	296
TB among children all forms (Under 15)	333	266	230	245	220

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	85.5	94.4	96.3	97.2	98
TB / HIV Co-infection rate	11.7	10.9	8.7	9.7	9.3
ART uptake	81.2	95.3	96.6	97.4	100
CPT Uptake	98.7	100	97.5	98.7	99.4

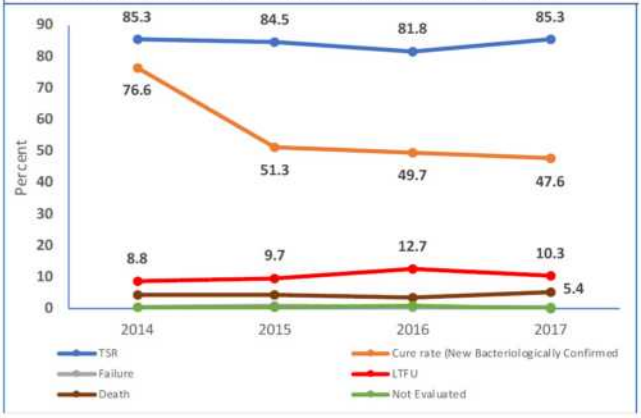
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion malnourished	46.8	51.7	54.1	48.1	46.5
Proportion on food support	27.7	34.4	21.7	18.2	53.7

DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
Rifampicin Resistant (Including MDR)	1	6	5	14	24
Mono Resistant	1	4	2	0	3
Pre XDR	0	0	0	0	2
PDR	0	0	2	1	0
XDR	0	0	0	0	0

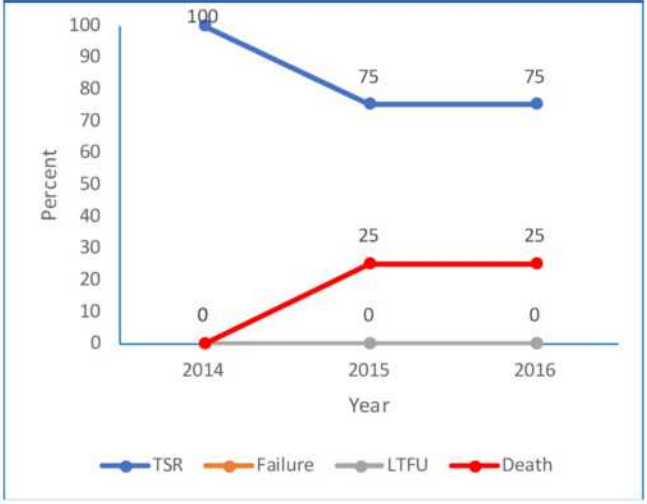
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	644	685	773	939	1023
Number of <5 on IPT	11	14	81	130	186
IPT Uptake among <5 (%)	1.7	2	10.4	13.8	18.1

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	1	4	0	0	0

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

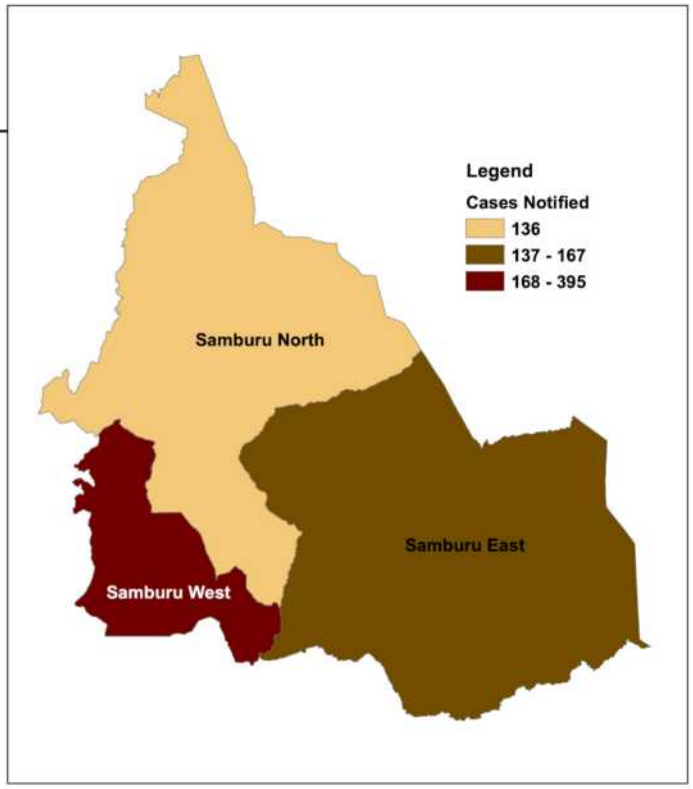


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by Private Sector (%)	5	6.6	5.7	6.1	2.4

SAMBURU COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	260	255	272	287	231
New Clinically Diagnosed	368	236	221	201	210
Previously Treated	20	34	20	33	42
Extra Pulmonary	50	62	70	69	54
TB among children all forms (Under 15)	117	89	72	69	68

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	96.4	96.7	95.7	97.7	97.7
TB / HIV Co-infection rate	26.6	21	21	20.2	14
ART uptake	90.9	94.3	96.7	91.5	95.9
CPT Uptake	98.6	100	96.7	94.9	97.9

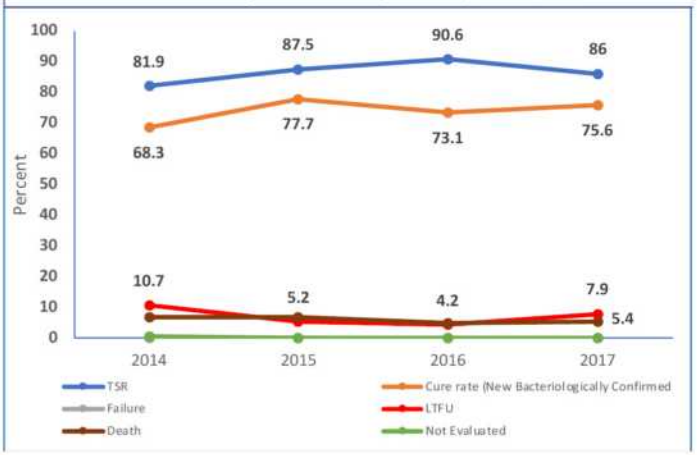
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion malnourished	71.1	68.6	67.7	60.6	62.3
Proportion on food support	48.6	35.2	26.5	54.8	34.5

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	2	0	7	4	3
Mono Resistant	0	0	1	0	0
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

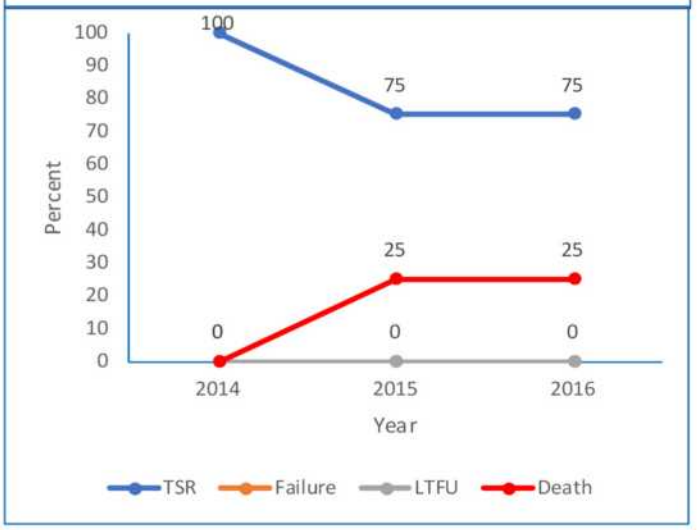
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	253	305	280	273	269
Number of <5 on IPT	11	1	28	7	22
IPT Uptake among <5 (%)	4.3	0.3	10	2.5	8.1

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	0	0	0	0

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017



Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	19.3	19.6	15.4	19.9	16.3

SIAYA COUNTY

DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	901	910	955	875	765
New Clinically Diagnosed	863	510	343	554	848
Previously Treated	128	128	115	157	195
Extra Pulmonary	236	276	263	345	452
TB among children all forms (Under 15)	191	152	111	151	220

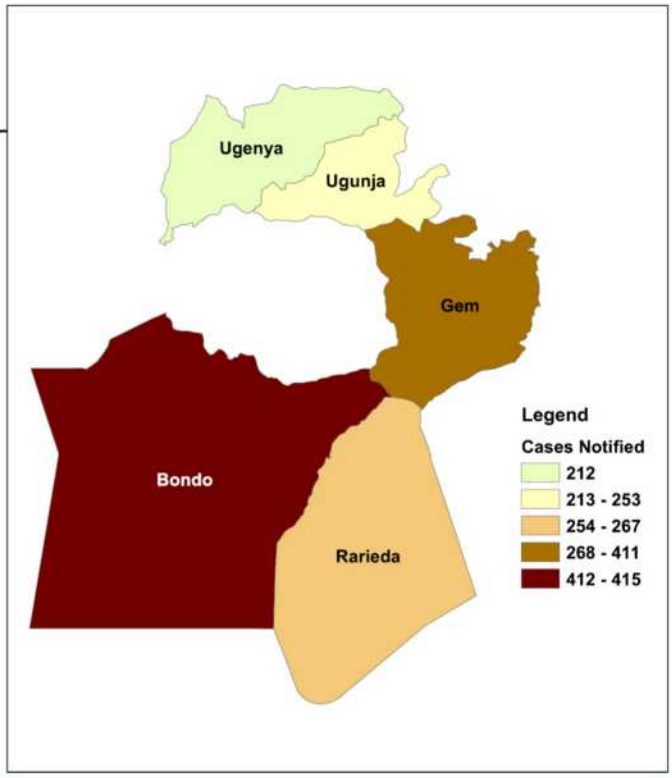
TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	98.8	99.2	99.4	99.2	99.1
TB / HIV Co-infection rate	68.2	66.2	62.7	57.5	53.7
ART uptake	96.5	97.7	97.7	95.8	97.9
CPT Uptake	99.2	99.6	99.5	100	99.8

Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion malnourished	46.8	46.7	47.8	44	43.1
Proportion on food support	38.3	27.9	38.4	28	22.7

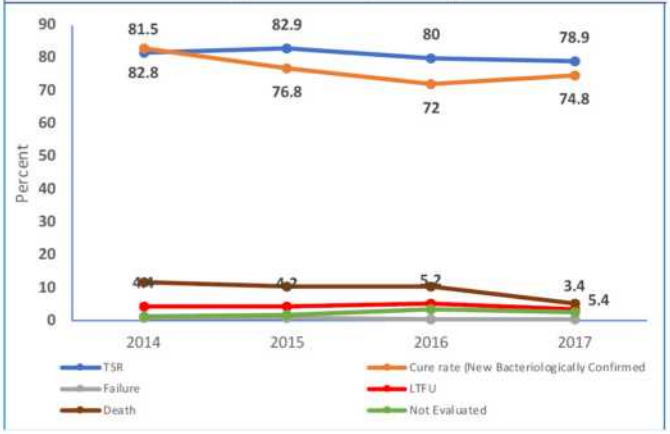
DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	6	2	8	6	24
Mono Resistant	4	7	6	3	4
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	887	972	1042	986	976
Number of <5 on IPT	149	87	263	351	340
IPT Uptake among <5 (%)	16.7	8.9	25.2	35.5	34.8

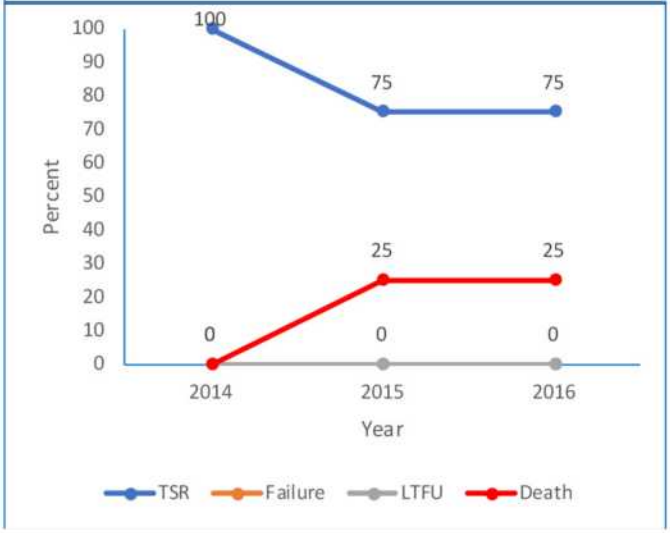
Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	11	12	5	6	12



Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017



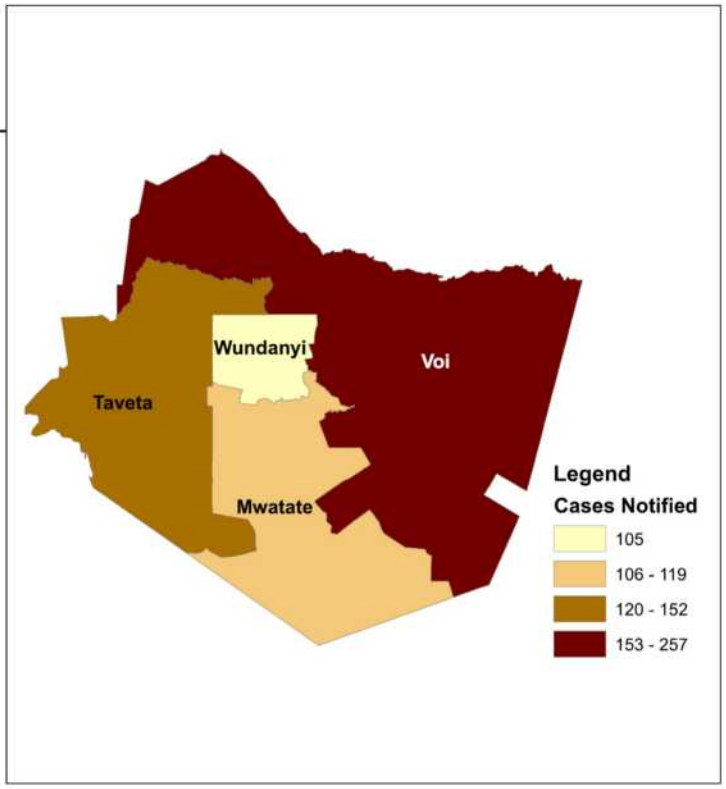
Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	13.9	14.5	15.3	15.4	11.9

TAITA TAVETA COUNTY

DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	291	287	316	245	236
New Clinically Diagnosed	201	106	126	153	168
Previously Treated	70	47	28	34	74
Extra Pulmonary	71	71	57	72	96
TB among children all forms (Under 15)	72	43	51	58	51



TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	94.2	95.8	96.7	95.3	97.7
TB / HIV Co-infection rate	36.7	27.9	28.8	23.4	28.1
ART uptake	87.6	92.9	95.3	92.5	96.6
CPT Uptake	98.5	98.5	99.3	95.8	96.6

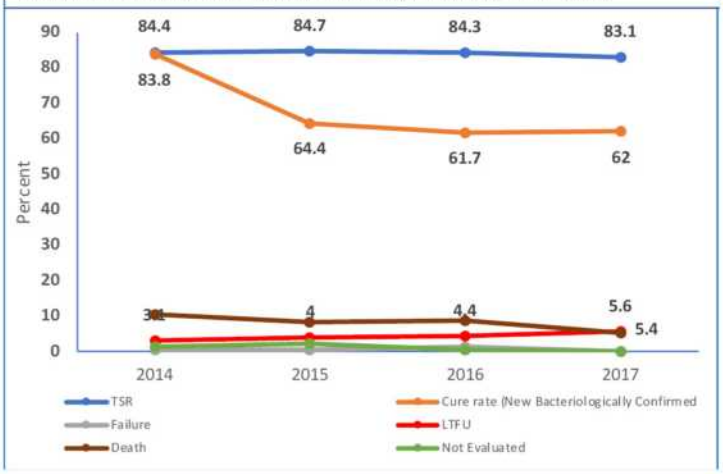
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion malnourished	39.5	42.8	46.1	31.7	43.9
Proportion on food support	16.5	13.4	37.1	36.3	41

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	2	7	4	3	3
Mono Resistant	0	0	1	3	0
Pre XDR	0	0	0	0	0
PDR	0	0	1	0	0
XDR	0	0	0	0	0

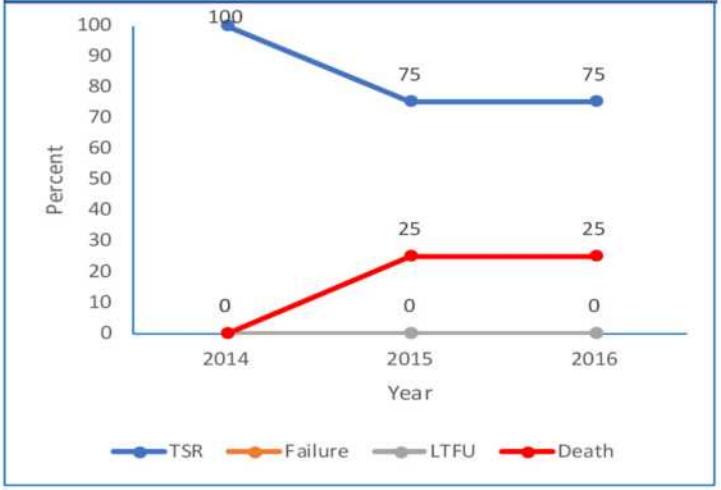
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	278	266	340	322	325
Number of <5 on IPT	1	128	158	41	40
IPT Uptake among <5 (%)	0.3	48.1	46.4	12.7	12.3

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	2	0	0	2

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017



Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	12	10.5	15.1	7.6	6.7

TANA RIVER COUNTY

DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	186	207	232	177	157
New Clinically Diagnosed	255	151	132	141	144
Previously Treated	6	10	8	32	27
Extra Pulmonary	70	42	58	57	51
TB among children all forms (Under 15)	105	63	48	58	35

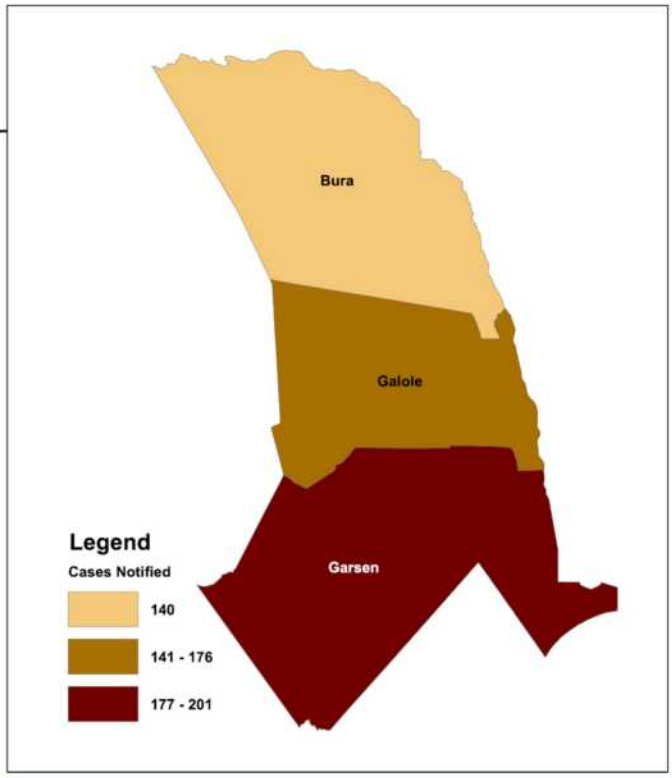
TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	96.8	96.8	97.4	98	96.3
TB / HIV Co-infection rate	10.2	11.3	10.9	8.2	7.3
ART uptake	94.8	97.8	95.7	97	100
CPT Uptake	100	97.8	100	100	100

Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion malnourished	47.4	48.6	44.4	40.4	39
Proportion on food support	21.3	24.8	16.5	17.8	29.4

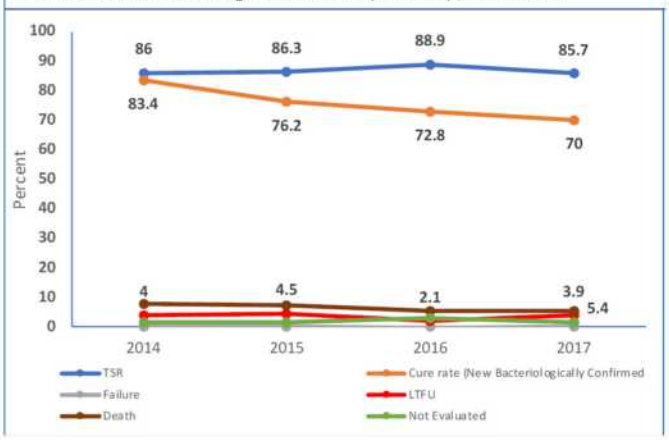
DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	0	0	2	3	3
Mono Resistant	0	0	0	0	2
Pre XDR	0	0	0	0	1
PDR	0	0	0	0	0
XDR	0	0	0	0	0

IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	173	194	235	212	188
Number of <5 on IPT	6	50	378	122	93
IPT Uptake among <5 (%)	3.4	25.7	161	57.5	49.4

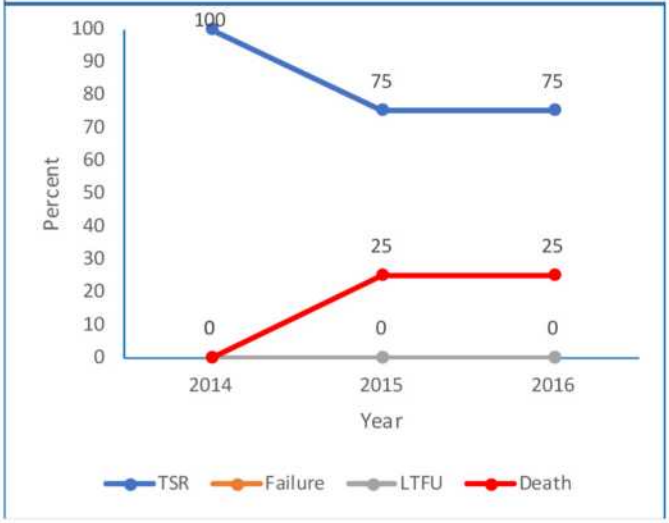
Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	1	1	0	0



Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017



Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	2.9	4.4	8.1	5.1	2.3

THARAKA NITHI COUNTY

DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	526	626	497	457	396
New Clinically Diagnosed	699	344	249	271	372
Previously Treated	90	42	53	54	59
Extra Pulmonary	192	233	210	208	225
TB among children all forms (Under 15)	286	173	162	114	175

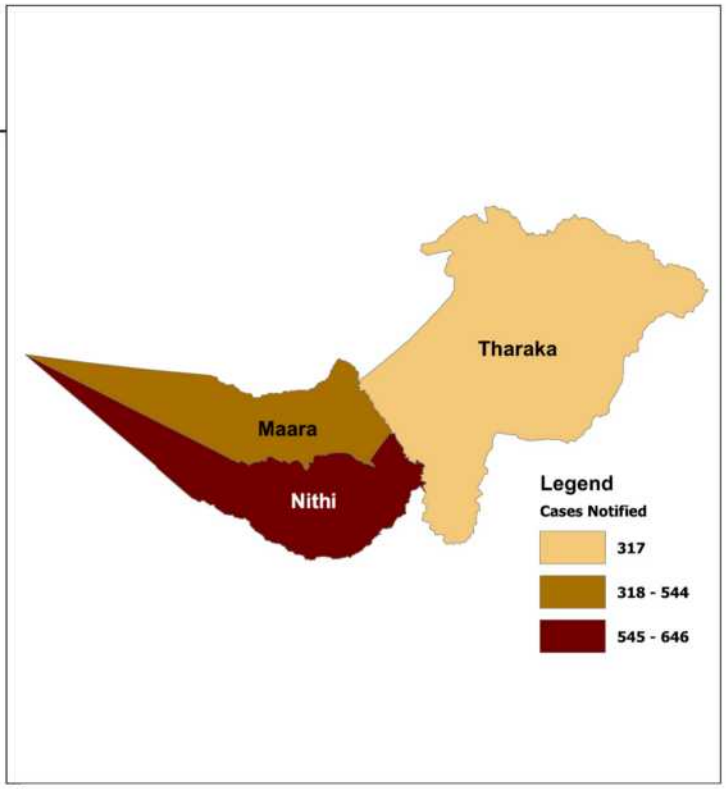
TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	97.3	98.7	96.9	94.6	95.6
TB / HIV Co-infection rate	21.3	23.4	22.6	20.3	17.3
ART uptake	96	99.5	99.1	97.2	99.6
CPT Uptake	100	99.1	100	98.8	100

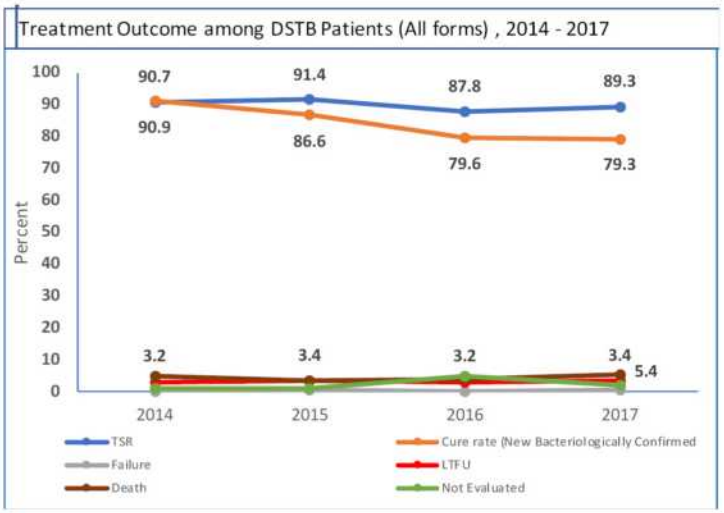
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion malnourished	28.2	40.3	35.7	17.9	33.5
Proportion on food support	16.8	8.2	11	12.5	15.5

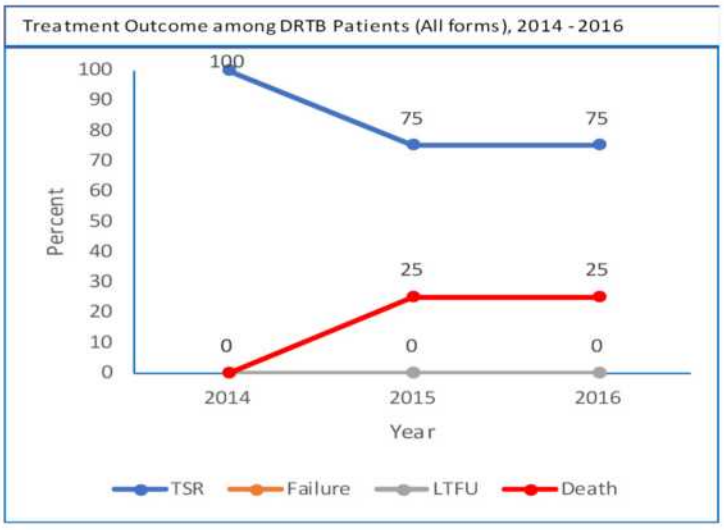
DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	0	2	3	1	4
Mono Resistant	0	1	1	0	0
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	1
XDR	0	0	0	0	0

IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	434	499	531	653	575
Number of <5 on IPT	21	55	32	105	50
IPT Uptake among <5 (%)	4.8	11	6	16	8.6

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	1	1	1	0







Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	32.9	33.3	33.9	40.5	26.8

TRANS NZOIA COUNTY

DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	625	618	499	510	451
New Clinically Diagnosed	703	525	342	584	604
Previously Treated	67	48	49	70	68
Extra Pulmonary	140	119	184	162	161
TB among children all forms (Under 15)	173	116	91	175	146

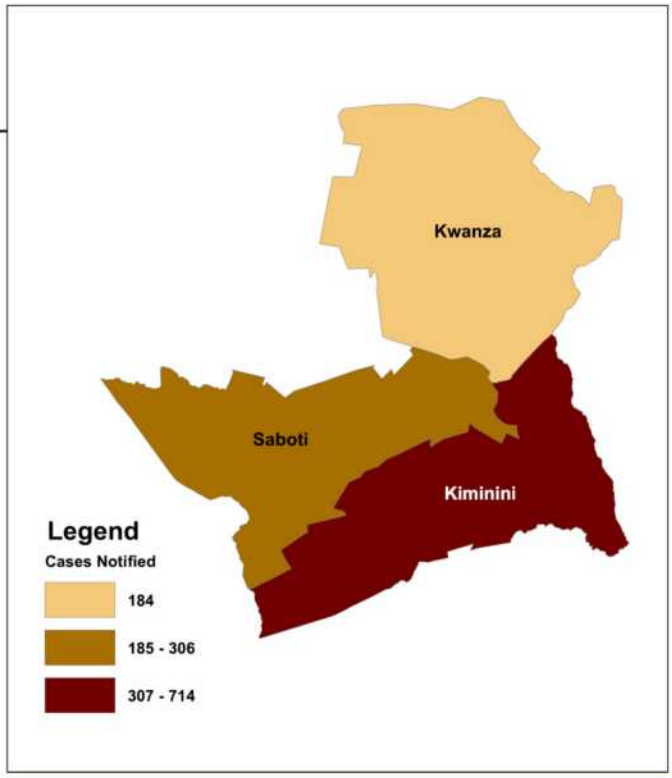
TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	88.5	94.5	97.5	98.6	99.5
TB / HIV Co-infection rate	31.6	32.5	29.4	29.7	29.5
ART uptake	82	90.9	93.6	98.4	98.6
CPT Uptake	94.5	98.8	99.6	99.2	99.7

Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion malnourished	37.4	41.4	43.6	47.6	53.2
Proportion on food support	8.8	24.2	27.5	30.2	27.1

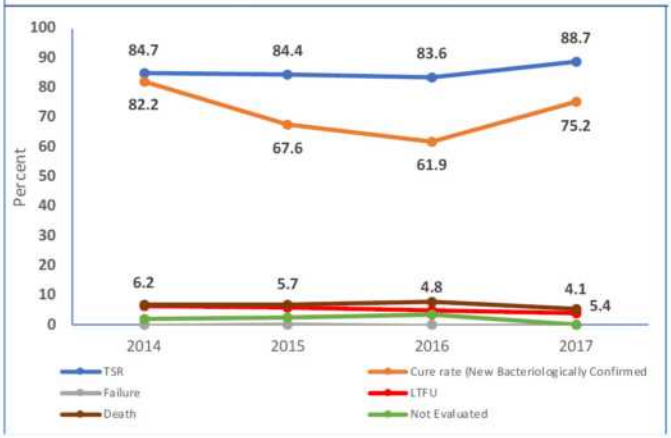
DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
Rifampicin Resistant (Including MDR)	1	1	3	3	9
Mono Resistant	0	1	0	2	0
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	483	549	523	647	654
Number of <5 on IPT	1	92	171	196	94
IPT Uptake among <5 (%)	0.2	16.7	32.6	30.2	14.3

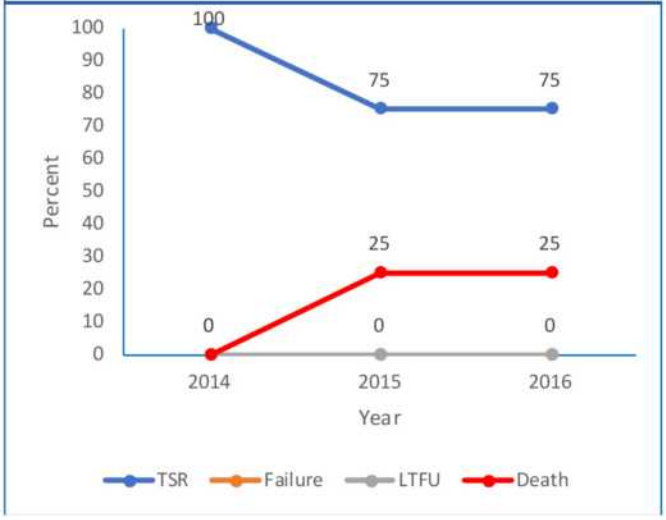
Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	0	3	0	0	0



Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017



Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by Private Sector (%)	16.7	14.8	16.2	13.3	14.2

THARAKA NITHI COUNTY

DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	526	626	497	457	396
New Clinically Diagnosed	699	344	249	271	372
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TB / HIV Co-infection rate	21.3	23.4	22.6	20.3	17.3
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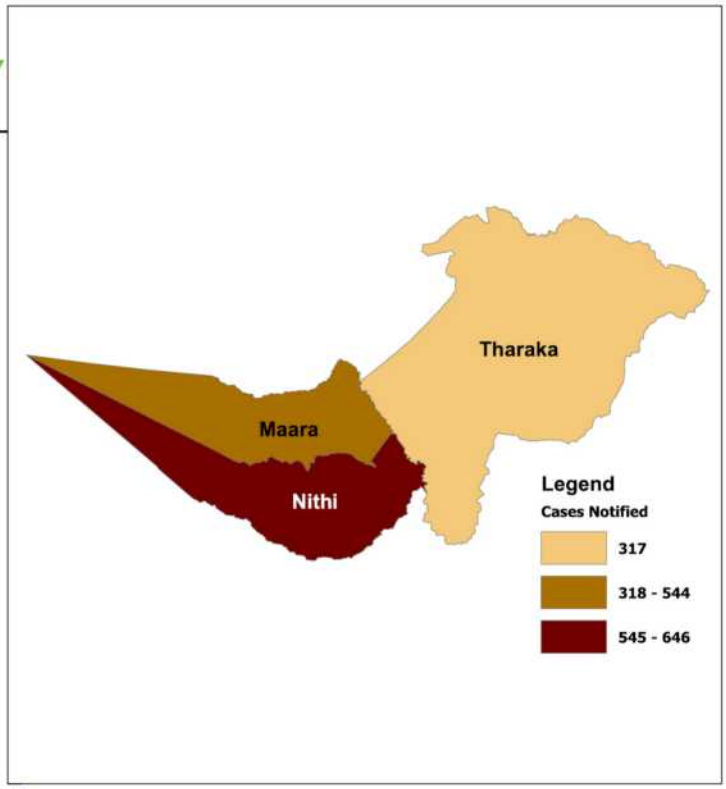
CPT Uptake	100	99.1	100	98.8	100

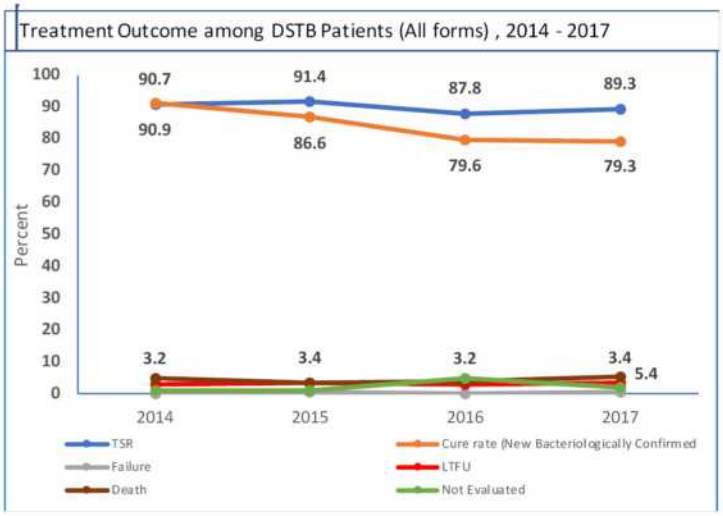
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion malnourished	28.2	40.3	35.7	17.9	33.5
Proportion on food support	16.8	8.2	11	12.5	15.5

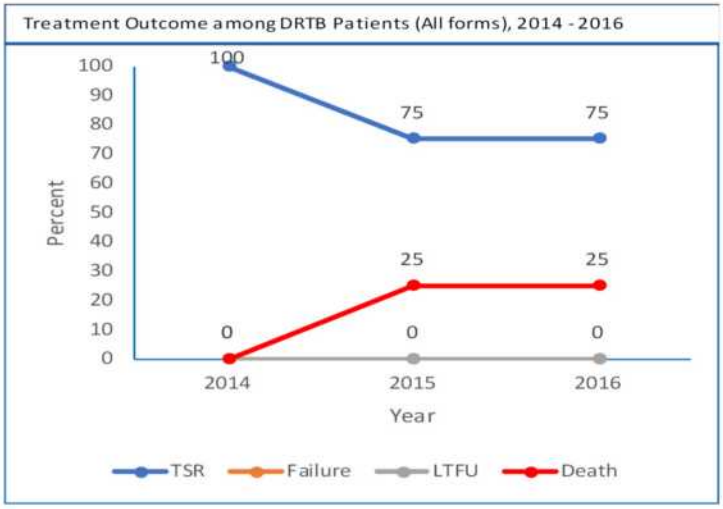
DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	0	2	3	1	4
Mono Resistant	0	1	1	0	0
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	1
XDR	0	0	0	0	0

IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	434	499	531	653	575
Number of <5 on IPT	21	55	32	105	50
IPT Uptake among <5 (%)	4.8	11	6	16	8.6

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	1	1	1	0







Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	32.9	33.3	33.9	40.5	26.8

TRANS NZOIA COUNTY

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TB among children all forms (Under 15)	173	116	91	175	146

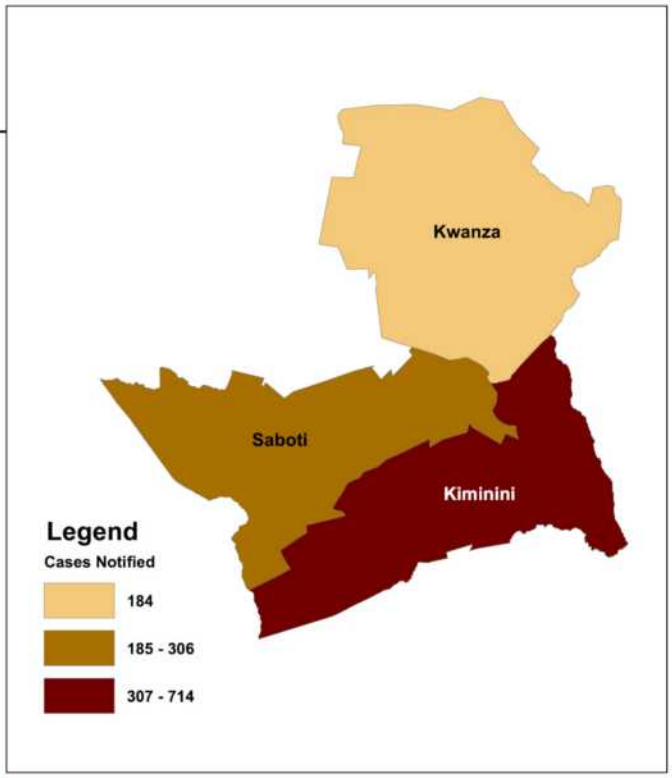
TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	88.5	94.5	97.5	98.6	99.5
TB / HIV Co-infection rate	31.6	32.5	29.4	29.7	29.5
ART uptake	82	90.9	93.6	98.4	98.6
CPT Uptake	94.5	98.8	99.6	99.2	99.7

Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion malnourished	37.4	41.4	43.6	47.6	53.2
Proportion on food support	8.8	24.2	27.5	30.2	27.1

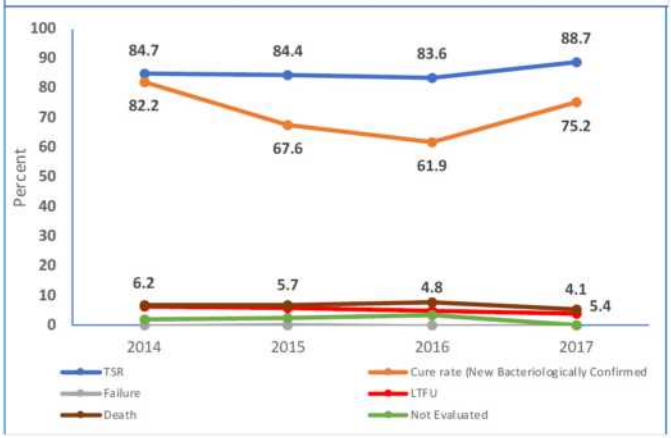
DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
Rifampicin Resistant (Including MDR)	1	1	3	3	9
Mono Resistant	0	1	0	2	0
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	483	549	523	647	654
Number of <5 on IPT	1	92	171	196	94
IPT Uptake among <5 (%)	0.2	16.7	32.6	30.2	14.3

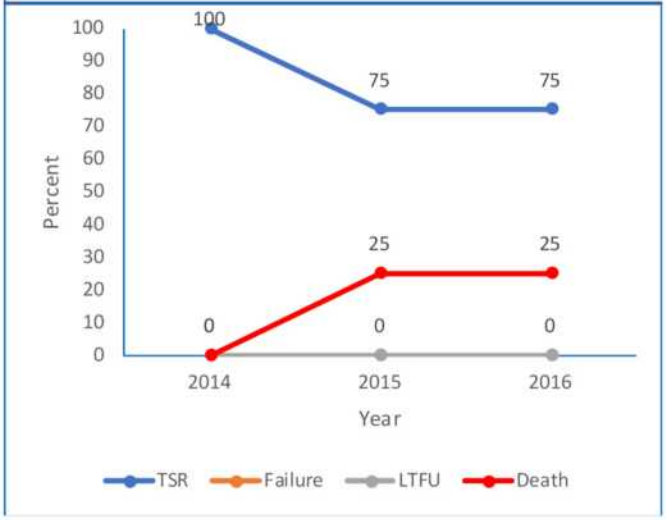
Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	0	3	0	0	0



Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

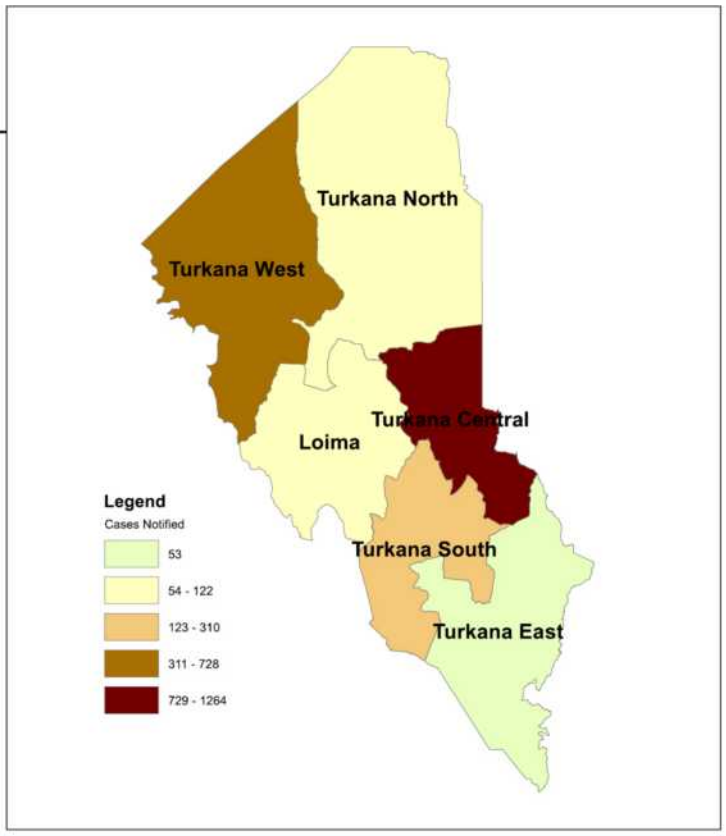


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by Private Sector (%)	16.7	14.8	16.2	13.3	14.2

TURKANA COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	**2018**	**2017**	**2016**	**2015**	**2014**
New Bacteriologically Confirmed	1111	1096	1008	971	561
New Clinically Diagnosed	997	816	546	1021	977
Previously Treated	201	108	62	77	55
Extra Pulmonary	251	227	171	179	181
TB among children all forms (Under 15)	495	428	240	397	308

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
HIV Testing	92.1	96	96.5	98	96.2
TB / HIV Co-infection rate	22.4	27	26.8	21	19.7
ART uptake	94.7	98.6	97	98.5	97.4
CPT Uptake	98.2	99.3	98.7	99.3	98.8

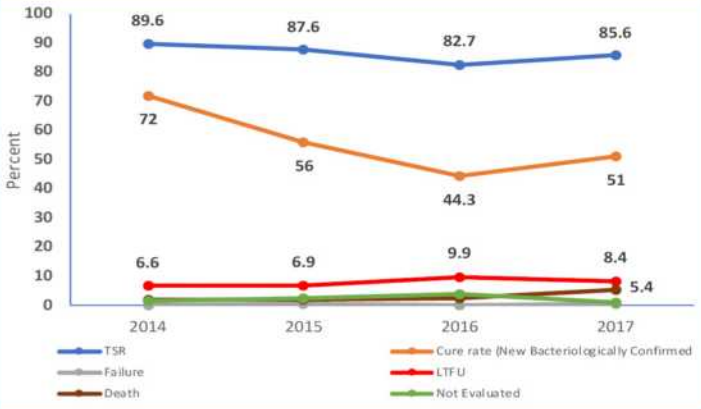
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Proportion malnourished	43.5	54.5	61.7	51.2	54.6
Proportion on food support	13.4	38.3	41.8	44.9	61.7

DRTB Cases Notified, 2014-2018					
Resistant Patterns	**2014**	**2015**	**2016**	**2017**	**2018**
Rifampicin Resistant (Including MDR)	5	2	12	15	14
Mono Resistant	0	4	7	0	4
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

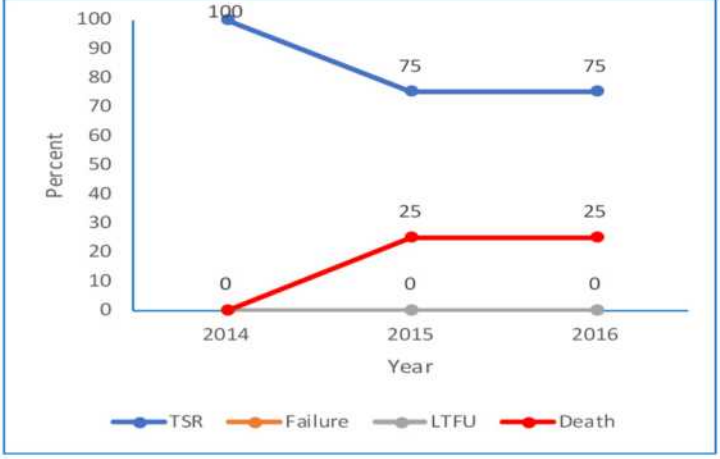
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number PTB Bact Confirmed	587	1023	1055	1145	1215
Number of <5 on IPT	0	0	100	144	220
IPT Uptake among <5 (%)	0	0	9.4	12.5	18.1

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Number of Leprosy Cases	0	0	2	0	3

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

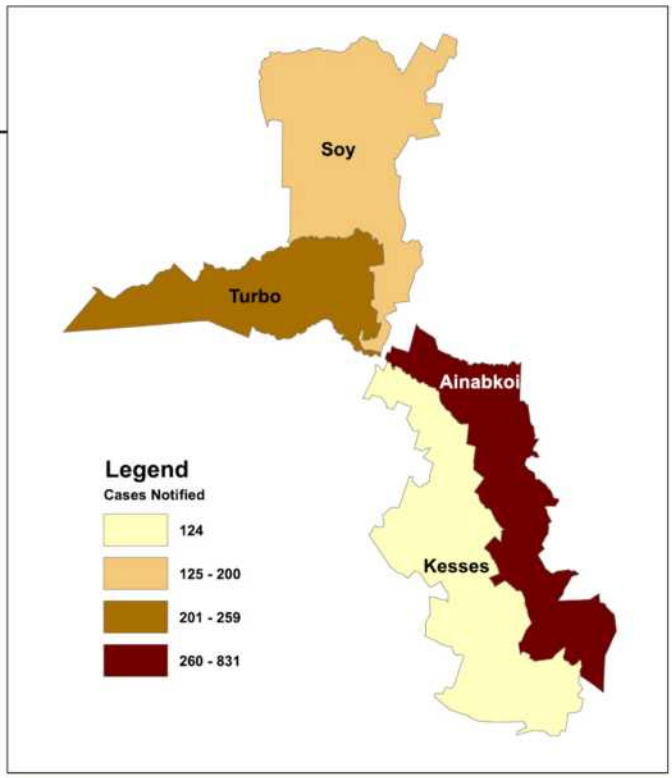


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	**2014**	**2015**	**2016**	**2017**	**2018**
Contribution by Private Sector (%)	71.1	60	58.3	23.5	13.9

UASIN GISHU COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	887	821	755	746	749
New Clinically Diagnosed	476	404	383	464	545
Previously Treated	78	73	63	72	91
Extra Pulmonary	295	292	287	343	386
TB among children all forms (Under 15)	110	133	125	117	129

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	92.4	96.1	95.6	97.3	96.8
TB / HIV Co-infection rate	39.6	40	32.4	33.1	30
ART uptake	91.4	96.4	97.5	98.4	97.3
CPT Uptake	98.5	99.8	98.9	99.8	98.2

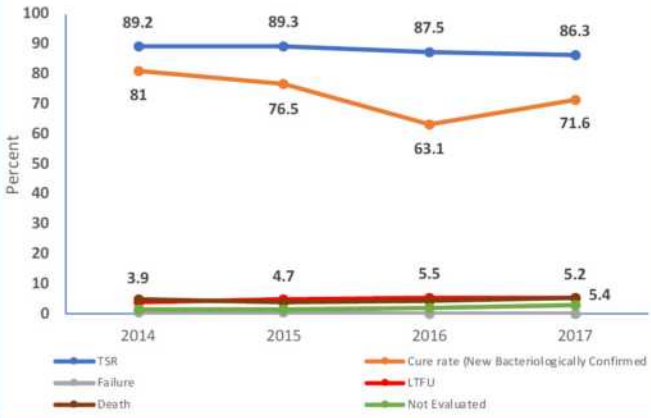
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion malnourished	36.3	40.8	37.3	34.4	35.4
Proportion on food support	9.9	13.2	26.7	23.8	16.8

DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
Rifampicin Resistant (Including MDR)	7	5	8	6	11
Mono Resistant	1	0	2	0	0
Pre XDR	0	0	0	0	0
PDR	1	0	1	0	0
XDR	0	0	0	0	0

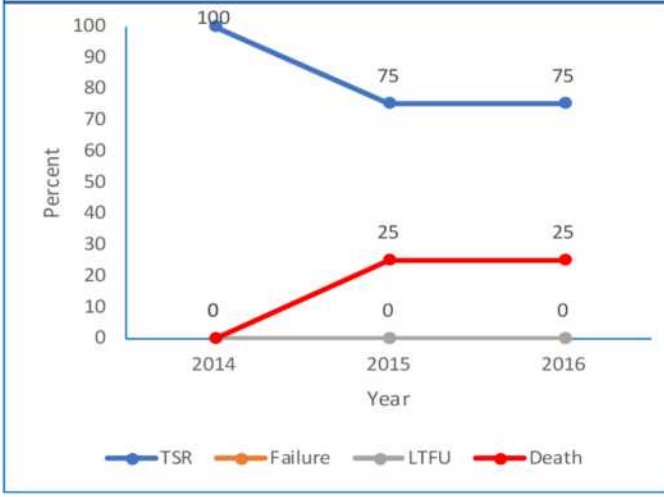
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	808	792	791	882	940
Number of <5 on IPT	73	145	125	178	86
IPT Uptake among <5 (%)	9	18.3	15.8	20.1	9.1

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	0	1	0	0	0

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

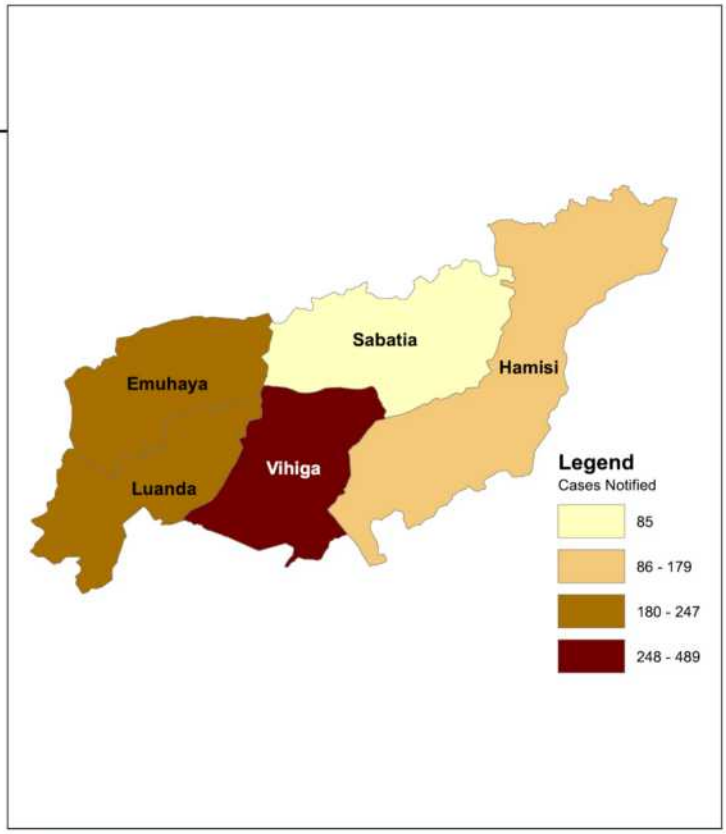


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by Private Sector (%)	6.2	8	6.1	10.5	7.4

VIHIGA COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	450	411	471	326	369
New Clinically Diagnosed	369	330	204	245	304
Previously Treated	88	64	48	86	122
Extra Pulmonary	93	70	100	161	244
TB among children all forms (Under 15)	78	63	63	57	54

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	94.1	97.1	98.7	98.4	98.9
TB / HIV Co-infection rate	40.9	43.8	42.8	32.3	32.4
ART uptake	96	96.6	98.5	99.6	97.2
CPT Uptake	99.7	99.4	99.7	99.6	99.3

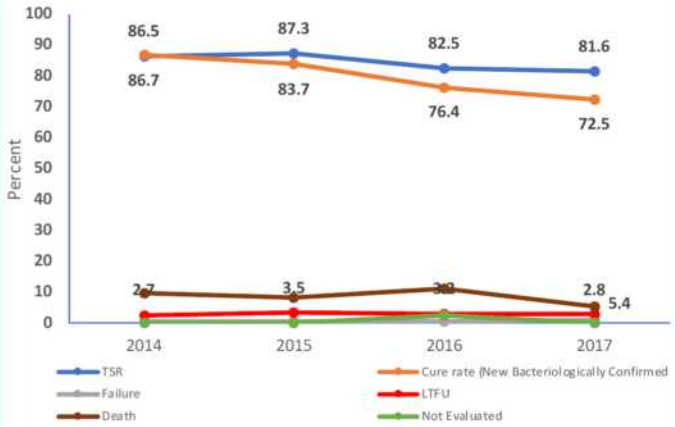
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion malnourished	43.5	37.8	39.4	45	38.2
Proportion on food support	25.6	16.8	22.6	42.9	42.9

DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
Rifampicin Resistant (Including MDR)	3	3	2	2	5
Mono Resistant	0	1	1	2	0
Pre XDR	0	0	0	0	0
PDR	1	0	0	0	0
XDR	0	0	0	0	0

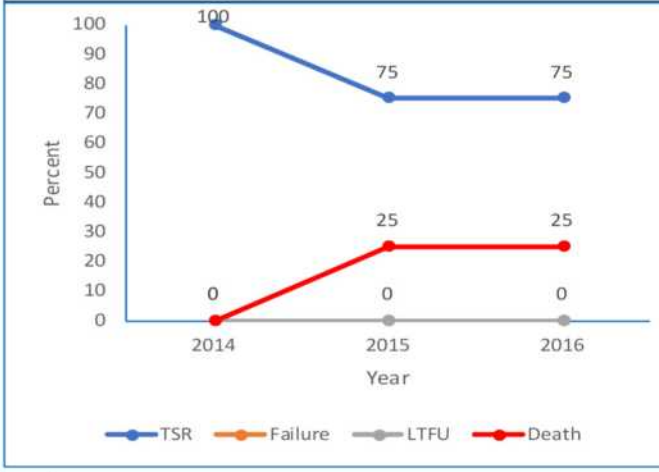
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	438	375	507	451	503
Number of <5 on IPT	13	36	59	161	95
IPT Uptake among <5 (%)	2.9	9.6	11.6	35.6	18.8

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	0	2	0	1	1

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017

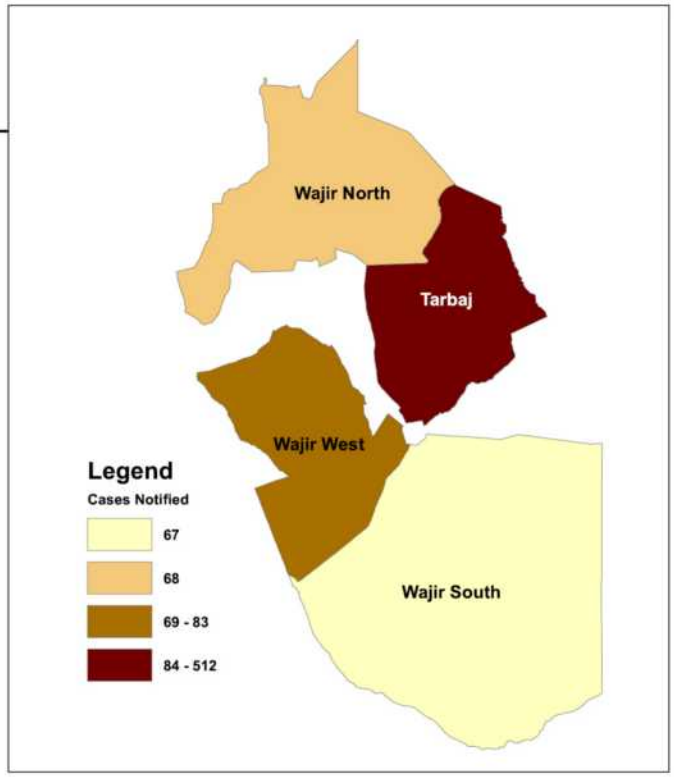


Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by Private Sector (%)	12.2	19.3	17.4	22.7	12

WAJIR COUNTY



DSTB Cases Notified, 2014-2018					
Type of TB	2018	2017	2016	2015	2014
New Bacteriologically Confirmed	383	332	303	277	263
New Clinically Diagnosed	196	116	121	138	225
Previously Treated	20	27	9	28	42
Extra Pulmonary	131	100	113	97	69
TB among children all forms (Under 15)	75	66	66	62	76

TBHIV Care Cascade among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
HIV Testing	97.4	96.8	93.5	96.6	98.4
TB / HIV Co-infection rate	2.3	1.8	1.6	1	0.5
ART uptake	92.8	100	100	83.3	100
CPT Uptake	92.8	100	100	100	100

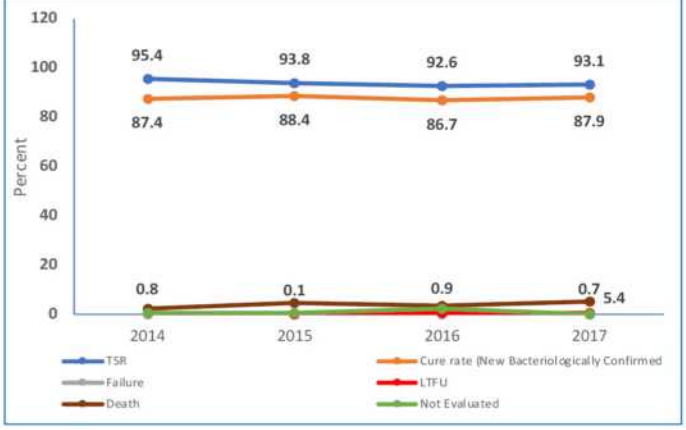
Nutrition Status among DSTB (All forms) (%), 2014- 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Proportion malnourished	61.4	55.9	54.3	53	53.1
Proportion on food support	55.9	54	15.2	50.7	65.8

DRTB Cases Notified, 2014-2018					
Resistant Patterns	2014	2015	2016	2017	2018
Rifampicin Resistant (Including MDR)	0	0	0	0	4
Mono Resistant	0	0	0	0	0
Pre XDR	0	0	0	0	0
PDR	0	0	0	0	0
XDR	0	0	0	0	0

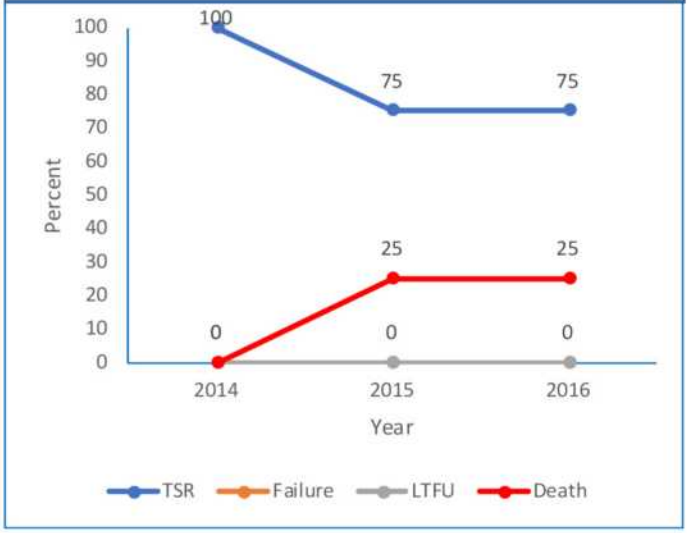
IPT among <5 exposed to bact confirmed PTB, 2014 - 2018					
IPT Indicator	2014	2015	2016	2017	2018
Number PTB Bact Confirmed	290	297	309	349	395
Number of <5 on IPT	0	4	23	61	45
IPT Uptake among <5 (%)	0	1.3	7.4	17.4	11.3

Notified Leprosy Cases, 2014 - 2018					
Leprosy Indicator	2014	2015	2016	2017	2018
Number of Leprosy Cases	0	0	0	0	0

Treatment Outcome among DSTB Patients (All forms) , 2014 - 2017



Treatment Outcome among DRTB Patients (All forms), 2014 - 2016



Contribution of Notified Cases by Private Sector,2014 - 2018					
TBHIV Indicator	2014	2015	2016	2017	2018
Contribution by Private Sector (%)	0.1	0	0	0	0

National Tuberculosis, Leprosy and Lung Disease Program,

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