FEDERAL MINISTRY OF HEALTH
DEPARTMENT OF PUBLIC HEALTH

DRAFT

2019 ANNUAL TB REPORT

NATIONAL TUBERCULOSIS AND LEPROSY CONTROL PROGRAMME

Foreword

Nigeria has the highest burden of TB in Africa and is among the eight countries that accounted for two thirds of the Global TB burden. The country in 2018 signed the commitments at the United Nations High Level Meeting (UNHLM) on TB to successfully treat 1,109,000 people with TB from 2018 - 2022 and placed 2,193,890 people on TB Preventive Therapy (TPT) within the same period. A National Plan for translating the UNHLM commitments into action was developed and launched during the 2019 World TB Day.

The 2019 annual report was therefore developed to track the progress made towards achieving the UNHLM targets while documenting key successes, challenges and lessons learnt. The annual report also highlight some priority area of focus for the programme in 2020 based on the lessons learnt in 2019.

There has been a consistent increase in the number of TB cases notified in the country in the past 4 years, the increased recorded between 2018 and 2019 was the highest ever since the programme was established in 1989. The number of TB cases notified increased by 13% from 100,653 in 2018 to 120,266 in 2019. 76% of the states (28) recorded an increased while 24% (9) of the states recorded a decreased in TB notification. Taraba state has the highest increase of 49%, the increased in case notification in 5 of the states (Taraba-49%, Cross River-45%, Katsina – 42%, Niger-40%, Akwa-Ibom-28% and Bauchi-26%), doubled the value for the national increase of 13%.

Seventy Seven (77%) of the UNHLM target for TB diagnosis and treatment was achieved in 2019 while the number or people placed on TB preventive therapy remain extremely low. Despite the achievement in case notification, the treatment coverage is still low at 27% with huge number of missing TB cases.

Finding the missing TB cases and placing them on treatment including rapid scale up of TB preventive therapy remain the key priority of focus of the programme in 2020. The programme in order to achieve this will rapidly scale up TB services to over 5,000 health facilities in 2020; expand TB diagnostic services with the installation of over 100 new GeneXpert machines. Additionally, the WHO recommended MDR-TB regimen and the shorter TPT regimen will be rapidly scale up in the country. The Government will also mobilizing additional resources to fill the current huge gap in TB funding.

The FMOH is committed in making accelerated progress in 2020, the programme will leverage on collaboration with partners and other programmes of the FMOH such as Community Health Influencer, Promoters and Services (CHIPS); Basic Health Provision Funds (BHPF) AND Health Insurance Scheme among others to enhance efforts at reaching the UNHLM targets. The Government count on the support from our partners in making giant stride in 2020 towards ending TB epidemic in Nigeria

Dr. U.M. Ene-Obong
Director Public Health,
FMOH, Abuja

Acknowledgement

National Tuberculosis, Leprosy and Buruli Ulcer Control Programme (NTBLCP) compiled this Annual report to highlight the progress made in 2020 finding the missing TB cases and in the implementation of various strategies towards ending TB epidemic in Nigeria

Our heartfelt gratitude goes to the Federal Ministry of Health through the Head of Department of Public Health, Dr. U.M. Ene-Obong for the good managerial coordination and passionate drive to achieve our set targets.

The achievements documented in this report were made possible through the inspiration and support of the Honourable Minister of Health, Dr. Osagie E. Ehanire, whose desire is to end TB epidemic in Nigeria in line with the change agenda of the President and commander-in -chief of the Federal Republic of Nigeria, His Excellency General Muhammadu Buhari

We also want to thank the staff of TBL & BU control programme at Federal, State, and local Government levels. We also appreciate the support from all the World Health Organization National Professional Officers (WHO NPOs), ILEP partners, the Private sector GF (IHVN) and all national/international Consultants to GFATM for joining in implementing the strategic plan for the interventions and control of Tuberculosis, Leprosy and Buruli ulcer. Our achievements would not have been possible without their commitment.

Our Special appreciation is to the Global Fund, the USAID (KNCV, MSH, FHI360), the CDC, WHO, other technical and financial partners who have contributed tremendously to the progress achieved by the NTBLCP in the year under review.

We appreciate all who have made the development of this annual report possible especially the commitment of Dr. O.C. Akaniro, NTBLCP M&E focal point and Dr. Omoniyi Amos, WHO-Nigeria who spearheaded the development of this report.

Finally, our gratitude goes to the Almighty God for the fortitude to take these giant strides.

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Abbreviations

ACSM	Advocacy, Communication and Social Mobilisation
ADR	Adverse Drug Reaction
AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-Retroviral Therapy
BU	Buruli Ulcer
CDC	Centres for Disease Control and Prevention
CIDA	Canadian International Development Agency
CPT	Co-trimoxazole Preventive Therapy
CTBC	Community TB Care
DFB	Damien Foundation Belgium
DOTS	Directly Observed Treatment Short-course
DST	Drug Susceptibility Test
EPTB	Extra Pulmonary TB
EQA	External Quality Assessment
FCT	Federal Capital Territory
FDC	Fixed Dose Combination
FMOH	Federal Ministry of Health
GDF	Global Drug Facility
GFATM	Global Fund to Fight Aids, Tuberculosis & Malaria
GHAIN	Global HIV/AID Initiative in Nigeria
GHW	General Health Worker
GHCW	General Health Care Worker
GLC	Green Light Committee
GLP	Good Laboratory Practice
GLRA	German Leprosy and Tuberculosis Relief Association
HCT	HIV Counselling Testing
HDL	Hospital Development and Linkage
HIV	Human Immunodeficiency Virus
IHVN	Institute of Human Virology Nigeria
ILEP	International Federation of Anti-Leprosy Associations
IPT	Isoniazid Preventive Therapy
ISTC	International Standards for TB Care
IULTD	International Union against TB and Lung Diseases
LGA	Local Government Area
MB	Multi-bacillary
MDR	Multi-Drug Resistance
MDT	Multi-Drug Therapy
NLR	Netherlands Leprosy Relief
NPO	National Professional Officer
NSP	National strategic Plan
NTBLCP	National TB and Leprosy Control Programme
NTBLTC	National TB and Leprosy Training Centre
PAL	Persons Affected by Leprosy
PB	Pauci-bacillary
PLHIV	People Living With HIV/AIDS

POD	Prevention of Disability
PPM	Private Public Mix
QA	Quality Assurance
QAP	Quality Assurance Policy
R&R	Recording & Reporting
RFT	Released From Treatment
M&E	Monitoring & Evaluation
STBLCO	State TBL Control Officer
TB/HIV	Tuberculosis/Human Immuno-deficiency Virus
TBL	Tuberculosis and Leprosy
TBLS	TBL Supervisor
TLMN	The Leprosy Mission Nigeria
USAID	United States Agency for International Development
WHO	World Health Organisation

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1. Introduction

Nigeria is one of the most densely populated countries in Africa, with approximately 200 million people in an area of 920,000 km^2 (360,000 sq mi) and is also the country with the largest population in Africa and the seventh largest population in the world

Approximately 50% of Nigerians are urban dwellers, with the rate of urbanization being estimated at 4.3%.[2] Nigeria is home to over 250 ethnic groups, with over 500 languages,[2] and the variety of customs, and traditions among them gives the country great cultural diversity

Most of the population is a young population, with 42.54% between the ages of 0–14.[2][4] There is also a very high dependency ratio of the country at 88.2 dependents per 100 non-dependents.[2]

Administratively, the country is divided into 36 states and FCT. The States are grouped into 6 geo-political Zones and also further divided into 774 Local Government Areas to bring governance close to the people.

The United Nations General Assembly first ever-High Level Meeting (UNHLM) on TB was held on 26 September 2018 in New York with the theme "United to end tuberculosis: an urgent global response to a global epidemic". Nigeria was among the countries that adopted the political declarations and committed to achieve the ten headline UNHLM targets by 2022. The programme in 2019 developed a national plan for translating UNHLM commitments into action, with the targets disaggregated by state and a score cards developed to monitor state and National progress

Leprosy and Buruli ulcer though listed among the Neglected Tropical diseases in the Federal Ministry of Health, the two diseases are managed by the NTBLCP because of the comparative advantage and structure. However, this is done in close collaboration with the NTD unit.

The 2019 annual report of the NTBLCP was developed to highlight the progress made in accelerating TB case finding in Nigeria, provide comprehensive report on programme performance in the efforts towards controlling TB, Leprosy and BU diseases in Nigeria.

1.1. NTBLCP structure

The NTBLCP was established in 1989 and launched in 1991 to coordinate efforts at controlling Tuberculosis, Leprosy and Buruli Ulcer in Nigeria. NTBLCP in order to enhance effectiveness and efficiency is structured along the three tiers of government, vis: Federal, State and LGAs.

2. TB disease burden in Nigeria

TB is a major public health problem in Nigeria with the country ranked 6th among the 30 high TB burden country globally, and first in Africa. Nigeria is also among the 14 countries that are in all the three WHO Global high-burden country lists for TB, TB/HIV and MDR-TB with an estimated

incident rate of 219 per 100,000 population and mortality rate (excludes HIV+) of 64/100,000[1]. Nigeria is among the eight countries that accounted for two thirds of the global TB burden, with the country accounting for 4% of the total global burden. The estimated burden of TB in Nigeria in 2019 is shown in the table below:

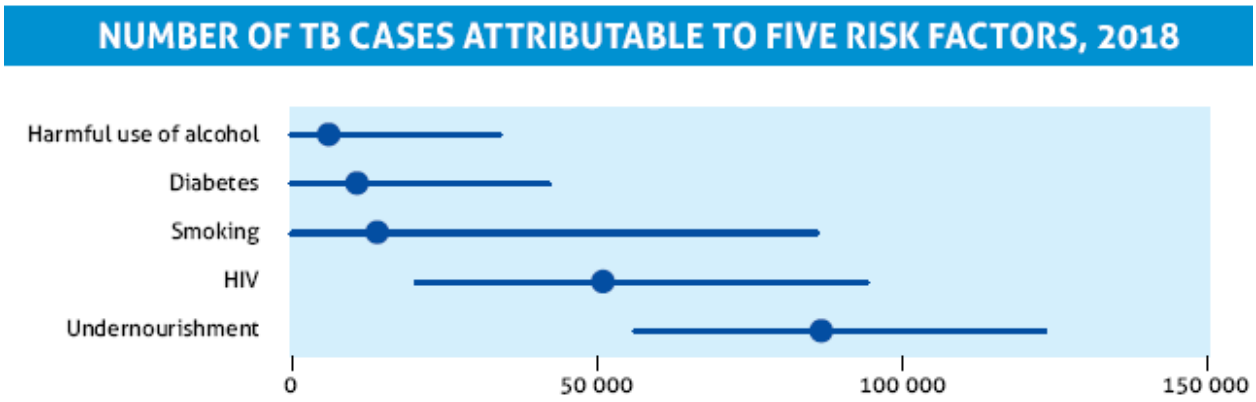
Table 1: Estimates of TB burden in 2019[2]

ESTIMATES OF TB BURDEN,[a] 2018

	NUMBER (thousands)	RATE (per 100 000 population)
Total TB incidence	429 (280–609)	219 (143–311)
HIV-positive TB incidence	53 (34–75)	27 (17–38)
MDR/RR-TB incidence[b]	21 (13–32)	11 (6.4–16)
HIV-negative TB mortality	125 (73–192)	64 (37–98)
HIV-positive TB mortality	32 (20–47)	16 (10–24)

Drivers of TB burden in Nigeria

Key drivers of TB burden in Nigeria include HIV and undernourishment as shown in the figure below[3]



3. Coverage of TB services in Nigeria

3.1. DOTS treatment services

There was an 31% increase in number of health facilities providing TB treatment services from 9,625 in 2018 to 12,606 in 2019 (see figure and table 2 below). The proportion of health facilities providing TB services increase from 28% (with 35,000 health facilities as denominator) in 2018 to 31% (with 40,562 health facilities as denominator) in 2019.

[1] WHO Global TB Report 2019
[2] WHO 2019 Global TB report
[3] WHO Global TB Report 2019

However, only 31% of the health facilities in the country are providing TB treatment services. The low TB treatment coverage with TB services is one of the factors accounting for the high number of missing TB cases in the country. Trend in TB service scale up is shown in the table below:

Figure 1: Health Facility coverage with TB treatment services (2017 - 2019)

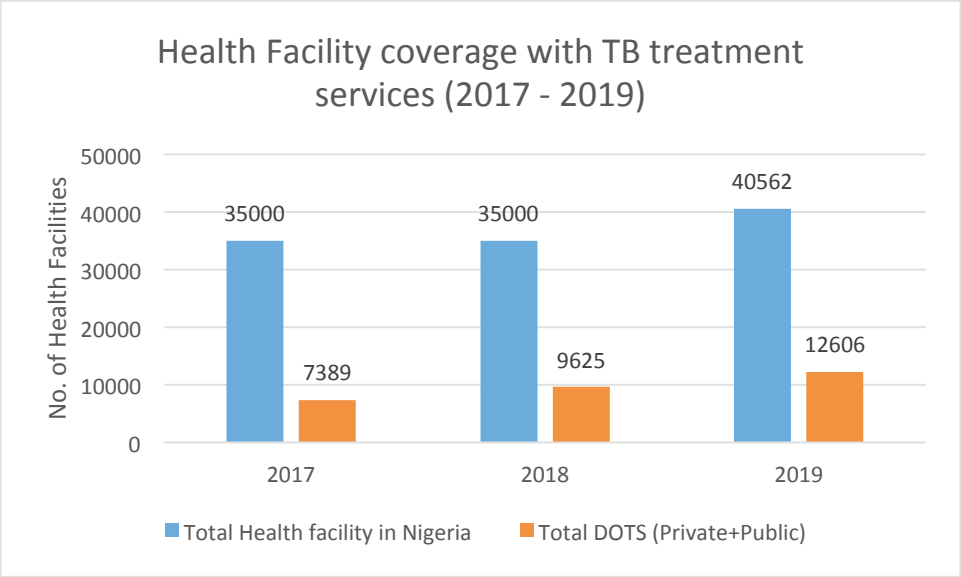


Table 2: Trend of TB services in Nigeria 2011-2019

Type of services	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
No of DOTS centres		4387	5057	5383	5727	5861	6619	7389	9625	12,606
Microscopy Centres		1229	1366	1473	1687	1835	2371	2650	2786	3220
GeneXpert MTB/RIF	-	7	32	50	96	201	318	390	398	398
Line Probe Assay (FLD) sites	2	3	3	4	4	5	8	8	9	10
Line Probe Assay (SLD)	0	0	0	0	1	1	3	7	9	10
Cultures	5	5	5	6	7	7	8	8	9	10
DST	2	2	2	5	5	6	8	8	9	10

3.1.1. Public health facilities coverage with TB treatment services

The number of Public facilities providing TB treatment services increased from 8,174 in 2018 to 9,024 in 2019. Majority (72%) of the health facilities providing TB services in Nigeria are in the public , while 28% (3,582) of the facilities providing TB services are in the private.

The public health facilities coverage with TB services in 2019 is 30%, this is expected to increase to 47% in 2020 based on the additional 5,117 public health facilities expected to be engaged for provision of TB services in 2020 (see table below)

3.1.2. Private health facilities coverage with TB treatment services

The private health facilities engaged for provision of TB treatment TB services increased by 147% from 1,451 in 2018 to 3,582 in 2019. The huge increased in service expansion in the private sector was due to dedicated efforts by the programme in comprehensively engaging the private providers with the GF funds and having a dedicated PR for the private.

The private health facilities coverage with DOTS services is 34% in 2019 and this is expected to increase to 46% in 2020 based on the planned expansion into 1363 additional private health facilities in2020.

Table 3: Public and Private Health facility coverage with DOTS services (2017 – 2020)r

		2017	2018	2019	2020	2021
	Total Health facility in Nigeria	35,000	35,000	40562	40562	40562
	Total DOTS (Private+Public)	7389	9625	12606	19086	24140
1	% Dots in Nigeria	21%	28%	31%	47%	60%
	PUBLIC	6412	8174	9024	14141	19141
	Total public facility in Nigeria	24000	24000	29904	29904	29904
2	% Public facility DOTs	27%	34%	30%	47%	64%
	PRIVATE	977	1451	3582	4945	4999
	Total private in facility			10658	10658	10658
	% private			34%	46%	47%
	IHVN			1643	118	54
3	SHOPS PLUS			488	1245	
	Facilities involved with Identification and referral				11,000	
	Total facilities having at least one form of TB Services				30,086	35,140
	% Health facilities involved with one form of TB services				74%	87%

Overall, the programme has made progress in expanding TB services to 2,981 additional health facilities (private and public sector) in 2019, with plan to expand to additional 6,480 health facilities (private and profit) in 2020. The lessons learnt while expanding DOTS services in 2019 will be used to rapidly scale up the expansion in 2020. Key lessons learnt in the 2019 expansion include:

- Facility assessment using the WHO checklist facilitate rapid identification of eligible health facilities
- Provision of recording and reporting tools and medicine during training facilitate immediate activation of the TB treatment sites.
- Frequent and continuous supervision of newly established sites enhance reporting

3.1.3. Yield from newly engaged health Facilities in 2019 (DOTS Expansion)

The programme with support from GF expanded TB service to additional health facilities in 17 states in Q3 2019, while expansion in other states were conducted with other funding source.

Analysis of data obtained from the newly established DOTS centers in 21 states revealed that 62% of the health facilities reported at least one presumptive in Quarter 4 2019. The average reporting rate of TB presumptive varies from 2 presumptive in Oyo to 92 presumptive in Q4 2019 (see table below).

The yield of the newly established DOTS centers varies from state to state, In Katsina state, the average presumptive per newly established DOTS center in Q4 2019 is 92 presumptive per facility, and in terms of diagnosed TB cases it is an average of 11 TB cases per facility in Q4 2019.

In Abia state, all the 42 newly established DOTS centers reported at least one presumptive; the newly established DOTS centers accounted for 22% (74) of the TB cases notified in the state in Q4 2019.

In Taraba state, average presumptive per newly established DOTS center in Q4 2019 is 12 presumptive per center, while the average TB case per newly established DOTS center is 2 TB cases per center.

Over all, the DOTS expansion activities has led to an increase in presumptive and number of TB diagnosed, with yield varying from states to states, hence the need for more targeted expansion based on the lessons learnt. The lessons learnt from state with high yield (Katsina, Sokoto, Abia, Taraba) will be used in further expansion in 2020.

The NTBLCP will also prioritize supportive supervision and demand creation activities in newly established DOTS centers to further increase notification from these facilities.

Table 4: Yield of presumptive and TB cases from newly established DOTS centers in Q4 2019

No.	State	No of newly established DOTS Centers	No of presumptive	No of TB cases	Average presumptive per facility	Average TB cases per facility
1	Katsina	50	4614	543	92	11
2	Akwa Ibom	70	1932	22	28	0.3
3	Bauchi	50	1167	49	23	1
4	Sokoto	13	231	58	18	4.5
5	Abia	42	640	74	15	2
6	Plateau	108	1484	75	13.7	0.7
7	Kano	50	672	48	13	1
8	Taraba	50	592	82	12	1.6
9	Enugu	65	752	35	12	1
10	Kaduna	50	562	32	11	1
11	Benue	50	466	38	9	1
12	Rivers	104	859	129	8	1.2
13	Bayelsa	43	316	28	7	1
14	Niger	44	323	12	7	0.3
15	Anambra	78	545	69	7	1
16	Kogi	50	266	10	5	0.2
17	Delta	50	243	56	5	1
18	Kwara	50	182	18	4	0.4
19	Jigawa	50	169	7	3	0
20	Edo	47	139	21	3	0.4
21	Oyo	50	77	3	2	0.1

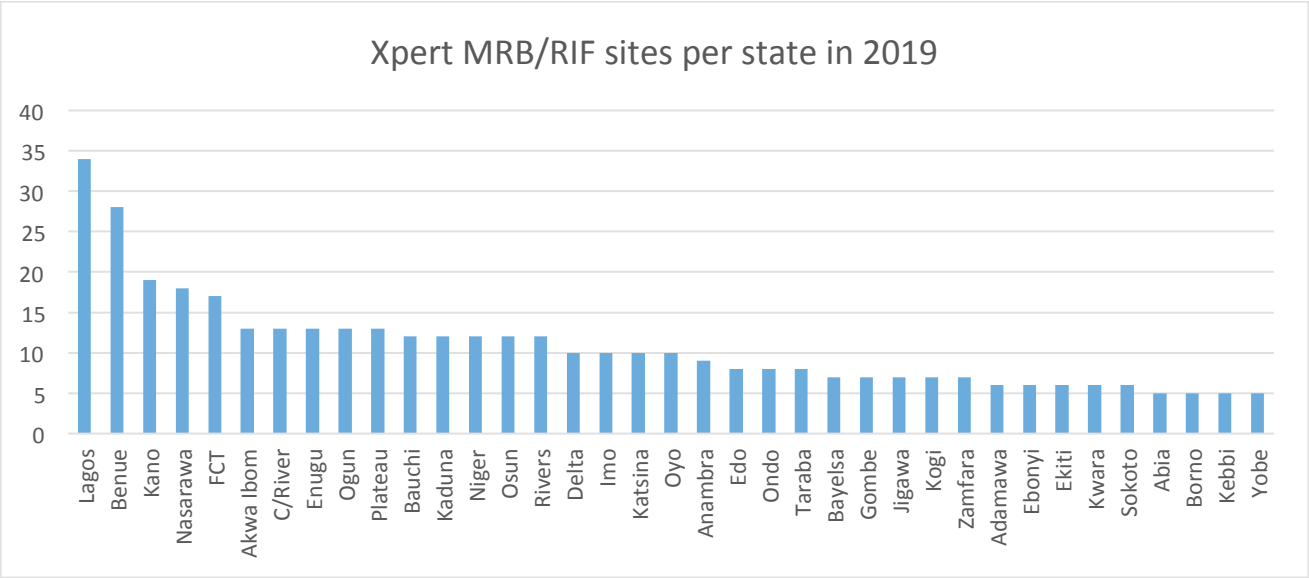
3.2. Laboratory services

3.2.1 GeneXpert MTB/RIF services

The number of GeneXpert MTB/RIF machine is on consistent increase since the introduction of the technology in 2011, there are currently 398 GeneXpert MTB/RIF machines in the country located in 388 health facilities and in 48% of the LGAs in Nigeria.

The number of GeneXpert MTB/RIF machines per state varies from 5 machines in Abia, Borno, Kebii and Yobe states to 38 machines in Lagos state. The distribution of the GeneXpert MTB/RIF machines by state is shown in figure 2 below. The country introduce the ultra in 2019 with some of the machines updated to conduct ultra-test.

Figure 2: State coverage with GeneXpert MTB/RIF machine in 2019

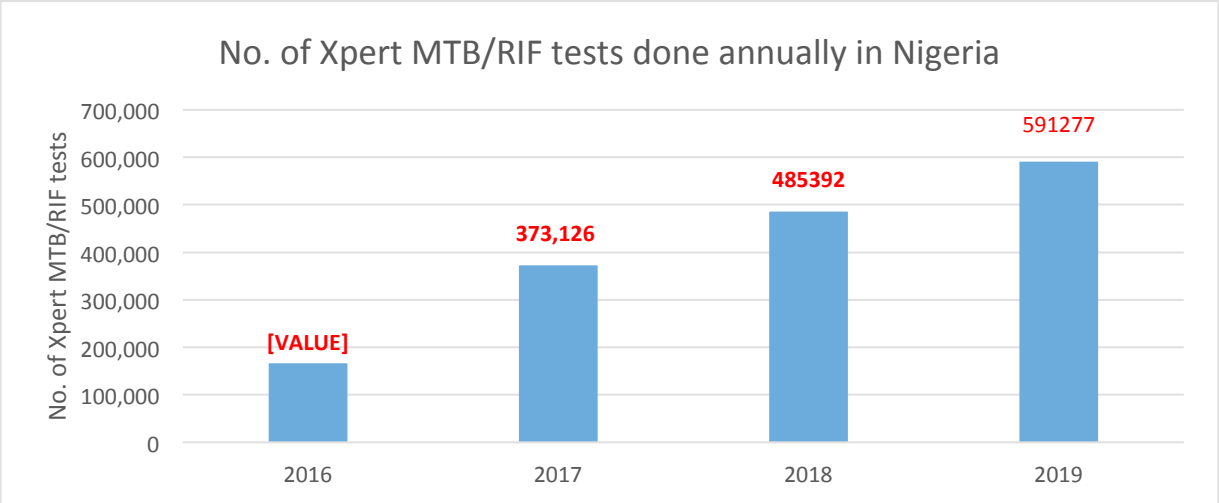


The country with the funds from GF optimization portfolio is expected to procure 102 additional GeneXpert MTB/RIF machines in 2020

Optimization of GeneXpert MTB/RIF

The optimization efforts of the programme has contributed to a 22% increase in the number of Xpert MTB/RIF test conducted from 485,392 tests in 2018 to 591,277 tests in 2019. Consequently, a 10% increase in the number of bacteriologically positive TB patients notified was observed from 78,507 in 2018 to 86,256 in 2019; while the all forms of TB cases notified also increase by 13% increase from 106,533 in 2018 to 120,266 in 2019 (see figure below)

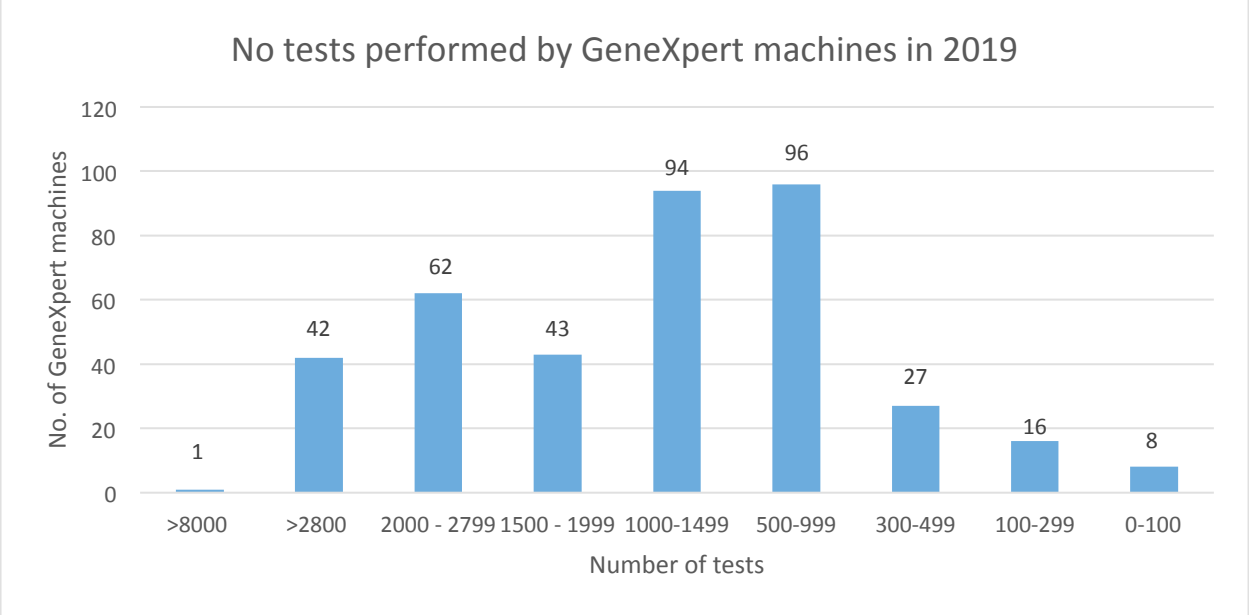
Figure 3: No. of Xpert MTB/RIF tests done annually in Nigeria



GeneXpert utilization rate in 2019

The utilization rate of the machines has also increased from 43% 2018 and to 52% in 2018 (assuming each 4-module machine will conduct 2,880 tests annually). A detailed analysis of the utilization rate of GeneXpert machine in 2019 revealed that 11% (43) machines performed at-least the optimal 2,800 tests per year for a 4-module machines. See figure for summary of tests performed by GeneXpert MTB/RIF machines in the country

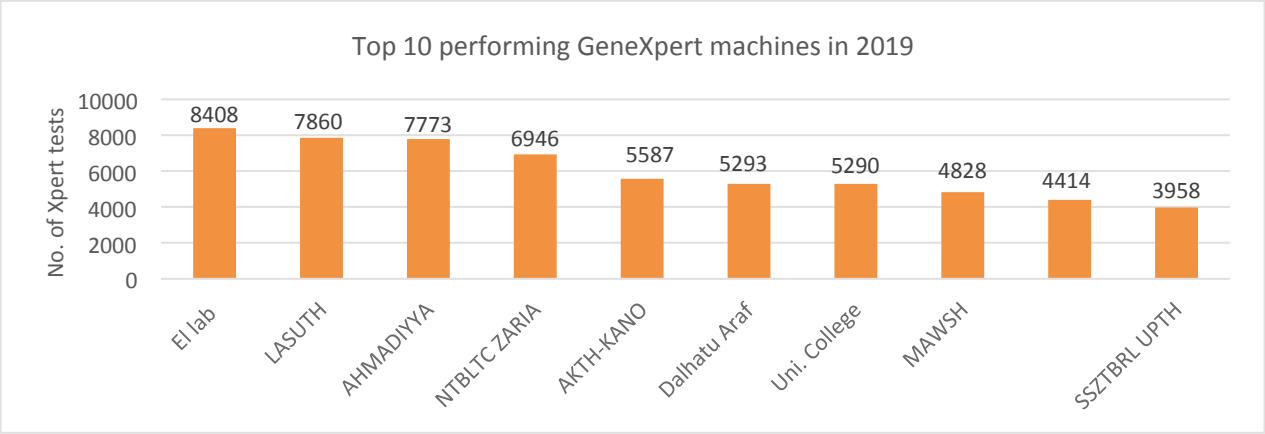
Figure 4: Summary of tests performed by GeneXpert MTB/RIF machines in the country



A further analysis of the top 10 facilities with the highest output in-terms of Xpert MTB/RIF assay in 2019 revealed the following:

- A private laboratory with only one 4-module machine performed the highest number of tests in 2019 (8,408 tests)
- The top 10 machines performed 10% of the Xpert tests conducted in 2019

Figure 5: Top 10 performing GeneXpert machines in 2019



The engagement of private sector in provision of Xpert MTB/RIF tests has shown great result in with El Lab performing the highest number of tests in the country in 2019. The Programme as a way forward will prioritize potential private health facility for the expansion of GeneXpert MTB/RIF services.

Connection to GxAlert system

394 (99%) of the existing GeneXpert MTB/RIF machines in the country are connected to GxAlert system. This system has enhanced the capacity of the programme to monitor the functionality of the machines and to effectively follow up on diagnosed DR-TB cases to enhance their enrollment.

3.2.2. Microscopy services

The NTBLCP currently recommend AFB microscopy for use in diagnosing TB only in places where Xpert MTB/RIF assay is not available. A significant number of presumptive still had AFB

microscopy tests done in 2019. 22% (206,382) of the presumptive examined for diagnosis (928,877 presumptive tested) were tested with microscopy, with a positivity rate of 12%

Variable	Value
No. of presumptive examined with microscopy	206382
No. with AFB positive	25412
positivity rate	12%

The programme in view of this must:

- Strengthen the quality of microscopy services in the country in view of the significant number of TB cases diagnosed with microscopy in 2019.
- Possible significant number of TB cases in view of the number of presumtive sent for microscopy, the programme must therefore scale up access to Xpert MTB/RIF ultra o reduce the number of presumptive sent for microscopy.

3.2.3. Line Probe Assay, culture and DST

First and 2nd line LPA services are provided in all the 10 Reference laboratories in the country. Culture and DST services are provided in all the National and Zonal reference laboratories in the country.Detail of Laboratory that provided LPA, culture & DST services in 2019 is shown in the table below:

Table 5: Reference Laboratory services

Reference Laboratory	Culture		First Line LPA	2nd line LPA
	Solid media	Liquid Media		
NIMR	X	X	X	X
NTBLTC	X	X	X	X
Zankli (Bingham University)	X	X	X	X
Lawrence Henshaw, Calabar	X	X	X	X
JUTH	X		X	X
UCH	X		X	X
UPTH	X		X	X
AKTH	X		X	X
FMC yola	X		X	X
Specialist Hospital Amachara	X		X	X

3.2.4. QA of Laboratory services

The NTBLCP implement the three elements of quality assurance programme namely quality control, external quality assessment and quality improvement at various levels of implementation. As at end of 2019, microscopy centers that participated in EQA achieve concordance rate of ≥95%. In the effort to achieve a robust external quality assessment system for Xpert MTB/Rif testing, TB molecular testing and Culture/Drug Susceptibility Testing. Two cycles of Xpert MTB/Rif EQA panels were performed and analyzed in 2019. The proportion of Xpert sites that passed the EQA increased from 89% in cycle 1 2019 to 92% in cycle 2 (see table below)

Table 6: Xpert EQA cycle 1 2019 Performance

Zones	Total number of sites	No. of sites that passed	No. of sites that failed	Sites with challenges	% of sites that passed
NC	101	92	5	4	91%
NE	43	38	1	4	88%
NW	64	60	1	2	94%
SE	43	35	4	4	81%
SS	62	52	4	3	84%
SW	81	73	4	4	90%
Total	**394**	**350**	**19**	**21**	89%

Table 7: Xpert EQA cycle 2 2019 Performance

Zones	Total number of sites	No. of sites that passed	No. of sites that failed	Sites that did not report	Sites with challenges	% of sites that passed
NC	101	93	0	1	7	92%
NE	43	39	1	0	3	91%
NW	65	60	1	0	4	92%
SE	43	41	0	1	1	95%
SS	62	54	1	0	7	87%
SW	81	77	0	1	3	95%
Total	**395**	**364**	**3**	**3**	**25**	92%

Key Challenges of laboratory services in Nigeria

- Operational: labour unrest; staff attrition
- Human Resource: inadequate number of laboratory staffs at all levels
- Limited access to diagnostic services
- Underutilization of available diagnostic tool e.g. Xpert MTB/RIF assay
- Inadequate access to public power source *(interrupted power supply with no reliable power back-up equipment e.g. solar panel)*
- Weak specimen transportation system *(especially the logistics at the primary level)*
- Inadequate funding for laboratory activities at all levels
- Frequent breakdown of laboratory equipment due to irregular power supply, inadequate maintenance/validation/certification/calibration/warranty extension etc.
- Weak laboratory information system (LIS) network connectivity

4. Progress towards finding the missing TB cases in Nigeria.

106,533 (24%) of the estimated 429,000 TB cases in Nigeria were notified in 2018[4] (with 322,467 missing TB cases in 2018) using the incident rate to make a projection for 2019, a total of 440,698 TB cases was estimated to have occurred in 2019, out of which 27% (120,266) were notified and put on treatment. There are estimated 320,432 missing TB cases in 2019 and thus need for efforts to intensify

4.1. TB Case finding and notification in 2019

The country in 2019 recorded the highest TB notification ever since the establishment of the NTBLCP in 1989. 120,266 TB cases was notified in 2019, this represent about 13% increase relative to the TB case notification in 2018.

4.2. The missing TB cases in Nigeria in 2019

Nigeria is currently detecting only about 27% of the estimated TB cases in the country with about 73% estimated TB cases still being missed. The breakdown of the missing TB cases in 2019 in the country are as follows:

The missing TB cases in 2019:

- A total of 320,432 missed drug susceptible TB cases
- About 18,452 missed Drug resistant TB cases
- 43,334 missed childhood TB cases
- 40,479 missed HIV positive Incident TB Cases

[4] WHO Global TB report 2019

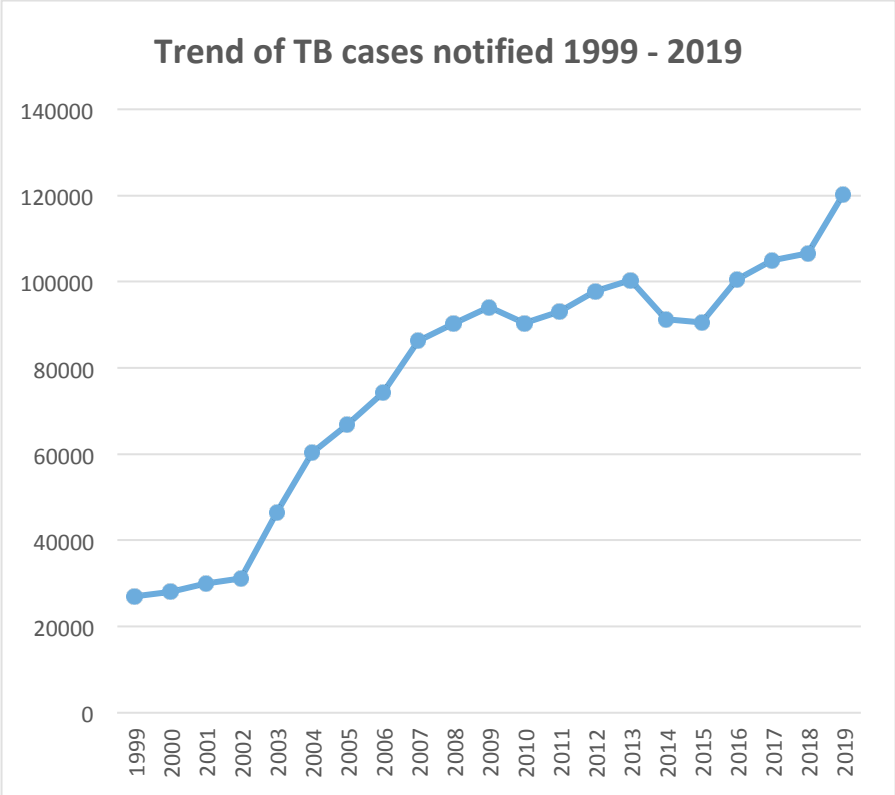
The missing TB cases continue to constitute a pool of reservoir for the continue transmission of TB in Nigeria. One infectious TB case can infect about 15-20 persons per year if untreated, thus **finding the missing TB cases remain the single most important priority for TB control in Nigeria in the next couple of years**.

4.3. Analysis of TB cases notified in 2019

The number of TB cases notified increased by 13% from 106,533 in 2018 to 120,266 in 2019. This is the first time an annual increase of up to 13% was achieved in the programme.

The trend in TB case notification from 1999 to 2019 is shown in the figure 6 below.

Figure6: Trend in National TB case notification from 1999 - 2019



4.3.1. Age and sex distribution of TB cases notified in 2019

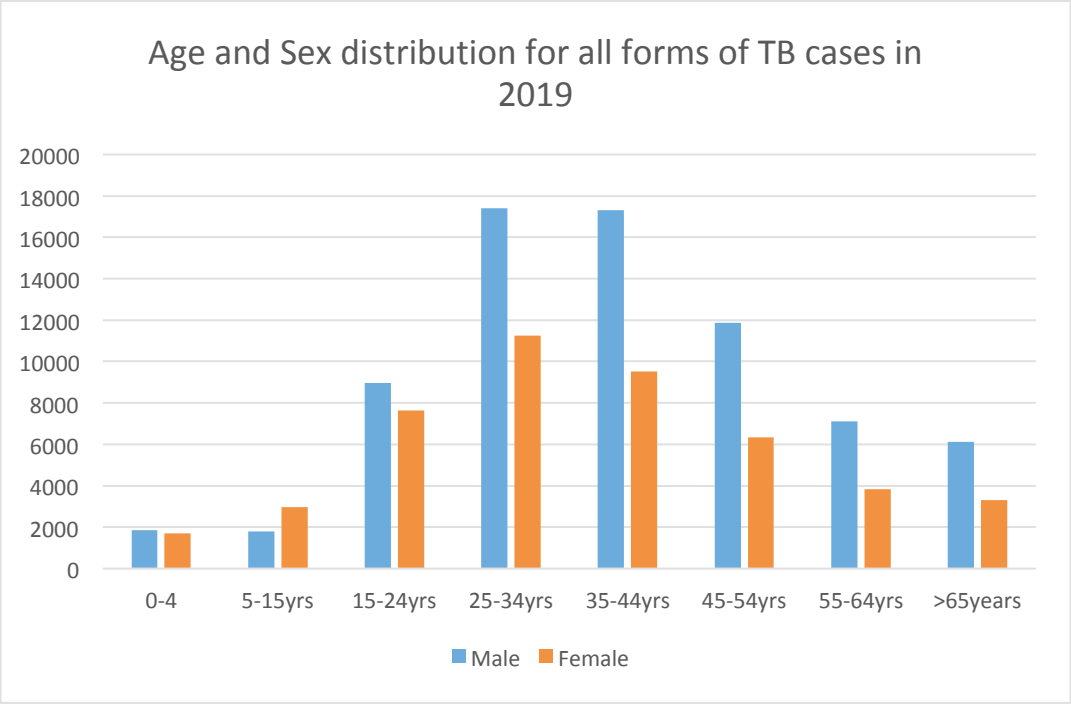
Male account for 61% of TB cases notified in 2019 and female is responsible for only 39% of the cases; this is in line with the finding of the National TB prevalence survey conducted in 2012[5], which show male preponderance. The proportion of females among the notified TB cases ranges from 29% in Kebbi state to 47% in cross-River in 2019, this is a possible indication that females in Kebii state may be having difficulty in accessing TB services, there may be need to

[5] The report of the National TB prevalence survey 2012

implement a gender friendly TB service in the state. A further assessment of the gender situation in Kebbi state to identify barrier to accessing TB service among females should be conducted with interventions identified for addressing such barriers. Other states with low female proportion include Plateau – 32%; Jigawa-33%; Sokoto – 33%; Gombe-35% and Adamawa-35%.

The age group 25-34 years accounts for highest number of TB cases notified in 2019, the age group 25-34 years accounts for 24% of the TB cases notified. The age and sex distribution of all forms of TB notified in 2017 is shown in the figure 7 below:

Figure 7: Age and sex distribution of all forms of TB cases notified in 2019



4.3.2. Case notification rate per 100,000 pop:

4.3.2.1. CNR for all forms of TB

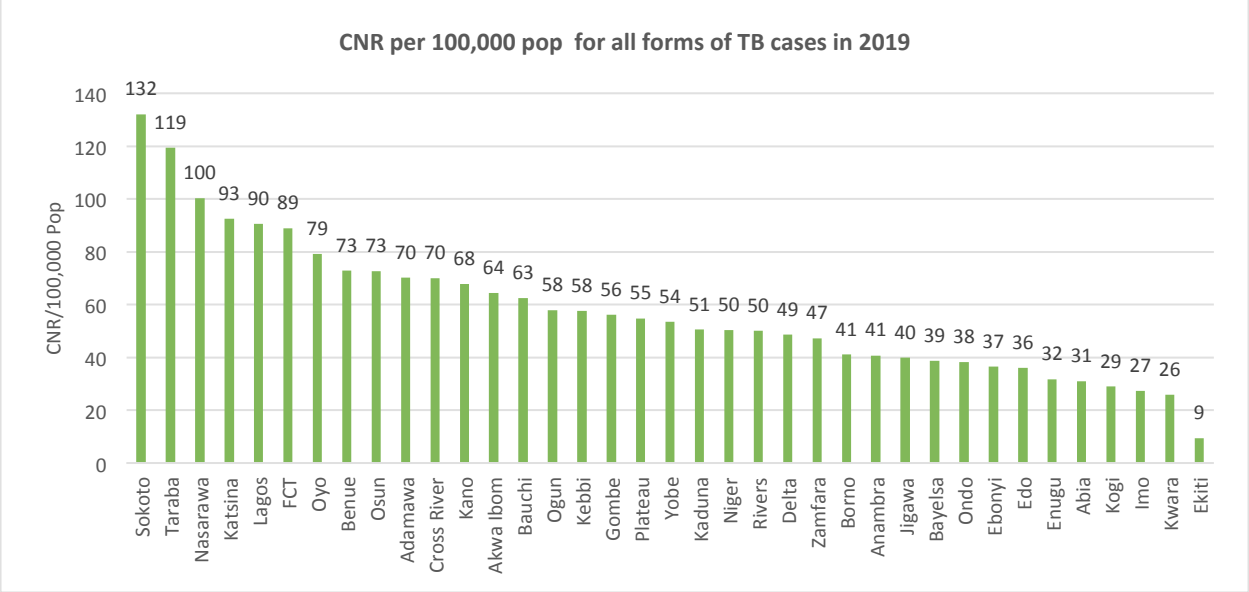
The TB case notification rate increased from 54/100,000 population in 2018 to 60/100,000 pop in 2019 (based on projected pop of 201million for year 2019). The CNR achieved in 2019 is far below the NSP target of 235/100,000 Pop for the same period.

A detail analysis of the case notification rate per 100,000 pop by states revealed the followings:

- None of the states achieved the NSP target of 235/100,000 pop
- 62% of the states (23 states) have CNR below the national average of 60/100,000 pop
- The CNR is as low as 9/100,000 population in Ekiti state, while Sokoto state had the highest notification rate of 132/100,000 population.
- The southeast zone had the lowest CNR of 33.5 per 100,000 populations while the North West zone had the highest CNR of 69.4 per 100,000 populations.
- Imo state with the 15th largest population among the 36 states and FCT had the 3rd lowest CNR of 27.3 per 100,000 populations.

The CNR for all forms of TB in 2019 by states is shown in figure 8 below:

Figure 8: CNR/100,000 pop for all forms of TB in 2019 by states



A positive trend was observed in the CNR in 2019 compared with that of 2018 and other years. The CNR increase from 54.4/100,000 pop in 2018 to 60/100,000 pop in 2019, this is far higher than what was achieved when 2018 is compared with 2017, when CNR increased from 54/100,000 pop in 2017 to 54.4 per 100,000 pop in 2018.

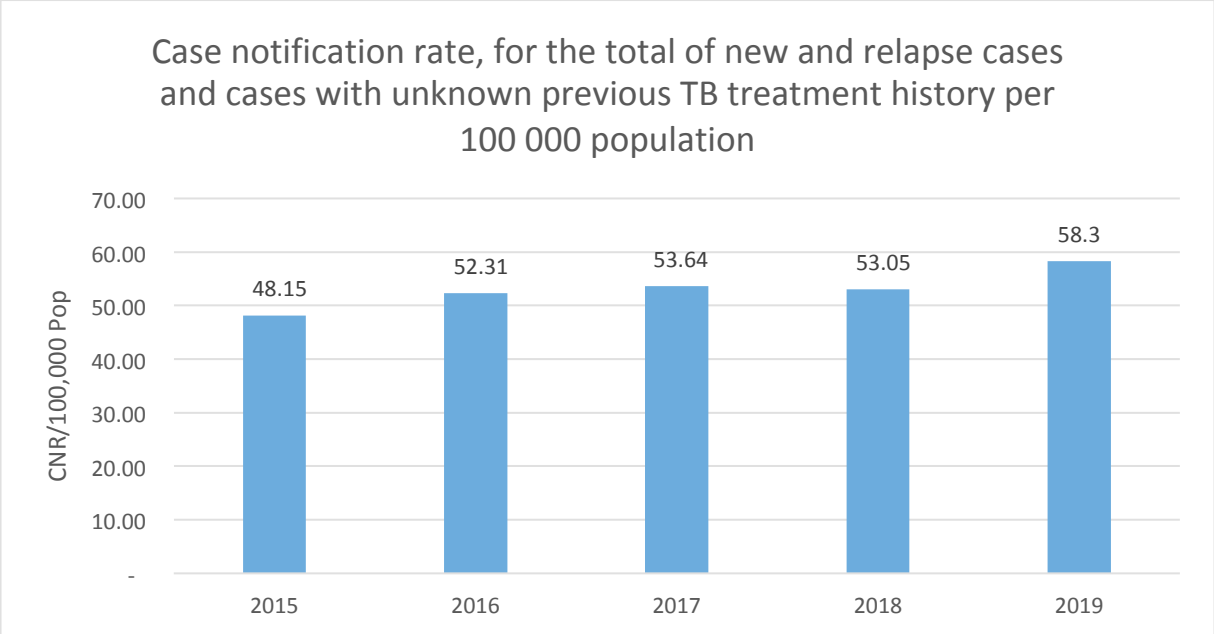
It is therefore important for the programme to maintain this positive trend and scale up the achievements towards reaching the set CNR target by:

- Sustaining and rapidly expanding the ongoing TB case finding interventions on a larger scale towards finding the missing TB cases
- Using the lessons learnt from the implementation 2019 in scaling up the active TB case finding interventions.

CNR for new and relapse cases and cases with unknown previous TB treatment history per 100 000 population

Case notification rate for new and relapses cases and cases with unknown previous TB treatment history per 100,000 population increased from 53.05 per 100,000 population in 2018 to 58.3 per 100,000 population (see figure below)

Figure 9: Case notification rate, for the total of new and relapse cases and cases with unknown previous TB treatment history per 100 000 population

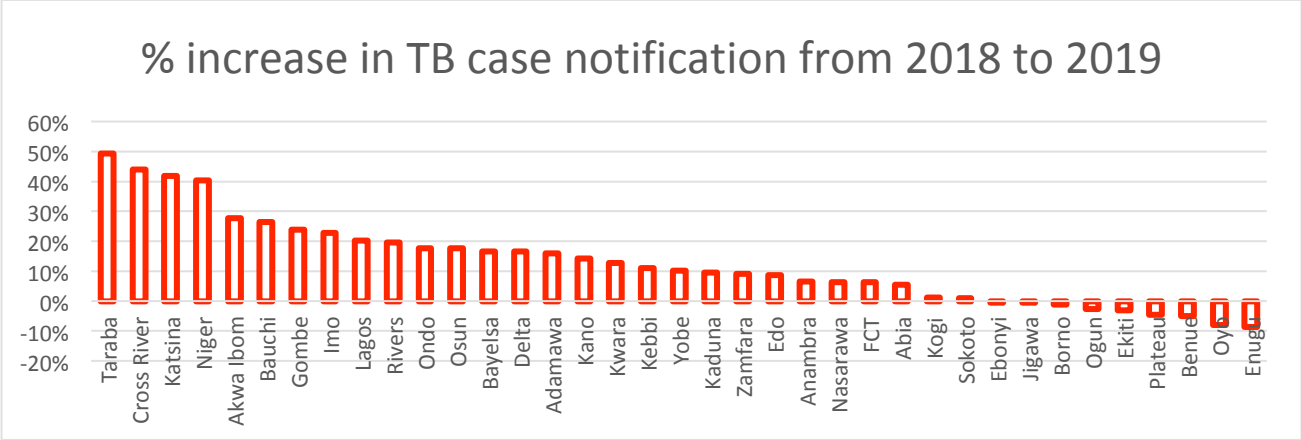


4.3.3. Proportional increase in the number of notified TB cases in 2019 relative to 2018

The programme recorded 13% increase in the number of TB cases notified from 106,533 in 2018 to 120,266TB cases in 2019. 76% of the states (28) recorded an increased in the number of TB cases notified in 2019 is compared with the cases notified in 2018, this increase ranges from 1% increase in Sokoto state to 49% increase in Taraba state. The increased in case notification in 5 of the states (Taraba-49%, Cross River-45%, Katsina – 42%, Niger-40%, Akwa-Ibom-28% and Bauchi-26%), doubled the value for the national increased.

The figure 10 below highlights the % differences in TB notification from 2018 to 2019 by states.

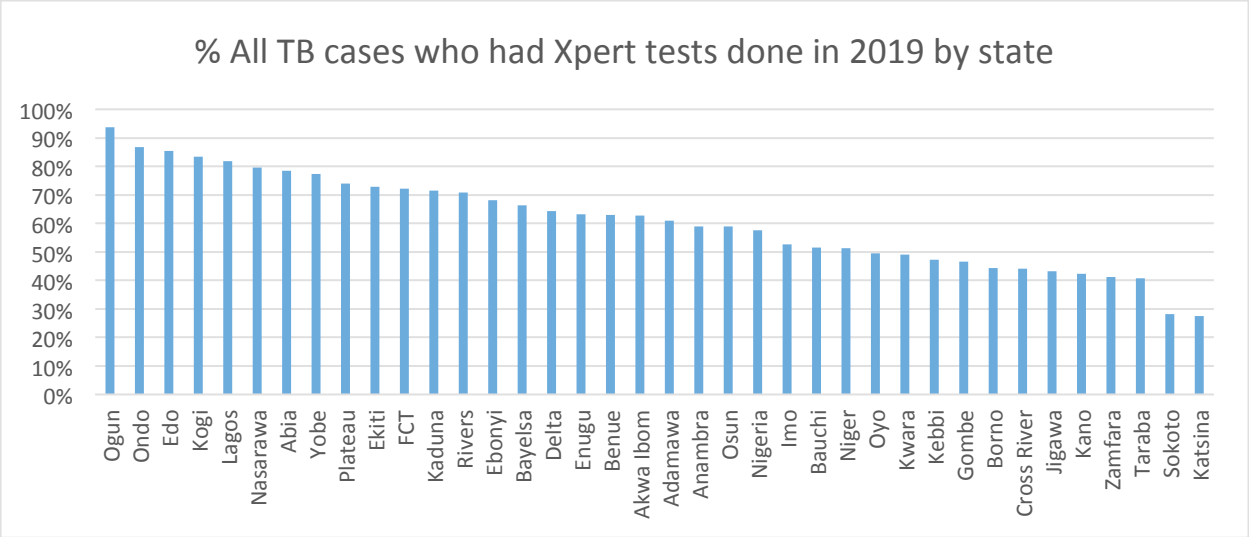
Figure 10: Percentage (%) differences in TB notification from 2018 to 2019 by states



4.4. Access to Xpert MTB/RIF assay among TB patients notified in 2019

69,263 (58%) of all the TB cases notified in 2019 (120,266) had GeneXpert test done, the proportion that had Xpert MTB/RIF done renges from 28% in Katsina and Sokoto states to 94% in Ogun states (figure below)

Figure 11: Proportion (%) of all TB cases who had Xpert MTB/RIF assay in 2019



5. Reporting rate from DOTS centers in 2019

The number of health facilities that reported at least one presumptive increased by 37% from 7,022 health facilities in 2018 to 9,628 in 2019. The health facility reporting rate increase from 73% (7022 of the 9,625 health facilities reported) in 2018 to 78% (9,628 out of 12,279 health facilities reported) in 2019. In 2019, 4,475 health facilities reported at least one TB cases.

The lessons learnt from TB notification from DOTS centers in 2019, which should guide the TB programme moving forward:

- Supportive supervision using the ODK to non-reporting sites enhance case notification
- Expansion of TB services need to be accompanied by concomitant demand creation activities

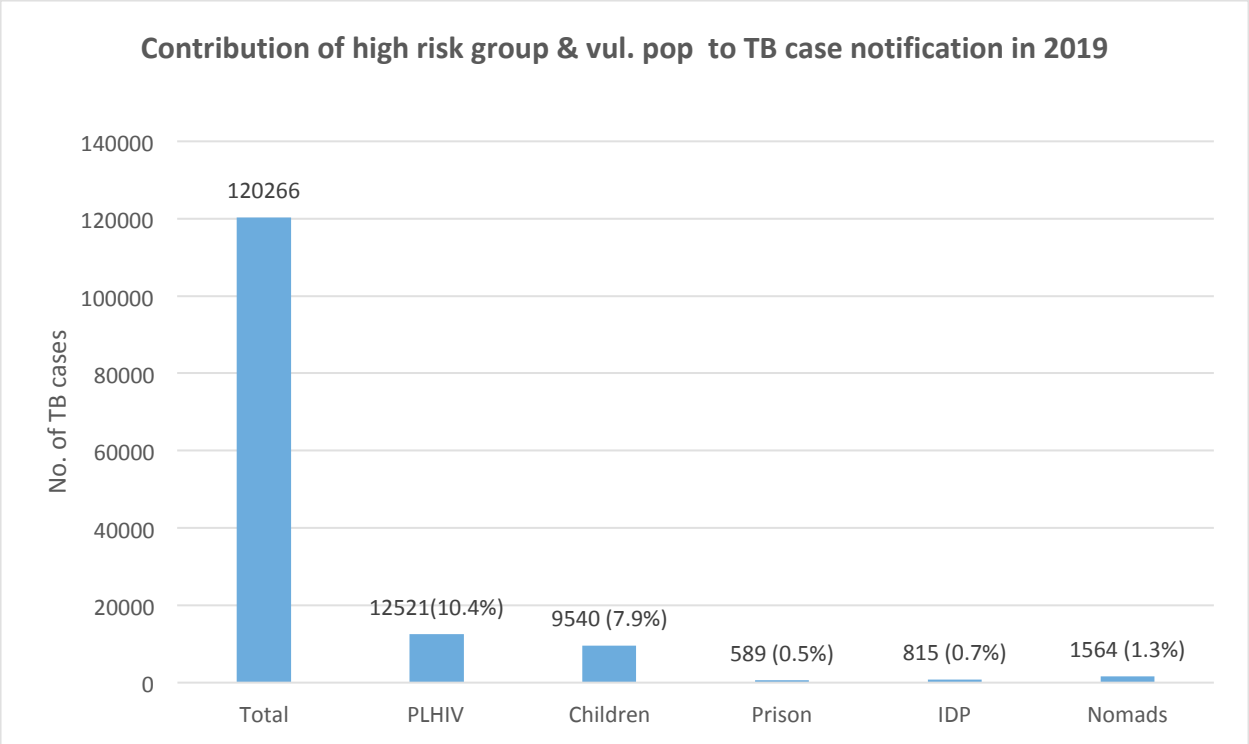
The programme in view of this will intensify supportive supervision in non-reporting facilities and as well integrate awareness creation in service expansion activities.

6. TB Case Notification from the high risk group and vulnerable population

The high-risk group and vulnerable population in Nigeria include the followings: PLHIV, Children, Diabetics, Prison inmates, migrant (nomadic pastoralist & Artisanal migrant fisherman), IDPs, Slum dwellers, malnourished, contacts of TB cases, People in hard to reach areas (riverine communities).

The contribution from high risk group revealed that 10.4% of the TB cases in 2019 are HIV positive incident TB cases; 7.9% from children; 0,5% from prison; 0.7% from IDP and 1.3% from Nomads. The contribution from the high risk groups are shown in the figure below:

Figure 12: Contribution of high-risk group & vul. Population to TB case notification in 2017



6.1. TB in Correctional facilities

TB service are provided in 83 (34%) out of the 244 correctional facilities in the country. There is an increase in TB case notification by 32% from 413 TB cases in 2016 to 546 TB cases in 2019; 97%(530) of the TB cases in 2019 are Male and 3%(16) are females.. The TB incident rate increased as the prison population increased, the incident rate increased from 654/100,000 pop in 2016 to 780/100,000 population in 2018; similarly, the number of inmates also increase by 13% within the same period[6]; an indication of possible correlation between overcrowding and TB incident in congregate settings.

Figure 13: Trend in prison population and TB incident rate in Nigeria

[6] (https://www.prisonstudies.org/country/nigeria).

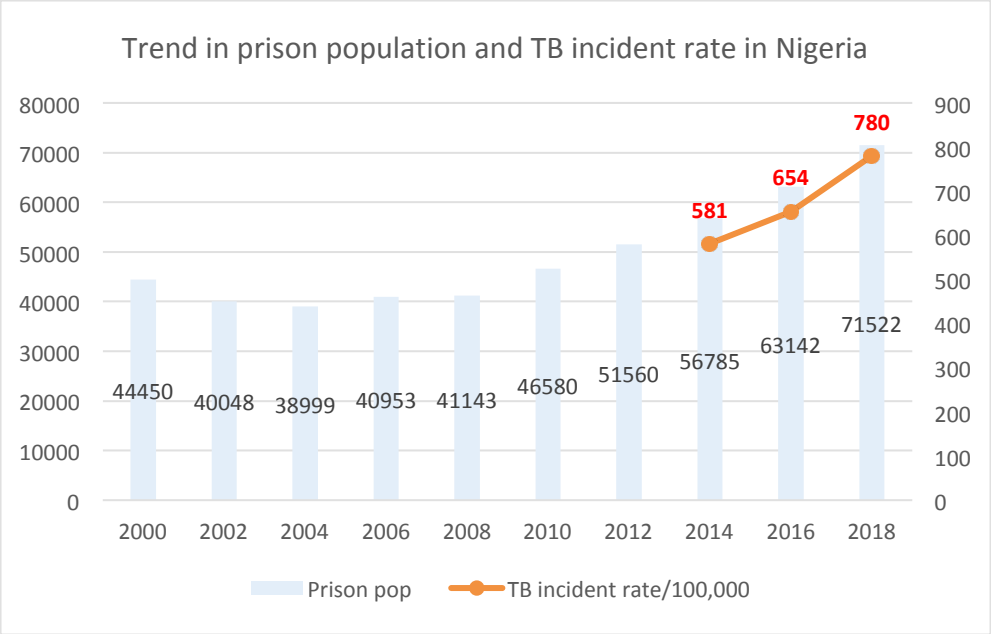
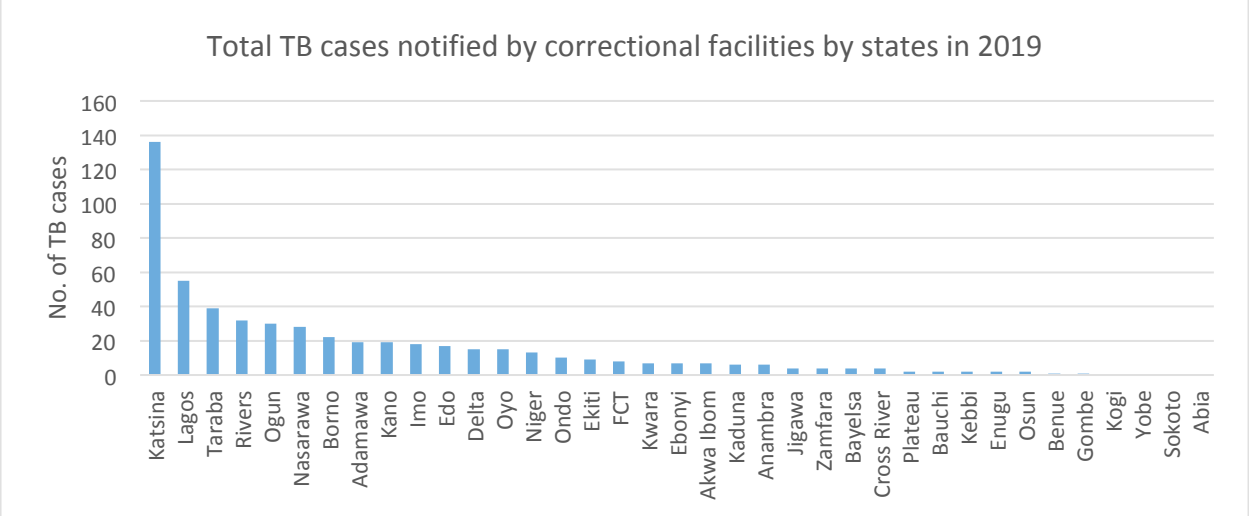


Figure 14: Trend in prison population and prison population rate/100,000 in Nigeria (2000 - 2018)

The correctional facilities in Katsina and Lagos states accounts for 35% (191) of the TB cases notified from the correctional facilities in 2019. The notification by states in 2019 is shown in the figure below:

Figure 15:: TB cases notified by correctional facilities by states in 2019



Priority focus for 2020

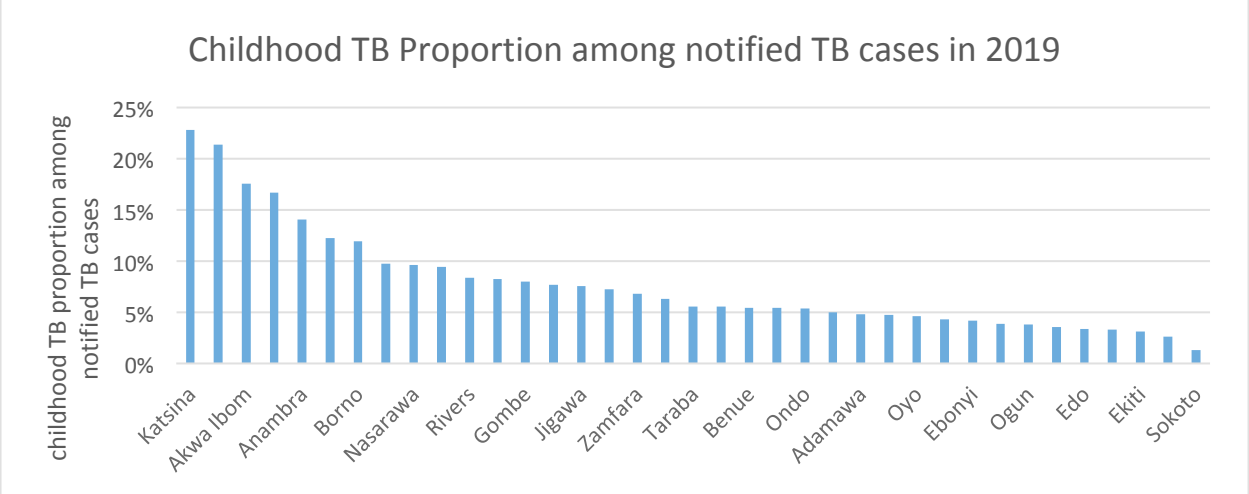
The incident rate of 780/100,000 population among the prison population tripled the TB incident rate among the general population. The higher incidence rate among this population further justify the need for the programme to rapidly scale up TB services to 62% of the correctional facilities that are without TB services. The NTBLCP will therefore expand services to additional correctional facilities and as well institutionalize point of entrance TB screening including periodic screening.

7. Childhood TB

The number of childhood TB cases notified increase by 15% from 8,293 in 2018 to 9,540 in 2019. 8%(9450) of the TB cases notified in 2019 are children; 37%(3652) of the childhood TB cases notified are children 0-4 years and 63%(5988) are children age 5-14 years

The childhood TB proportion among notified TB cases in 2019 ranges from 1% in Sokoto state to 23% in Katsina state (see figure below).

Figure 16: Childhood TB proportion among notified in 2019



The achievement in Katsina state was because of extra efforts put in place by the state programme in ensuring the X-ray support and travel vouchers provided by the programme are utilized for child contacts and presumptive childhood TB cases.

The programme in 2019 commenced phase implementation of TB integration into RMNCAH + Nutrition, this contributed to the 15% increase in childhood TB notification from 2018 to 2019.

Key challenges include: Low childhood TB case detection rate; lower TB notification among under-5 children compared to the 5-14years age group; Inadequate knowledge and skills in diagnosing and managing childhood TB (especially in the primary health care settings).

Priority Focus area in 2020

The priority area of focus by the NTBLCP in 2020 in scaling up childhood TB interventions include:

- Scale up Integration of TB care into Reproductive, Maternal, Newborn, Child and Adolescent Health plus Nutrition services.
- Intensify childhood TB case finding in health facilities and also during outreaches

8. Programmatic Management of Drug Resistant TB (PMDT) in 2017

Nigeria is among the 30 high DR-TB burden countries globally, the country ranked 6th among the 30 high MDR burden countries (in terms of estimated incidence of MDR/RR TB). It is estimated that 4.3% of the new TB cases and 15% of the previously treated TB cases have MDR/RR-TB[7].

8.1. Diagnostic service coverage

There are total of 398 GeneXpert MTB/RIF machines in Nigeria for the diagnosis of MTB and Rif resistant TB cases. The number of laboratories providing Line probe assay to first line drugs increased from 5 in 2016 to 10 in 2019, all the 10 reference laboratories have the capacity for 2nd line DST.

RR/MDR-TB **Treatment service**

The programme currently implement both ambulatory and hospital admission model of care, a higher proportion of DR-TB patients are on ambulatory care due to the decentralization policy of the programme.

There are 27 DR-TB treatment centers in 26 states with a total bed capacity of 542 bed spaces. The following states did not have a DR-TB treatment center

[7] WHO Global TB Report 2019

• FCT • Borno • Gombe • Yobe	• Kebbi • Ekiti • Abia • Enugu	• Bayelsa • Delta • Edo

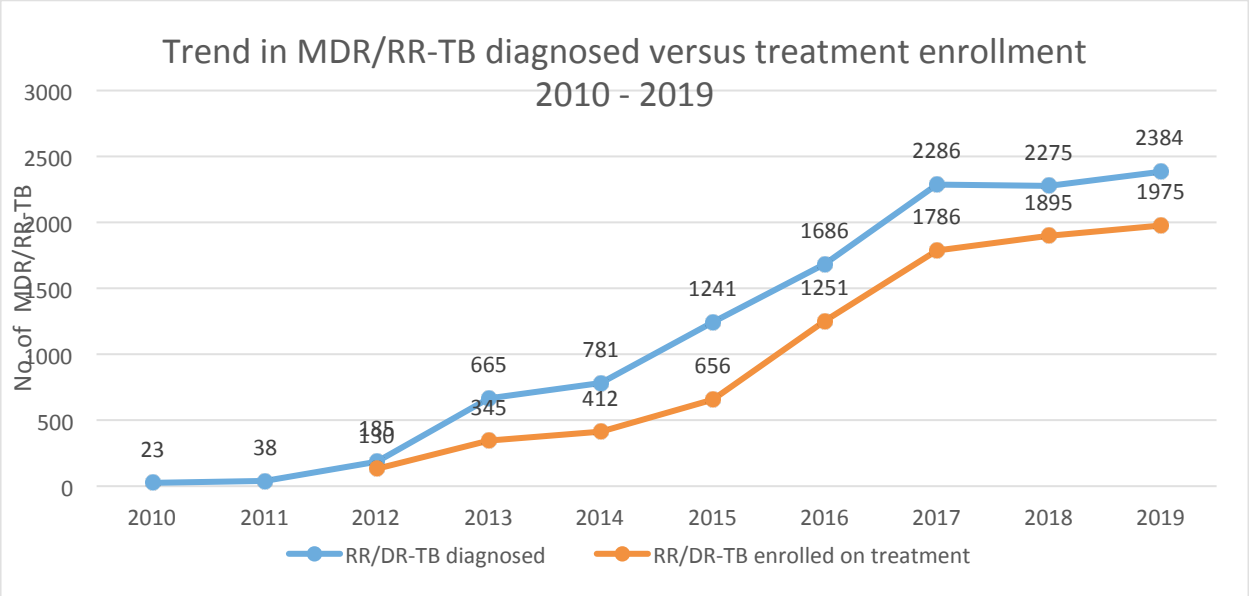
8.3 DR-TB Case finding

The number of MDR/RR-TB diagnosed in the country has been on consistent increase with increased access to Xpert MTB/RIF tests. The number of diagnosed MDR/RR-TB cases increased by 5% from 2275 in 2017 to 2384 in 2019. (See figure 13 below for trend in MDR/RR-TB case notification). However, the DR-TB cases notified in 2019 represent only about 11% of the estimated incident MDR/RR-TB cases (using the 2018 estimates of 21,000 as the denominator). The low MDR/RR-TB case notification is worrisome due to increasing pool of undiagnosed MDR/RR-TB cases fueling DR-TB transmission in the community, thus, finding the missing MDR/RR-TB cases remain a priority for the NTBLCP in 2020.

8.4. Enrollment on treatment among new cases diagnosed in 2019

The number of MDR/RR-TB enrolled on treatment increase by 4% from 1895 MDR/RR-TB cases in 2018 to 1975 MDR/RR-TB cases in 2019 (see figure below). The treatment enrollment gap has reduced significantly from 48% in 2013 to 17% in 2018. This remained at 17% in 2019.

Figure 17: Trend in MDR/RR-TB diagnosed versus treatment enrollment 2010 - 2019



Line Listing of DR-TB patients in 2019

The Programme is implementing a line listing to enable it account for every diagnosed MDR/RR-TB cases. The 2019 line listing revealed that 669 are patients that were cumulatively carried over from the previous quarter, when this is added to the 2,384 newly diagnosed in 2019, it bring the total number of MDR/RR-TB cases that were eligible for treatment to 3,053 in 2019.

The 2019 line listing revealed that 65% of the eligible MDR/RR-TB cases were enrolled on treatment, 7% of the patients died before treatment, 7% also refused treatment; 12% of the patients cannot be traced and 9% awaiting treatment (see table below for detail)

Table 8: Line listing of DR-TB patients diagnosed in 2019

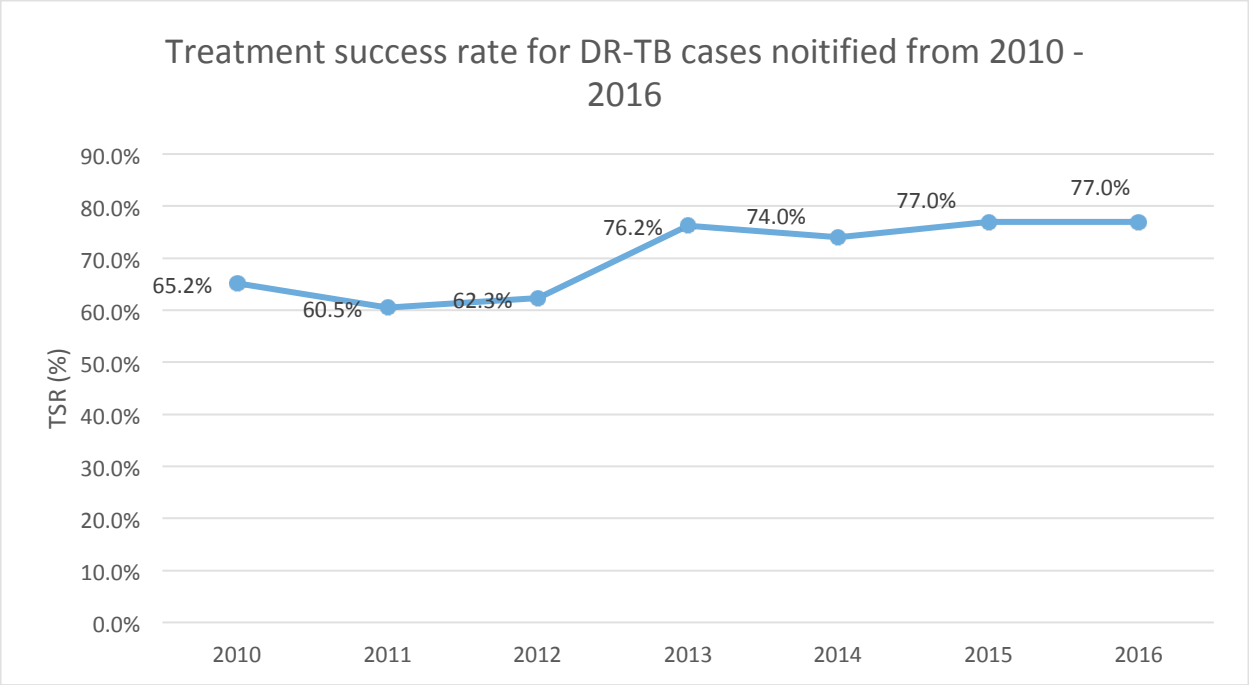
Q1-Q4 RR/MDR-TB line listing		
Q1- Q4 MDR/RR-TB diagnosed	2384	
carried over	669	
Total eligible for treatment	3053	
		% of the eligible
Enrolled	1975	65%
Died	222	7%
Refused	199	7%
cannot be traced	371	12%
awaiting	286	9%
Total	3053	

Patients who died before treatment or refused treatment or that cannot be traced constitute about 26% of the eligible patients for treatment in 2019; hence, the need to put in efforts to reduce the number of patients who died, or refused treatment or that cannot be traced.

8.7. DR-TB Treatment outcomes

Nigeria is among the counties with high treatment success rate for MDR/RR-TB cases placed on treatment. The treatment success rate increased from 65.2% in 2010 to 76.2% in 2013 and then dropped again to 74% for 2014 cohort and it increased to 77% for 2015 and 2016 cohorts.

Figure 18: Trend of DR-TB treatment success rate 2010-2014



8.7.1. Treatment outcomes for cohort of DR-TB cases notified in 2017

The treatment outcomes for cohort of DR-TB cases notified in 2017 revealed that 77% of patients who started treatment were treated successfully, the TSR was slightly higher among patients enrolled on longer MDR TB/individualized regimen (79%) compared with those on shorter on regimen (77%). 12% of the patients on shorter and individualized regimen died.

Table 9:Treatment outcomes for cohort of DR-TB cases notified in 2017.

	Enrolled	cured	Treat completed	TSR	Failed	LTFU	Died	Not Evaluated
All patients	1786	1089 (61%)	286 (16%)	1375(77%)	36(2%)	89(5%)	214(12%)	72(4%)
Patients enrolled on shorter regimen	1473	913(62%)	216(15%)	1129(77%)	36(2%)	76(5%)	176(12%)	56(4%)
Patients enrolled longer MDR TB /Individualized regimen	313	176(56%)	70(22%)	246(79%)	0(0%)	13(4%)	38(12%)	16(5%)

Priority Focus area in 2020

The priority areas to be focused on by NTBLCP in PMDT include:

- Finding and Treating all missing DR-TB Cases
- Enhance quality of services provided for DR-TB patients
- Reducing the gap between notification and enrollment.
- Institute mortality review in treatment centers
- Use peer counsellors and community members and other relevant agencies to reduce number of patients who refused treatment
- Actively engage CBOs in tracing patients who were lost to follow up and also in providing adherence counselling to the patients.

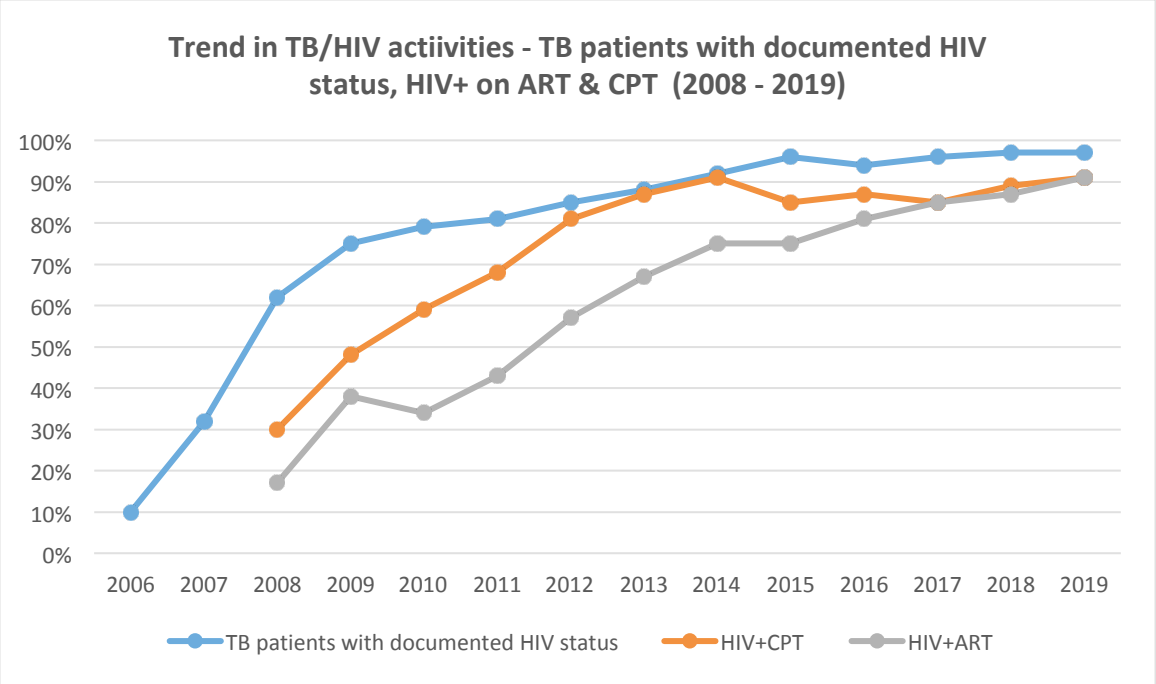
9. TB/HIV collaborative activities

Nigeria is one of the 14 countries that are on the three high-burden country lists for TB, TB/HIV and MDR-TB. The country has an estimated 53,000 incident HIV+ TB cases in 2018, which is about 9% of the estimated HIV+ incident TB cases in the African region (2019 Global TB report).

9.1. Uptake of HIV testing services among PLHIV

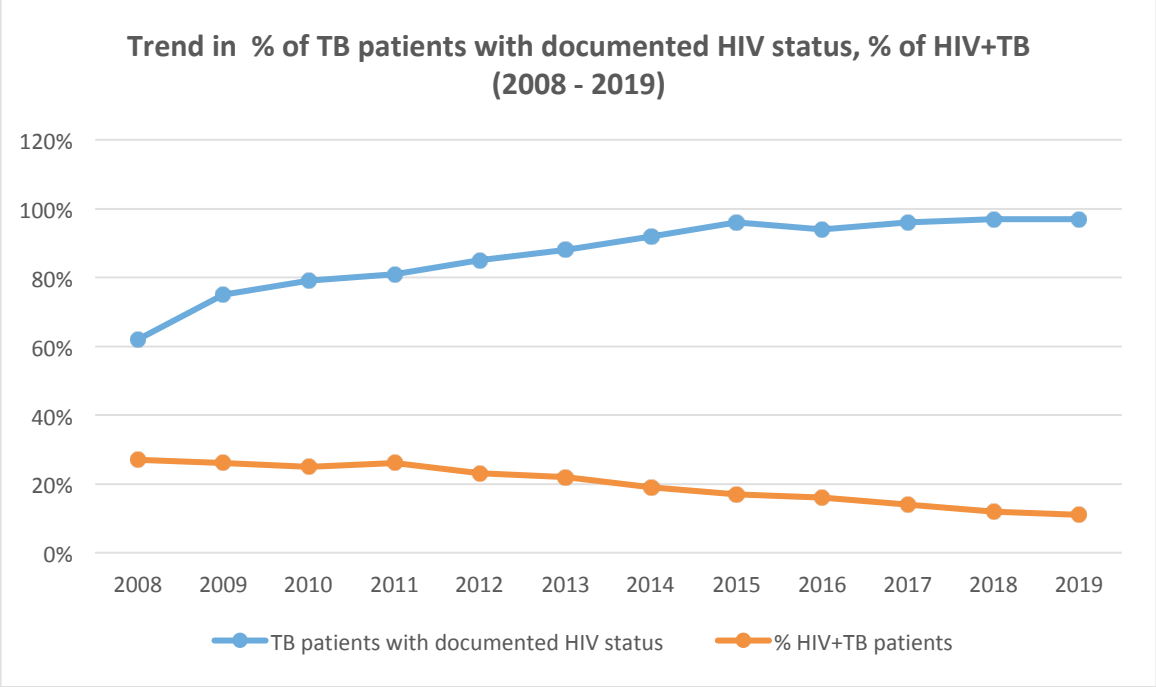
Significant progress have been made by the programme in the area of providing HTS for TB patients. The proportion of TB patients with documented HIV status have been above 90% in the last 5 years (see figure beloe), 97% (116,879) of the TB patients notified in 2019 had documented HIV status on the TB register, 11% of these patients were HIV positive.

Figure 19: Trend in TB/HIV actiivities - TB patients with documented HIV status, HIV+ on ART & CPT (2008 - 2019)



The HIV positivity rate among TB patients has consistently dropped over the years with increasing number of TB patients tested for HIV. While the Proportion of TB patients with documented HIV status increased from 62% in 2008 to 97% in 2019, that of HIV positivity rate among TB patients with documented HIV status dropped from 27% in 2008 to 11% in 2019 as shown in figure below.

Figure 20: Trend in % of notified TB patients with documented HIV status and HIV positivity rate 2008 - 2019

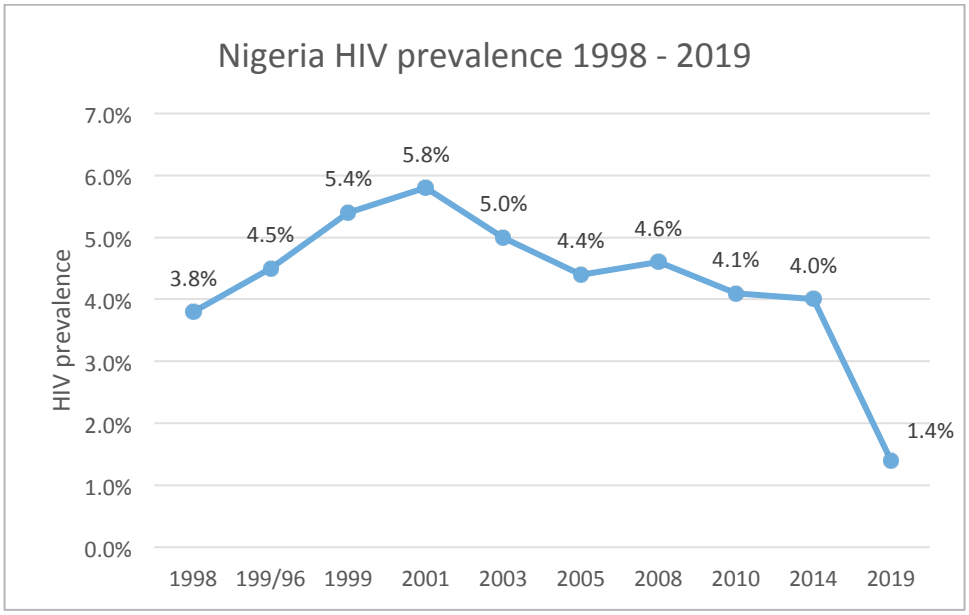


HIV positive incident TB cases

The number of HIV positive TB cases detected has been on consistent decrease from 17747 HIV+TB cases in 2010 to 12521 HIV+TB cases in 2019 (see figure below), despite the increase in number of TB patients with known documented HIV status. This consistent decline could be a reflection of the Nigeria's HIV prevalence, which shows downward trend since 2001[8]; the HIV prevalence rate in 2019 is 1.4%[9].

[8] Federal Ministry of Health (FMoH). 2015. 2014 National HIV sero-prevalence sentinel survey among pregnant women attending antenatal clinics in Nigeria. Abuja, FMoH.
[9] Nigeria National HIV/AIDS Indicator and Impact Survey (NAIIS) 2019

Figure 21: Trends in HIV in Nigeria: 1991-2019



Source: NHSSS 2014 and NAIIS 2019

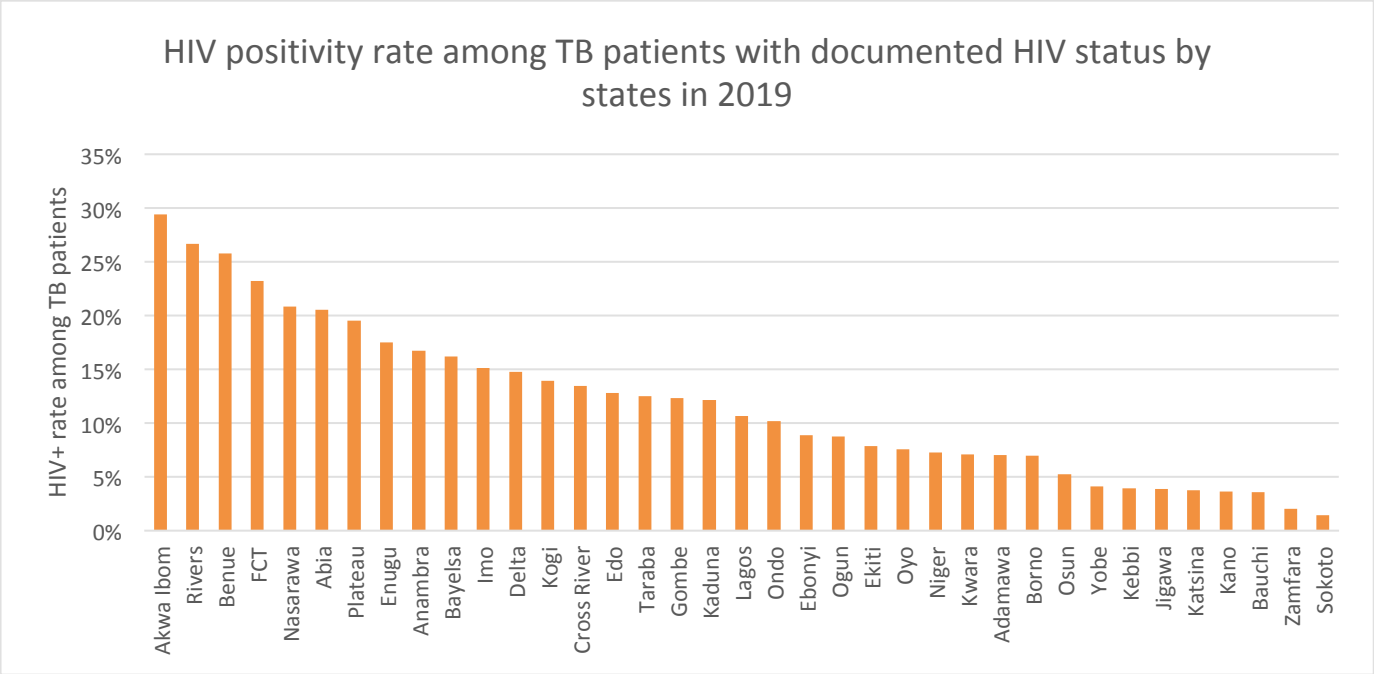
The implication of the declining HIV trend is that the country need to test a large number of TB patients to be able to achieve the target for the estimated number of HIV positive incident TB cases. The country in 2018 was only able to detect 24% of the estimated HIV+ incident TB cases[10] , using the 2018 projection; this is because of the low treatment coverage of 24%.

Analysis of HIV+TB cases in 2019 by states

The National HIV positivity rate among TB patients with documented HIV status ranges in 2019 is 11%, however this range from 1% in sokoto to 29% on Akwa Ibom state

[10] WHO Global TB report 2019

Figure 21: HIV positivity rate among TB patients with documented HIV status by states in 2019



The National programme has adopted the use of GeneXpert as primary diagnostic tool in Nigeria, additional efforts will be put in place in 2020 to ensure that all the presumptive from states with high HIV positivity rates are tested with Gene Xpert. The programme will also prioritize states for the use of LAM tests depending on the quantity of the test being procured in 2020.

The HIV positivity rate among TB patients follow a similar trend with the HIV prevalence in 2019. The zone with the highest prevalence of HIV in 2019 also has the highest HIV positivity rate among TB patients (see table below), this is an indication that TB burden will continue to be driven by the HIV burden .

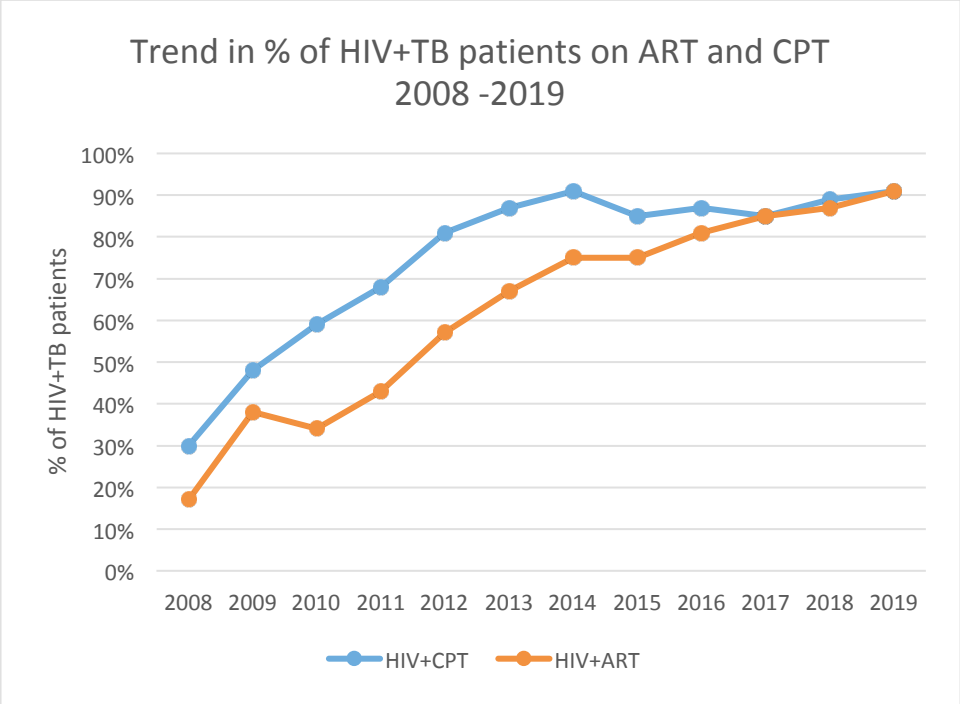
Table 9: Zonal HIV prevalence and HIV+TB rate in 2019

Zone	HIV prev (NAIIS)	HIV+TB rate 2019
SS	3.1%	21%
NC	2.1%	19%
SE	1.9%	16%
SW	1.2%	9%
NE	1.1%	8%
NW	0.6%	4%

Access to CPT and ART among HIV+ incident TB cases

The proportion of HIV positive TB patients receiving ART increased from 81% in 2016 to 91% in 2019, while the proportion on CPT in 2017 is also 91% as shown in figure below:

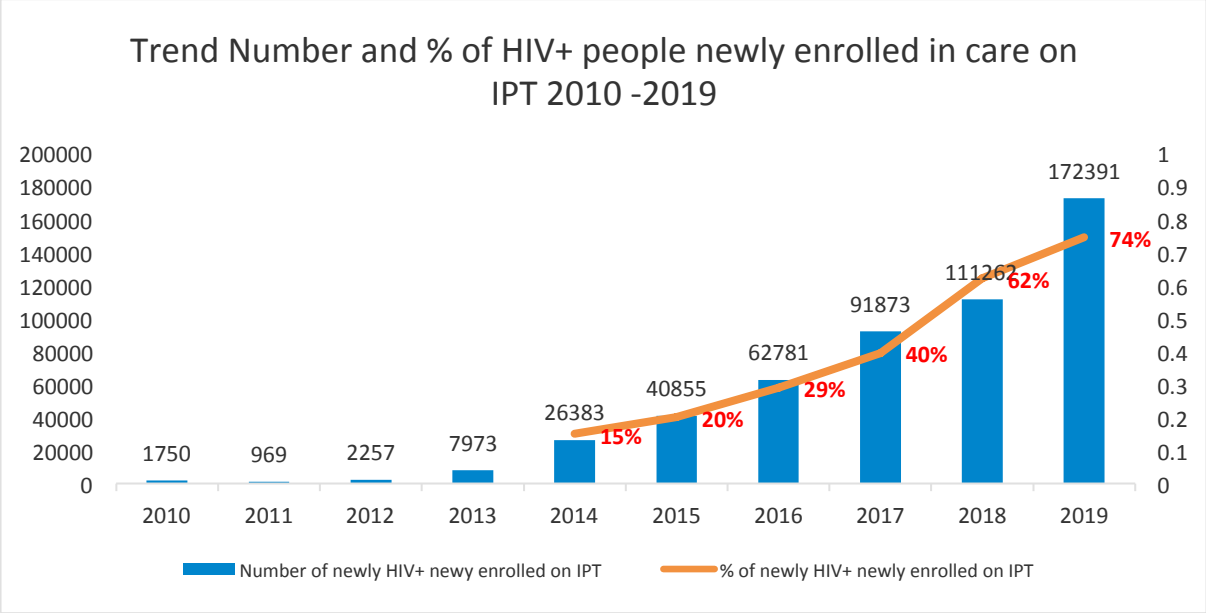
Figure 22: Trend in HIV+TB patients on CPT and ART 2008 – 2019



9.2. TB preventive therapy among PLHIV

The number of newly enrolled PLHIV on IPT increased from 2,257 in 2012 to 11,262 in 2018, this represent a low IPT coverage of 62% among the newly enrolled PLHIV in 2018. The trend in number of PLHIV newly enrolled in care on IPT 2010 – 2018 is shown in figure below

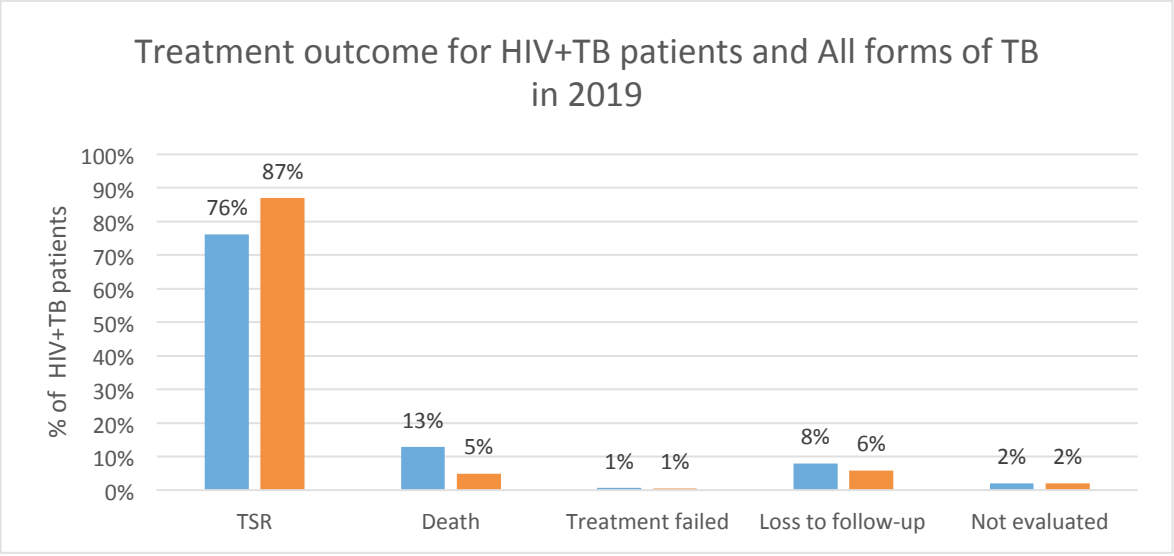
Figure 23: The trend in number of PLHIV newly enrolled in care on IPT 2010 – 2018



Treatment outcomes among HIV+TB cases

The TB treatment outcomes in 2019 revealed a higher death rate among HIV+TB patients that is twice the death rate among all forms of TB patients. The HIV+TB patients has a death rate of 12% compared to death rate of 5% among all forms of TB patients as shown in figure 23 below. This is in line with the National study of TB prevalence among PLHIV in 2016 which shows that the mortality rate among PLHIV co-infected with TB (11 per 1000 PLHIV population) to be nearly thrice the general PLHIV population (4 per 1000 PLHIV population).

Figure 24: Treat outcomes of all forms of TB and HIV+TB patients reported in 2019



The TB and HIV programmes in the 2015-2020 National TB strategic Plan have an ambitious target of achieving 100% coverage for all TB/HIV-related interventions and zero death among TB/HIV co-infected patients. However, there are several challenges which are currently preventing the achievement of this ambitious target. Some of these key challenges among others include:

- Low TB case finding among PLHIV, only 24% of the estimated TB cases among PLHIV notified in 2018
- Sub-optimal TB symptomatic screening among PLHIV at every visits
- Limited access of TB symptomatic PLHIV to Xpert MTB/RIF assay
- Low IPT coverage among PLHIV only 62% of eligible PLHIV are initiated on TB preventive therapy (IPT) in 2018.
- Suboptimal collaboration between TB and HIV programme especially at the lower level
- About 10% of the existing ART sites not providing TB services
- Limited implementation of TB infection control practices in health facilities

9.3. Priority area of focus in 2020

The priority area of focus in 2020 for TB/HIV collaborative activities aimed at enhancing TB diagnosis among PLHIV, scaling up IPT among PLHIV and addressing most of the identified key challenges. The priority areas are highlighted below

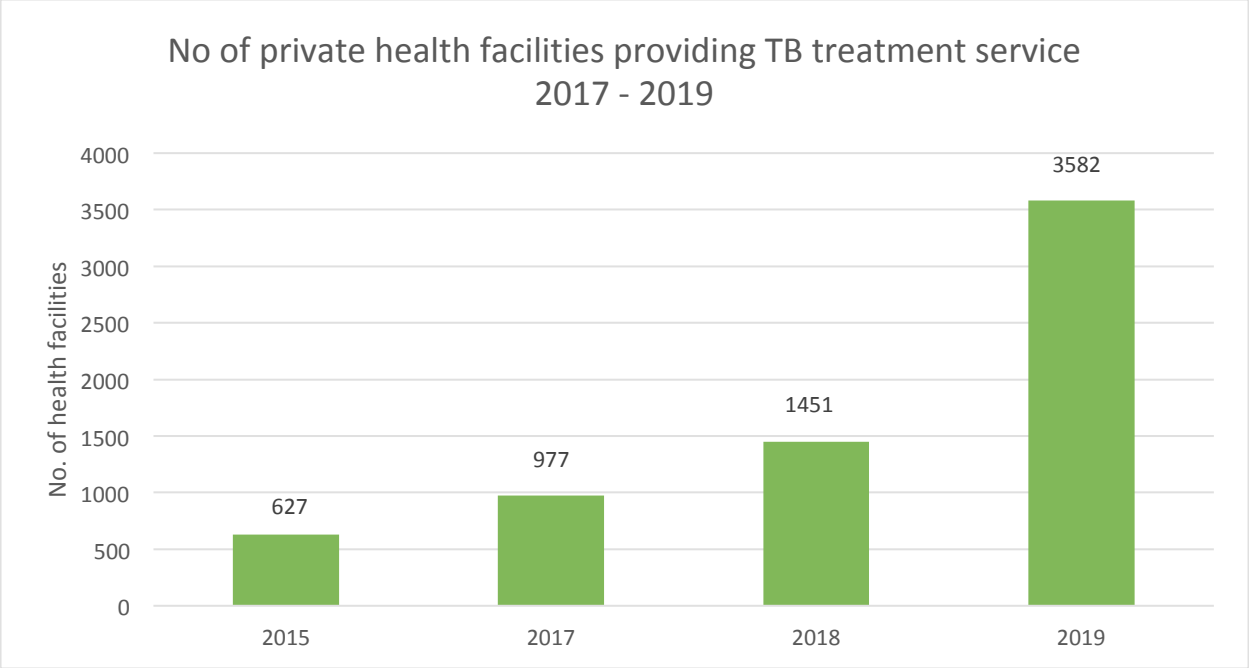
The priority area of focus in 2018 for TB/HIV collaborative activities

- Integrate TB into HIV services targeting high risk group
- Strengthen quality of TB symptomatic screening among all PLHIV to find missing cases
- Implement the use of digital X-ray as a screening tool among PLHIV especially at the point of enrolment into care
- Strengthen access of TB symptomatic PLHIV to Xpert MTB/Assay (optimization of the existing Xpert machine and establishment of additional Xpert sites)
- Scale up TPT among PLHIV to reach towards achieving the 100% target, and introduce the use of shorter TPT regimen 3HP among PLHIV
- Scale up the use of LAM for TB testing among eligible PLHIV., this can be as part of package of care for chronically ill patients.
- Scale up implementation of TB infection control practices to additional health facilities and strengthen TB screening among health workers
- Strengthening TB collaboration especially at lower level
- Scale up community engagement for planning and provision of joint TB/HIV services.

10. Public Private Mix (PPM) for TB

The concerted efforts made at engaging private sector in TB service delivery with dedicated PR resulted in 147 % increase in number of private facilities providing TB services from 1,451 health facilities in 2018 to 3,582 health facilities in 2019 (see figure below)

Figure 25: No of private facilities providing TB services in Nigeria

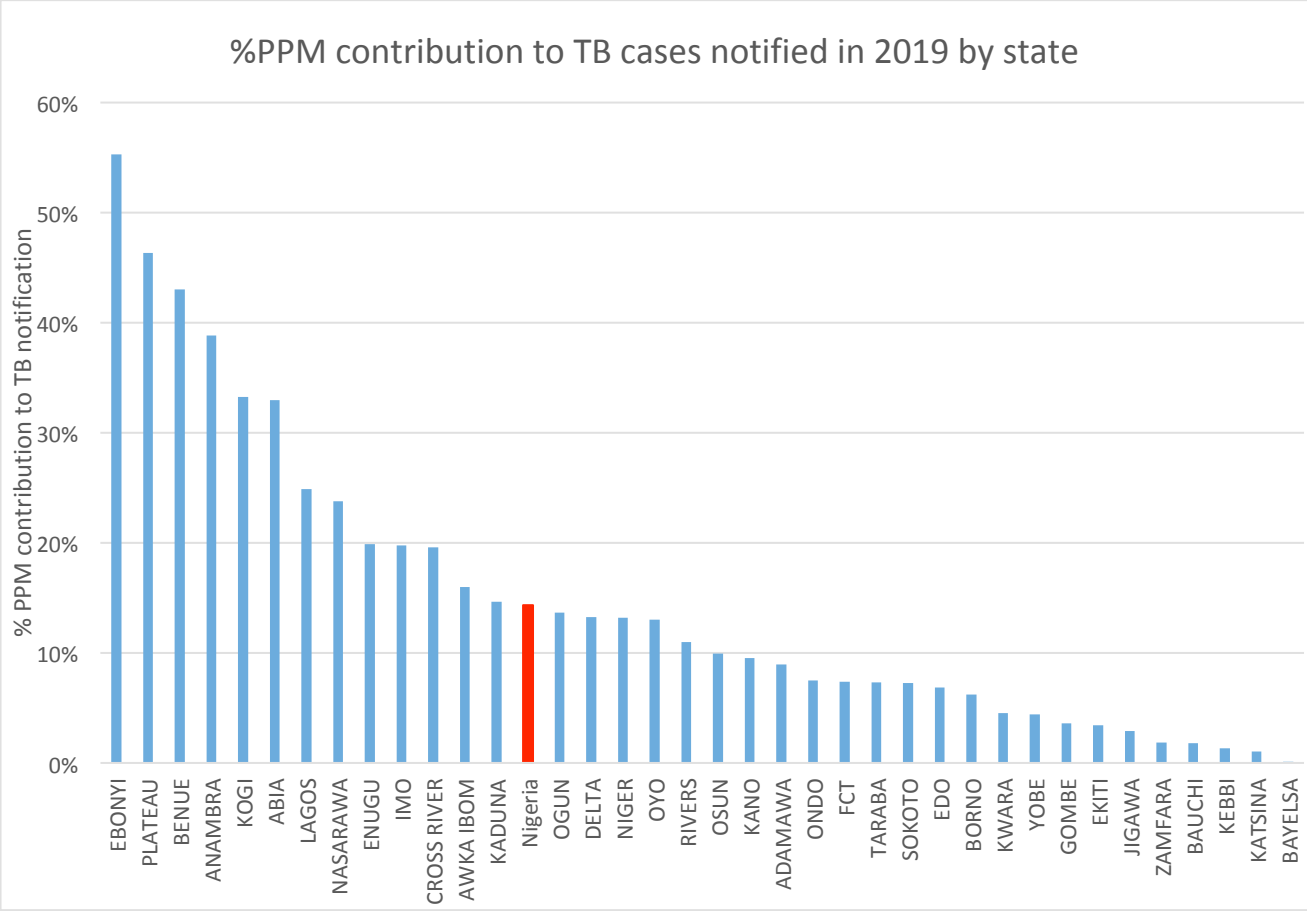


TB cases notified from private health facilities

The comprehensive engagement of private health facilities in provision of TB services in 2019 resulted in 130% increase in number of presumptive from private health facilities from 70,120 in 2018 to 161,521 in 2019. The number of TB cases notified from the private also increased by 37% from 12,619 TB cases in 2018 to 17,250 in 2019.

The private health facilities accounted for 14% of the TB cases notified in the country in 2019, this is below the NSP target of 30% for 2019. The percentage contribution to TB notification in the state in 2019 ranges from 0.1% in Bayelsa to 55% in Ebonyi state (see figure below).

Figure 26: Percentage PPM contribution to TB cases notified in 2019 by state



Engagement of the PMVs, CP and standalone laboratories in 20 states

The programme with support from GF engaged 800 CPs, 18,755 PMVs and 397 standalone laboratories in the 20 states (Anambra, Rivers, Enugu, Abia, Delta, Edo, Imo, Benue, Cross River, Akwa-Ibom, Plateau, Kaduna, Nasarawa, Kogi, Niger, Sokoto, Ogun, Ondo, Osun and Oyo).

The PMVs referred a total of 37,593 presumptive, out of which 7% (2687) were diagnosed with TB in 2019; the CPs also referred 343 presumptive out of which 6%(21) were diagnosed with TB. The stand-alone lab engaged were also able to diagnosed 16 TB cases in 2019. The PMVs being the first line of visit by patient in the country possess huge opportunities for identification of presumptive and linkage to care.

Programme priority in 2020.

The priority area of focus by the NTBLCP in 2020 under the PPM include:

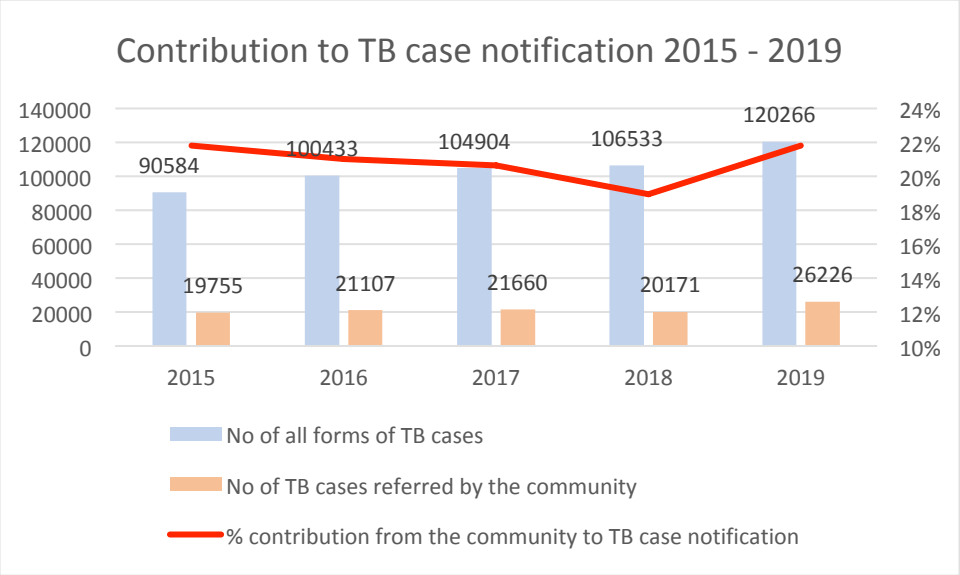
- Rapidly scale up TB services to all FBO private health facilities in view of the potential yield from their engagement.
- Intensify active TB case finding activities in private health facilities
- Using TB case notification app in all private health facilities to strengthen TB case notification
- Scaling up the engagement of PMVs and other alternate health care providers in TB service

11. Community TB

The NTBLCP with support from GF supported implementation of community TB intervention in 10 states (Kano, Lagos, Kaduna, Katsina, Anambra, Oyo, Abia, Osun, Sokoto and FCT). The USAID through the challenge TB project, which ended in 3rd quarter 2019, also supported implementation of community TB activities in 12 states.

The implementation of performance base community intervention in 2019 significantly increased the number of TB cases referred from the community by 30% from 20,171 in 2018 to 26226 in 2019 (see figure below). The community TB intervention account for 22% of TB cases notified in 2019.

Figure 27: Contribution from community referral to TB case notification 2015 - 2019



12. TB Treatment outcomes in 2019 for all forms of TB and HIV+TB patients

The treatment outcomes for all forms of TB cases reported in 2019 (for 2018 cohort) revealed that 87% of the cases were successfully treated, 5% of the patients died while on treatment and 6% were lost to follow up.

The TSR among all forms of TB (87%) is higher than among HIV+TB patients (76%), the HIV positive patients have a higher death rate (13%) compared with the all forms of TB (5%) – see figure below

Figure 28: Treatment outcomes for all forms of TB cases in 2019