



Republic of Namibia
Ministry of Health and Social Services

National Tuberculosis and Leprosy Programme

Annual Report: 2019-2020



Vision¹:

A Namibia free of tuberculosis and leprosy.

Mission statement

Universal access to tuberculosis and leprosy care and prevention per international standards, while addressing the determinants and consequences of the diseases in line with the Sustainable Development Goals.

National Tuberculosis and Leprosy Programme

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¹ Third Medium-term Strategic Plan for Tuberculosis and Leprosy, 2017/18-2021/22

PREFACE

Tuberculosis (TB) remains a public health concern, being one of the top ten causes of death and the leading cause from a single infectious agent. Namibia continues to rank amongst the top 30 high burden TB countries per capita. The country notified 7,718 TB cases, all forms, in 2019 which translates to 314 per 100 000 persons. The country notified 22 leprosy cases in 2019 (9/1,000,000), through passive case detection.

The 2019-2020 annual report highlights the progress in the implementation of the Third Medium-term Plan for Tuberculosis and Leprosy 2017-2021/22 (TBL MTP-III). The report contains information on TB and Leprosy data with focus on the following targets:

- To have reduced the incidence of TB from 489/100,000 in 2015 to 321/100,000 by 2021.
- To have reduced TB mortality from 68/100,000 in 2015 to 34/100,000 by 2021.
- To have reduced the incidence of leprosy from 10/1,000,000 in 2016 to 4/1,000,000 by 2021.

The World Health Organization estimates that 39% of TB cases go undetected annually, based on the results of the TB Disease Prevalence Survey conducted in 2017/2018. However, the incidence and mortality rates had to be revised upwards following the survey.

The Directorate of Special Programmes acknowledges the ongoing support provided by the following organisations: Global Fund to Fight HIV/AIDS, TB and Malaria (GFATM), World Health Organisation (WHO), and United States Agency for International Development (USAID) through KNCV Tuberculosis Foundation, the United States Centers for Disease Control and Prevention (CDC), and the Namibia Institute of Pathology (NIP). Implementation of community-based TB services by Advanced Community Health Care Services Namibia (CoHeNa) and Health Poverty Action continues to be a key component of tuberculosis care and prevention in the country.

I sincerely acknowledge the stewardship being provided by MoHSS leadership at all levels, particularly the Regional Directors, as well as Regional and District TB and Leprosy Coordinators who play a tremendous role in the fight to End TB in Namibia.

I am confident that continued collaboration and formidable efforts will result in the ultimate goal of ending Tuberculosis and Leprosy in the country.



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Ms A. Nitschke

Director; Directorate of Special Programmes.

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LIST OF ACRONYMS

ACSM	advocacy, communication and social mobilisation
AFB	acid-fast bacilli
Am	amikacin
Amx/Clv	amoxicillin/clavulanate
ART	antiretroviral therapy
CAA	Catholic AIDS Action
CBTBC	community-based tuberculosis care
CCRC	Central Clinical Review Council of the NTLP
CDC	United States Centres for Disease Control and Prevention
CHPO	Chief Health Programme Officer
CHW	Community health care workers
Clr	clarithromycin
Cm	capreomycin
CMO	Chief Medical Officer
CMS	central medical stores
CNR	Case notification rate
CoAg	Cooperative Agreement
CoHeNa	Advanced Community Health Care Services Namibia
CPT	co-trimoxazole preventive therapy
CSC	National Steering Committee
Cs	cycloserine
DAPP	Development Aid from People to People

DM	direct microscopy
DOT	Directly observed treatment
DOTS	directly observed treatment - short course (WHO strategy)
DRS	drug resistance survey
DR-TB	Drug-resistant tuberculosis
DSP	Directorate of Special Programmes
DST	drug susceptibility testing
DTLC	District Tuberculosis and Leprosy Coordinator
E	ethambutol
ETR	Electronic system register
Eto	Ethionamide
FDC	fixed-dose combination
FLD	first line (anti-TB) drugs (or medicines)
GFATM	Global Fund to fight HIV/AIDS, TB and Malaria
GRN	Government of the Republic of Namibia
H	isoniazid
HAART	highly active anti-retroviral therapy
HCT	HIV counselling and testing
HCW	Health care workers
HIV	human immunodeficiency virus
IEC	information, education and communication
INH	isonicotinic acid hydrazide
IPT	isoniazid preventive therapy

ITECH	International Training and Education Centre for Health
IUATLD	International Union against Tuberculosis and Lung Disease (The Union)
KAP	knowledge, attitude, practices
Km	kanamycin
KNCV	Koninklijke Nederlandse Centrale Vereniging
Lfx	levofloxacin
RTLc	Regional TB and leprosy coordinator
LPA	Line probe assay
LTBI	Latent tuberculosis infection
Lzd	linezolid
MB	Multi-bacillary
MDR-TB	multi-drug-resistant tuberculosis
MDT	Multidrug-resistant TB
Mfx	moxifloxacin
MoHSS	Ministry of Health and Social Services
MSH	Management Sciences for Health
MTP-II	Second Medium Term Plan (for tuberculosis and leprosy)
NANASO	Namibia Network of AIDS Service Organisations
NGO	non-governmental organisation
NIP	Namibia Institute of Pathology
NSP	new smear-positive
NTLP	National Tuberculosis and Leprosy Programme
OLD	Occupational lung disease

OR	operational research
PB	Paucibacillary leprosy
PLHIV	People Living with HIV
PTB	pulmonary tuberculosis
R	rifampicin
RMT	Regional Management Team
RTL	Regional Tuberculosis and Leprosy Coordinator
Rx	Treatment
S	streptomycin
SHPO	Senior Health Programme Officer
SLD	second line (anti-TB) drugs/medicines
SNT	sputum not tested
TALFU	Treatment After Lost to Follow-up
TAF	Treatment After Failure
TB	tuberculosis
TB-IC	TB Infection Control
THU	Treatment history unknown
TIMS	TB in the Mining Sector
TIPC	Therapeutics Information and Pharmacovigilance Centre
TPT	Tuberculosis Preventive Therapy
TSR	Treatment success rate
ULO	Unknown last outcome
USAID	United States Agency for International Development

WHO	World Health Organisation
Z	pyrazinamide

EXECUTIVE SUMMARY

The total number of tuberculosis (TB) cases reported in 2019 were 7718 (7,503 new and relapse cases), with a slight difference of 4% reduction on 2018 new and relapse cases. The case notification rate (CNR), based on the burden of all forms of active TB, in 2019 was 314 cases per 100,000 population, compared to 336 per 100,000 in 2018. The number of patients with drug-resistant (DR) TB reported in 2019 was 298, which is a significant decrease from 333, which was reported in 2018. Of all the DR-TB cases, 289 had rifampicin resistance.

The treatment success rate for all forms of TB was 85% for the patients started on treatment during 2018 and 86% for the new and relapse TB patients. The death rate for TB patients on treatment is above 5% for all forms of TB. The treatment success rate for DR-TB declined from 75% for 2016 cohort to 67% for 2017 cohort. However, the treatment success rate for XDR-TB has improved to 67% from 56%, probably due to the introduction of new medicines.

Prevalence of HIV infection among TB patients has declined to 32% in 2019. The proportion of TB patients with a known HIV status stood at 99%, and of those patients that tested HIV positive 99% were put on ART.

The number of leprosy cases reported during 2019 indicates an increase from 15 to 22 new cases of leprosy. The cases are sporadic and numbers vary year to year, signifying that the current surveillance system could be under-reflecting the magnitude of the leprosy burden in the country. Leprosy cases were notified in Khomas 2, Oshana 1, Omusati 3 and Kavango region 16.

1 NATIONAL OVERVIEW

1.1 Background

Namibia is located in Southern Africa and covers about 800,000 square kilometers (km²), making it Africa's fifth largest country. It is bordered by Angola, Botswana, South Africa, Zambia and the Atlantic Ocean. The country is semi-arid and prone to droughts, posing a severe threat to water and food security. Only about 1% of Namibia's land is considered arable. In 2019, Namibia had an estimated population of 2,458,936 people residing in its 14 administrative regions and 35 districts. However, Kavango East and Kavango West are considered as one region (Kavango Region) for the sake of this report, bringing the number of reporting regions to 13.

Despite declining case notification rates since 2004, the per capita burden of TB in Namibia remains high with World Health Organisation (WHO) listing the country among the thirty countries with the highest burden of TB globally. According to the National Tuberculosis and Leprosy Programme Annual Report 2018-2019, total cases notified (all forms) in Namibia 2018 was 8100, new and relapse was 7808 cases, and treatment success rate new and relapse (2017 cohort) was 86%.

Table 1: Summary of key numbers

INDICATORS	NEW	RELAPSE
<i>Pulmonary, bacteriologically confirmed²</i>	3821	773
<i>Pulmonary, clinically diagnosed</i>	1144	253
<i>Extra pulmonary</i>	1373	139
Totals	6338	1165
<i>New and relapse</i>	7,503	
<i>Previously treated, excluding relapses</i>	215	
<i>Totals cases notified (all forms)</i>	7,718	
<i>Case notification rate (per 100,000)</i>	314 / 100,000	
<i>HIV known status</i>	99%	
<i>Prevalence of HIV</i>	32%	
<i>Rifampicin resistant TB notified</i>	289	
<i>Treatment success rate new and relapse (2018 cohort)</i>	86%	
<i>Treatment success rate rifampicin resistant TB (2017 cohort)</i>	67%	
<i>TB case fatality rate (2018 cohort)</i>	7%	

1.2 The National TB and Leprosy Programme

The National TB and Leprosy Programme (NTLP) operates at national, regional, district, and community levels. At national level, the NTLP is a subdivision within the Directorate of Special Programmes and led by a Chief Medical Officer supported by 11 national level programme officers. Each of the 14 regions has a regional TB and Leprosy coordinator while each of the 35 districts has a designated District TB and Leprosy Coordinator (DTLC). Although, the moratorium was revised in 2019, human resources challenges continuous due to slow recruitment process.

² A bacteriologically confirmed TB case: a biological specimen is positive by smear microscopy, culture or Xpert MTB/RIF. A clinically diagnosed TB case: not bacteriologically confirmed but diagnosed with active TB by a clinician or other medical practitioner who has decided to give the patient a full course of TB treatment.

1.3 The Medium-Term Strategic Plan III 2017/18 to 2021/22

The third Strategic Plan for TB and Leprosy was implemented as from 2017. The plan was aligned to the Global End TB Strategy, and provides a national framework for coordination of the country's response to TB and leprosy by all sectors, service providers and communities towards ending TB and leprosy in Namibia. The goal is to reduce the national burden of tuberculosis to less than 10 cases per 100,000, and reduce the burden of leprosy to less than one leprosy patient per 1,000,000 population. The strategic objectives of the plan are as follows:

- Secure at least 90% of the required funding for TBL MTP-III and maintain focussed positions for TB and leprosy at national, regional and district levels.
- Test 100% of presumptive TB patients with rapid molecular tests, and achieve universal drug susceptibility testing by 2019.
- Increase treatment success rate for drug-susceptible from 83% (2015 cohort) to 90%, and for drug-resistant from 60% (2014 cohort) to 77%, by 2021.
- Increase coverage of HIV testing among TB patients to 100%, coverage of ART among TB/HIV patients to 100%, and coverage of diabetes screening among TB patients to 75%.
- Increase coverage of TB screening for health facility staff to 90% and establish infrastructure standards for airborne infection control by 2021.
- Transition to online case-based electronic recording and reporting system and establish a TB research network by 2019.
- Establish the catastrophic costs due to TB and increase coverage of socio-economic assessment of TB and leprosy patients to 80% by 2020.
- Maintain 100% health facility coverage of community-based TB and leprosy care in all districts.

- Attain 100% coverage of annual active leprosy screening in regions reporting leprosy cases since 2010, and 100% coverage of MDT treatment for all leprosy patients.

1.4 Programme support

1.4.1 Stakeholder collaboration

The TB National Steering Committee (NSC), which was established to steer and guide the multisectoral implementation of TB and leprosy control initiatives in the country, was able to meet twice in 2019. Technical working groups, comprising of the collaborating partners such as laboratory services, pharmaceutical services, community civil society organisations, and HIV services met regularly during the year to provide additional support to the NTLP with their different comparative strengths. In 2019, the memorandum of understanding on TB research consortium was signed between the Ministry of Health and other stakeholders. On the contrary, there is a need to strengthen the relationship between the Ministry of Health, line ministries and stakeholders.

1.4.2 Technical support

These international partners provided significant technical support to the NTLP: World Health Organisation (WHO), United States Centers for Disease Control and Prevention (CDC), United States Agency for International Development (USAID), KNCV Tuberculosis Foundation and Chemonics. WHO also supports leprosy care and prevention, including provision of multi-drug treatment (MDT) packs. Advanced Community Health Care Services Namibia (CoHeNa), which works together with Namibia Network of AIDS Service Organisations (NANASO) was the main partner providing community health care for TB in 2019. A significant reduction in the funding

for TB control activities in recent years has seen several organisations scaling back or withdrawing their activities, including community-based TB care.

1.4.3 Financial Support

The Namibian government continued its mandate to avail funds through Ministry of Finance for TB control in the country as part of overall health services. Additional resources were mobilised from various sources, including the Global Fund, USAID/KNCV and CDC. In 2019, the NTLP budget to implement TB prevention, treatment and care activities amount to US\$ 49 000 000. Domestic financing covered first and second line TB medicines, laboratory diagnosis and majority of sub-national human resources. Funding from international partners has decreased significantly over the past few years, influenced by the World Bank classification of Namibia as an upper-middle income country.

1.5 Coverage of TB services

The Ministry of Health and Social Services continued its mandate to provide TB services at public health facilities. TB services at public health facilities are accessible at no cost. Community Based TB Care (CBTBC), described as the community contribution to TB care in various ways such as through supporting patients to remain on treatment until cure, family and community education, case finding, lobbying for political commitment, complemented the work at the health facilities. The NTLP managed to recruit 156 community health workers (CHWs) in ten regions, whereas CoHeNa as an NGO operated in three regions (Khomas, Omaheke and Hardap region). In 2019, 6034 patients were registered under community TB care accounting for 80% of all new and relapsed TB patients registered in 2019.

1.6 Programme Achievements, Challenges and Recommendations

1.6.1 Achievements

The National Tuberculosis and Leprosy Programme (NTLP) has made great progress in the roll out of new drugs for drug-resistant TB (Bedaquiline, linezolid and Delamanid) and consequent reduction of mortality among DR-TB patients was reported. In addition, the implementation of the laboratory algorithm has resulted in most presumptive cases been tested with rapid molecular testing (Xpert MTB RIF). Lastly, the use of the urine LAM test for TB in PLHIV has yielded positively towards the diagnosing of TB among PLHIV.

1.6.2 Challenges

Challenges experienced by the National Tuberculosis and Leprosy Programme (NTLP) are reduction in treatment support, community outreach, laboratory capacity, TB diagnosis, drug supply. Furthermore, high number of treatment failure, death rates, lost to follow-ups and Gene Xpert stock outs led to low treatment success rate.

In addition to the above challenges, is the TB system ineffective for electronic case-based surveillance of drug sensitive TB, ETR.net. The system is out-dated, and no longer meets the national TB and leprosy program's needs for recording and reporting. A high-quality system for routine recording and reporting is a critical component of TB control, in order to monitor emerging challenges and evaluate the success of interventions.

1.6.3 Recommendations

The NTLP to transition from ETR.net to an up-to-date case based electronic surveillance system for TB, with adequate data verification processes and reporting capabilities, for example the

DHIS2 TB Tracker. In addition, secure sustainable funding for TB testing with Gene Xpert, to maintain and expand its use as the primary test and support efforts to promptly identify MDR-TB. Lastly, initiate monitoring sputum conversion and treatment outcomes, to identify treatment failures due to drug stock outs or failures to detect MDR-TB.

2 TB DIAGNOSTIC SERVICES

Namibia Institute of Pathology (NIP) provides TB laboratory diagnostic services, while the MoHSS maintained its obligation to avail these tests at no cost to the patients. In 2019, two additional GeneXpert testing sites were installed outside the NIP network, located in Tsumkwe Clinic and Mangeti Dune Health Centre in Otjozondjupa region, each site getting a GeneXpert GX IV (four modules) instrument, supported by the MoHSS and KNCV/USAID.

In 2019, 27939 Xpert MTB/RIF tests were performed within the NIP network, of which 4475 were positive, 22422 were negative and the rest were failed tests.

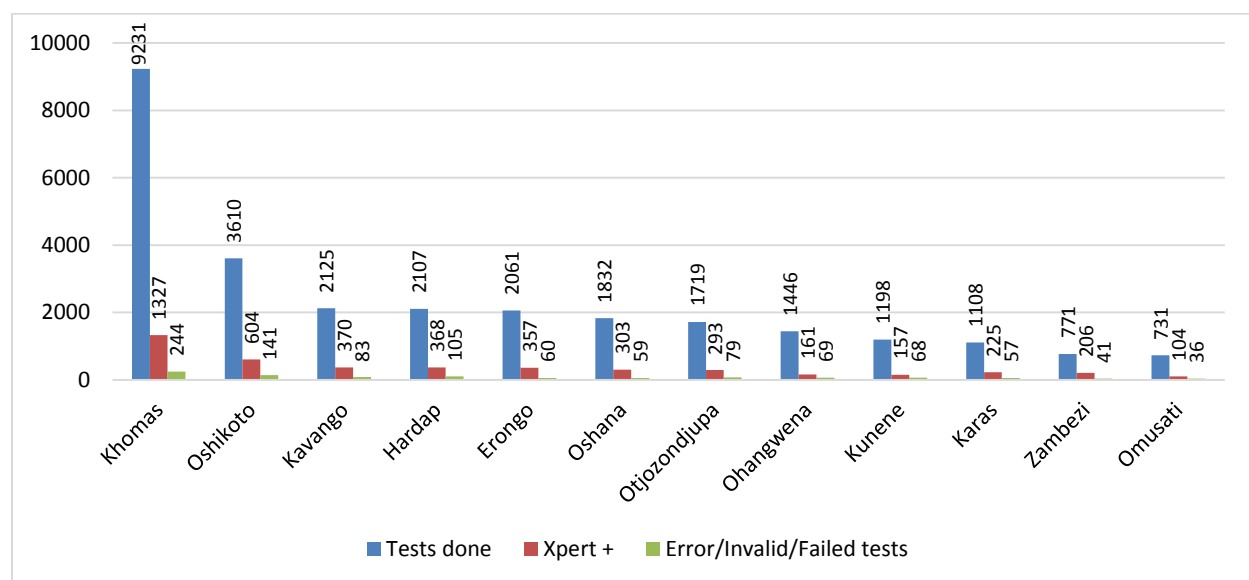


Figure 1: Number of Xpert MTB/RIF Tests Performed by Region

Among 6338 TB patients diagnosed, 2785 (44%) of new patients had an Xpert MTB/RIF result, while 548 (47%) of relapse patients had an Xpert MTB/RIF result documented.

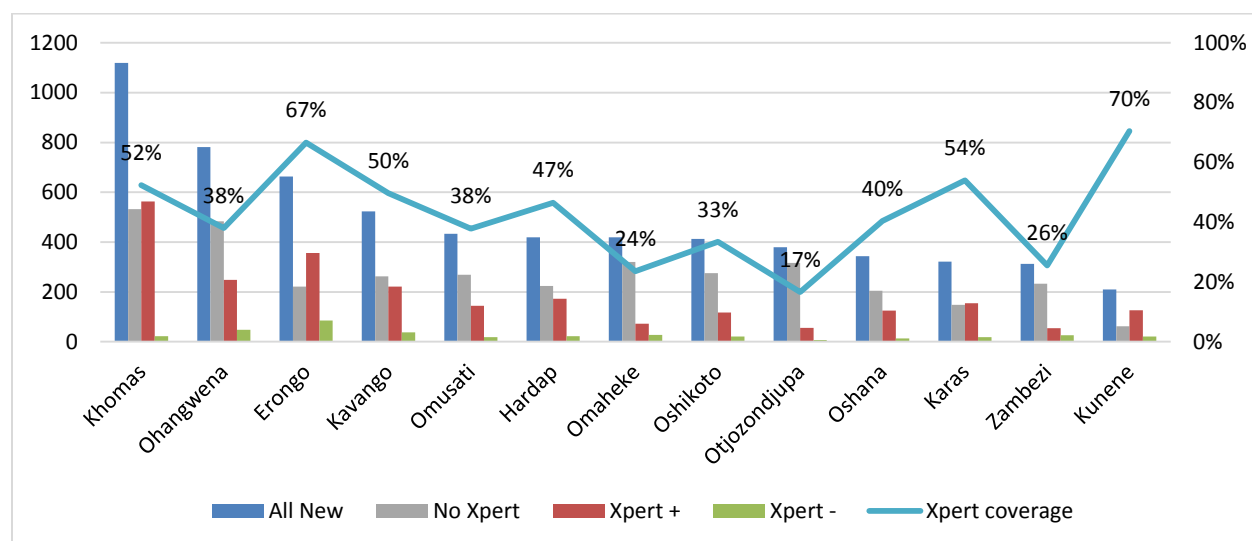


Figure 2: Xpert Coverage among New Patients 2019

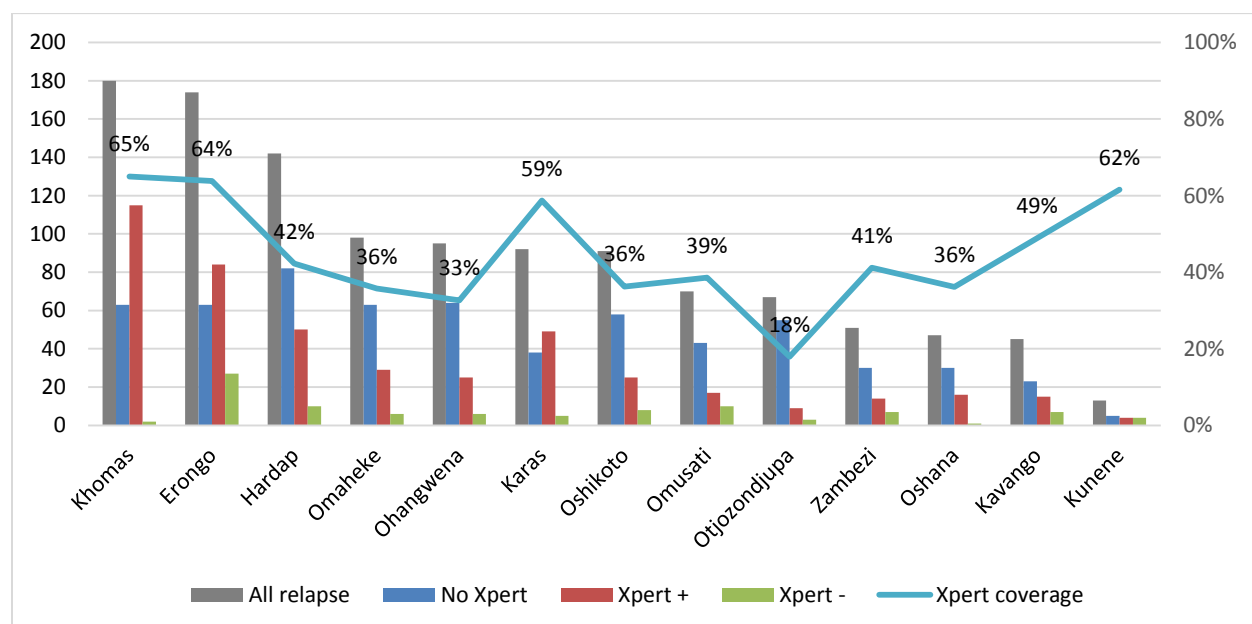


Figure 3: Xpert Coverage among Relapse Patients, 2019

289 patients with rifampicin resistance were recorded, 86 (30%) had results for 2nd line drug susceptibility testing. In 2019, severe interruptions occurred in the laboratory network, resulting in inability to perform Xpert MTB/RIF and line probe assay testing. These interruptions were caused by the economic challenges being experienced in the country. To mitigate this, additional assistance was provided by Global Fund (11000 Xpert cartridges) and KNCV/USAID (4000 cartridges) through the MoHSS.

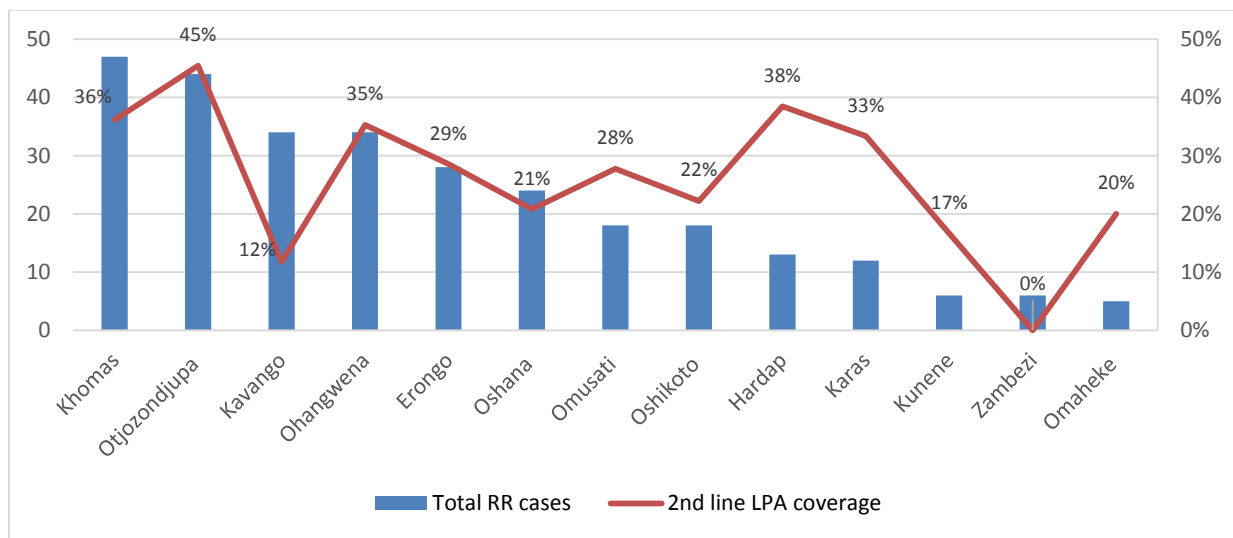


Figure 4: 2nd Line LPA Coverage among Patients with Rifampicin Resistance, 2019

3 BURDEN OF DRUG-SUSCEPTIBLE TB

3.1 TB Case notifications

The data on case notifications presented in this report was obtained from the Electronic TB Register (ETR.Net). The number of TB cases notified continued to decline as in previous years, with 4.7% fewer cases than in 2018. This decline could be either due to a continuation of the trend of reduction of the TB burden or the interruption of diagnostic services in 2018 and 2019. The total number of TB cases notified in 2019 was 7,718 of which 7,503 were classified as “new and relapse”.

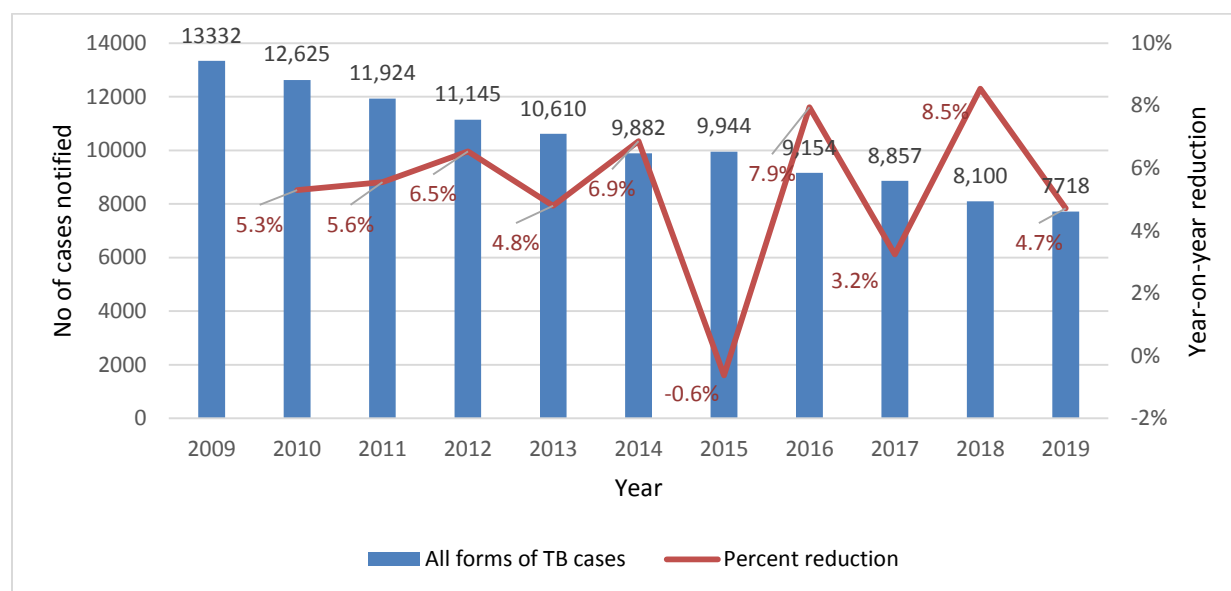


Figure 5: Trends of Number of all Forms of TB cases Notified in 2008 - 2019

The decline in the cases notified occurred against the backdrop of a growing population, the TB case notification rate also dropped to 314/100,000, compared to 336/100,000 in 2018.

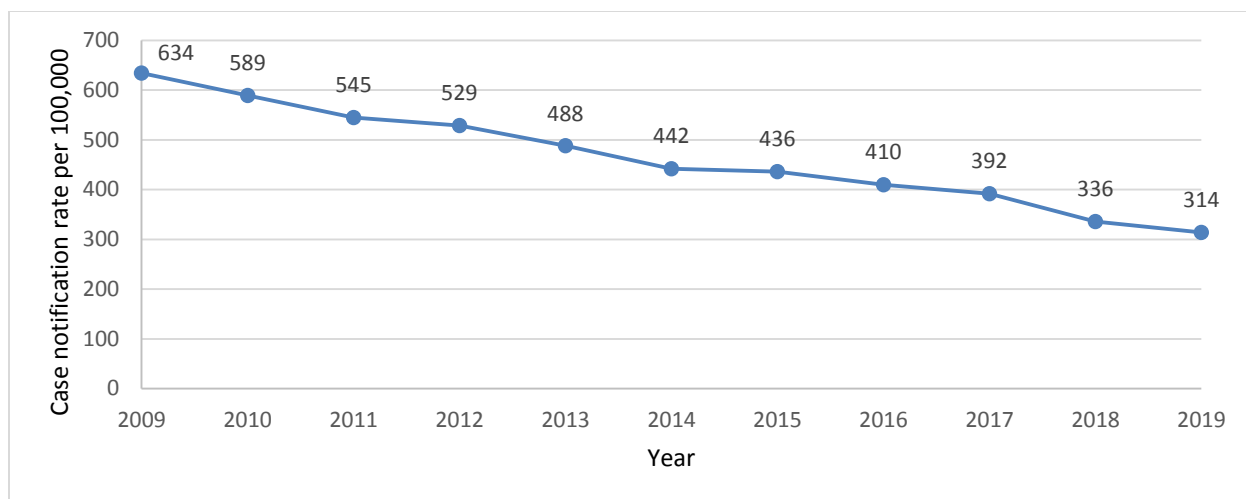


Figure 6: Trend in Case Notification Rates; 2009-2019

The figure below shows all forms of TB notified cases by category.

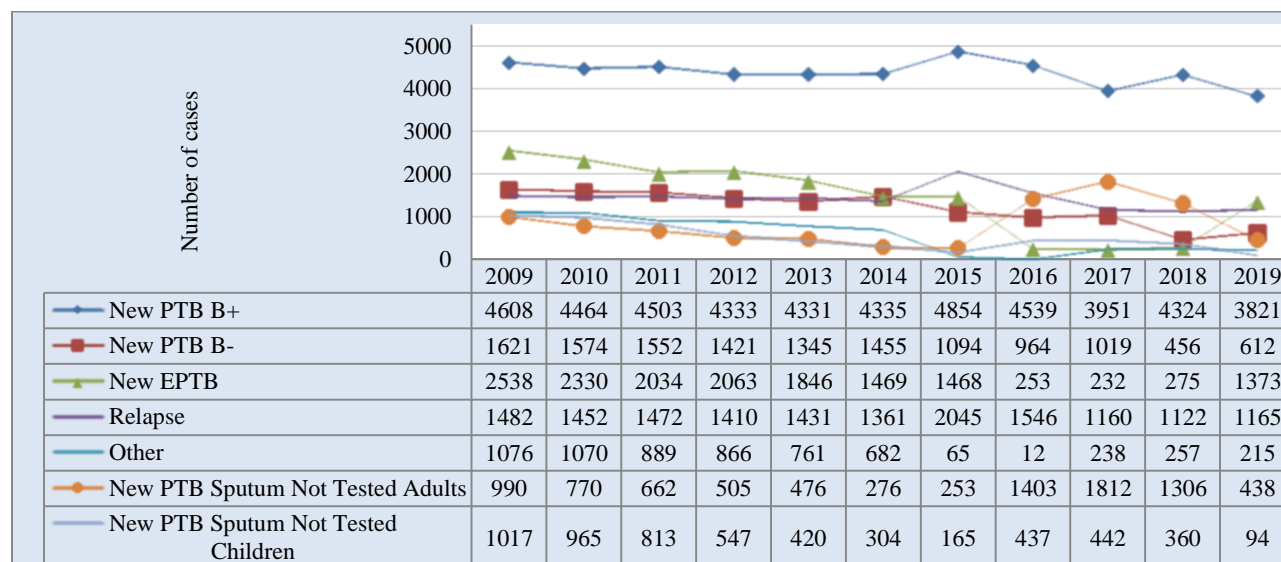


Figure 7: Trends in Number of TB Cases Notified in 2009 to 2019, by category

3.2 Regional distribution of TB cases

Khomas, Ohangwena and Erongo regions notified the highest number of TB cases same as previous years, contributing 17%, 12% and 11% respectively to the 7,718 TB cases notified countrywide.

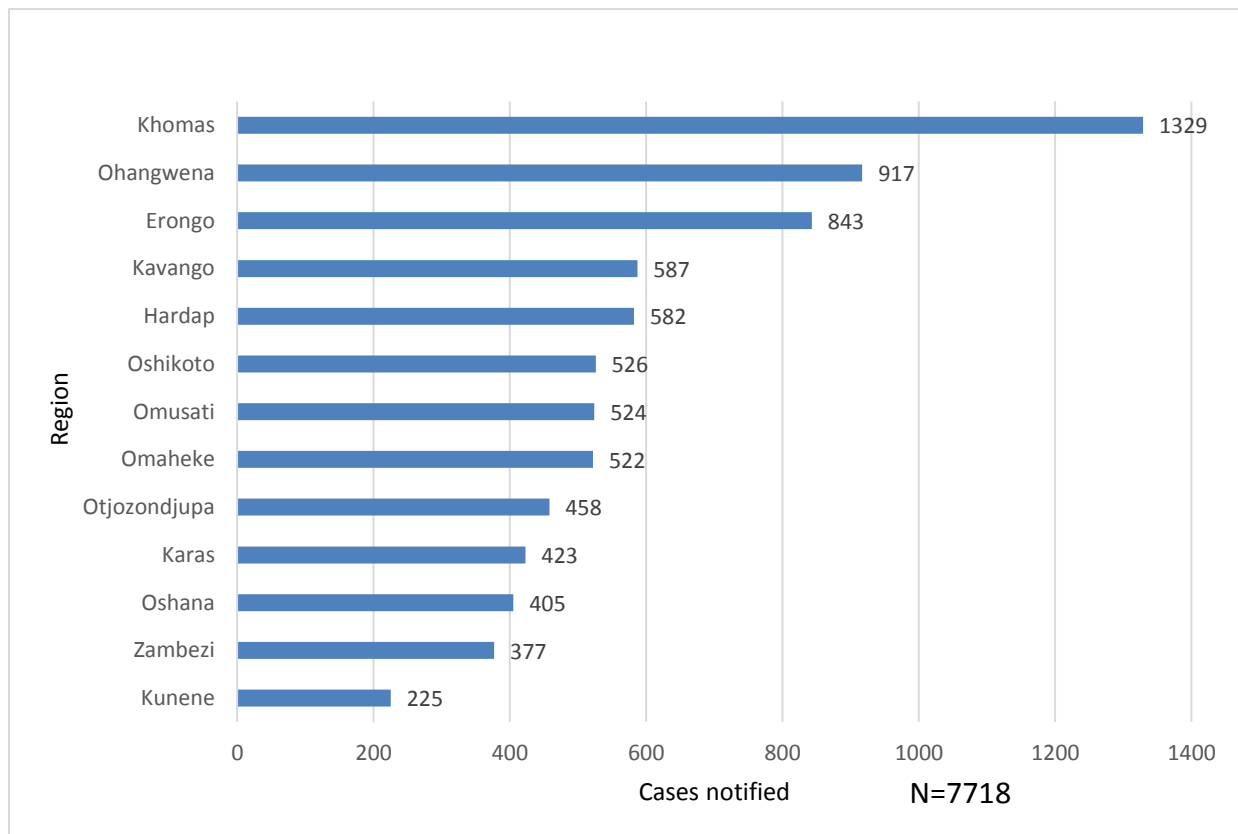


Figure 8: Number of TB cases (all forms) by region, 2019

Expectedly, the trend is similar when limiting the distribution to new and relapse cases, as shown in Figure 9 below.

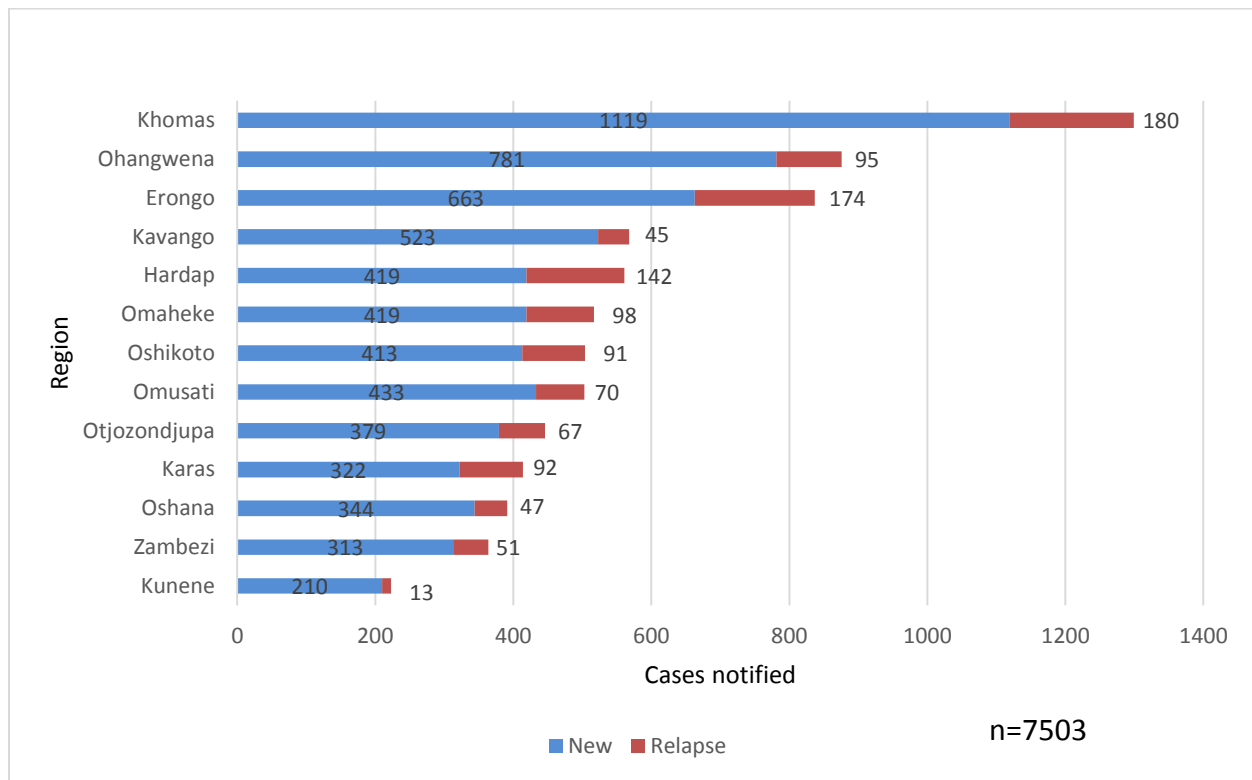


Figure 9: Number of New and Relapse TB cases by region, 2019

3.3 Districts with the highest burden

The distribution of TB cases across districts was not uniform, with seven districts contributing to 53% of the country's TB burden, namely Windhoek, Engela, Gobabis, Walvis Bay, Oshakati, Katima Mulilo and Rundu. Furthermore, 14 districts contributed to 75% of the cases and 16 contributed to 80% of cases as shown in the table below.

Table 2: Districts with the highest TB burden

District	Number of TB cases, all forms	Percentage contribution	Cumulative contribution
Windhoek District	1329	17.2%	17.2%
Engela District	673	8.7%	25.9%
Gobabis District	522	6.8%	32.7%
Walvis Bay District	460	6.0%	38.7%
Oshakati District	405	5.2%	43.9%
Katima Mulilo District	377	4.9%	48.8%
Rundu District	326	4.2%	53.0%
Rehoboth District	278	3.6%	56.6%
Swakopmund District	266	3.4%	60.1%
Onandjokwe District	257	3.3%	63.4%
Keetmanshoop District	240	3.1%	66.5%
Mariental District	238	3.1%	69.6%
Outapi District	215	2.8%	72.4%
Grootfontein District	205	2.7%	75.0%
Oshikuku District	196	2.5%	77.6%
Eenhana District	190	2.5%	80.0%

3.4 Age and sex distribution of TB cases (all forms) notified

Majority (62%) of the 7,7718 TB cases notified were male, Figure 10, with a similar trend observed for all 13 regions. A significant proportion of the TB cases were between the ages of 25 and 44 years, which is consistent with previous years. Additionally, the fact that the disease is observed more in males within this age group is consistent with findings elsewhere, pointing towards the higher risk in this group and possibly a male driven epidemic.

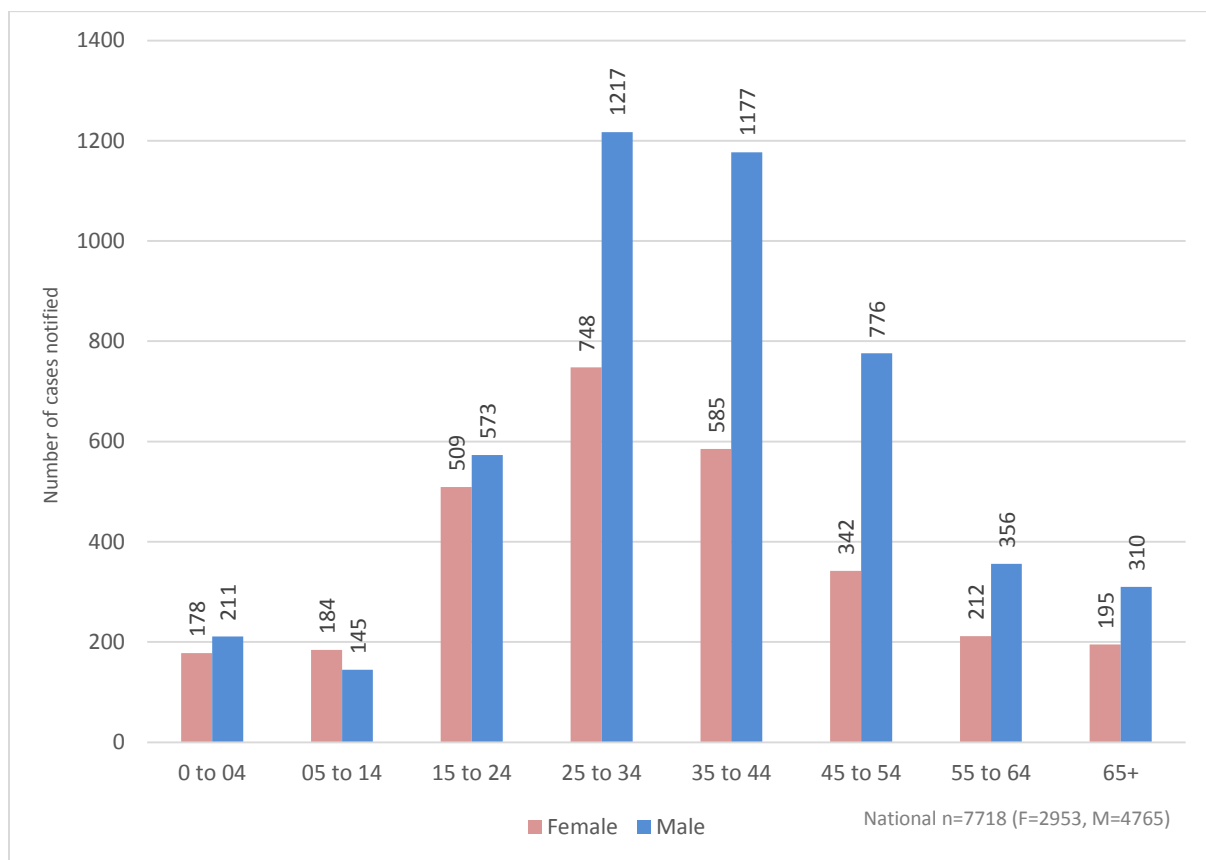


Figure 10: TB cases (all forms) by Age Group and Sex, 2019

3.5 Childhood TB

Of the total 7,718 TB cases, 718 (9%) were children under the age of 15 years. The sex distribution was marginally different, with 362 girls and 356 boys. Limited expertise in diagnosing childhood TB and the shortage of Xpert MTB/RIF testing may be contributing to underdiagnosis and/or underreporting of childhood TB cases. The Figure 11 shows the contribution of children to the TB case burden by region. However, due to the challenges with obtaining a confirmation of TB in children, this contribution tends to reflect the index of suspicion by clinicians rather than the true burden.

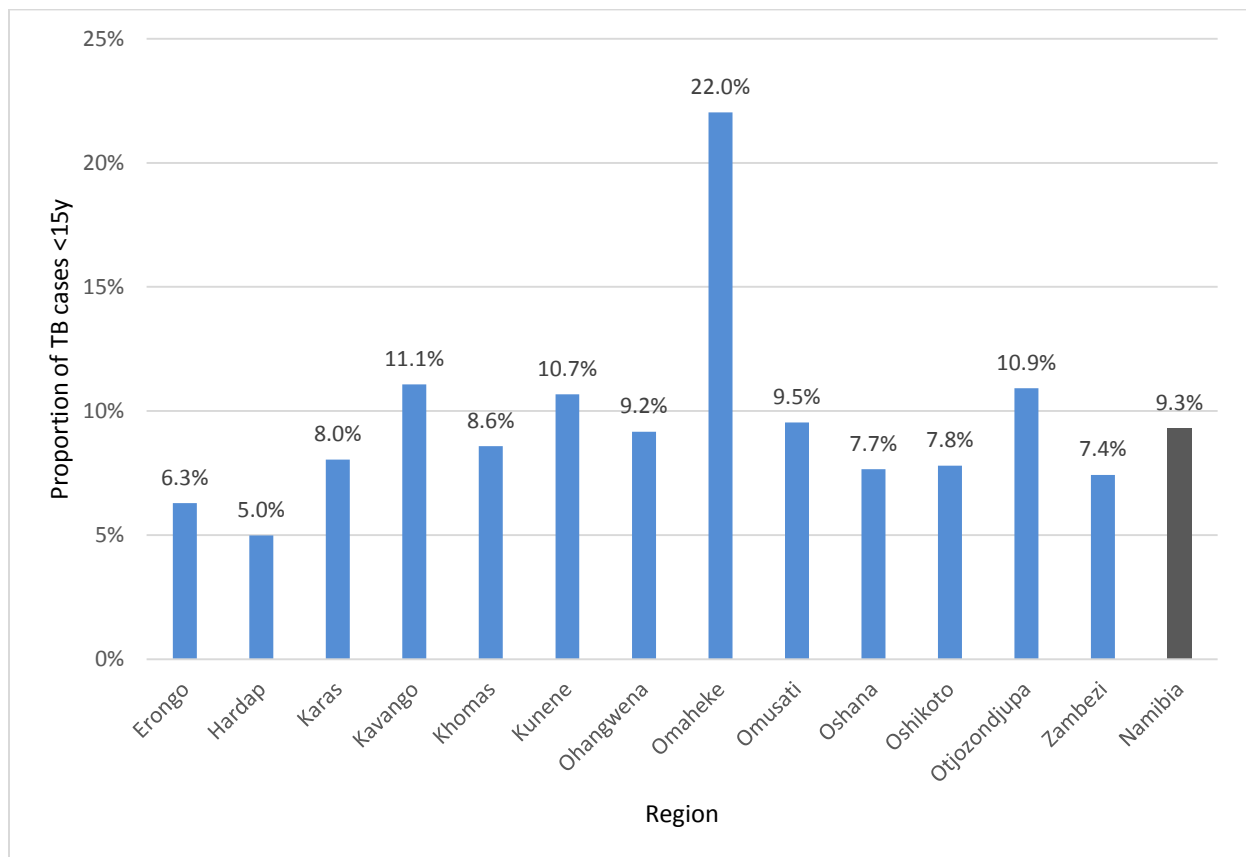


Figure 11: Proportion of TB cases that are Children below 15 years of Age by Region, 2019

3.5.1 Treatment outcomes for drug susceptible TB

Table 3 and Figure 12 below provide a summary of national treatment outcomes for TB patients notified in 2018 by category. Treatment success rate (TSR) for all forms of TB was 85%, Higher than 84% of 2017 cohort. The highest TSR (87%) was recorded among new bacteriologically positive TB patients. Death rate was highest among patients with New B- PTB tested (14%) which may be an indication of misdiagnosed patients.

Table 3: Treatment Outcomes for Drug Susceptible TB cases Notified in 2018

	Cured		Treatment completed		Successfully treated		Died		Failed		LTFU		Total evaluated		Not evaluated (incl. transfer out)		Total notified (2018 cohort)	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
All forms	4230	52%	2636	33%	6866	85%	605	7%	150	2%	422	5%	8043	99.7%	25	0.3%	8068	100%
New & Relapse	4097	53%	2557	33%	6654	86%	592	8%	142	2%	364	5%	7752	99.7%	25	0.3%	7777	100%
New B+ PTB	3176	77%	429	10%	3605	87%	216	5%	98	2%	197	5%	4116	99.9%	5	0.1%	4121	100%
New B- PTB	17	4%	331	76%	348	80%	65	15%	0	0%	15	3%	428	98.8%	5	1.2%	433	100%
Smear not done	782	29%	1471	54%	2253	83%	260	10%	28	1%	153	6%	2694	99.6%	12	0.4%	2706	100%
Relapse TB	724	54%	383	28%	1107	82%	136	10%	35	3%	63	5%	1341	99.5%	7	0.5%	1348	100%
Foreign national	315	41%	215	28%	530	69%	26	3%	28	4%	178	23%	762	99.5%	4	0.5%	766	100%
EPTB	0	0%	1145	86%	1145	86%	110	8%	0	0%	63	5%	1318	99.5%	6	0.5%	1324	100%
HIV +ve	1161	46%	902	35%	2063	81%	302	12%	49	2%	124	5%	2538	99.5%	12	0.5%	2550	100%

The TSR for new and relapse cases was 86% with a loss to follow up (LTFU) of 5%. On the other hand, LTFU among foreign nationals recorded the highest with 23%, a call for strengthening of cross border interventions, referrals and addressing other operational issues.

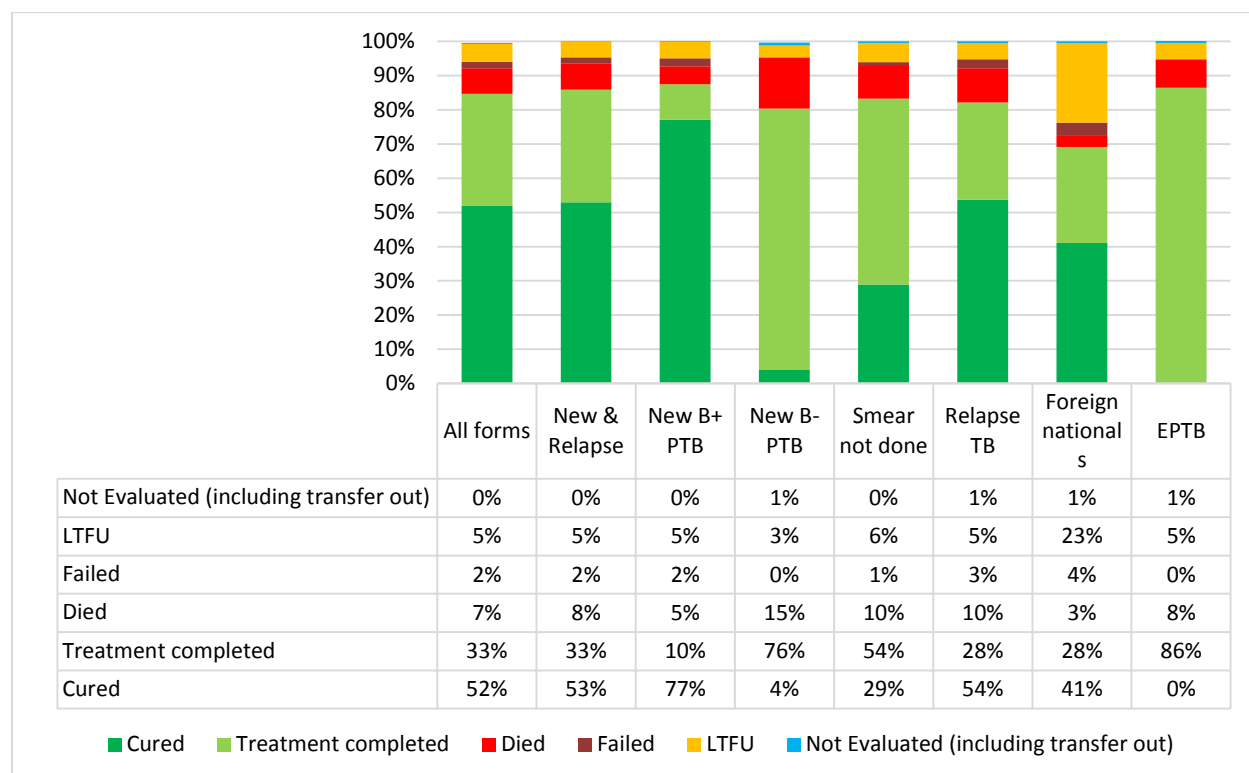


Figure 12: Treatment Outcomes for Drug Susceptible TB cases Notified in 2018

3.5.2 Treatment Outcomes by Region

There were variations in the TSRs between the regions as shown in Figure 13, against the target of 90%. Erongo and Omaheke regions exceeded the target TSR with 92% and 94% respectively. Ohangwena region recorded the highest LTFU (15%) attributed to the high proportion of cross-border patients from Angola. Khomas and Omusati region also had high LTFU. Hardap region recorded highest death rates (13%) followed by Oshikoto and //Kharas region (11%).

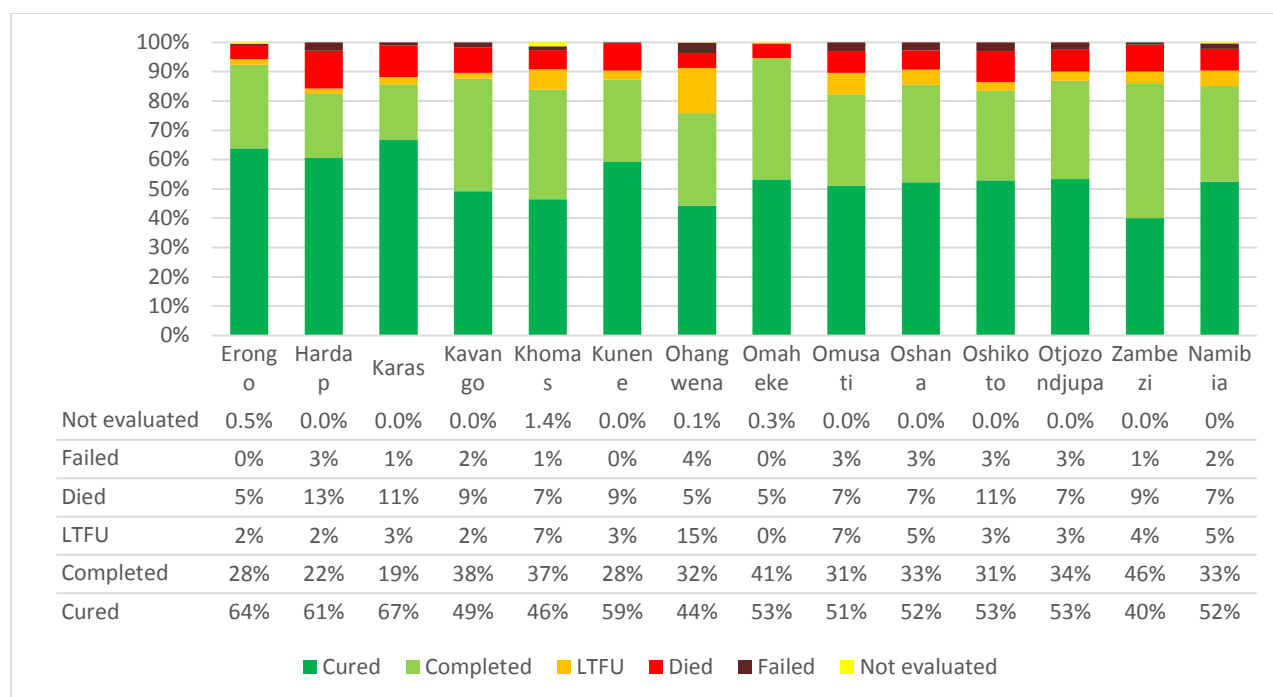


Figure 13: Treatment Outcomes for all Forms of TB, 2018 Cohort, by Region

3.5.3 Treatment Outcomes for New Bacteriologically positive PTB cases

The national TSR for new bacteriologically positive TB cases (2018 cohort) was 87%. Erongo and Omaheke regions reported the highest TSR (95% and 93% respectively) among PTB B+ patients.

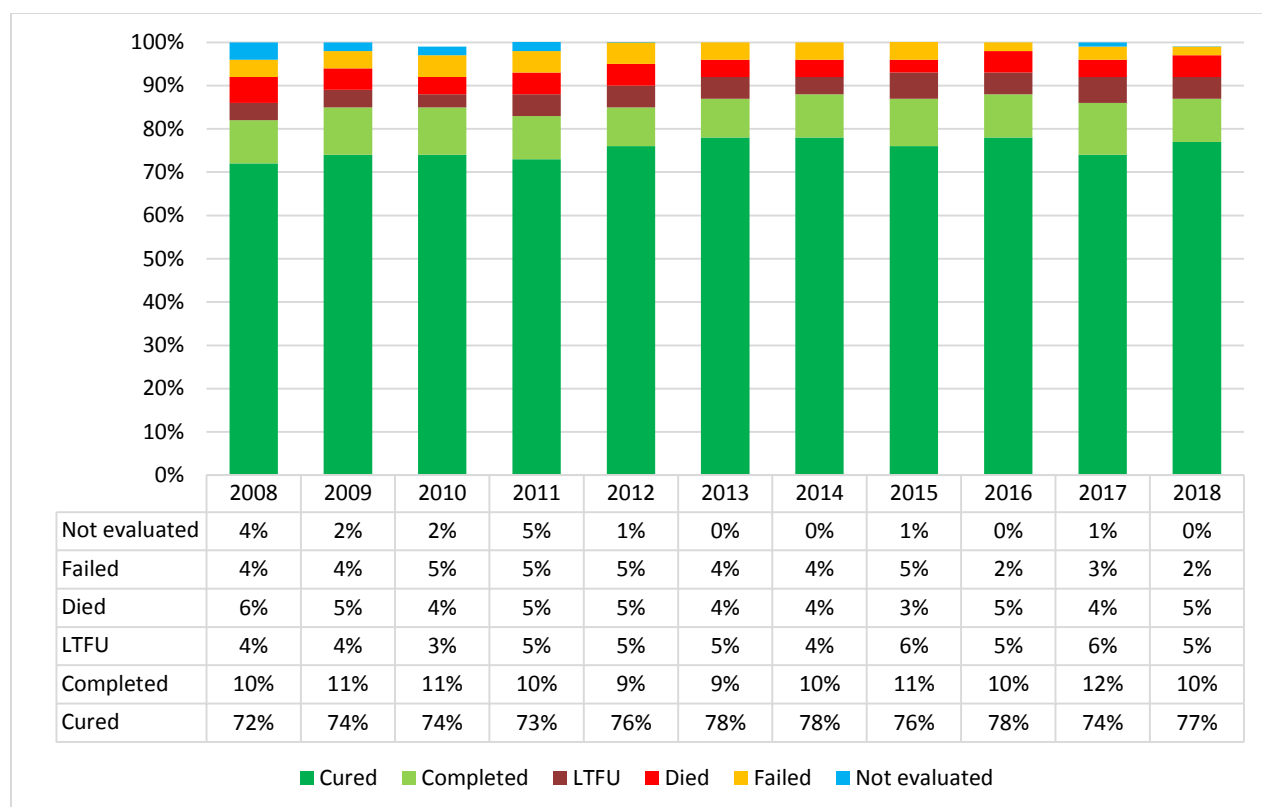


Figure 15: Trends in Treatment Success Rate for PTB_B+ cases, 2008 ó 2018³

3.5.5 Treatment Outcomes for Relapse TB cases

As with new PTB cases, Omaheke and Erongo featured the highest treatment success rates, while Hardap and //Karas had the lowest. Hardap, Kunene and //Karas region had the highest death percentage.

³ PTB B+ cases included from 2008 – 2014 is only for New smear positive patients

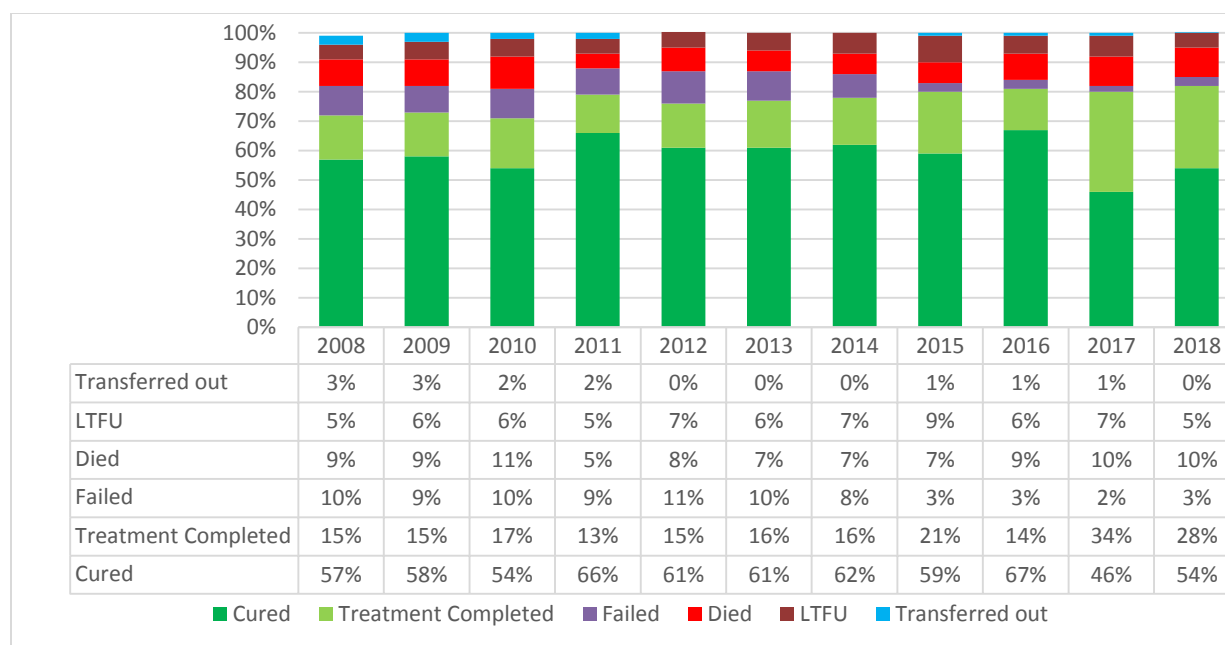


Figure 17: Trends in treatment outcomes of previously treated cases, 2008-2018 cohorts

3.5.7 Treatment Outcomes for EPTB cases

Namibia achieved 86% treatment success rate for New EPTB cases diagnosed in 2018. Apart from //Karas and Ohangwena region, all eleven regions achieved more than 80% TSR. //Karas region recorded a highest death rate of 21%, and Ohangwena region reported high LTFU of 17%.

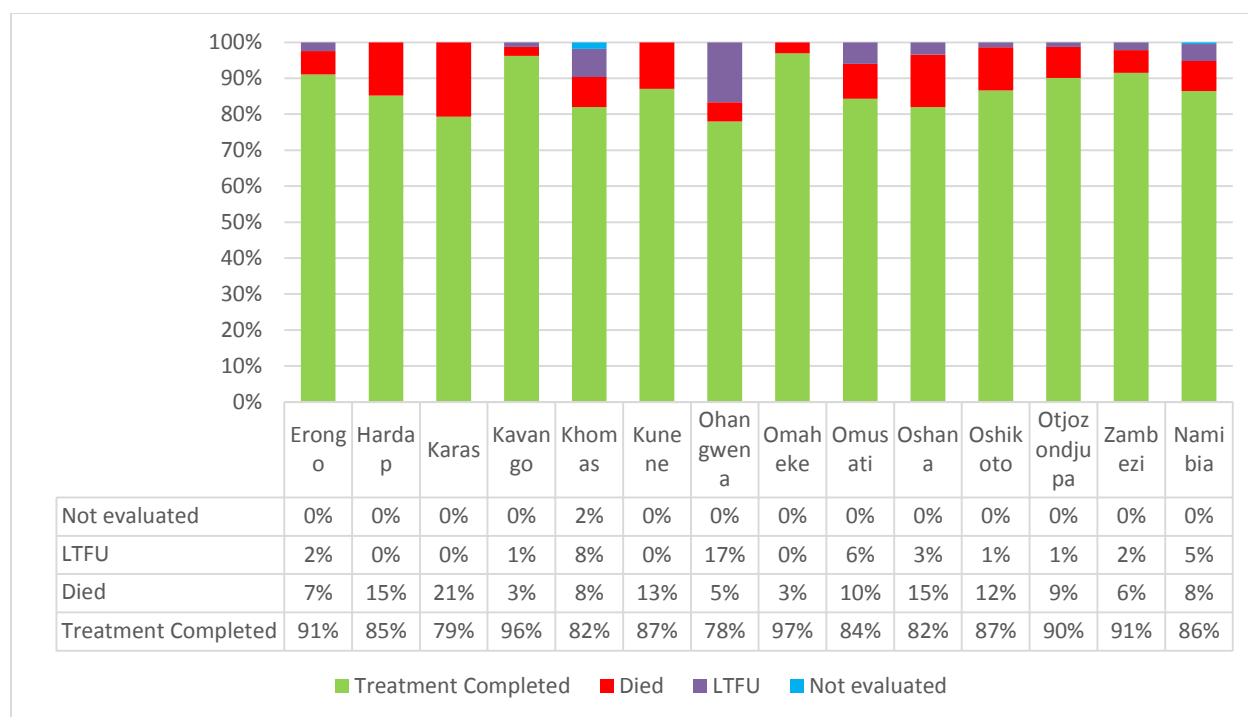


Figure 18: Treatment Outcomes for EPTB cases by Region, 2018 cohort

The treatment completion among new EPTB patients was 86% in 2018, high than in 2017 with 4%. Death rate reduced with 4% in 2018, compare to a high death rate of 12% reported in 2017. In 2017 and 2018, LTFU and Not evaluated patients remained constant at 5% and 0% respectively.

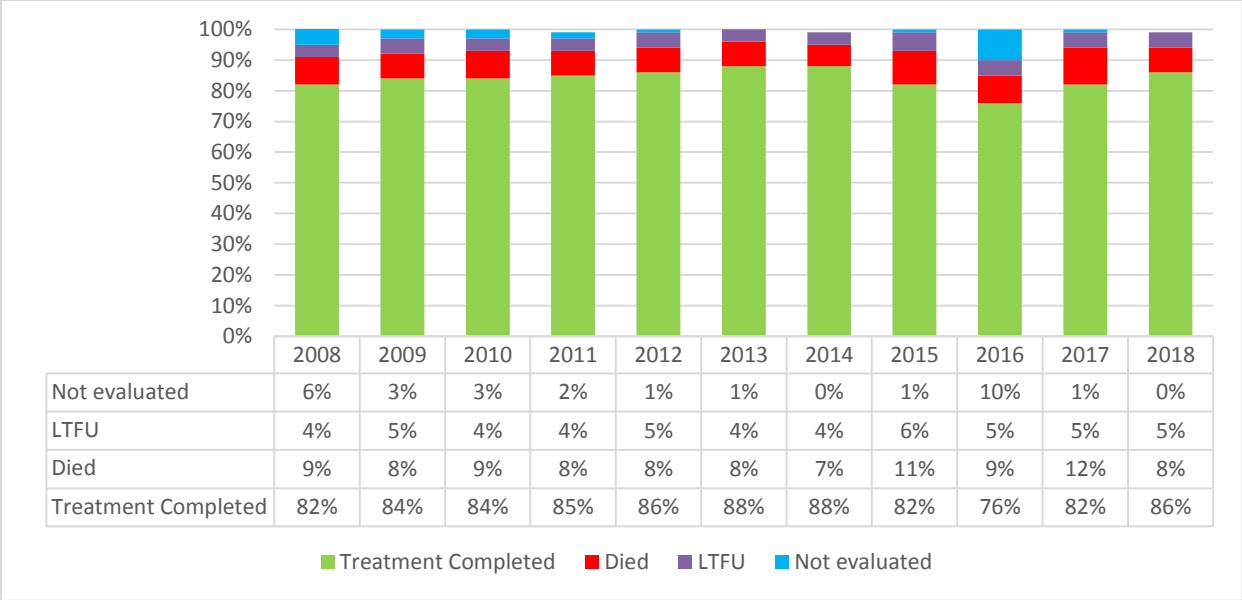


Figure 19: Trends in Treatment Outcomes for EPTB cases 2008-2018 cohorts

4 TB/HIV AND OTHER CO-MORBIDITIES

Namibia has made strides in addressing TB and HIV at various levels of the health care system. The goal of TB/HIV collaborative activities is to reduce the burden of TB and HIV in populations affected by or at risk of suffering both diseases.

4.1 The burden of TB/HIV coinfection

The graph below shows the trend of TB notification among PLHIV. The proportion of PLHIV among patients diagnosed with TB has been declining over the years. During 2019, this proportion was 2504/7718 (32%), a decline from 2018 where it stood at 36%.

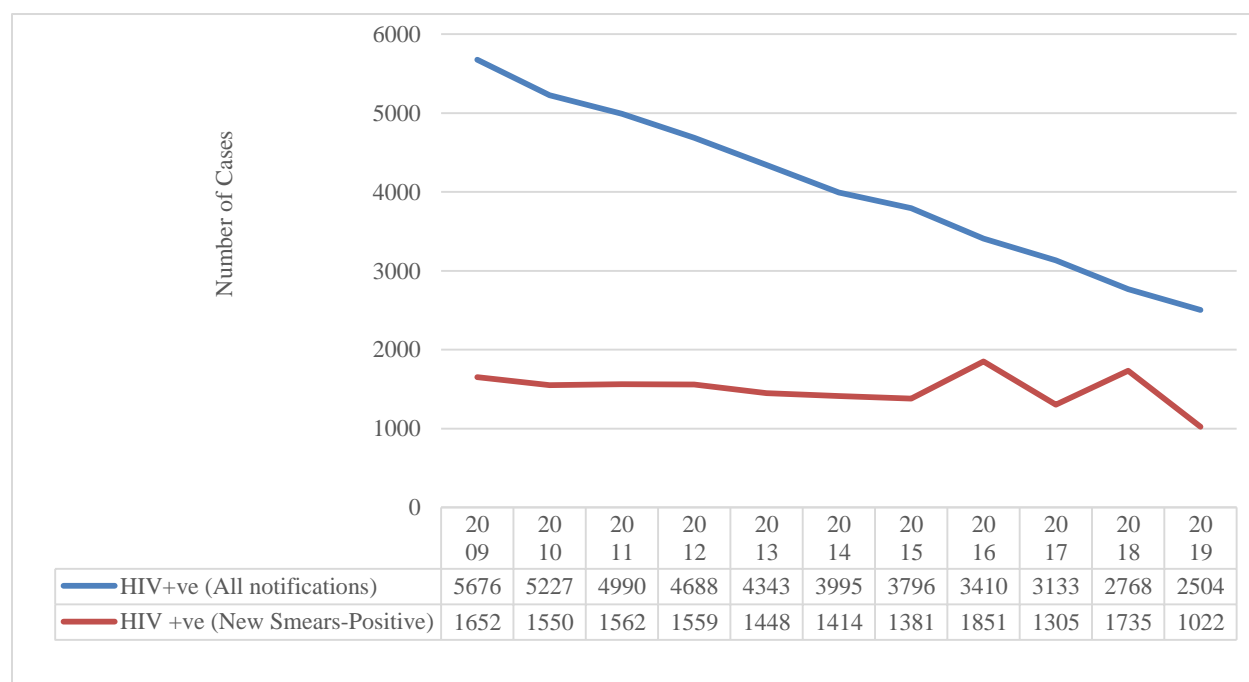


Figure 20: Trends in TB/HIV notifications 2009-2019

The age-sex distribution of TB among PLHIV mirrors the overall age-sex distribution of TB in the country. Males dominated most age groups, with high HIV cases at 59% and 65% in 35–44 and 45–54 age groups respectively. However, females significantly had a slight preponderance in the age group 15-24, as shown in the graph below.

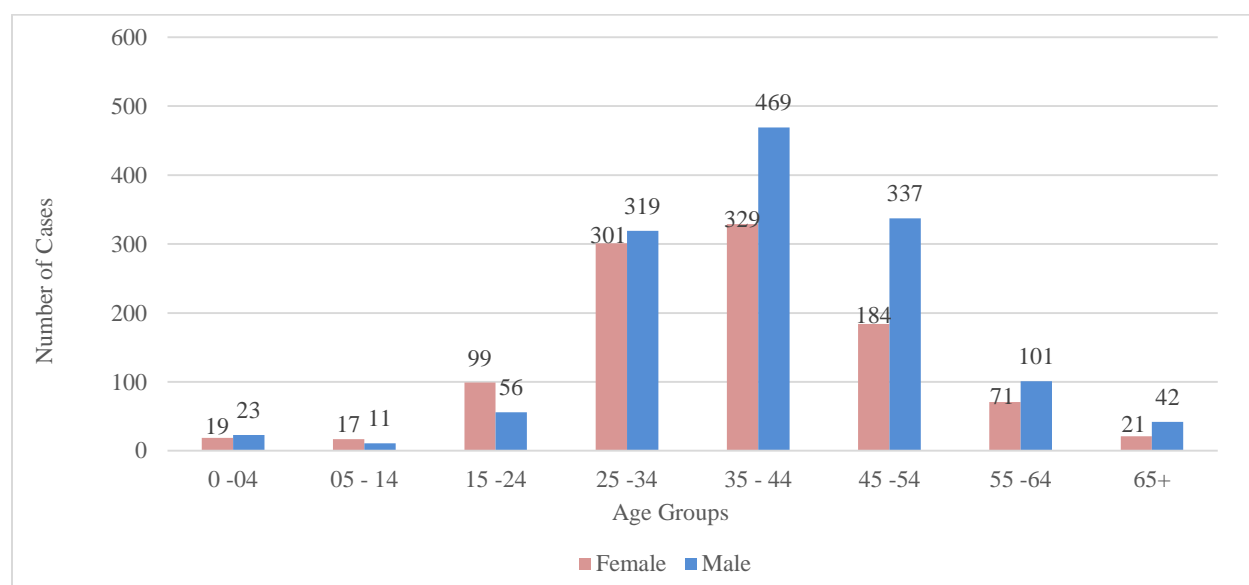


Figure 21: Age-sex distribution among New and Relapse TB/HIV cases, 2019

4.2 Provision of HIV services for TB patients

Figure 22 shows that in 2019, 99% of patients registered for TB treatment had a documented HIV status. Out of the registered TB cases with a known status, 2,504 (32%) were HIV positive. In addition, the graph displayed that there has been an increase in the proportion of HIV+ patients initiated on ART from 97% in 2018 to 99% in 2019. Lastly, Initiation on Cotrimoxazole Preventive Therapy (CPT) remained high and maintained at 99% in 2019.

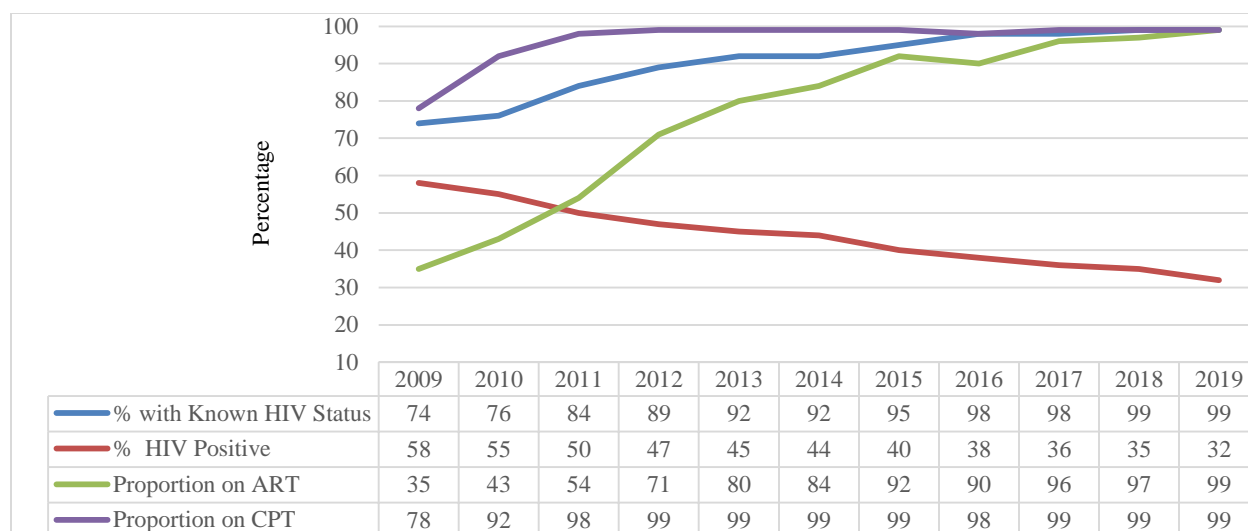


Figure 22: Trends in selected TB/HIV indicators 2009-2019

There was interregional variation of HIV prevalence among TB patients, with prevalence ranging between 19-57%. Zambezi region had the highest prevalence at 57% while Omaheke had the lowest prevalence at 19%.

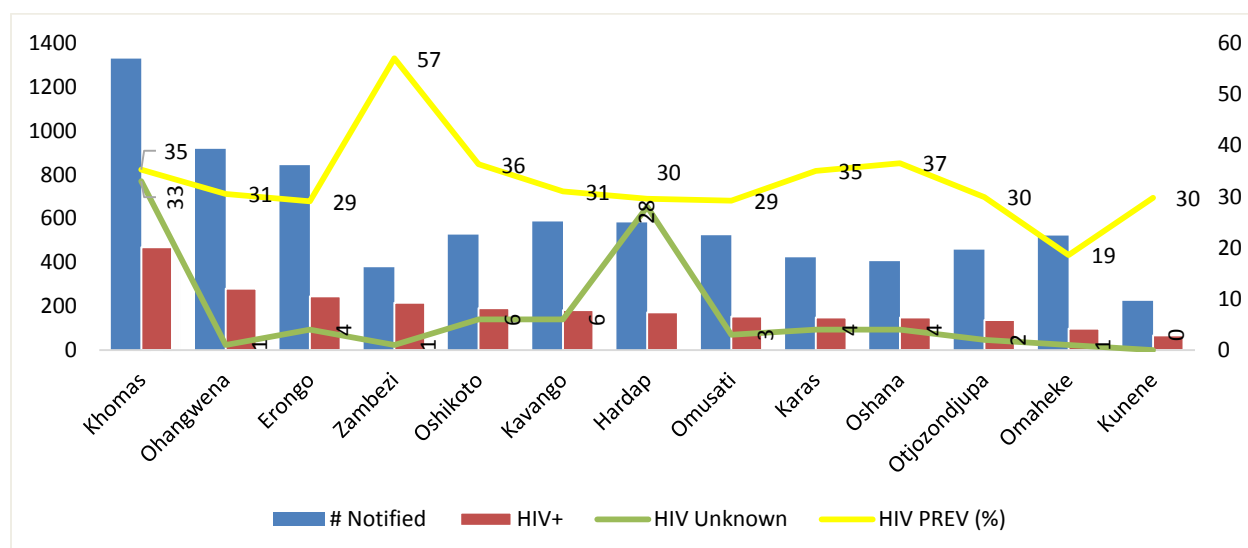


Figure 23: HIV burden among all TB patients by region, 2019

The graph below shows the number of HIV-infected TB patients who were initiated on CPT and ART. Ohangwena, Zambezi, Oshikoto, Kavango, and Kunene regions initiated 100% of their patients both on ART and CPT. All the other regions had an ART initiation of above 95%. Except for Erongo and Hardap regions, the rest of the regions had initiated all their HIV+ patients on CPT as reflected in the figure below.

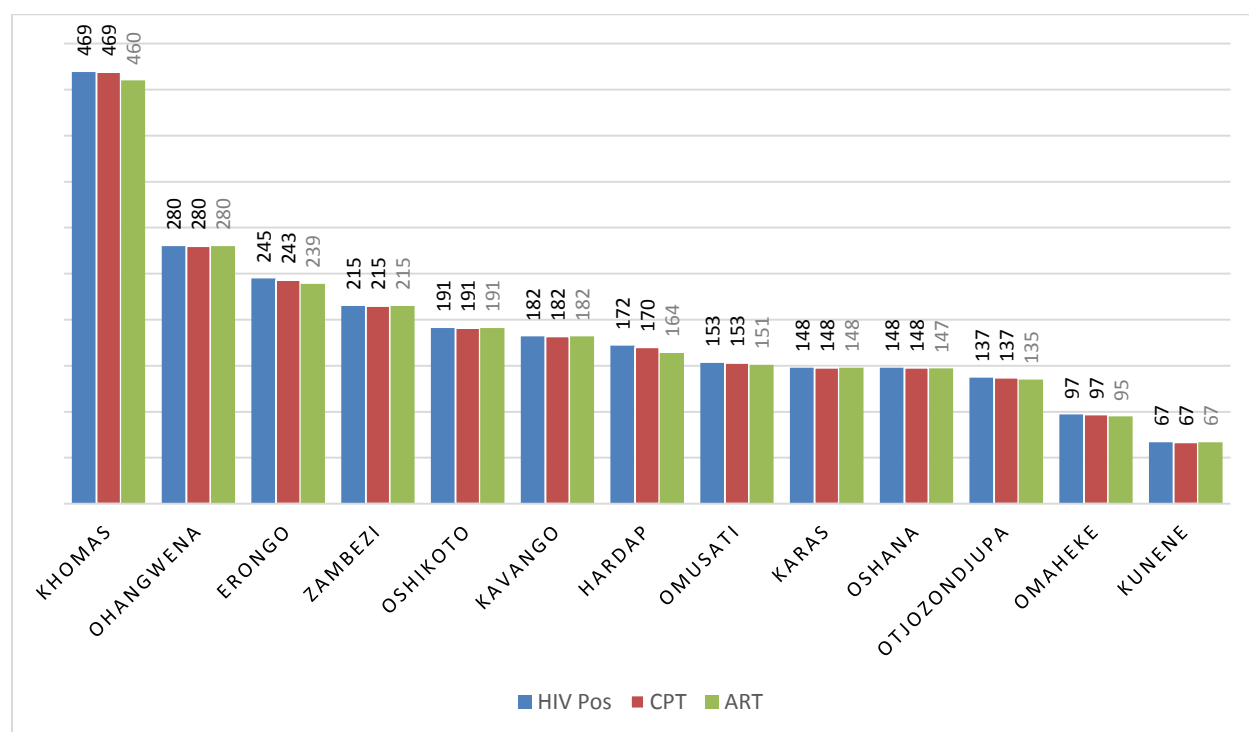


Figure 24: Regional distribution of Notified TB patients on ART and CPT, 2019

Figure 25 shows that //Kharas and Erongo regions reported the highest cure rate at 59%. Nine regions reported a cure rate below 50%. Hardap region reported the highest death rate at 21% followed by Kunene region at 18%. Lastly, Ohangwena and Khomas regions both reported high LTFU at 16% and 8% respectively.

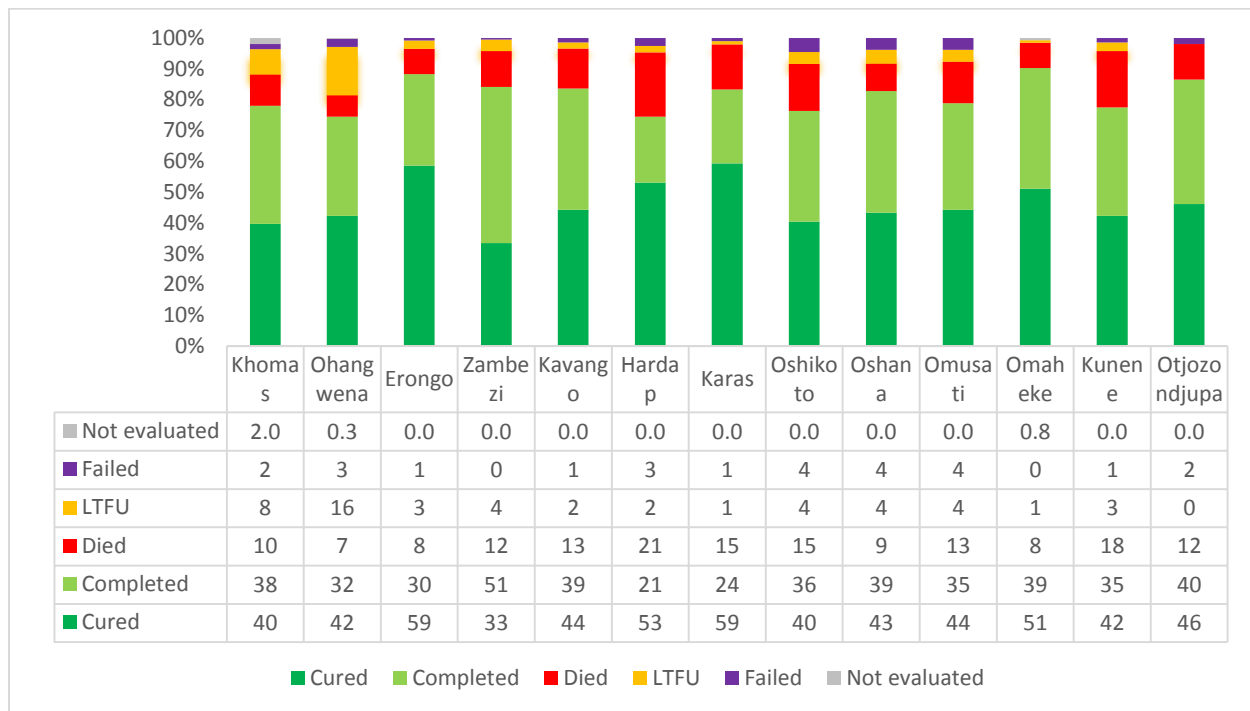


Figure 25: TB treatment outcomes for TB/HIV patients by region, 2018 cohort

4.3 TB and other co-morbidities

Systematic screening for diabetes mellitus started in 2018. Figure 26 show that out of 7718 total notified cases in 2019, 4968 were screened and 26 were diagnosed with Diabetes. There is disproportionate data in screening for Diabetes across the regions with Otjozondjupa and //Kharas screening nearly all their cases, while Zambezi screened simply 2% of their TB patients.

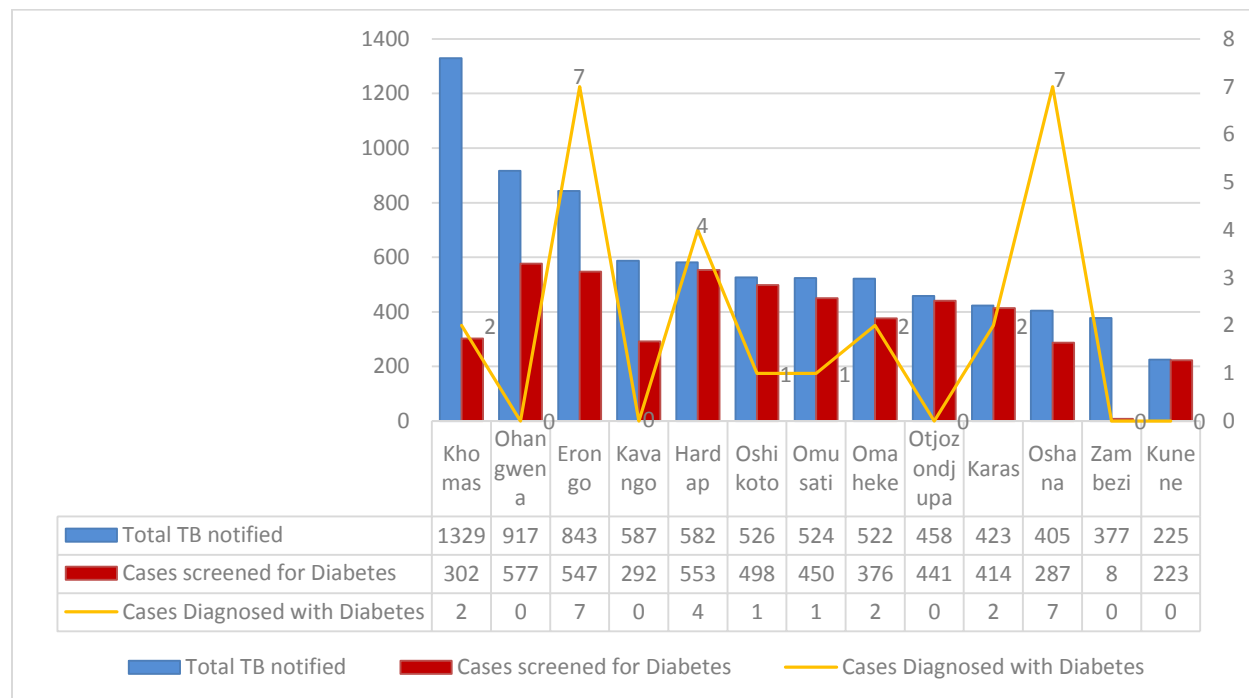


Figure 26: Diabetes screening among TB patients in 2019

5 TB PREVENTION SERVICES

5.1 TB Preventive Therapy

Tuberculosis preventive therapy (TPT) also referred to as treatment of TB infection or Latent TB Infection (LTBI) treatment is the therapy offered to individuals considered to be at risk of developing TB disease in order to reduce that risk. The categories of patients eligible for TPT includes PLHIV and close contacts of TB patients who are children under the age of five, diabetic, people on immunosuppressive drugs and other immunocompromised people.

The graph below shows that majority (97%) of the patients enrolled for ART were screened for TB in 2019, an increase compared to 94% in 2018. Out of 10973 people screened, 81% were eligible for TPT, a slight drop from 2018 where 84% were eligible. From those that were eligible, 81% were initiated on TPT. TB preventive therapy initiation in 2019 was low compared to 2018 and this could be attributed to the Isoniazid stock out during the course of the reporting period. Lastly, 404 patients were diagnosed with TB at ART enrolment.

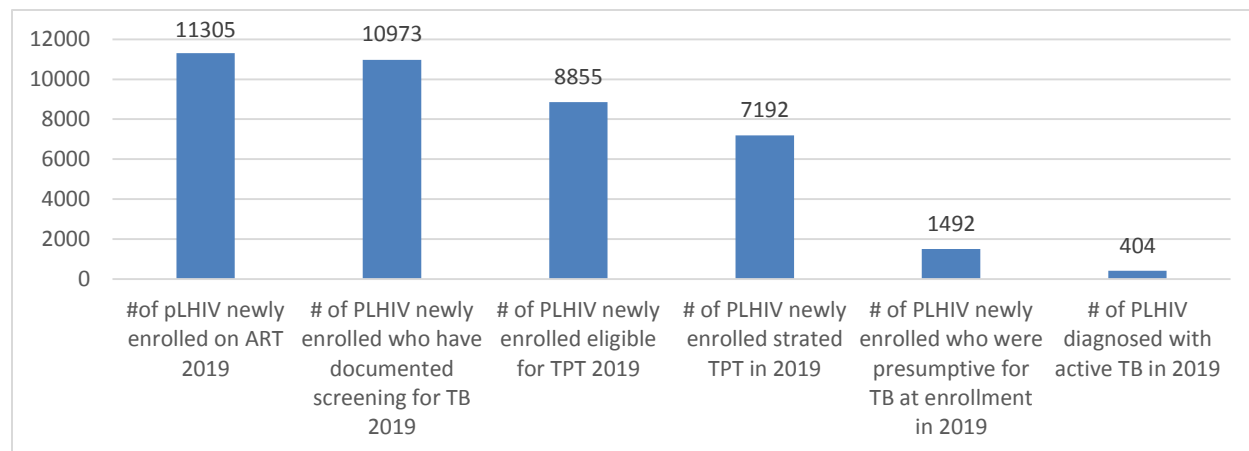


Figure 27: TB screening and TPT initiation among PLHIV in 2019

5.2 Prevention of TB among health care workers

People working in health-care settings are at risk of TB infection and disease. The number of Health care workers screened for TB has been increasing slowly over the years. During 2019, 43% (6190/14320) of Health care workers were screened for TB compared to 2017 (17%) and 2018 (32%). Kunene region screened all its Health care workers, followed by Otjozondjupa region at 95%, with Omaheke, Omusati and Oshana regions also reporting above 50%. Regions that have reported screening below 50% are Hardap 48%, //Kharas 44%, Ohangwena 33%, Kavango/Erongo regions 16%, Zambezi 13%, and Khomas 9%. In total 22 HCWs were diagnosed with TB in 2019 compared to 26 in 2018 and 42 in 2017 HCWs.

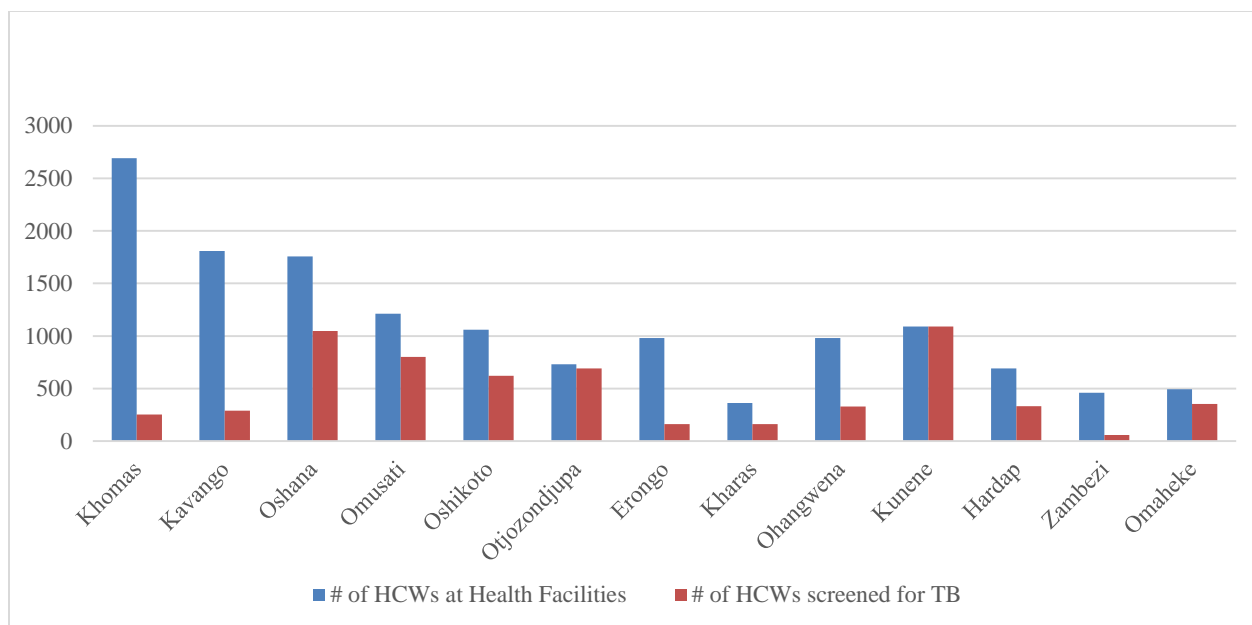


Figure 28: Regional distribution of TB screening among HCWs in 2019

5.3 TB infection control practices at health facilities

Effective TB infection control includes the assessment of health facilities for the risk of infection and appropriate plans to prevent and reduce spread of infection. Out of 408 public health facilities documented in 2019, 322 (78%) had updated TB-IC plans. The figure was low compared to 92% in 2018. A total of 267 (65%) of health facilities had established outdoor waiting areas to prevent spread of airborne diseases among patients and Health workers. Currently, the program is in the process of reviewing the IC control guideline, aligning it with the revised 2019 IC guideline of WHO.

5.4 Contact Investigation

5.4.1 Contact investigation and TPT

Contact investigation is a crucial and systematic process of identifying previously undiagnosed cases with TB among contacts of an index case. Total of 5104 bacteriologically confirmed cases were diagnosed in 2019, 4452 (87%) had documented contacts. Out of the identified 22087 contacts, 15% were children under the age of five.

The graph below shows the contacts identified, screened and initiated on TPT in 2019. Eighty-five percent of the contacts identified were above the age of five. Total of 2754 contacts identified under five years: 83% were screened for TB, 2183 (79%) were eligible for TPT, and 1491 were initiated on TPT.

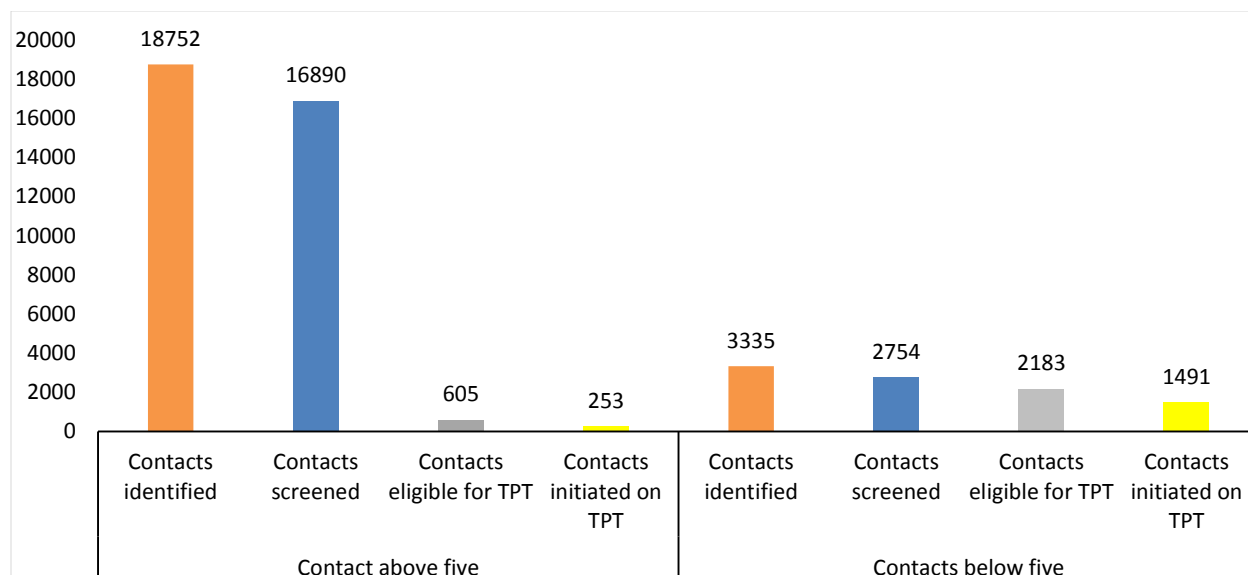


Figure 29: TB contact screening and TPT, 2019

The figure below shows regional distribution of TB screening and TPT initiation among under five year contacts.

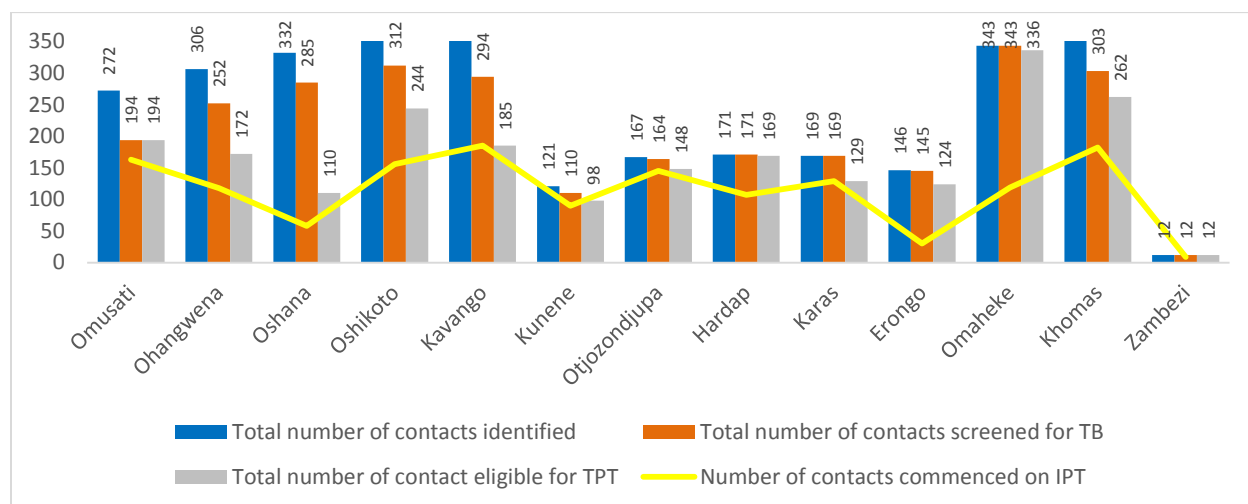


Figure 30: Regional distribution of TB contact investigation and TPT among under five years, 2019

5.4.2 TPT outcomes among contacts investigated in 2018

The figure below shows the treatment outcomes among the TB contacts initiated on prophylaxis in 2018. Out of 1715 contacts initiated on TPT in 2018, 1390 (81%) successfully completed the course. This result was higher than 72% reported in 2017. Among 1715 contacts initiated on TPT, 1329 contacts were under-five years with 1061 (80%) completion, and 386 contacts were above five years with 329 (85%) completion. The treatment outcome in both the under 5 and the above 5 years had increased compared to 76% and 63% respectively in 2018.

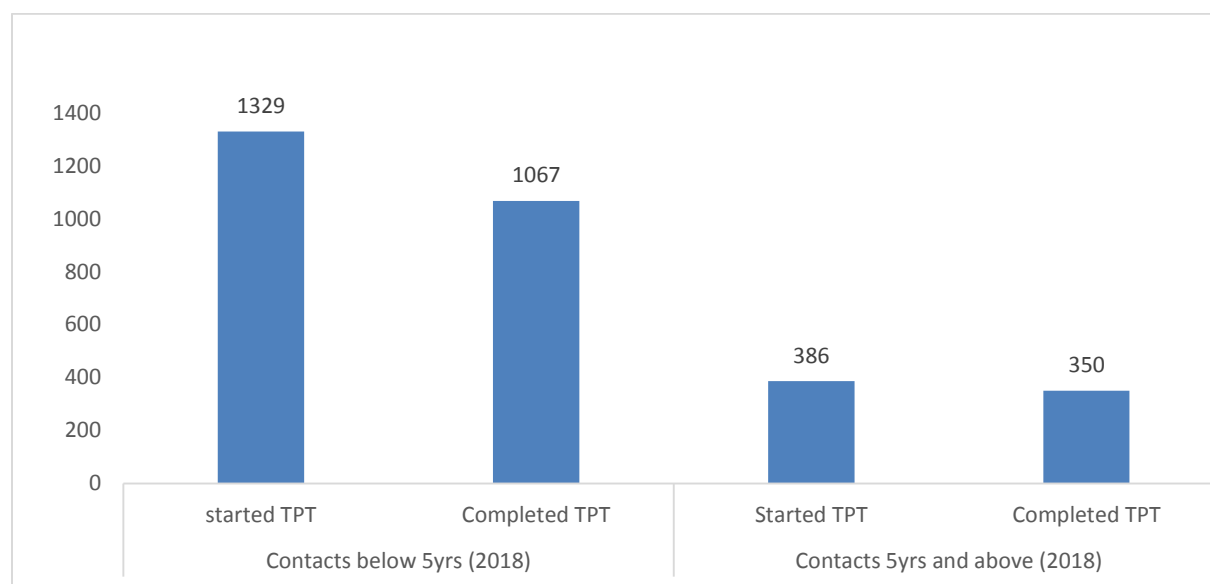


Figure 31: National outcome of TPT for contacts initiated on therapy, 2018

6 PROGRAMMATIC MANAGEMENT OF DRUG-RESISTANT TUBERCULOSIS

6.1 DR-TB Notifications

A total of 298 cases were notified as having drug-resistant TB in 2019, of which 292 had confirmed drug-resistance (70 MDR-TB excluding XDR-TB; 4 XDR-TB; 202 rifampicin resistance on Xpert MTB/RIF only and 13-rifampicin mono-resistance). An additional six (6) patients were started on second line anti-TB treatment without confirmation of drug resistance (clinically diagnosed). Figure 32 below shows the trend of confirmed DR-TB cases.

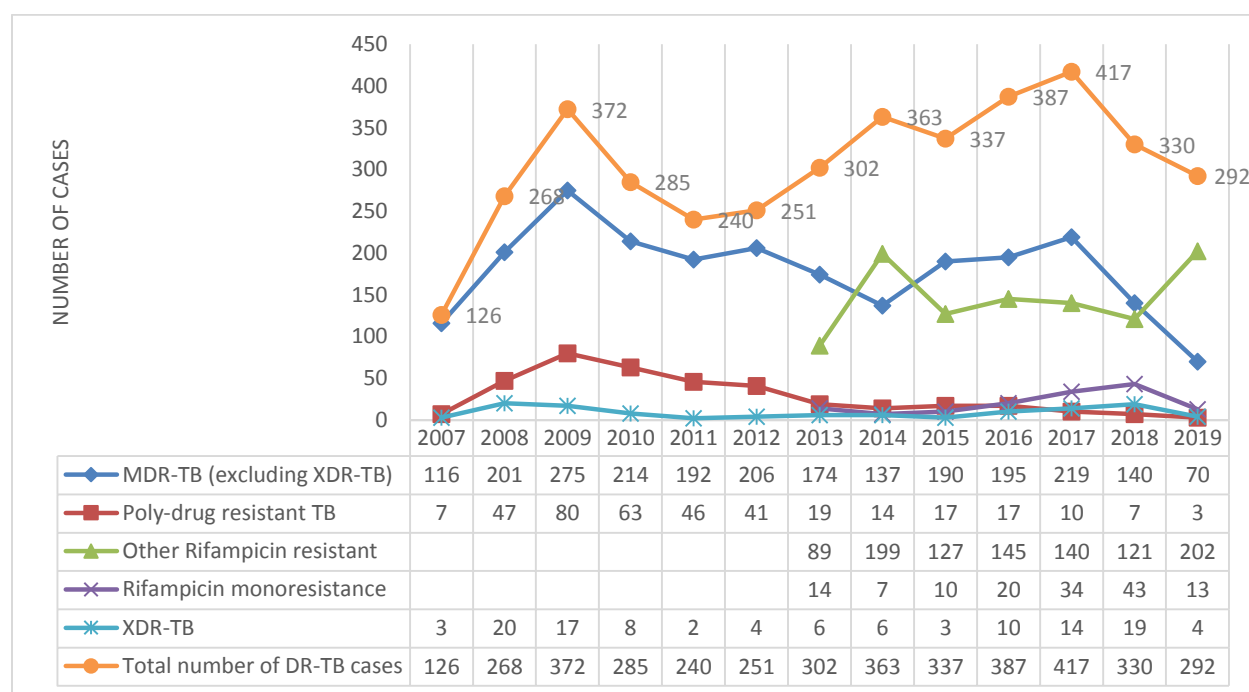


Figure 32: Trends in the Reported cases of Confirmed Drug-Resistant TB, 2007-2019

The figure below presents the age-sex distribution of DR-TB cases registered in 2019, which is similar to that in 2018. Male patients constituted the majority of DR-TB cases reported, at 57%, while children under the age of 15 were 21 (7% of cases).

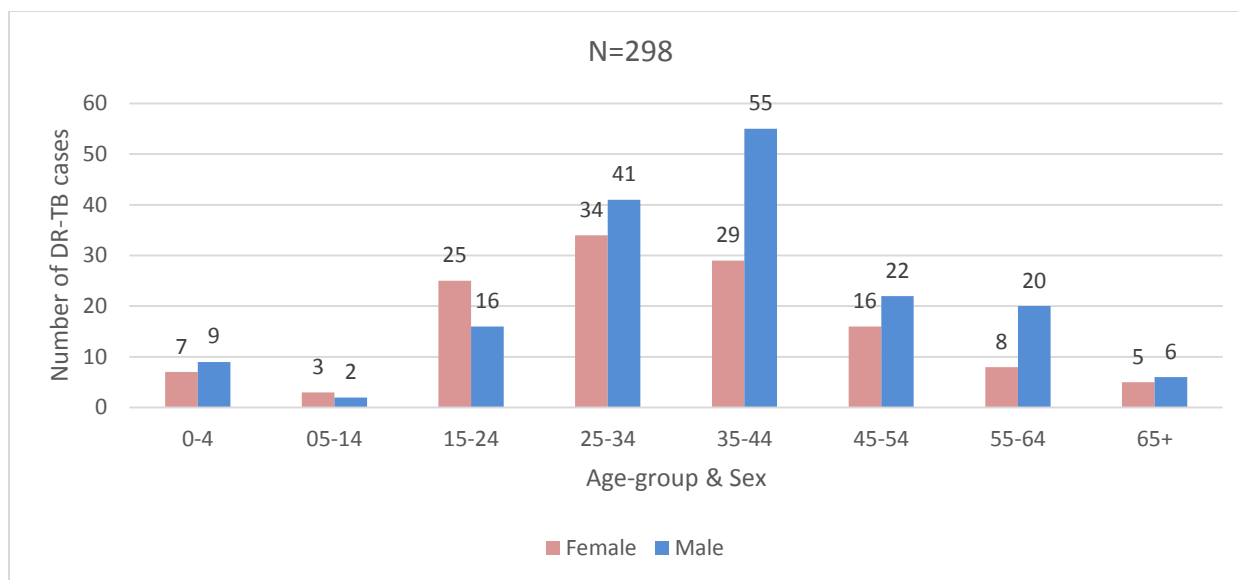


Figure 33: Age-Sex Distribution for DR-TB cases, 2019

Khomas, Otjozondjupa, Ohangwena, and Kavango regions reported the highest numbers of DR-TB patients in the country, while the lowest number of patients was reported in Zambezi, and Omaheke regions, in 2019. As illustrated in figure 34 below.

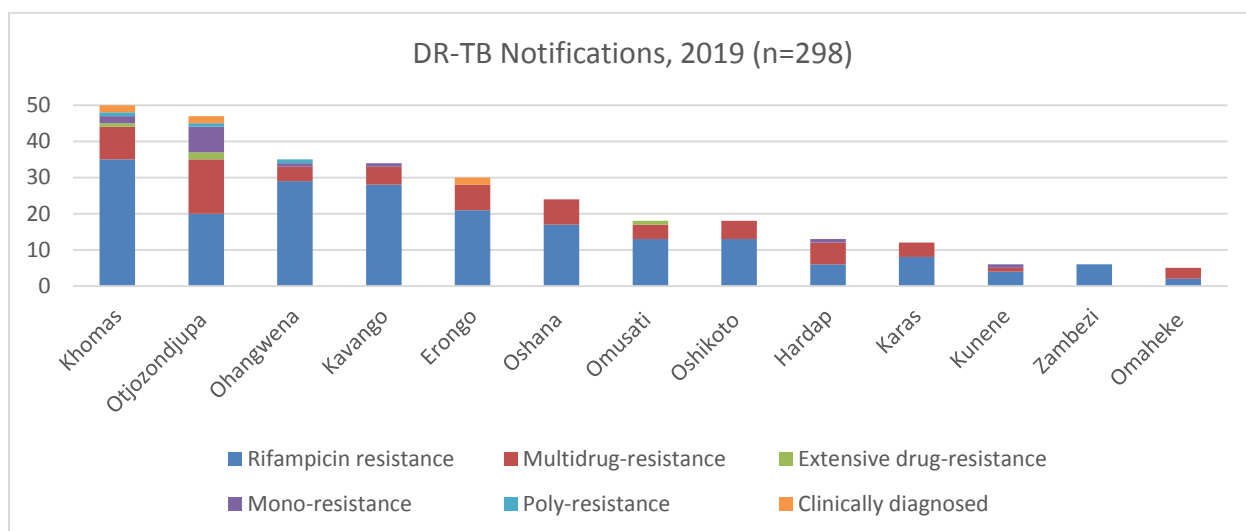


Figure 34: Regional Distribution of reported DR-TB cases by Resistance pattern, 2019

Out of the total patients with DR-TB, 289 had confirmed rifampicin resistant (including XDR) TB that was confirmed by genotypic or phenotypic methods, while the rest (3) had other forms of resistance. Majority (61%) of patients with rifampicin-resistant TB were new TB patients with no history of previous treatment while 19% were relapse cases.

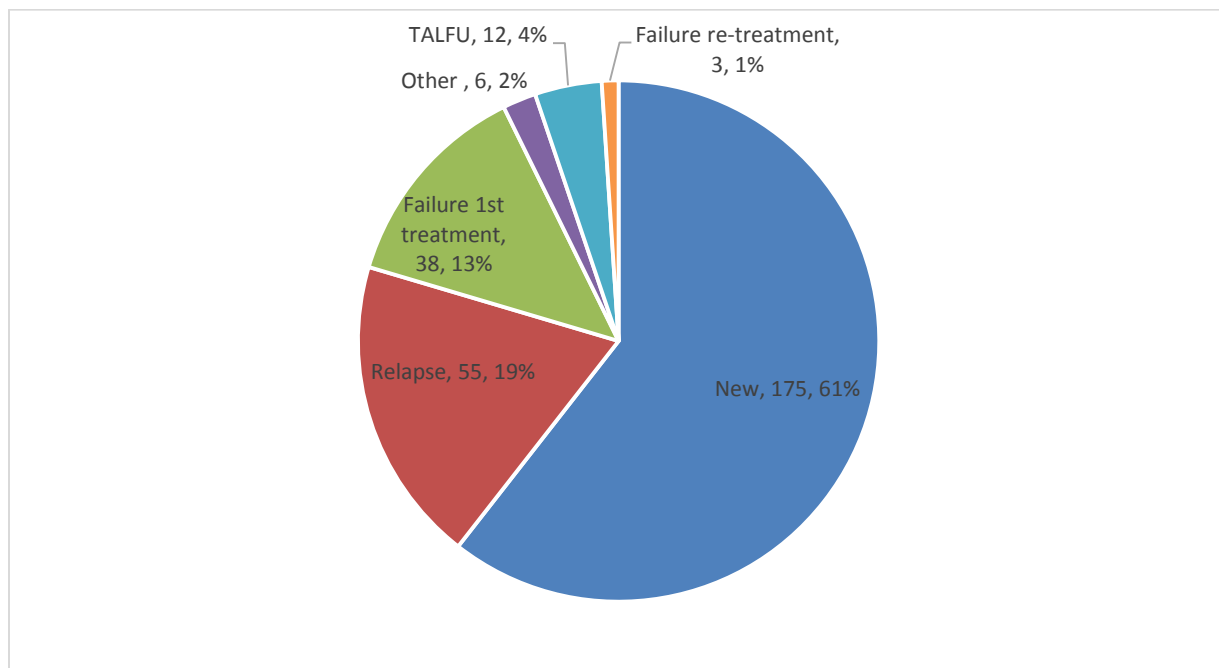


Figure 35: Distribution of Rifampicin resistant TB cases by Treatment History, 2019

6.2 DR-TB treatment

The Ministry of Health Social Services continued to avail facilities for treating DR-TB at no direct cost to the affected Namibians in 2019. Out of 298 patients notified, 286 (96.0%) were started on treatment in 2019; the rest having either died (9) or lost to follow-up before treatment (3). Among the 289 rifampicin resistant cases, 278 (96.2%) were started on treatment. The figure below shows the notifications against those started on treatment by region.

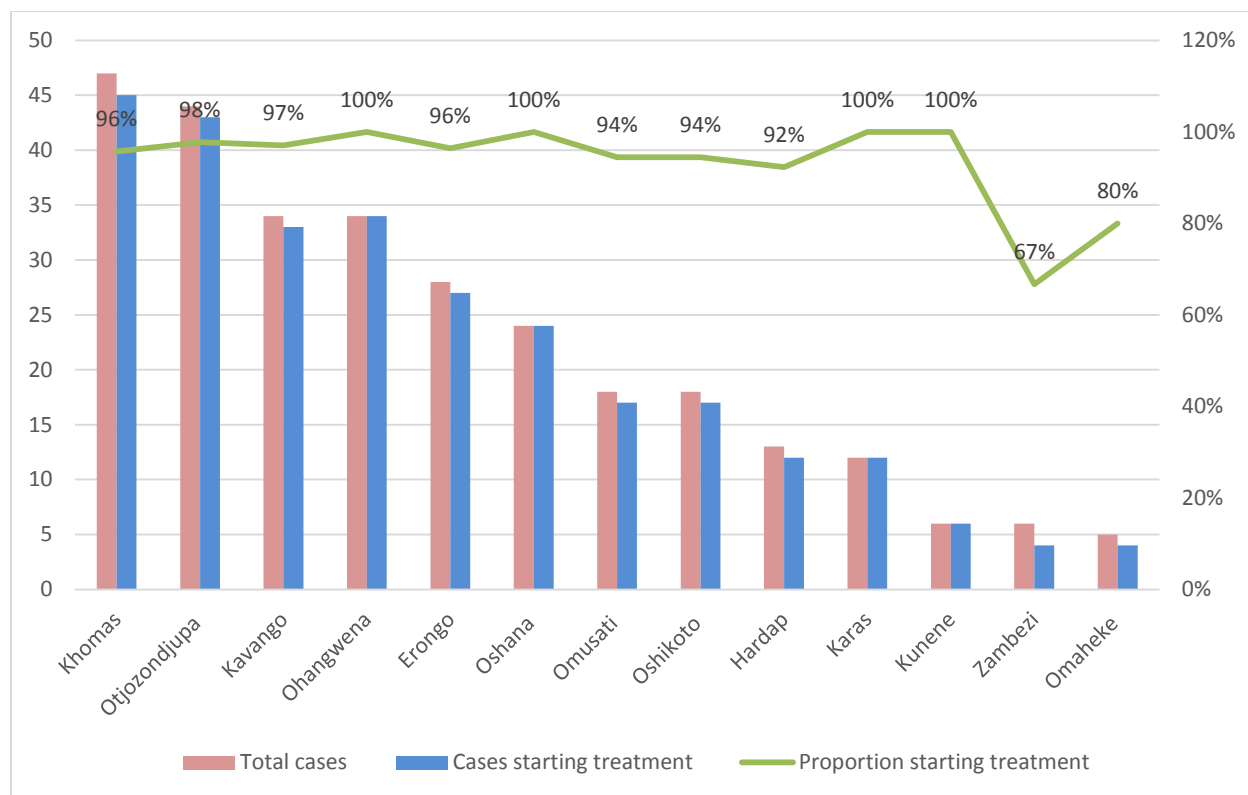


Figure 36: Rifampicin Resistant TB Treatment coverage by Region

Figure 37 below, shows the number of patients that started treatment for DR-TB by regimen. Out of these patients, 149 were started on the short DR-TB treatment regimen in 2019, while 130 were treated with regimens that contained either Bedaquiline (89) or delamanid (21) or both (20). This represented a significant increase from 54 in 2018. In addition, only seven (7) patients were treated with other individualised regimens that are being phased out.

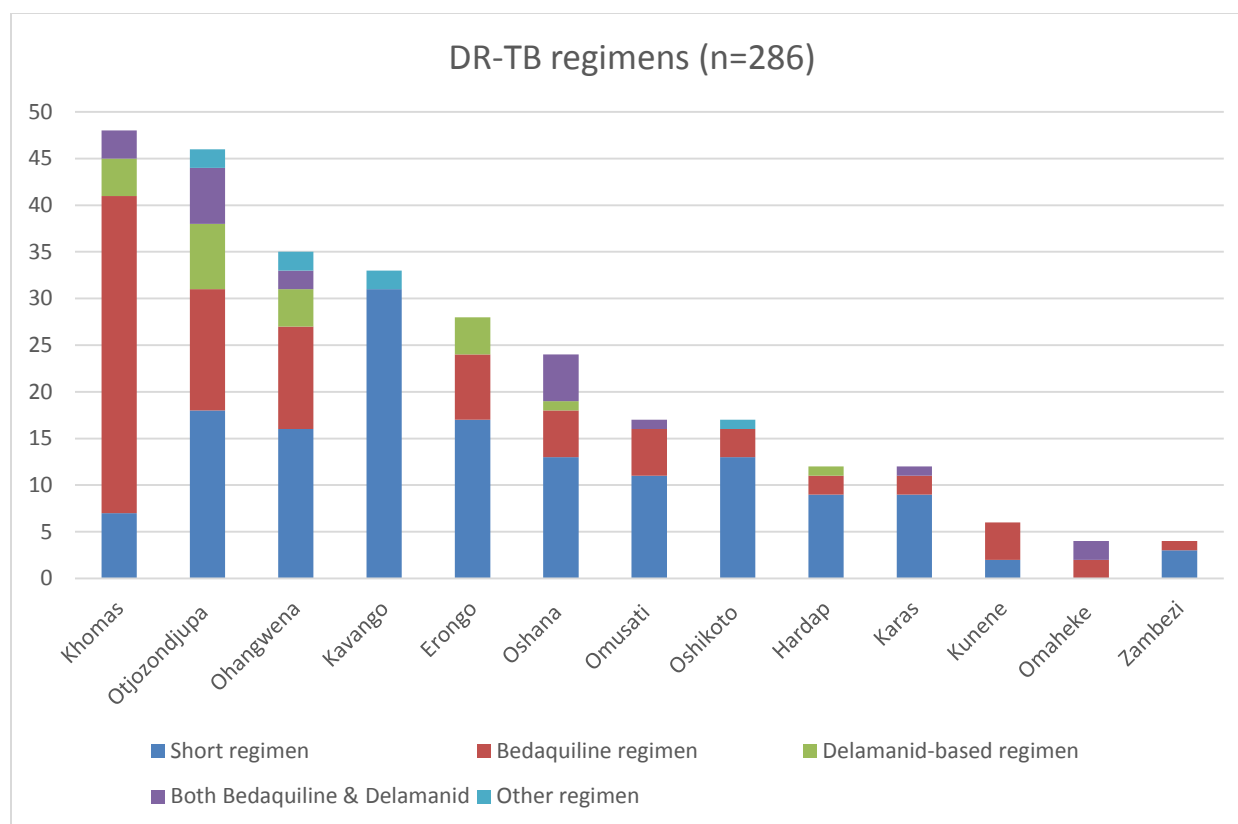


Figure 37: Treatment of DR-TB by regimen

6.3 DR-TB and HIV

Out of the 298 DR-TB patients notified in 2019, 297 (99.7%) had a known HIV status; 126 (42%) of these patients were HIV positive, of which 121(96%) were put on ART and 118(95%) were on CPT. Among the five who were not on ART, four had died before starting treatment and one lost to follow-up.

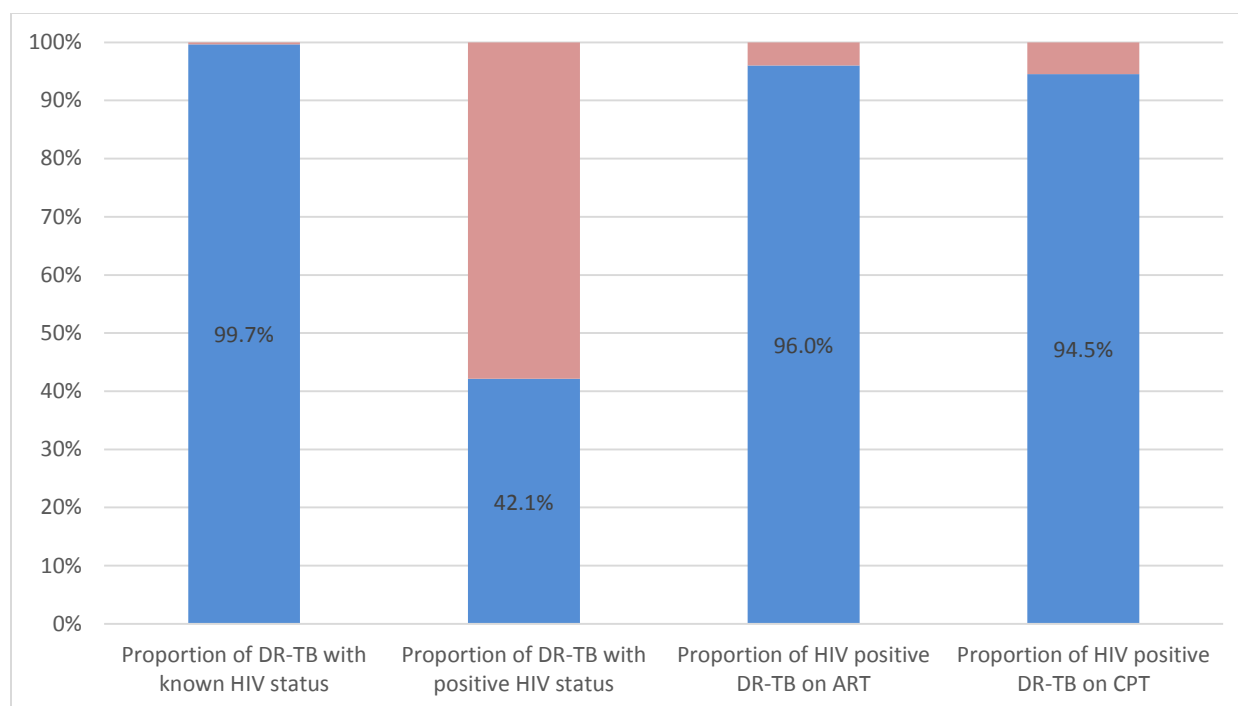


Figure 38: DR-TB and HIV indicators

6.4 Treatment outcomes for DR-TB patients

Overall, treatment success rate for DR-TB patients was 67% for the 2017 cohort. Zambezi region recorded a 100% TSR. Whereas, Omaheke, Kavango, Omusati, //Kharas, Oshikoto and Oshana region achieved treatment success rates exceeding 75%. Lastly, High death rate (15.9%) and loss to follow-up rate (13.4%) continued to be a major problem all over the country. The figure below shows the treatment outcomes for all DR-TB patients initiated on treatment in 2017.

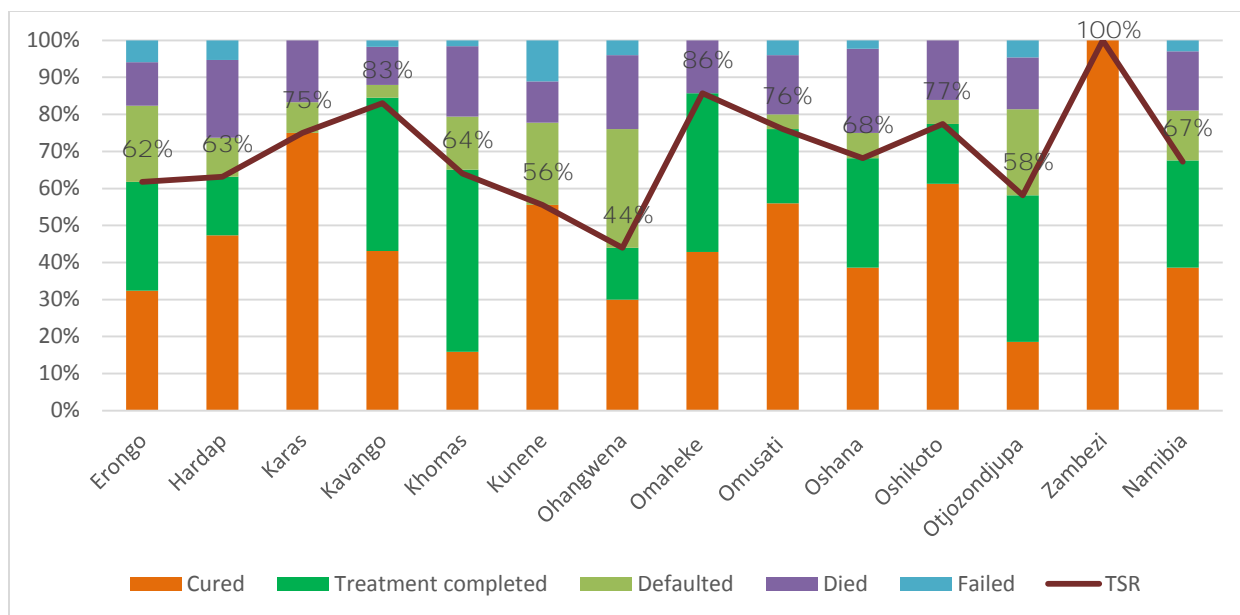


Figure 39: Regional Distribution of DR-TB Treatment outcomes, 2017 cohort

The treatment success rate was 67%, with high loss to follow-up (14%) and death (16%) rate as.

The figure below shows that patients with rifampicin resistance other than XDR-TB.

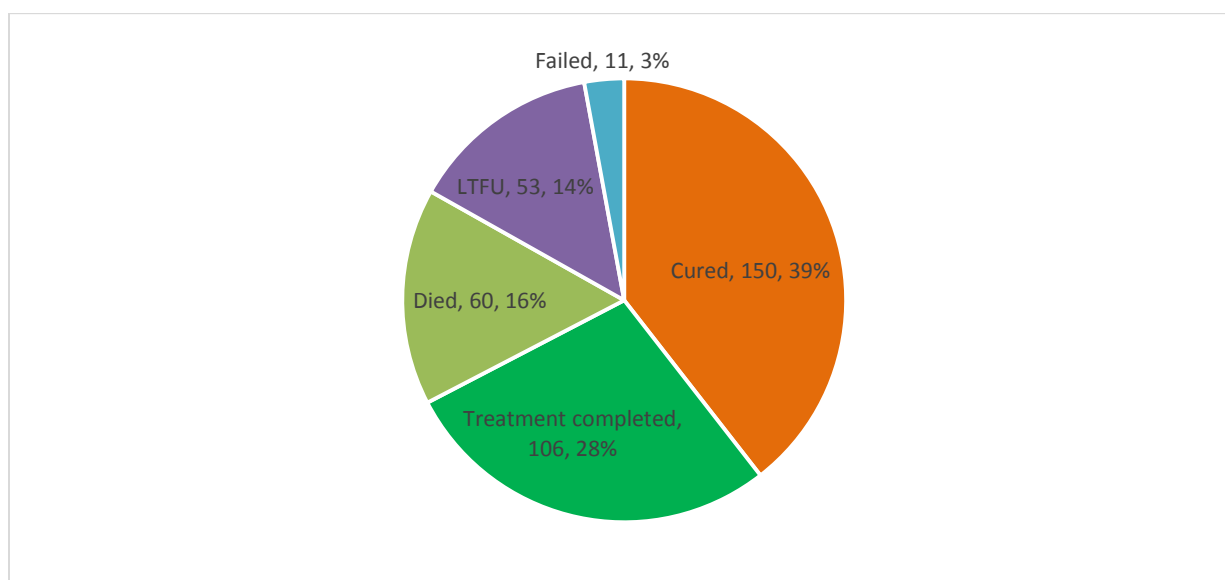


Figure 40: Treatment outcomes for MDR-TB patients, 2017 cohort, Namibia

The treatment success rate for MDR-TB in the 2017 cohort was 69%, which is less than 2016 cohort with 6%. The treatment success rate for XDR-TB was 46%, with a high death rate (36%). The reduction in treatment success rates for 2017 cohort possibly related to the retrenchment of specialised health-care workers (doctors, nurses and CHWs) due to reduction in funding, mainly from the Global Fund in early 2018.

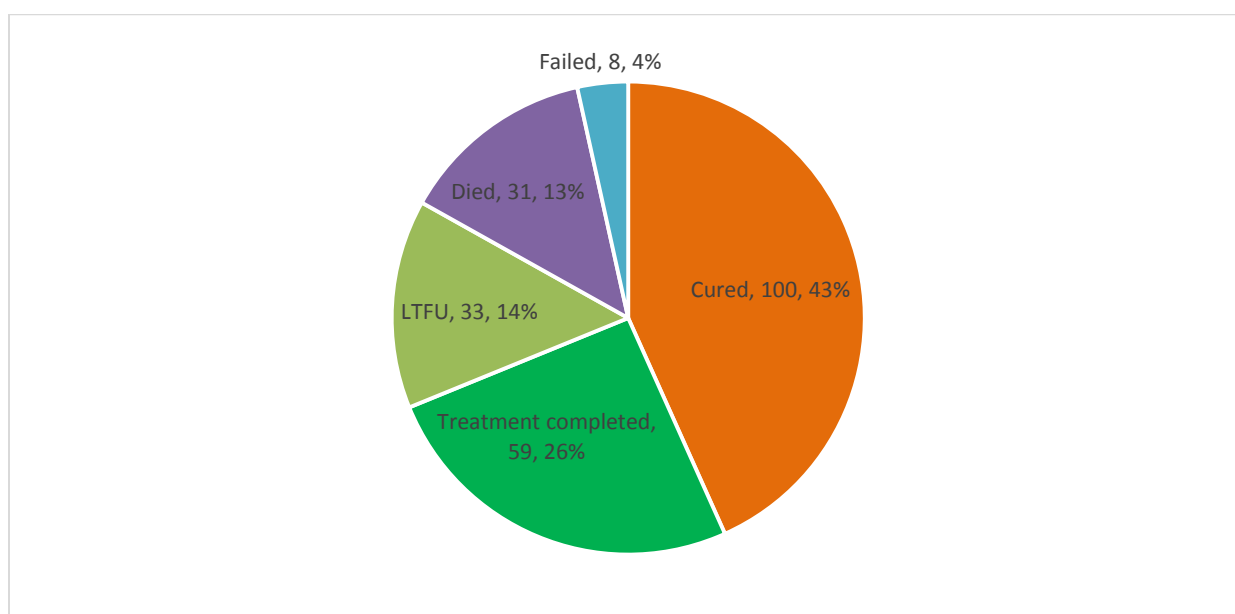


Figure 41: Treatment outcomes for MDR-TB patients, 2017 cohort

7 PHARMACEUTICAL SUPPLIES

In general, the availability of medicines is reflected by the CMS service level, which is a measure of the capability of CMS to fulfil demand from health facilities. The service level has been deteriorating over the past three financial years. However, for the period under review there was a significant improvement as reflected on the figure below.

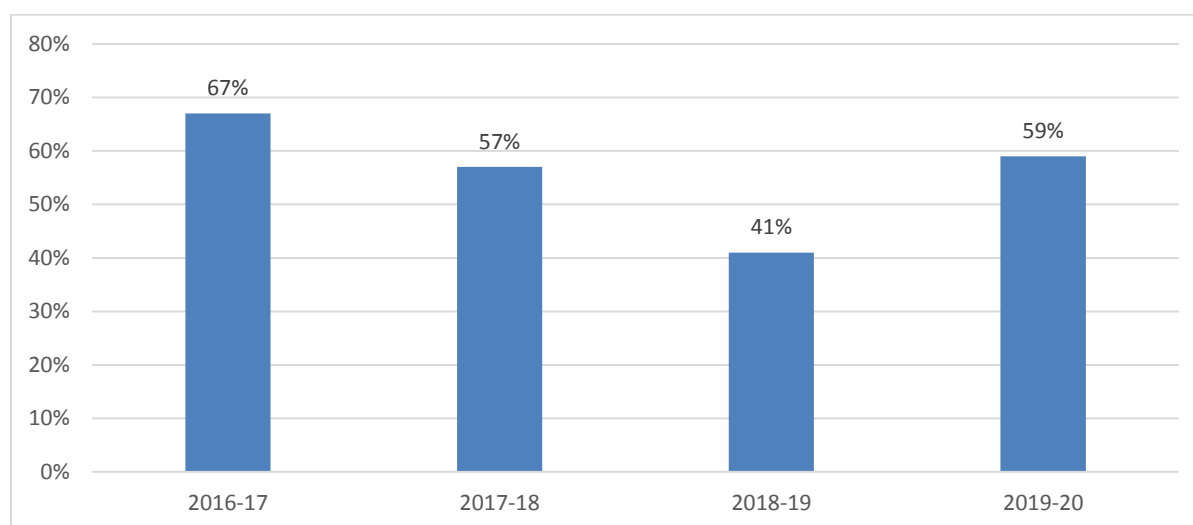


Figure 42: CMS service levels from 2016 to 2019

During the period under review, the frequency of significant stock outs was minimal. Stock-outs were reported on the following medicines:

- Š Isoniazid 300mg tablets
- Š Isoniazid 100mg tablets
- Š Ethionamide 250mg tablets

The total value of TB and Leprosy pharmaceutical products issued by CMS in 2019 was 33.6 million Namibian dollars (see annexure D).

8 PARTNERSHIPS TO END TB

8.1 Overview of partner engagement

The implementation of community-based TB care (CBTBC) activities has contributed to the improvement of key indicators such as treatment success rate and has reversed adverse outcomes such as loss to follow-up and treatment failure over the years. Community based TB care organizations, operate in different regions in Namibia. Advocacy, Communication and Social Mobilization (ACSM) activities are part of the CBTBC approach. The table below lists the partners and civil society organisations (CSOs) officially working with NTLP in 2019.

Table 4: List of partners and CSOs working with NTLP in 2019

Name of Partner	Areas of Support
WHO	All programme area for both TB and Leprosy
GFATM	Financial Support for human resources, facility renovation, community-based TB care, TB/HIV, ACSM, PMDT and programme management
KNCV Foundation	Community TB care, programme management, PMDT, TB Infection control, TB/HIV, human resources and public – private partnership
CDC	Laboratory strengthening, TB/HIV, human resources, intermittent technical support and renovation
DAPP	TB screening for ex mine workers, occupational health centre and awareness
NANASO	Community based TB care and Global Fund principal recipient
CoHeNa	Community based TB care and Global Fund Sub-recipient under NANASO
Health Poverty Action	Community based TB care
Namibia Correctional Service	TB screening, awareness and treatment services for offenders
Namibian Police Force	TB screening for the inmates and awareness
Namibia Defence Forces	TB awareness and treatment services for staff members

8.2 Community based TB care

Community TB care organisations remained crucial in providing care and support to TB patients in the community. A total 156 CHWs operated under NTLP in 2019 covering ten regions, whereas 60 operated under CoHeNa in three regions, namely Khomas, Hardap and Omaheke. In total,

5912 patients were registered under CBTBC, and 10,705 community health education sessions were conducted.

Table 5: Community engagement activities for 2019

Number of community TB health education sessions conducted (10 or more people per session)	16242	
Number of Community Health Committee / Village Health Committee/ Clinic health Committee Meetings held in 2019	485	
	DS-TB	DR-TB
Number of TB patients registered with CBTBC provider	6765	237
Number of patients who interrupted treatment or were lost to follow-up	330	34
Number of interrupters/LTFU patients traced and back on treatment	214	14

8.3 TB in the mining sector

The TB in the Mining Sector (TIMS) is a Southern African project supported through a Global Fund multi-country grant. TIMS project operates in three regions (Erongo, Oshikoto and Otjozondjupa), as well as exploring possibilities of artisanal mining activities in Hardap region (Aranos district). The three Civil Society Organisations (Catholic Aids Action (CAA), CoHena, and DAPP) supports the TIMS project in above-mentioned regions.

The project remained largely unchanged since 2017 with interventions focusing on:

- (i) TB care and prevention
- (ii) Health information systems

- (iii) Removing legal barriers to access to TB services
- (iv) Community systems strength for prevention of TB among mineworkers with their families and the communities residing in areas close to the mines.

Table 6: "Regulating" the health of the EUQØu

INDICATORS	CAA	CoHena	DAPP
Number of Clients reached through health education sessions	4018	33058	5.807
Number of Clients Screened for TB	1916	12,725	1.805
Number of Presumptive TB Cases	119	199	157
Number of Clients Diagnosed with TB	3	31	4
Number of trainings conducted	0	6	0
Number of Field Community Mobilisers	18	6	6

8.4 Occupational Health Centre for occupational lung diseases

Tamariskia Occupational Health Service Centre commenced operation since September 2017, financed by the Global Fund multi-country grant for TB in the mining sector. It is located within the premises of the Tamariskia Health Centre in Swakopmund. The centre provides, screening for occupational lung diseases (OLD) especially TB and Silicosis as well as social mobilization. Namibian Institute of Pathology (NIP) Swakopmund laboratory provides laboratory services. Currently, employed five staff at the centre. Figure below indicates numbers of clients screened at Occupational Health Centre.

8.5 Advanced Community Health Care Services Namibia (CoHeNa)

Advanced community health care service (CoHeNa) is a locally registered not-for-profit organisation with 70 staff working in Hardap, Khomas and Omaheke regions. The organisation focus on community health education, TB case finding and treatment support through Global Fund support in the country.

Table 7: CoHeNa 2019 TB data by region

INDICATORS	HARDAP	KHOMAS	OMAHEKE
Number of TB patients registered by organisation	432	1093	361
Number of DR-TB patients on treatment in the community	79	83	11
Number of field promoters in the organisation at end of reporting period	20	28	20
Number of field promoters trained	22	28	20
Number of new community members trained as to observe treatment	483	989	405
Number of defaulter/ interrupters	37	28	30
Number of defaulter/ interrupters traced who were put back on treatment	36	15	23
Number of close contacts symptom-screened for TB	2858	2690	1989
Number of TB suspects (close contacts) referred to health facilities for TB examinations	1684	783	1107
Number of TB patients with known of HIV status	95.5%	98%	100%
Number of TB patients provided with food supplements	0	0	53
Number of patients/former TB patients trained in life-skills activities	0	0	250
Number of TB awareness health education sessions events conducted	1941	3049	2033
Number of IEC materials distributed (TB booklets)	11132	8479	1456

8.6 Health Poverty Action, TB treatment adherence project

Health Poverty Action (HPA) in collaboration with the University of Namibia (UNAM) School of Public Health commenced a research project (TB REACH Wave 6 project) to explore culturally acceptable treatment adherence tools for people frequently on the move, and participants of seasonal hunting and gathering livelihoods. The project aim is to use 99DOTS to improve

treatment outcomes amongst mobile populations with drug-susceptible TB, monitoring the patients' treatment adherence.

Table 8: Performed indicator for 99DOTs by Health Poverty Action

AREAS	INDICATORS	MALE	FEMALE	TOTAL
Clinic	Number of Bac+ TB patients (new & relapsed)	13	20	33
Clinic	Number of Bac+ TB patients (new & relapsed) on treatment	13	20	33
HPA	Number of Bac+ TB patients enrolled on 99DOTS by HPA Project	6	7	13
HPA	Number of field officers in the organisation	2	0	2
HPA	Number of enrolled 99DOTS patients trained on 99DOTS	6	7	13
Clinic	Number of field officers trained	2	0	2
Clinic/HPA	Number of Health Workers/Nurses trained on 99DOTS	1	1	2
Clinic/HPA	Number of close contacts symptom-screened for TB	1811	1203	3014
Clinic/HPA	Number of TB suspects (close contacts) referred to health facilities for TB examinations	68	101	169
Clinic/HPA	Bac+ TB patients smear conversion at 2 months	7	10	17
Clinic/HPA	Bac+ patients successfully treated	16	19	35

8.7 Partnership with Private sector and Congregate settings

8.7.1 Private Sector

Namibia has a vibrant private health sector with 733 mapped facilities. The Public Health Act mandates TB case notification by all healthcare providers including those from the private sector. The MoHSS Circular 12 of 2013 provides guidance on the implementation of the National Guidelines for the Management of TB (3rd Ed) by private health care providers, including a description of their roles and obligations in managing TB patients. In Namibia private sector is accessed by a significant proportion of 19% of Namibia's population who are covered by some form

of health insurance. In 2019, 3% of notified TB cases came from private sectors. Private sector providers include private hospitals, doctors, laboratories and pharmacies.

Figure below shows TB notified cases in private sectors. Khomas region reported 102 patients followed by 21 Oshana region and 12 Oshikoto region. All regions in the country had TB cases notified by private facilities, except Zambezi and Kunene regions.

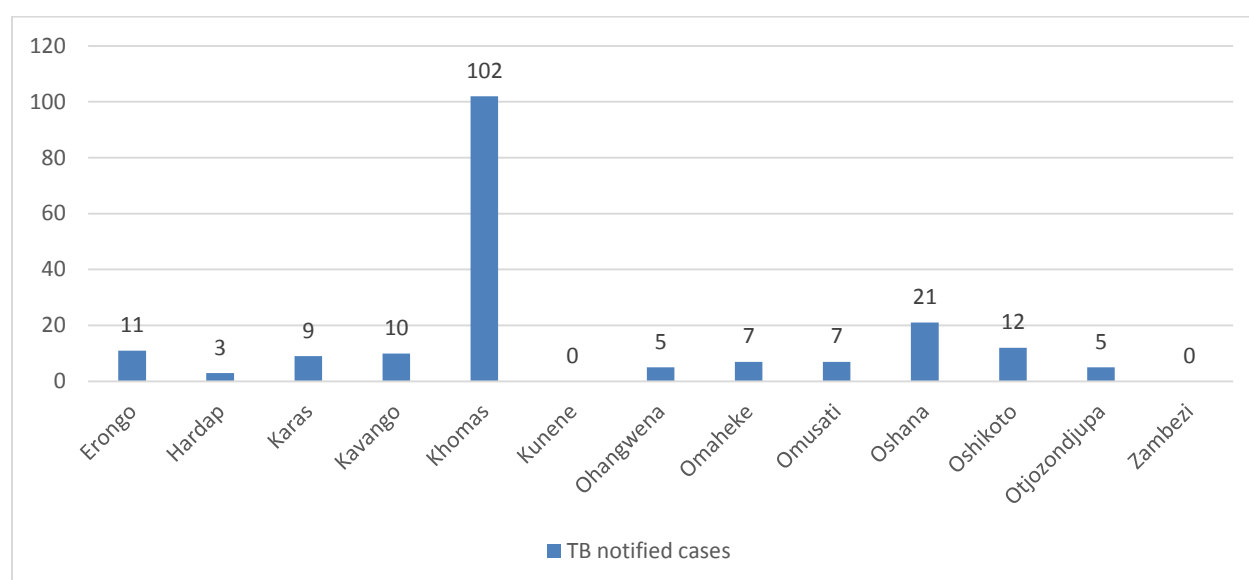


Figure 43: TB notified cases in Private Sector per region, 2019

8.7.2 Congregate settings

There is a policy in place to screen all inmates for TB, HIV and other conditions at point of admission. Every person in prison settings (inmates, health care workers and correctional services officers) are screened for TB biannually. Correctional services facilities have isolation units for TB patients. Figure below shows TB cases notified in Police Holding cells per region. Khomas

region covers 42% of cases notified in police holding cells, whereas 11 regions recorded less than five TB cases.

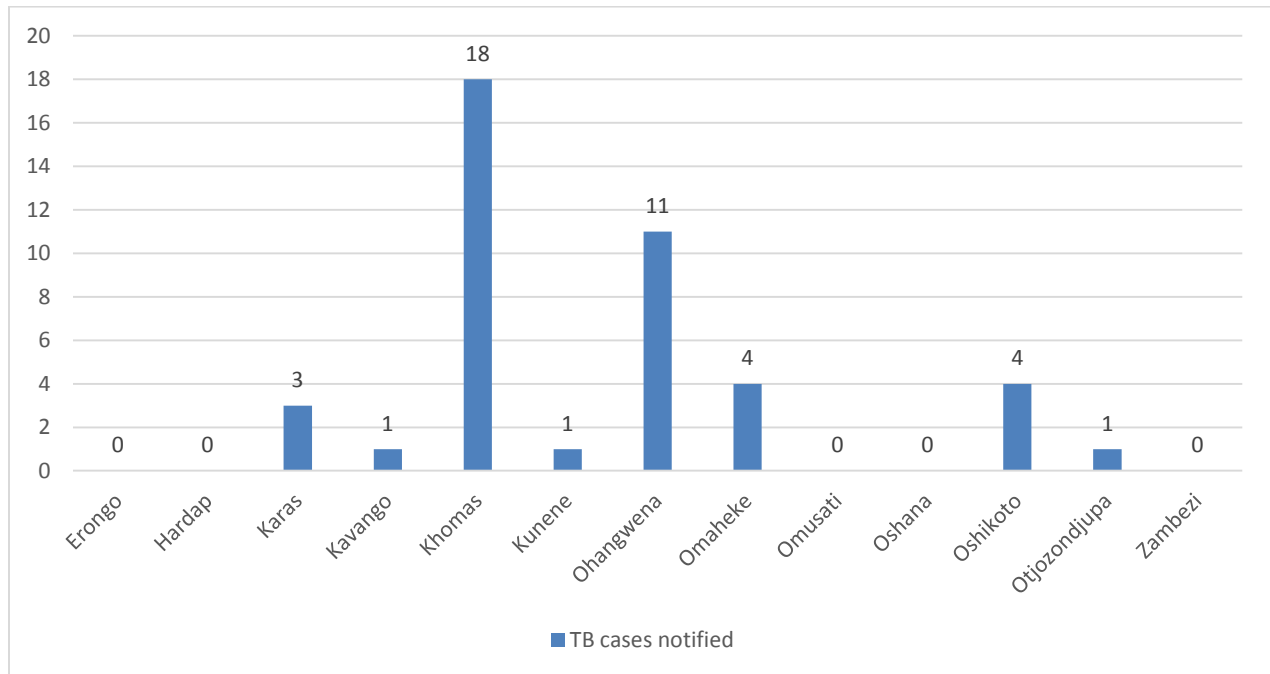


Figure 44: TB cases notified in Police Holding cells per region, 2019

reminded of the commitments made and the timely need for action in scale up, research, funding, human rights and accountability. The Ministry of Health and Social Services requested associate line ministries, communities, civil society, and private sectors to exercise the theme “It`s Time”. Commemoration of World TB Day 2019 was also an opportunity to launch the National Guidelines for the management of Tuberculosis, 4th Edition, along with the TB Disease Prevalence survey Report 2018.



Picture: Young Laina delivering her motivational Speech that touched the hearts of many

Above is a 13-year-old Laina Nuunyango, a Grade 6 learner at Iipandayaamiti Combined School, addressing her speech, on how TB continue to be among the lethal diseases in Namibia, and that we should fight it with a deadly determination.



Hon. Dienda, Chairperson of the Namibian Parliamentary Tuberculosis Caucus addressing the gathering, during the commemoration in Oshana region. She urged “it is time we all become advocates because together we will be able to achieve more and realise our dream of becoming a healthy and progressive nation”.

9.2 World Leprosy Day commemoration

Leprosy is a chronic infectious disease caused by *Mycobacterium leprae*. It usually affects the skin and peripheral nerves, but has a wide range of clinical manifestations. The disease is classified as paucibacillary or multibacillary, depending on the amount of bacteria and number of skin lesions. It is an air-borne disease and spread from person to person primarily as a nasal droplet infection. The incubation period is unusually long, generally five to seven years. It presents with pale or reddish skin patches, which are characterised by loss of (or decreased) feeling. Leprosy

can also cause weakness of the hands, feet or eyelids, and nerves to become painful resulting to disability if not treated.

World Health Organization has since 2000 encouraged countries to aim on eliminating leprosy as a public health threat. In 2019, the Ministry of Health and Social Services worked on the mass media campaign with its key stakeholder and host serial of interviews with radio, TV and newspaper. In addition, IEC materials were distributed to the regions. The programme did not host a national commemoration due to budget constrain.

10 SOCIAL SUPPORT AND REHABILITATION SERVICES

10.1 Social support

Tuberculosis (TB) treatment is inextricably involved in a host of psychological, social, and economic problems that interfere with the ability of TB clients to complete treatment. The provision of social support is an essential component in reducing clients' personal and environmental problems and thus increasing TB treatment completion rate. The delivery of social support services is necessary in any programmatic management of TB conducted in consideration of human rights, ethical standards, financial risk protection, then follows effective TB prevention and treatment. Social support similarly contributes to improving the general well-being of the patients, permitting them to access health care.

In an effort to promote treatment adherence and decrease the defaulter rate, the National Tuberculosis & Leprosy Programme (NTLP) has included Social Protection as a thematic issue in its Strategic Medium-Term Plan 2018-2022 and the latest National TB Guideline of 2016. The aim is to provide socio-economic support to TB patients. These documents support the NTLP to develop and administer a social support system that support TB patients on treatment as well as mobilising resources for this intervention.

The NTLP provides social support packages in a form of disability grants, orphans and vulnerable children's fund, nutritional food and transport enablers to TB patients as well the support of income-generating activities. As part of its efforts to address the socio-economic situation of TB patients, the NTLP will conduct a survey in 2020 to determine the catastrophic cost due to TB

among TB patients. The national TB & leprosy program monitor two main indicators on socio-economic support; the number of all TB patients with documented socio-economic assessment, and number of patients referred for economic support/grants.

The graph below shows the proportion of TB patients assessed for socioeconomic support in 2019. Khomas, Oshana and Omaheke regions conducted the lowest socio-economic assessment with 41, 49, and 52 percent respectively. Five regions (Zambezi, Otjozondjupa, Ohangwena, Kavango, and Karas) reported to have all TB patients with documented socio-economic assessment.

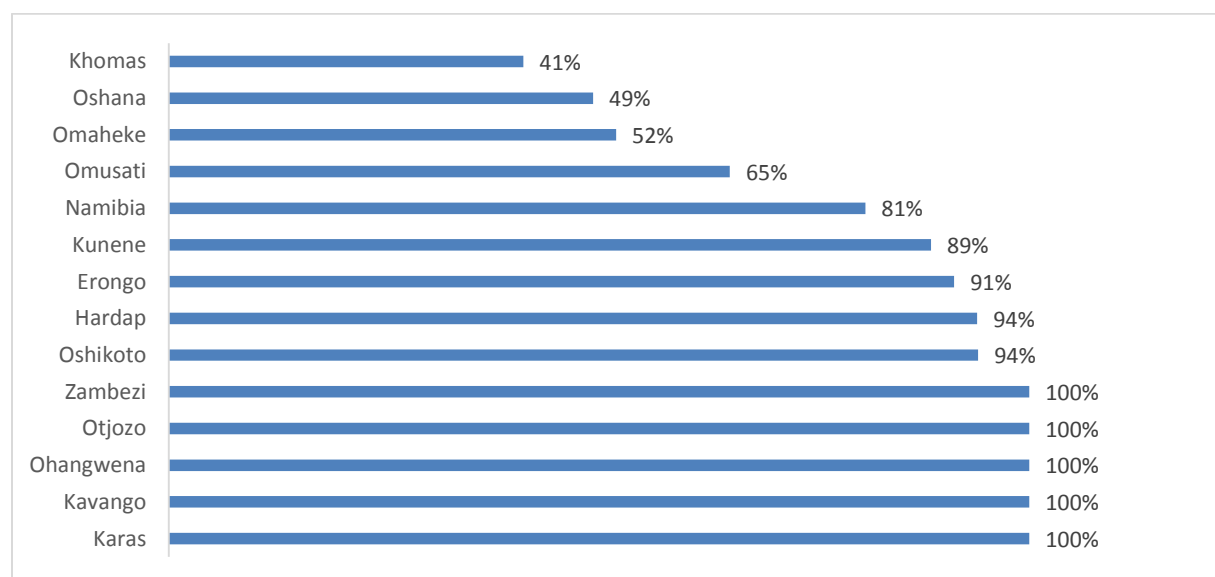


Figure 45: Percentage of all TB Patients with Documented Socio-economic Assessment in 2019

The figure below shows the proportion of TB patients referred for socio economic support after assessment in 2019. Kunene, Otjozondjupa, and Omaheke regions referred the highest percentage of TB patients assessed for socio economic support.

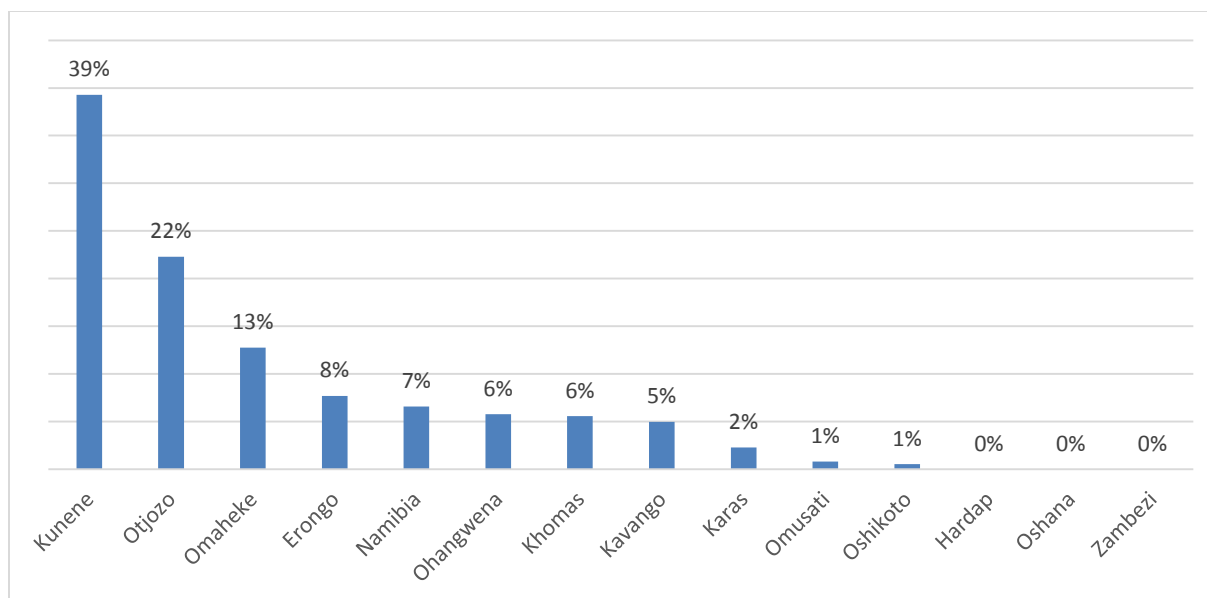


Figure 46: Percentage of patients referred for social support/grants in 2019

10.2 Rehabilitation

Rehabilitation is a set of interventions designed to optimize functioning and reduce disability to individuals with health conditions, through situation interaction. Rehabilitation can reduce the functional difficulties and improve quality of life faced by some TB patients. Professionals like occupational therapists, physiotherapists and medical rehabilitation workers provide rehabilitation. However, rehabilitation professionals are not always available and should be advocated for by regional and district staff.

The National Tuberculosis and Leprosy Programme (NTLP) have introduced screening of EPTB and DR-patients, prioritizing them for disability assessment. The screening includes inspection of pre-treatment disability, assessing walking, body movements, and observing any impairment

possibly caused by the current disease process. Alternative core activity is screening for hearing loss.

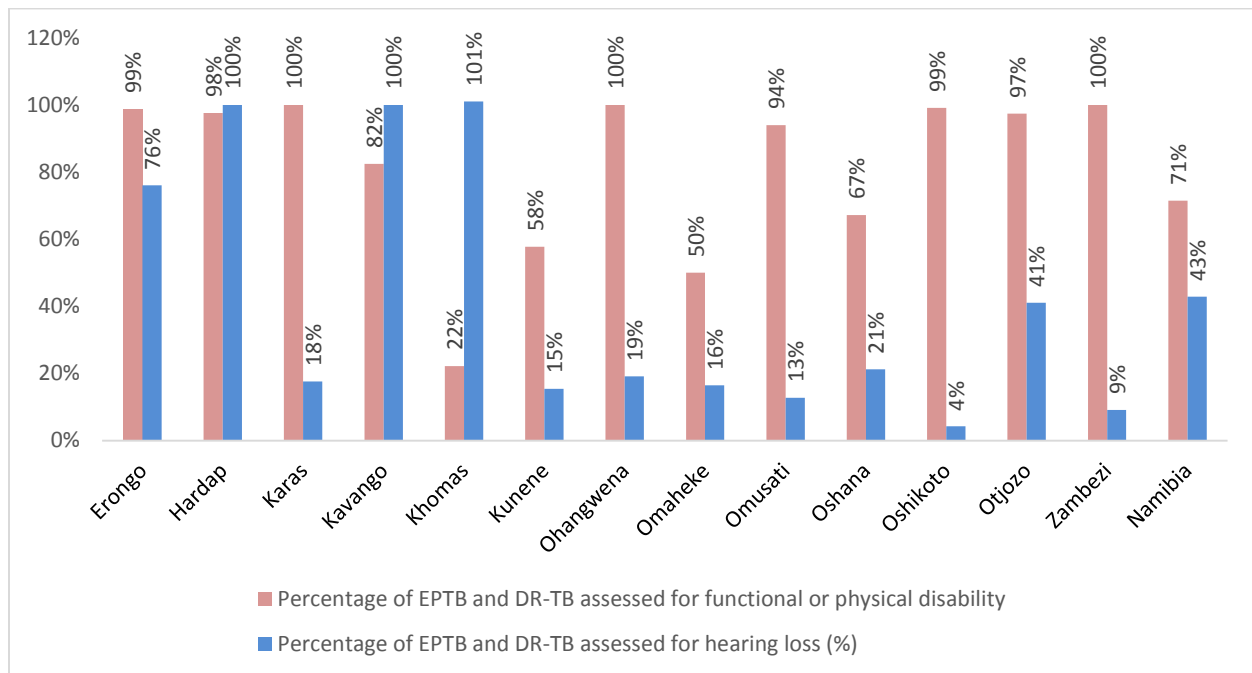


Figure 47: EPTB and DR-TB Assessed for Functional or Physical Disability and Hearing Loss in 2019

11 CAPACITY BUILDING AND SYSTEM STRENGTHENING

Capacity building for health care workers is aimed to improve service delivery for TB control, therefore budgetary provisions are made to finance trainings for health care workers. These trainings were complemented by annual supervision, and mentorship visits. Information on new guidelines is provided to the private sector and public sector, trainings were open for participants from private sector and congregate settings. NIP is encouraged to train laboratory staff, to consistently record TB Patient Identifier in the LIS (Meditech) and strengthen specimen-result linkage with periodic monitoring.

In 2019, the NTLP recently updated and launched the new National Guidelines for the Management of TB in line with WHO's recommendations for safer and more efficacious regimens for treating drug resistant TB. The TB/HIV guidelines were also refined in 2019 and trainings were conducted for 29 community health care workers and 40 district supervisors. The training include orientation for newly recruited staff as well as pre- and in- service training.

Table 9: Trainings conducted in 2019

Training conducted	Doctors	Nurses	Pharmacists	Rehab + social workers, pharmacist	Community health workers	DTLC
National TB guidelines	31	254	10	2	69	22
TB Infection control and prevention	0	34	1	0	0	0
TB/HIV	32	339	9	2	284	20
ART training for TB staff	23	108	9	0	203	5
Leprosy	4	14	2	0	69	1
Total	90	749	31	4	558	48

12 LEPROSY

12.1 Elimination status

Namibia has achieved leprosy elimination status since 2004 (less than one case per 10,000 population). Sporadic reporting of leprosy case notifications continues from across the country. The number of reported cases varies over the years (See the figure below).

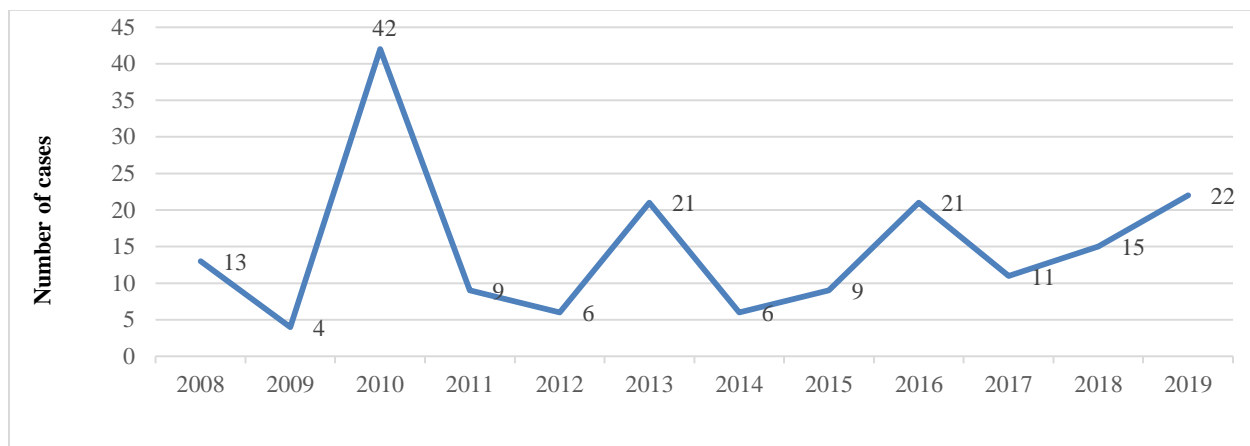


Figure 48: Trends in the Number of Notified cases of Leprosy, 2007- 2019

Over the past 12 years expanded leprosy case detection efforts increased the number of reported cases, suggesting that the current surveillance system could be under-reflecting the magnitude of the leprosy burden in the country. In 2019, leprosy cases notified Khomas (2), Oshana (1), Omusati (3) and Kavango region (16) respectively.

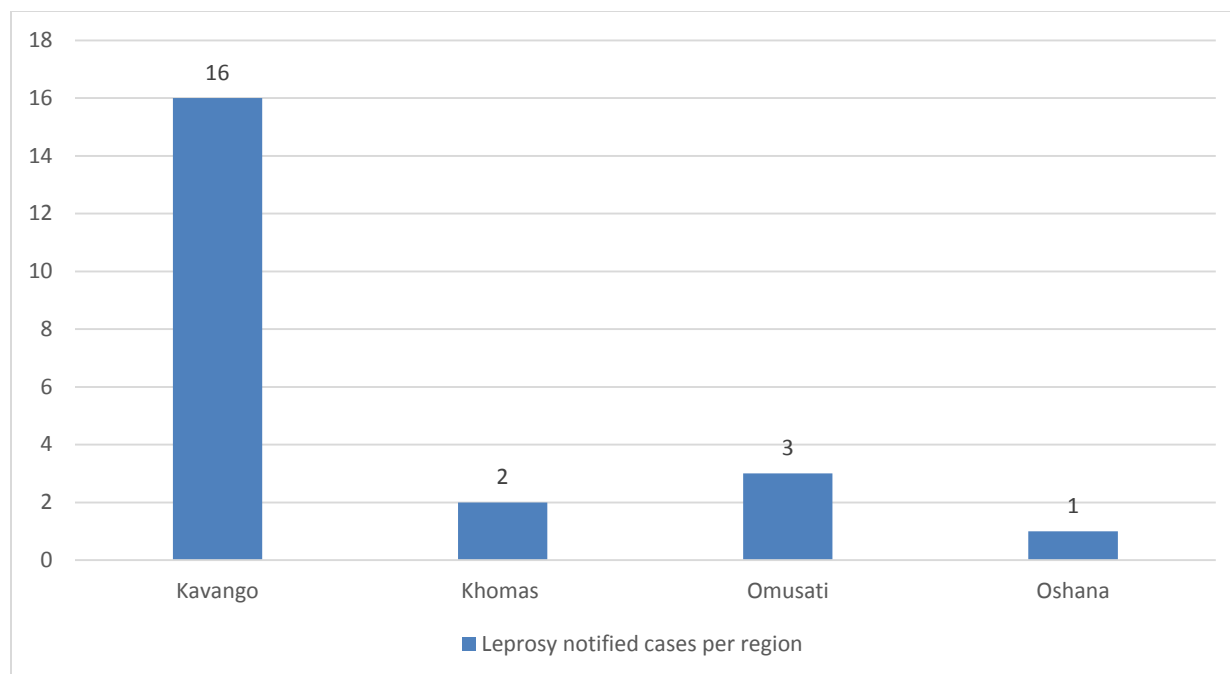


Figure 49: Notified New Leprosy cases by Region, 2019

The figure below shows the new Leprosy cases by district: Rundu (12), Nankudu (3), Nyangana (1), Windhoek (2), Outapi (1), Tsandi (1) Oshikuku (1) and Oshakati (1). All other districts reported zero leprosy cases in 2019.

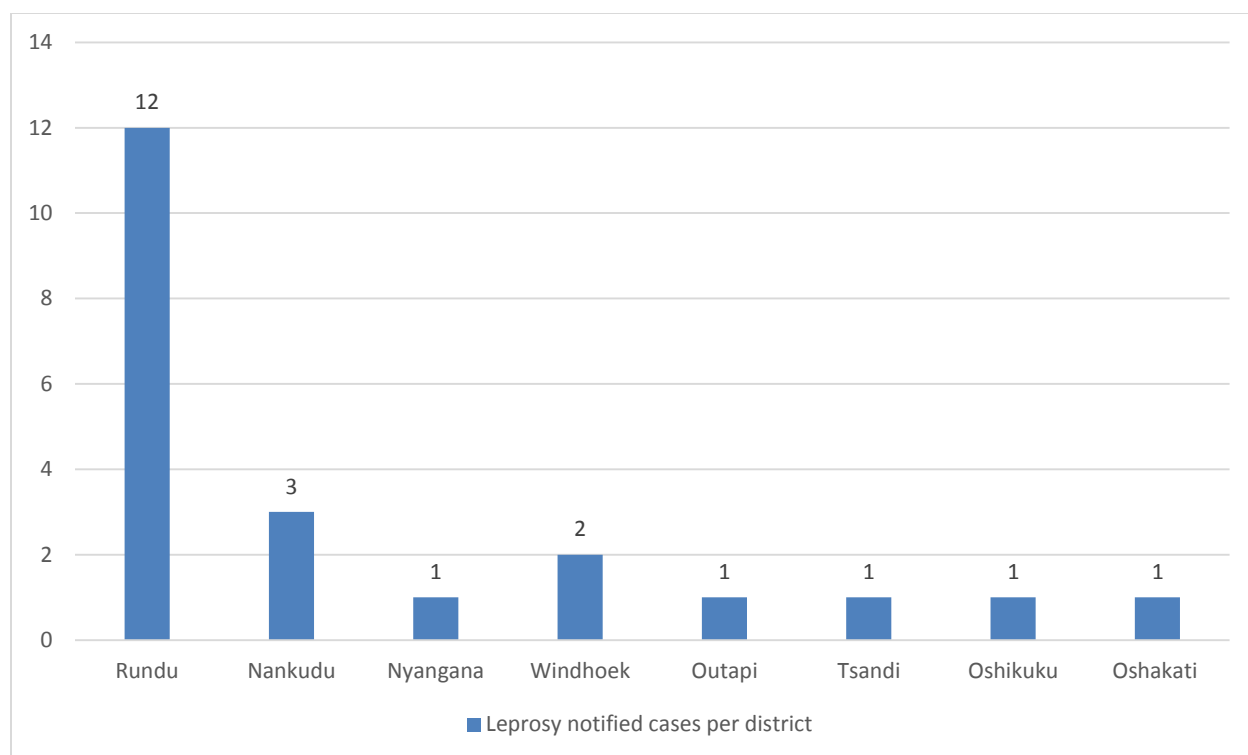


Figure 50: Leprosy Notified cases per District, 2019

12.2 Leprosy Medicines

In order to promote shorter and uniform treatment regimens, WHO recommends multidrug therapy (MDT) for both multi-bacillary (MB) and pauci-bacillary (PB) leprosy cases. The NTLP continued to receive MDTs donations via the WHO at no cost.

13 REGION SPECIFIC REPORTS

Table 10: TB burden and CNR by Region

Region	Notified cases of all forms of TB	Proportion (%) of national TB burden	Population (2019 projection)	Case notification rate (per 100,000)	Ranking by case notification rate
Khomas	1329	17%	463823	287	7
Ohangwena	917	12%	262668	349	6
Erongo	843	11%	202319	417	4
Kavango	587	8%	246811	238	10
Hardap	582	8%	91905	633	2
Oshikoto	526	7%	203522	258	9
Omusati	524	7%	254546	206	12
Omaheke	522	7%	76246	685	1
Otjozondjupa	458	6%	160120	286	8
//Karas	423	5%	90874	465	3
Oshana	405	5%	197274	205	13
Zambezi	377	5%	103970	363	5
Kunene	225	3%	104858	215	11
Namibia	7718	100%	2458936	314	

13.1 //Kharas Region

13.1.1 Case notifications

A significant Increased in New PTB B positive from 305 in 2017 to 328 in 2019. New PTB B Negative cases declined from 72 in 2017 to 49 in, is due to the improved diagnostic technology of GeneXpert. The region continues to report a high number of previously treated cases, although declined from 186 in 2018 to 162 in 2019. All forms of TB cases have been slowly declining over the past five (5) years; there is a notable increase in 2019.

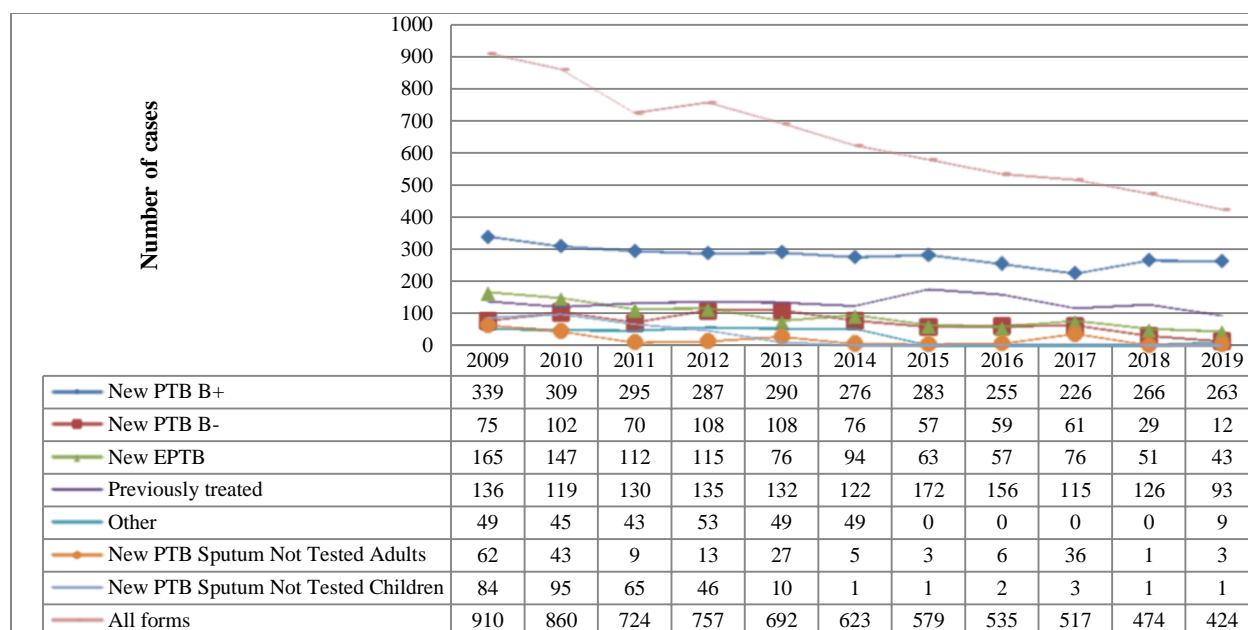


Figure 51: Trends in TB case finding for //Kharas Region, 2009-2019

13.1.2 Treatment outcomes

Table 11 below shows that all DS-TB and DR-TB cases were evaluated. The region treatment success rate (TSR) for new and relapse increased to 86% from 77% in 2017 cohort. On the contrary, the region reported a high mortality rate for all forms of TB, especially among EPTB. HIV deaths during treatment slightly declined to 14% from 16% of 2017. LTFU during treatment new/relapse cases at 2% is similar to 2017 cohort. However, it increased slightly to 3% compared to 2% in 2017 in B+ PTB cases and dropped to zero.

Table 11: Treatment outcomes //Kharas Region

	Cured		Treatment completed		Successful ly treated		Died before treatment		Died during treatment		Failed		LTFU before treatment		LTFU during treatment		Total evaluated		Not evaluated (including transfer out)		Total notified the previous year (cohort)
DS-TB																					
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n
new and relapse	309	67	88	19	397	86	2	0.4	48	10	5	1	1	0.2	8	1.7	461	100	0	0	461
new B+ PTB	233	87	10	4	243	91	1	0.4	14	5	2	0.7	0	0	7	3	267	100	0	0	267
new B- PTB			18	82	18	82	0	0	4	18	0	0	0	0	0	0	22	100	0	0	22
relapse TB	76	74	9	9	85	83	0	0	13	13	3	3	0	0	2	2	103	100	0	0	103
EPTB			50	75	50	75	0	0	17	25	0	0	0	0	0	0	67	100	0	0	67
HIV +ve	114	60	46	24	160	84	1	1	26	14	2	1	0	0	2	1	191	100	0	0	191
foreign nationals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DR-TB																					
All DR-TB	9	75	0	0	9	75	0	0	2	17	0	0	0	0	1	8	12	100	0	0	12
Interim outcomes for DR-TB 2018 cohort	4	67	0	0	4	67	0	0	2	33	0	0	0	0	0	0	6	100	0	0	6

Notable events on TB and leprosy in the region in 2019

- **Mass Screening:** The region conducted the screening in all three (3) districts, at Aussenker Grape Company. Whereby, a total of 206 clients were provided with awareness education. The activity was also carried out at Bethanie village with 588 clients screened; twenty nine (29) sputum specimens were collected in which one (1) was tested DM positive. In Keetmanshoop, 280 clients were screened at different occasions and nineteen (19) sputum specimens were taken for TB investigation in which 3 were tested positive
- **TB awareness information:** Educational session and sharing of information was provided at various areas in all districts. At Luderitz district, this activity was conducted at the Correctional Facility at which 204 inmates attended, thirty (30) were assessed for TB but none diagnosed with active TB. In the same district, educational sessions was provided at Angra Peguena Secondary School to 22 learners, 1 diagnosed with active TB and treatment

was initiated. Sixty six (66) Town Council staffs were provided with a comprehensive education on TB prevention and management in Luderitz. In the same vein, awareness education had been provided on Fridays at the local radio (||Kharas FM) in Keetmanshoop District as scheduled for 1 hour.

- Appointment of staff: One (1) TB Field Promoter (TBFP) was appointed at Aus settlement in Luderitz district and 1 nurse mentor for Karasburg District
- Training and feedback: In-service training on the revised 4th edition TB guideline was given by a DTLC to a total of 42 HCWs at various places in the district (Namdeb Private Hospital, Pescanova
- Commemoration of World TB day: The activity was conducted at Keetmanshoop Correctional Facility that was attended by 82 people. Besides, Luderitz commemorated the day by providing prevention awareness to 559 community members.

Main challenges on TB and leprosy in the region in 2019

- High mortality rate during treatment: One of the contributing factors could be poor mortality review of TB cases to ensure specific causes per cases in all three districts. Mortality review meetings could improve management of cases.
- Interruption of treatment: The region experienced a stock out of INH, RHE and Clofazimine that affects proper case management at occasional periods.
- NIP GeneXpert Reagents Stock out: A total of 186 cases were affected by the stock out of the reagents. Hence, no results for these cases.
- Non-calibrated Audiometry machine and unavailability of audiometers: This negatively interferes with proper case management of patients.

Main achievements on TB and leprosy in the region in 2019

- Hundred percent (100%) of all cases for both DS-TB and DR-TB evaluated
- The region managed to attain 91% TSR for B+ PTB cases
- There is a notable improvement of TSR for new and relapse (86%) compared to 77% in 2017 cohort
- All PLHIV newly registered with active TB were started on TB Treatment
- No leprosy cases reported in the region
- Social Stream Cross border meeting was conducted and attended on 5-6 December 2019 at Port Nolloth, South Africa

Main activities on TB and leprosy to be conducted by the region in 2020

- Mortality review meetings: The meetings will be strengthened at all districts to ensure proper case management and rule out specific causes of deaths
- Procurement and calibration of audiometers: Follow-ups to ensure procurement of audiometer for Karasburg district to avoid delays and on calibrating the audiometer of Keetmanshoop District with assistance of NTLP coordination.
- Training Program: The region is planning to provide training on TB guideline to HCWs and CHWs. The TB/HIV related trainings will be provided as well, due to high turnover in the region
- Support Supervisory Visit (SSV): SSV will be conducted to all three districts to monitor and evaluate the progress of program activities.
- Screening of Health Care Workers: Aimed to ensure wellness of all HCWs at all levels of care.

- Program Review meetings: Conduct pre-zonal and zonal meetings in all quarters for quality improvement.

13.2 Erongo Region

13.2.1 Case notification

The Figure below shows a declining trend in TB all forms cases notified in 2019. There was also a decrease in the bacteriologically confirmed cases, which may be due to the intermittent stock out of the Gene Expert reagents. In conclusion, there was a progressive downward trend in the number of sputum not tested for children.

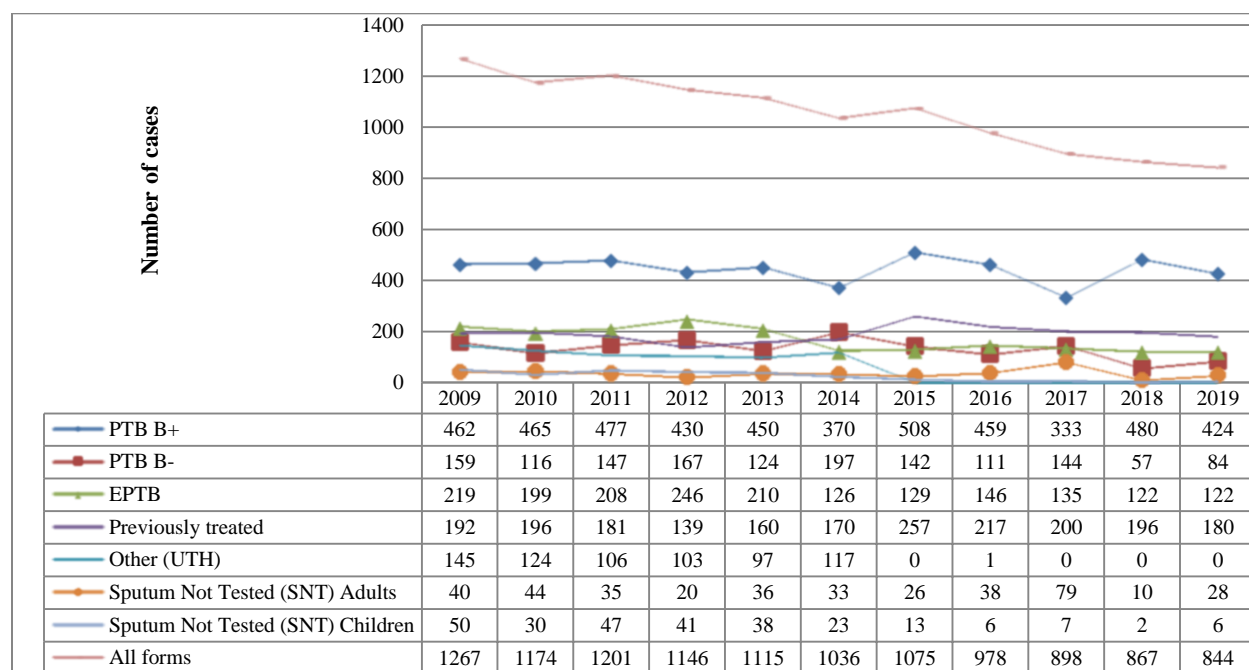


Figure 52: Trends in TB case finding for Erongo Region, 2009-2019

13.2.2 Treatment outcomes

The region reported important events, such as spot TB/HIV testing and screening, 200 employees sensitized on TB, combined health promotion conducted on TB, PrEP, PEP and HIV. Furthermore, improved number of Miners, Ex-miners and their families were screened for TB.

The table below shows that treatment success rate (TSR) among new and relapse cases was 92.3% and 96.3% among New B+ cases, four cases were not evaluated (x3 treatment stopped and x1 went back to country of origin before completing rx), death rate (4.4 %) and rx failure (0.7%). Additionally, LTFU rate was 2.1% among new and relapses. In conclusion, there was a high death rate of 5.8% of the overall evaluated patients and 20.6% lost to follow-up (LTFU).

Table 12: Treatment outcomes Erongo Region

	Cured		Treatment completed		Successfully treated		Died before treatment		Died during treatment		Failed		LTFU before treatment		LTFU during treatment		Total evaluated		Not evaluated (including transfer out)		Total notified the previous year (cohort)
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n
DS-TB																					
new and relapse	548	63.7	246	28.6	794	92.3	0	0	38	4.4	6	0.7	0	0	18	2.1	856	99.5	4	0.5	860
new B+ PTB	439	91.5	23	4.8	462	96.3	0	0	9	1.9	4	0.8	0	0	5	1	480	100	0	0	480
new B- PTB			51	89.5	51	89.5	0	0	5	8.8	0	0	0	0	0	0	55	96.5	2	3.5	57
relapse TB	109	57.7	56	29.6	165	87.3	0	0	11	5.8	2	1.1	0	0	9	4.8	187	98.9	1	1.1	189
EPTB	0	0	111	91	111	91	0	0	8	6.5	0	0	0	0	3	2.5	122	100	0	0	122
HIV +ve foreign nationals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	100	1
DR-TB																					
All DR-TB	11	32.4	10	29.4	21	61.8	0	0	4	11.7	2	5.9	0	0	7	20.6	31	100	0	0	34
Interim outcomes for DR-TB 2018 cohort	5	17.9	12	42.9	17	60.7	3	10.7	3	10.7	0	0	0	0	2	7.1	25	89.3	3(2 still on rx)	10.7	28

Notable events on TB and leprosy in the region in 2019

- The district conducted on spot TB/HIV testing and screening at Walvis Bay police, 22 police officers participated. None was diagnosed with TB.

- 200 Employees were sensitized on Tuberculosis at Walvis Bay Salt refiners. Three got tested and none had TB
- A combined health promotion was conducted on Tuberculosis, PrEP, PEP and HIV, 13 employees participated at Omaholi Solution Company
- TB awareness conducted at correctional facilities with about 26 inmates.
- WB rotary club provided soup for TB patients daily
- Increased number of Miners, Ex-miners and their families screened for TB with the assistance of the Tamariskia Occupational Health Services Centre in Swakopmund.
- 20% of DR TB patients are lost to follow up (2017 cohort)

Main challenges on TB and leprosy in the region in 2019

- Inability to conduct ECG in the districts due to shortage of ECG machines papers (old model machines)
- Inability to conduct monthly audiometric screening due to uncalibrated audio meters.
- Poor monitoring of DR TB patients due to the culture reagents stock out at NIP
- Stock out of gene expert reagents

Main achievements on TB and leprosy in the region in 2019

- Treatment Success Rate (TSR) of 92% among N+R and 96% among New B+
- 99.4% HIV testing among TB patients and 97.9% ART initiation
- Involvement of the correctional Facility staff in the TB/HIV review meeting that has led to an increased screening done in Correctional facilities

Main activities on TB and leprosy to be conducted by the region in 2020

- Calibration of the audiometers

- Conduct death audits for all TB deaths
- Acquire ECG papers

13.3 Hardap Region

13.3.1 Case notifications

The figure below shows that, there is an increase in New PTB B positive for last five years, while New PTB B Negative cases has been declining since year 2016, this is due to the improved diagnostic technology of G expert. Furthermore, the region continues to report a high number of previously treated cases.

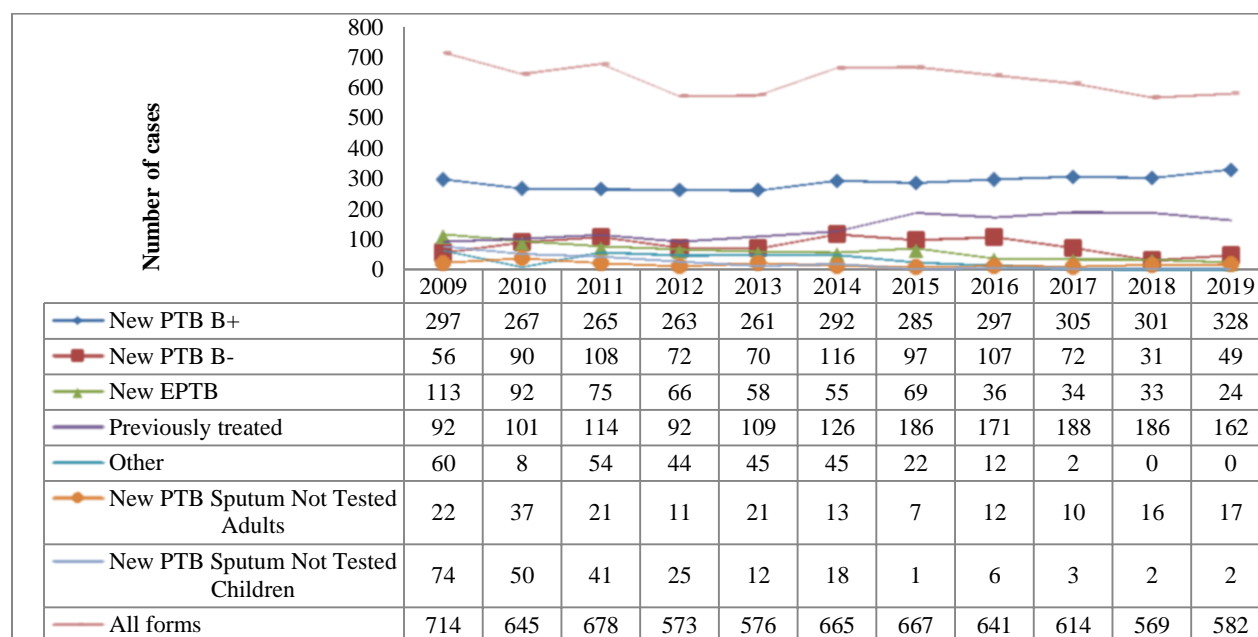


Figure 53: Trends in TB case finding for Hardap Region, 2009-2019

13.3.2 Treatment outcomes

The region observe low treatment success rate 73% for HIV Positive. New B positive PTB had the highest TSR. In conclusion, lack of CBDOT in the region contributed to the low treatment success rate and high relapse cases.

Table 13: Treatment outcomes Hardap Region

	Cured		Treatment completed		Successfully treated		Died before treatment		Died during treatment		Failed		LTFU before treatment		LTFU during treatment		Total evaluated		Not evaluated (including transfer out)		Total notified the previous year (cohort)	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
DS-TB																						
new and relapse	318	62%	103	20%	421	82%	14	3%	54	11%	15	3%	0	0%	10	2%	514	100%	0	0%	514	
new B+ PTB	228	75%	31	10%	259	85%	8	3%	19	6%	11	4%	0	0%	5	2%	302	100%	0	0%	302	
new B- PTB	0	0%	35	76%	35	76%	0	0%	10	22%	0	0%	0	0%	1	2%	46	100%	0	0%	46	
relapse TB	90	61%	22	15%	112	76%	6	4%	21	14%	4	3%	0	0%	4	3%	147	100%	0	0%	147	
EPTB	0	0%	25	83%	25	83%	0	0%	5	17%	0	0%	0	0%	0	0%	30	100%	0	0%	30	
HIV +ve	96	58%	38	21%	134	73%	4	2%	36	20%	5	3%	0	0%	4	2%	183	100%	0	0%	183	
foreign nationals	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	
DR-TB																						
All DR-TB	9	38%	5	21%	14	59%	2	8%	5	21%	1	4%	0	0%	2	8%	24	100%	0	0%	24	
Interim outcomes for DR-TB 2018 cohort	2	12%	0	0%	2	12%	2	12%	3	18%	1	6%	0	0%	2	12%	17	100%	0	0%	17	

Notable events on TB and leprosy in the region in 2019

- Soup Kitchen at Hoachanas Clinic Solitaire lodge management requested for TB services and Rapid testing, reaching 250 people
- TB campaign by COHENA community health workers reaching 1198 with 73 sessions
- TB day commemoration

Main challenges on TB and leprosy in the region in 2019

- Zero DOT points in the region, can be connected to low success rate and high relapse
- District and Regional TB reviews not conducted according to TB Guideline

Main achievements on TB and leprosy in the region in 2019

- Reduction in all forms cases of TB

Main activities on TB and leprosy to be conducted by the region in 2020

- Motivation and coordination for the establishment of the DOT points
- Strengthen District and Regional TB/HIV Review meetings
- Strengthen TB/HIV death audits
- Support Supervision to the Districts, facilities and communities

13.4 Kavango region

13.4.1 Case notifications

Figure 54 below displays the trends on TB case notifications in Kavango region. All forms TB notification reduced from 606 in 2018 to 587 in 2019. The trends in New PTB-, New EPTB, New PTB sputum Not Tested (Adults and children) declined as well. Lastly, the trend in New Bacteriologically confirmed cases remained practically constant at 327.

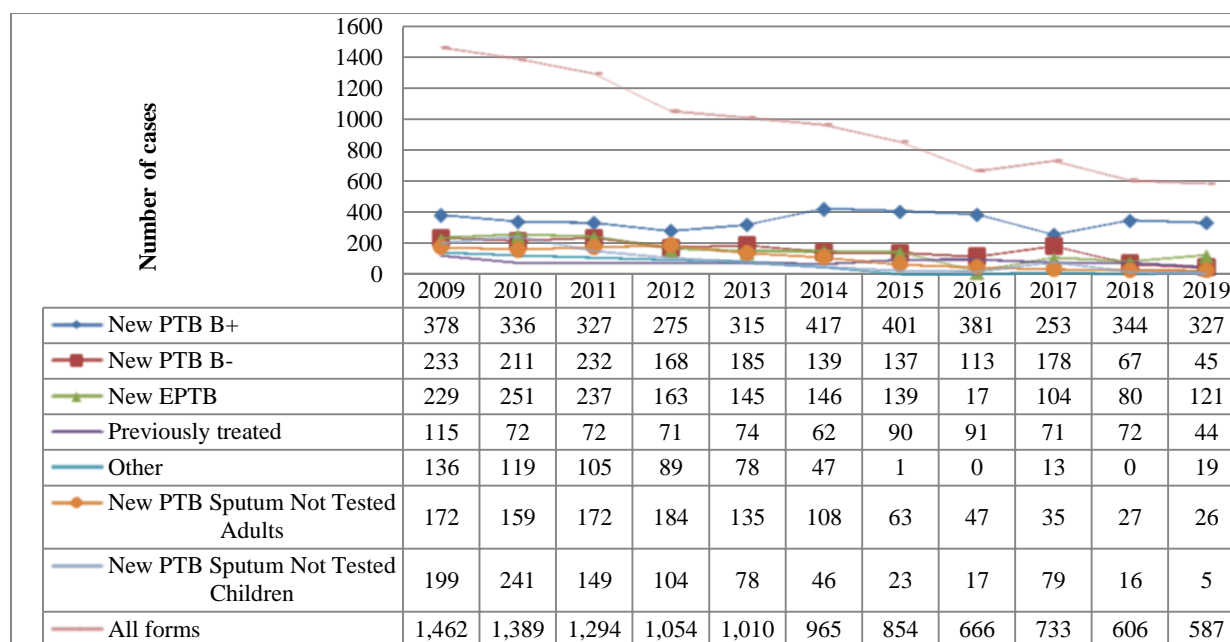


Figure 54: Trends in TB case finding for Kavango region, 2009-2019

13.4.2 Treatment outcomes

Kavango region established a radio talk show on TB/HIV and leprosy. In addition to ongoing mass TB screening in different districts, and regional cross border meeting with Angola bordering provinces (Cunene, Cuando Cubango provinces).

Table 14 below, indicates that there was an improvement on new and relapse TB treatment success rate currently at 88.5%, although was high at 7.5%. The treatment success rate of New PTB B- and B+ cases was at 80.4% and 88.4% respectively. Lastly, there was 26 patients for Interim outcomes for DR-TB 2018 cohort that were not evaluated since they are still on treatment.

Table 14: Treatment outcomes Kavango region

DS-TB																						
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	N	%	n	%	n	%	n	
new and relapse	292	49.9	226	39.6	518	88.5	2	0.3	44	7.5	10	1.7	0	0	11	1.8	585	100	0	0	585	
new B+ PTB	267	69.7	72	18.7	339	88.4	2	0.5	27	7	8	2	0	0	7	1.8	383	100	0	0	383	
new B- PTB	0	0	21	80.7	21	80.7	0	0	4	15.3	0	0	0	0	1	3.8	26	100	0	0	26	
relapse TB	25	43.8	22	38.5	47	82.4	0	0	6	10.5	2	3.5	0	0	2	3.5	57	100	0	0	57	
EPTB	0	0	77	87.5	77	87.5	0	0	2	2.5	0	0	0	0	1	1.2	80	100	0	0	80	
HIV +ve	89	43.8	80	39.4	169	83.2	0	0	27	13	3	1.4	0	0	4	1.9	203	100	0	0	203	
foreign nationals	22	53.6	14	34.1	36	87.7	0	0	3	7.3	1	2.4	0	0	1	2.4	41	100	0	0	41	
DR-TB																						
All DR-TB	25	41	24	40	49	81.6	0	0	8	13.3	1	1.6	0	0	2	3.3	60	100	0	0	60	
Interim outcomes for DR-TB 2018 cohort	7	12.2	10	17.5	17	29.7	5	8.7	6	10.5	0	0	0	0	3	5.2	31	54.3	26	45.6	57	

Notable events on TB and leprosy in the region in 2019

- Ongoing mass TB screening in different districts. Nyangana district at Ndiyona Police station screened 44 inmates screened with no positive case detected. Nankudu at Kanuni Haruwondi screened 33 with no positive case. Rundu District at Mururwani and Rundu police holding cells and no positive TB case.
- Managed to hold the regional Cross Border meeting with Angola bordering provinces (Cunene, Cuando Cubango provinces) and six regions in Namibia (Zambezi, Kavango, Ohangwena, Oshana, Omusati, Oshikoto Regions).
- Established Radio Talk shows on TB/HIV and Leprosy
- We commemorated World TB day by conducting door-to-door health education sessions on TB and managed to conduct TB screening done in the community in all districts. No TB positive case was diagnosed.

- Rundu Hospital provides soup to TB patients although not all patients benefit

Main challenges on TB and leprosy in Kavango region in 2019

- Stock outs of GeneXpert reagents
- Death audits not regularly conducted
- Low TB screening uptake among HCW
- Diabetes screening among TB patients is low
- Lack of knowledge and skills in diagnosis and management of leprosy

Main achievements on TB and leprosy in the region in 2019

- The Region has started engaging RACCOC, CACCOS in TB activities
- All HIV positive diagnosed (100%) were initiated on ART
- All eligible patients (100%) were put on CPT
- The region achieved TB Bacteriological positive treatment success rate of 88.4%.
- The region had TB DR treatment success rate of 81.6% for 2017 cohort.

Main activities on TB and leprosy to be conducted by the region in 2020

- Training on TB case management for health care workers
- Community Health Worker training on TB
- Leprosy training to the HCWs in the region
- Continue with data review meeting quarterly and strengthen district review meetings
- Orientation training on DR TB management
- Supportive supervision and mentorship
- Hold one cross border meeting between bordering regions of Namibia and Angola

- Strengthen TB active case detection

13.5 Khomas region

13.5.1 Case notifications

Khomas region reported the highest number of cases in the country. However, the overall numbers have decreased over the years. Nevertheless, the number of bacteriological confirmed cases have increased since the previous 2 years, indicating improved access to laboratory diagnosis. The number of patients with sputum not tested was low compare to the number the previous 2 years. The region has strengthened their community-based TB care component by training other cadres of community health workers on TB and that could have contributed to the improvements in notification.

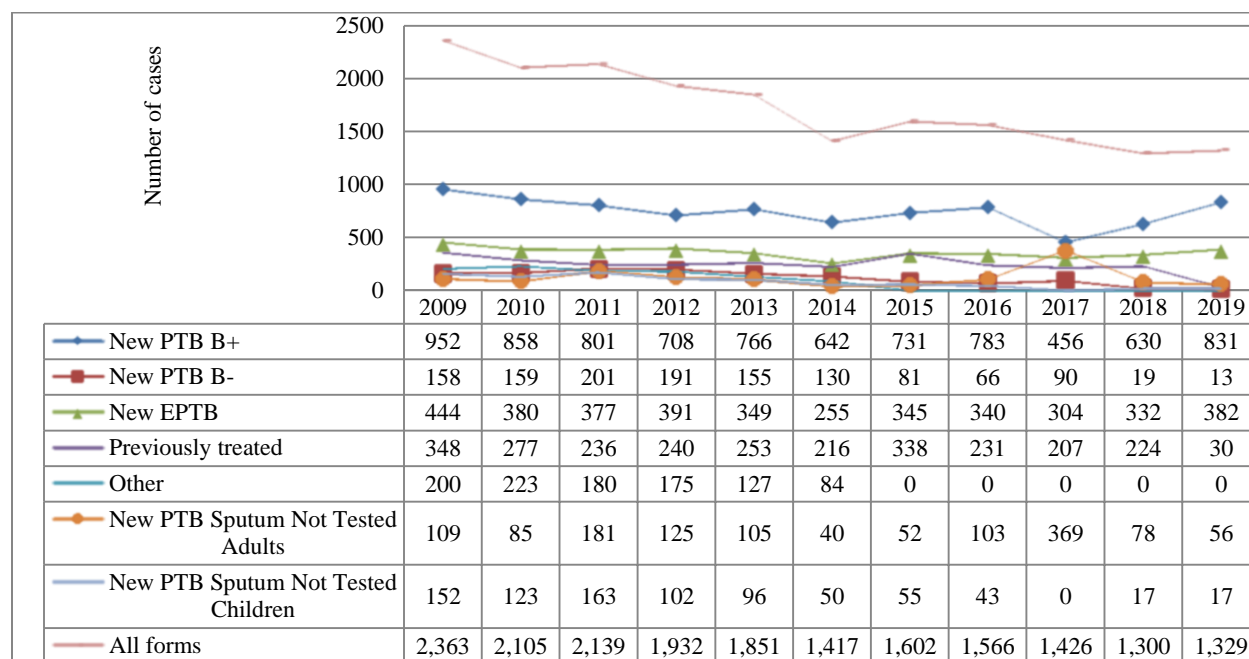


Figure 55: Trends in TB case finding for Khomas region, 2009-2019

13.5.2 Treatment outcomes

The table below shows that treatment success rates for new and relapse cases decreased to 83.7%, while the rate for DR-TB has increased to 59%. In addition, there was high death rates and LTFU among DR-TB, this display the complexity in treating DR-TB cases.

Table 15: Treatment outcomes Khomas region

	Cured		Treatment completed		Successful y treated		Died before treatment		Died during treatment		Failed		LTFU before treatment		LTFU during treatment		Total evaluated		Not evaluated (including transfer out)		Total notified the previous year (cohort)
DS-TB																					
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	N	%	n	%	n	%	n
new and relapse	589	46.5%	473	37.2%	1061	83.7%	0	0%	84	6.6%	15	1.1%	7	1%	75	6%	1243	98%	16	1.3%	1266
new B+ PTB	482	76.1%	87	13.7%	569	90%	0	0	31	4.8%	9	1.4%	6	0.9%	27	4.2%	642	101%	5	0.7%	633
new B- PTB	0	0%	58	52.2%	58	52.2%	0	0%	14	12.6%	0	0%	0	0%	10	9%	82	73.8%	3	2.7%	111
relapse TB	107	57.2%	52	27.8%	159	85%	0	0%	11	5.8%	6	3.2%	0	0%	13	6.9%	189	101%	1	0.5%	187
EPTB	0	0%	276	82%	276	82%	0	0%	28	8.3%	0	0%	1	0.2%	25	7.4%	330	98.5%	5	1.5%	335
HIV +ve	199	41%	193	39.7%	392	80.7%	0	0	51	10.4%	8	1.6%	0	0%	41	8.4%	492	101%	9	1.8%	486
foreign nationals	5	28%	8	44.4%	13	72.4%	0	0%	0	0%	1	5.5%	0	0%	1	5.5%	15	83.3%	3	17%	18
DR-TB																					
All DR-TB	10	15%	30	44.1%	40	59%	0	0%	12	17.6%	0	0%	4	5.8%	9	13.3%	66	97%	2 (on rx 1)	2.9%	68
Interim outcomes for DR-TB 2018 cohort	3	5.3%	10	17.8%	13	23%	1	1.8%	11	19.6%	0	0%	4	7.1%	4	7.1%	51	91%	5 (on rx 18)	8.9%	56

Notable events on TB and leprosy in the region in 2019

- Commemoration of the World TB day at Green Leaves Primary School (1,600 learners reached).

- Mass TB screening conducted in Police holding cells (279 trial awaiting persons reached), four diagnosed with TB and initiated on TB Rx.
- Seven schools were visited to create TB awareness, Community Health Care Workers reaching 2395 learners
- 3 doctors and 9 nurses trained on TB Lam test
- TB Lam Training conducted in the region by NTLP staff national level for piloting purposes

Main challenges on TB and leprosy in the region in 2019

- High number of LTFU, death rate and patients not evaluated/transfer out pull down TSR and possible create man made DR-TB
- Low number of HCWs screened for TB
- Low number of TB screening among trial awaiting persons in Police holding cells
- No trainings conducted on TB guidelines to empower HCWs may lead to TB patient mismanagement
- Stock outs of both TB medicine and influence TB patient management negatively

Main achievements on TB and leprosy in the region in 2019

- Region obtained 90% TSR among B+ TB cases
- Region Conducted All 4 TB regional review meeting and attended all 4 zonal meeting
- Improvement on TB data cleaning
- Good collaboration with CoHeNa, WcF and MoD during TB regional review meeting continued

Main activities on TB and leprosy to be conducted by the region in 2020

- TB guideline training for HCWs
- TB screening of HCWs at Intermediate Hospital Katutura and Windhoek Central Hospital
- TB screening in Police holding cells on Trial awaiting persons
- Conduct Regional TB reviews and Zonal meeting
- Conduct death audit of patients who died on TB Rx
- Commemoration of WTBD

13.6 Kunene region

13.6.1 Case notification

Kunene region reported low caseloads over the past 11 years compared to the other regions. However, a significant drop has been reported in relation to the previous reporting period. Lastly, comparing the current reporting period with the previous year, a little difference reported for TB cases all forms respectively.

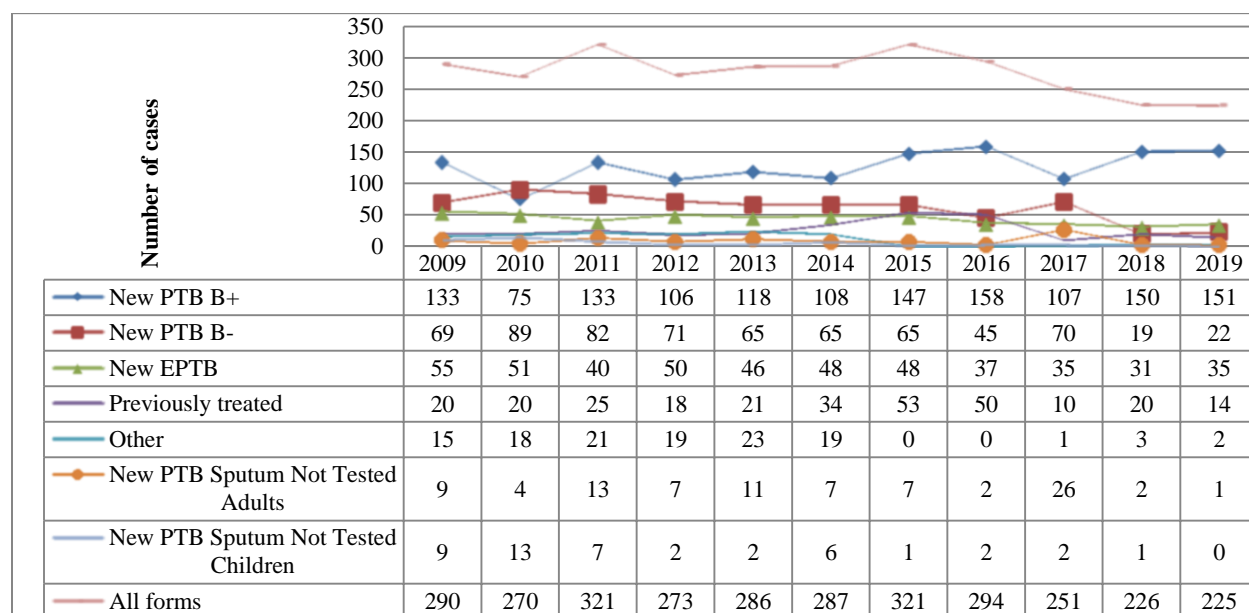


Figure 56: Trends in TB case finding for Kunene region, 2009-2019

13.6.2 Treatment outcomes

The region reported exceptionally high treatment success rate of 90% among the bacteriologically positive TB patients, but with a lower rate of 75.4% among the HIV +ve cases. The proportion of patients who died (among all categories) while on treatment varies between 4% and 21% with the exception of All DR-TB patients which was 1%. The region will conduct death audits among all TB patients to determine the primary cause of death since these categories have high death rates.

Table 16: Treatment outcomes Kunene region

	Cured		Treatment completed		Successfully treated		Died before treatment		Died during treatment		Failed		LTFU before treatment		LTFU during treatment		Total evaluated		Not evaluated (including transfer out)		Total notified the previous year (cohort)
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	N	%	n	%	n	%	n
DS-TB																					
new and relapse	135	59	64	28	198	87	0	0	21	9.3	1	0.4	3	1.3	4	2	227	100	0	0	227
new B+ PTB	124	81	14	9	138	90	0	0	7	5	1	1	3	2	4	2	153	100	0	0	153
new B- PTB	0	0	16	72.7	16	72.7	0	0	6	27.3	0	0	0	0	0	0	22	100	0	0	22
relapse TB	8	40	8	40	16	80	0	0	4	20	0	0	0	0	0	0	20	100	0	0	20
EPTB	0	0	27	87	27	87	0	0	4	13	0	0	0	0	0	0	31	100	0	0	31
HIV +ve	28	40.6	24	34.8	52	75.4	0	0	14	20.4	1	1.4	1	1.4	1	1.4	64	100	0	0	69
foreign nationals	8	89	0	0	0	0	0	0	0	0	0	0	0	0	1	11	9	100	0	0	9
DR-TB																					
All DR-TB	5	50	0	0	5	50	1	10	1	10	1	10	0	0	1	10	9	90	1	10	10
Interim outcomes for DR-TB 2018 cohort	1	25	0	0	1	25	0	0	0	0	0	0	0	0	0	0	4	100	3	75	4

Notable events on TB and leprosy in the region in 2019

- 90% Treatment Success rate among PTB + cases
- 20% death rate among all bacteriological positive TB cases.
- 100% HIV testing and ART initiation rate
- 16% of new TB cases are EPTB

- 100% of TB contacts screening

Main challenges on TB and leprosy in the region in 2019

- Only 66 % of the facilities have individual revised infection control plans.
- High percentage of death rate (20%) among PTB patients on treatment (instead of <5%)
- Reagents out of stock

Main achievements on TB and leprosy in the region in 2019

- List and comment (about 5 lines)
- TB screening successfully done on 22 people during Opuwo trade fair
- 93% of staff screen for TB
- Commemorate World AIDS day with the financial support of regional council on the 18 December 2019
- Spar Opuwo started sponsoring the patients (TB, malnutrition and HIV cases) with kitchen soup as from the 6th of May 2019 up to date, and 43 patients are benefiting.
- TB focal person at Khorixas and Opuwo police holding cell assigned.

Main activities on TB and leprosy to be conducted by the region in 2020

- World TB Commemoration
- Training of Health care workers on TB guideline
- Conduct Regional and Zonal TB review meeting
- Advocate and conduct staff TB screening
- Screening of inmates
- Revise the Infection control plans

13.7 Ohangwena region

13.7.1 Case notifications

The region consistently contributing high caseload to the national burden, and rated second highest following Khomas. The figure below shows that, there is a decline in all forms of TB cases by 15%. There is also a decline in new PTB B+ cases and previously treated cases from 578 to 500 and 263 to 96. On the other hand, there is some case increase on new PTB- and on new EPTB case.

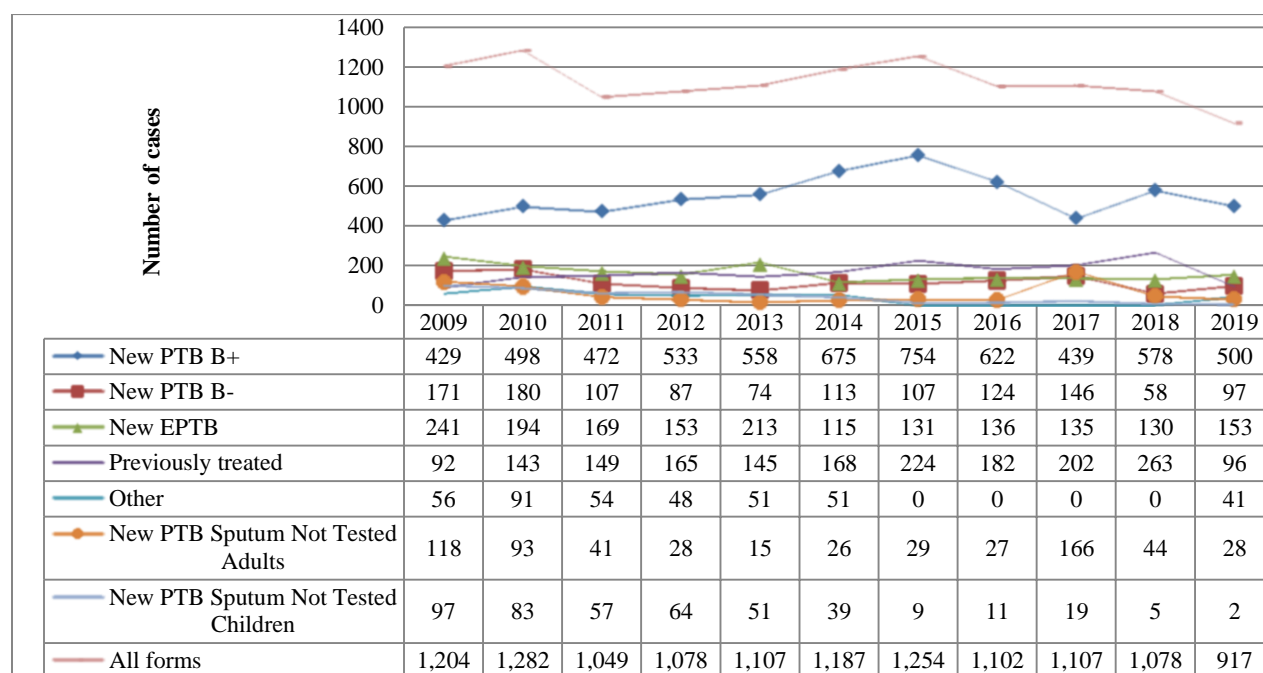


Figure 57: Trends in TB case finding for Ohangwena region, 2009-2019

13.7.2 Treatment outcomes

The region faced challenges with Angolan TB patients' tracing and lost to follow up for Angolan TB patients, due to cross border residents, distances and networks. The table below shows that there was decrease in TSR for New and Relapse TB cases from 80% in 2018 to 77% in 2019. The region reported high number of death cases 52 (5.2%), LTFU 134 cases (13.4%), and Treatment failure of 35 cases (4%).

Table 17: Treatment outcomes Ohangwena region

	Cured		Treatment completed		Successful ly treated		Died before treatment		Died during treatment		Failed		LTFU before treatme nt		LTFU during treatment		Total evaluated		Not evaluate d (includin g transfer out)		Total notified the previ ous year (coh ort)	
DS-TB																						
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	N	%	n	%	n	%	n	
new and relapse	447	45	323	32	770	77	3	0.3	52	5.2	35	4	0	0	134	13.4	995	100	0	0	995	
new B+ PTB	371	64	72	13	443	77	2	0.3	22	4	31	5	0	0	78	14	576	100	0	0	576	
new B- PTB	0	0	73	75	73	75	0	0	12	12.37	0	0	0	0	12	12.37	97	100	0	0	97	
relapse TB	76	43	68	38	144	81	1	1	8	4	4	2	0	0	21	12	178	100	0	0	178	
EPTB	0	0	103	77	103	77	1	1	7	5	0	0	0	0	23	17	134	100	0	0	134	
HIV +ve	145	42	111	32	256	75	1	0	23	7	9	3	1	0	52	15	342	100	0	0	342	
foreign nationals	203	39	152	29	355	68	0	0	12	2	20	4	0	0	139	26	526	100	0	0	526	
DR-TB																						
All DR-TB	15	32	6	12	21	43	0	0	10	20	2	4	0	0	16	33	49	100	0	0	49	
Interim outcomes for DR-TB 2018 cohort	4	9	7	16	11	24	0	0	4	9	2	4	0	0	17	38	45	100	0	0	45	

Notable events on TB and leprosy in the region in 2019

- Commemoration of World TB day
- TB/HIV Screening conducted at all five police-holding cell in the region.
- Three school health sessions conducted, 365 learners attended.

- The region's CHPO, TBHIV Doctor, DTLC and ART nurse attended a revised TB guideline training in Windhoek

Main challenges on TB and leprosy in the region in 2019

- High number of LTFU
- High number of death cases
- High number of failures
- Tracing of Angolan patients very compromising and difficulty.

Main achievements on TB and leprosy in the region in 2019

- The region managed to treat successfully 770 New and Relapse TB patients
- The region also managed to treat successfully 21 out of 43 DR TB cases
- Conducted community sensitization, awareness and TB screening in many communities, villages, police holding cells and schools.
- Traced and followed up most of the close contact of Smear Positive and DR TB Patients for screening and provision of health education.
- Attempt to trace all interrupters and defaulters. Most of them returned on TB treatment though, some still not in good health.

Main activities on TB and leprosy to be conducted by the region in 2020

- Commemoration of World TB day
- Conduct TB screening for HCWS in all district.
- Conduct TB/HIV screening in all Police Holding Cells and in the targeted communities
- Conduct contact tracing for all Bacteriological positive cases and DR TB cases.

13.8 Omaheke region

13.8.1 Case notifications

The figure below shows that 522 cases were reported, a slight decline from the 596 of the case reported in 2018. The number of New PTB, New EPTB and previously treated has decline. The new PTB smear negative increase to 0.5% to 16%

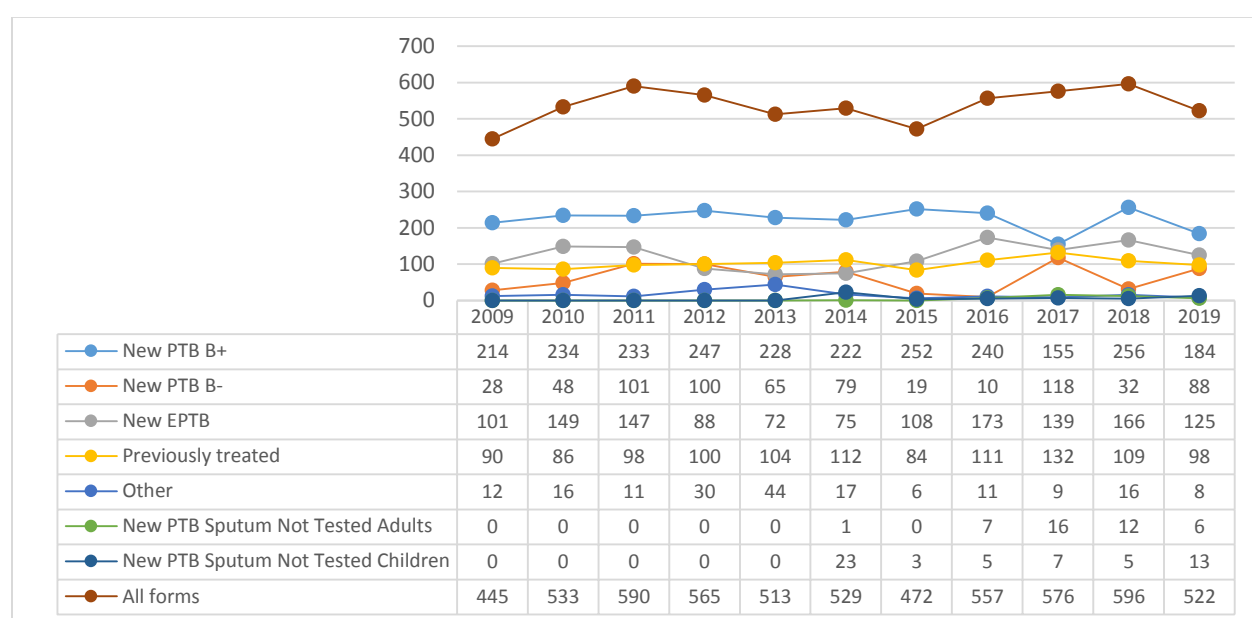


Figure 58: Trends in TB case finding for Omaheke region, 2009-2019

13.8.2 Treatment outcomes

The region maintained a treatment success rate above the national target of 90%, with that for the extra pulmonary TB patients being remarkably high at 96.2%. The success rate for new and relapse patients was 94.1%. In contrast, there was a high number of death rate on HIV +ve and relapse TB cases.

Table 18: Treatment outcomes Omaheke region

DS-TB																						
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	N	%	n	%	n	%	n	
new and relapse	306	52.8 %	239	41.3 %	545	94.1 %	1	0.2%	29	5%	0	0	0	0	2	0.3 %	577	99.7 %	2	0.3 %	579	
new B+ PTB	236	91.5 %	4	1.6 %	240	93 %	1	0.4%	15	5.8%	0	0	0	0	2	0.8 %	258	100 %	0	0	258	
new B- PTB	0	0	45	95.7 %	45	95.7 %	0	0	2	4.3%	0	0	0	0	0	0	47	100 %	0	0	47	
relapse TB	70	64.2 %	30	27.5 %	100	91.7 %	0	0	7	6.4%	0	0	0	0	0	0	107	98.2 %	2	1.8 %	109	
EPTB	0	0	176	96.2 %	176	96.2 %	0	0	7	3.8%	0	0	0	0	0	0	183	100 %	0	0	183	
HIV +ve	65	51.2 %	49	38.6 %	114	89 %	0	0	11	8.7%	0	0	0	0	1	0.8 %	126	99.2 %	1	0.8 %	127	
foreign nationals	00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DR-TB																						
All DR-TB	3	42.9 %	3	42.9 %	6	85.7 %	0	0	1	14.3 %	0	0	0	0	0	0	7	100 %	0	0	7	
Interim outcomes for DR-TB 2018 cohort	8	66.7 %	0	0	8	66.7 %	0	0	1	8.3%	0	0	0	0	1	8.3 %	10	83.3 %	2	16.7 %	12	

Notable events on TB and leprosy in the region in 2019

- Conducted the Clinic Health Committee competition for the best-managed clinic in TB management.
- The region is busy constructing the old hospital complex to be used as hospital for DR-TB cases.

Main challenges on TB and leprosy in the region in 2019

- Broken/out of stock reagents for Gene-Xpert machine and validation of the machine
- Out of stock of some of the TB treatment medicines (continuation phase)
- Lost to follow up of TB/DR patients while in treatment

Main achievements on TB and leprosy in the region in 2019

- Achieve treatment success rate of 94.1% on all forms of TB cases and 93.4% among new bacteriologically confirmed cases
- Conducted TB screening among health care workers (98% non-clinical) in the region without any confirmed TB cases
- Visited police holding cells for health education , screening whereby four were confirmed as TB cases

Main activities on TB and leprosy to be conducted by the region in 2020

- Training of health care on the New TB guideline as from April onwards x3
- Training of health care workers on Infection Control guideline x3
- Attend and host TB zonal meetings in the region and outside x4
- Commemoration of WTB in March (if budget allows from Operational/Developmental)
- Commemoration of TB week in October
- Screening of health care workers in the region
- Visiting of police holding cells in the region
- Visiting of schools for health education and screening

13.9 Omusati region

13.9.1 Case notification

The figure below shows the number of all forms of TB patients has showed a downward trend in the last 7 years in Omusati region. However, number of previously treated patients, EPTB and PTB B- has increased compared to the previous year.

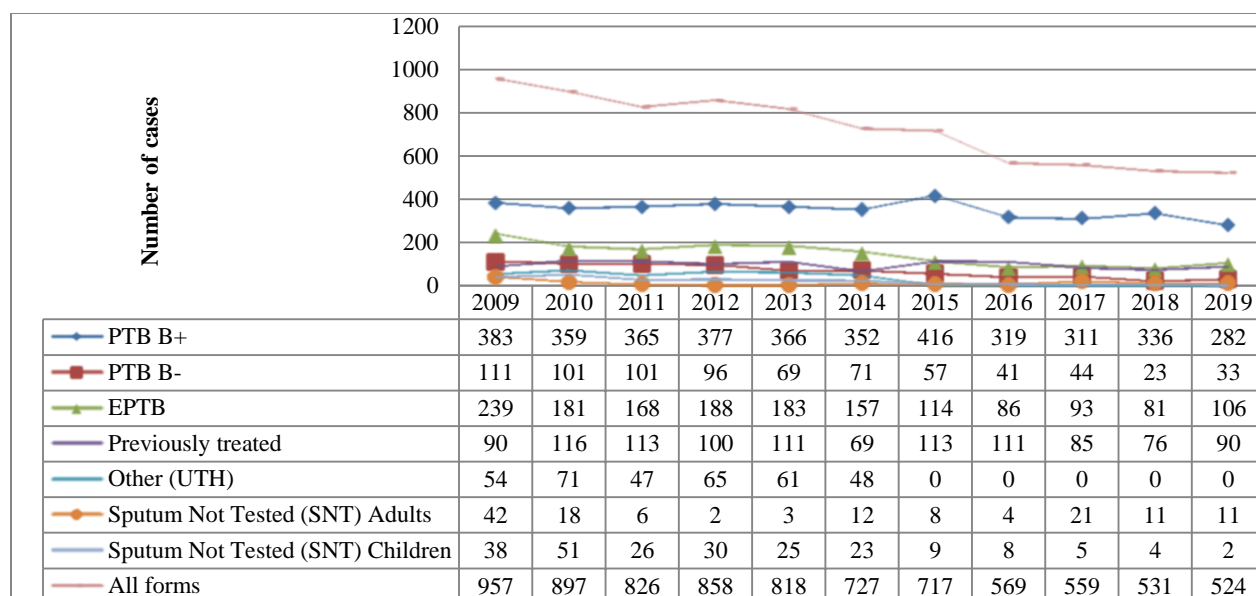


Figure 59: Trends in TB case finding for Omusati region, 2009-2019

13.9.2 Treatment outcomes

The table below shows that Omusati region reported 81.9% treatment success rate among the bacteriologically positive TB patients, which was less than 86% from the previous year. Then again, continue to struggle with achieving 90% TSR due to high death rate of 7.1% and lost to follow up rate of 6.2%, region encounters cross border challenges. Furthermore, the treatment success rate of DR-TB patients is satisfactory (70%) even though the death rate is relatively high at 15%.

Table 19: Treatment outcomes Omusati region

	Cured		Treatment completed		Successfully treated		Died before treatment		Died during treatment		Failed		LTFU before treatment		LTFU during treatment		Total evaluated		Not evaluated (including transfer out)		Total notified
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	N	%	n	%	n	%	n
DS-TB																					
new and relapse	261	50.6	161	31.3	422	81.9	2	0.4	37	7.1	16	3.1	6	1.1	32	6.2	515	100	0	0%	515
new B+ PTB	225	67.2	48	14.3	273	81.5	1	0.6	20	5.9	10	3	6	1.7	24	7.2	335	100	0	0%	335
new B- PTB	-	-	18	81.8	18	81.8	0	0	4	18.2	0	0	0	0	0	0	22	100	0	0%	22
relapse TB	36	58	14	22.6	50	80.6	0	0	4	6.5	6	9.7	0	0	2	3.2	62	100	0	0%	62
EPTB	-	-	73	82.9	73	82.9	0	0	10	11.3	0	0	0	0	5	5.6	88	100	0	0%	88
HIV +ve	70	45.4	53	34.4	123	79.8	2	1.2	18	11.6	6	3.8	0	0	5	3.2	154	100	0	0%	154
foreign nationals	57	47.8	26	21.8	83	69.7	0	0	6	5	3	2.5	1	0.8	26	21.8	119	100	0	0%	119
DR-TB																					
All DR-TB	14	56	5	20	19	76	0	0	4	16	1	4	0	0	1	4	25	100	0	0%	25
Interim outcomes for DR-TB 2018 cohort	4	17.3	3	13	7	31.4	1	4.3	5	21.7	2	8.6	0	0	1	4.3	23	100	7	31.4	23

Notable events on TB and leprosy in the region in 2019

- TB health information given through the radio talk show
- Establishment of a new dot point at Namibia-Angola boarder post
- 42 staff members screened at Okahao town council, 11 submitted sputum, no positive
- 20 people screened in Oshipe festival 5 submitted sputum, no positive case notified
- 659 learners given health education 7 gave sputum no positive case notified

Main challenges on TB and leprosy in the region in 2019

- High death rate due comorbidity
- Possible Missed opportunity for drug resistance cases due to lack of reagent to do the GeneXpert to all TB suspected patients
- Shortage of MDR medicine e.g. Linezolid, Delamanid & bedaquiline
- High burden of lost to follow up among the foreign National

- Few nurses trained in TB case management

Main achievements on TB and leprosy in the region in 2019

- The overall number of new infections has been reducing over the last few years and has stabilized during the reporting period
- Three cases of leprosy notified
- Quarterly TB/HIV data review meetings conducted
- Managed to do audiometry tests on all the patients on drug resistant tuberculosis treatment
- All the eligible patients on drug resistant treatment were put on the social grant.

Main activities on TB and leprosy to be conducted by the region in 2020

- Conduct regional TB/HIV cross border meeting
- Conduct operational research for health care worker on TB case management
- Orientate all community health workers on TB Guidelines (Health extension workers)
- Train nurses and doctors on the TB guidelines
- Commemoration of World TB Day

13.10 Oshana region

13.10.1 Case notifications

Figure 60 shows that the trend of TB infection has been regularly declining. In addition, notification of PTB B+ cases decreased with 18% in 2019. However, there was significant improvement on smear not tested adults with 19 in 2018 and 13 in 2019.

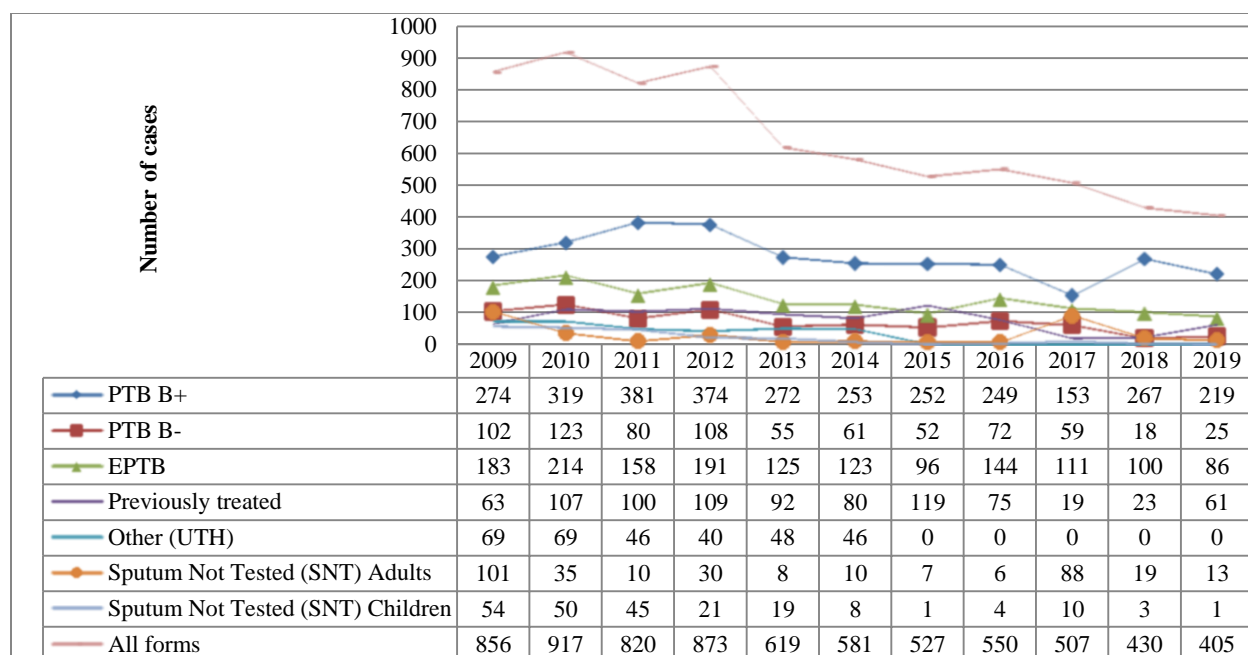


Figure 60: Trends in TB case finding for Oshana region, 2009-2019

13.10.2 Treatment outcomes

The table below show that there was an increase in the TSR of the Bacteriological confirmed cases from 88% in 2017 to 90% in 2018. There is a decrease in the TSR of New and Relapse cases of 82.3% in 2018 as compared to 87% in 2017. The death cases of New and Relapse remain almost constant, when comparing to 6% in 2017 and 7% in 2018. The LTFU of New and Relapse reduced with 3.2% in 2018 as compared to 6% in 2017. Foreign national's TSR have increased from 63% in 2017 and 65% in 2018.

Table 20: Treatment outcomes Oshana region

	Cured		Treatment completed		Successfully treated		Died before treatment		Died during treatment		Failed		LTFU before treatment		LTFU during treatment		Total evaluated		Not evaluated (including transfer out)		Total notified	
DS-TB																						
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	N	%	n	%	n	%	n	
new and relapse	215	50.1	138	32.3	353	82.3	2	0.4	26	6	11	2.5	0	0	14	3.2	429	100	0	0	11	
new B+ PTB	194	80.4	23	9.5	217	90	1	0.4	8	3.3	9	3.7	0	0	6	2.4	241	100	0	0	241	
new B- PTB	0	0	9	90	10	100	0	0	1	10	0	0	0	0	0	0	10	100	0	0	10	
relapse TB	21	46.6	15	33.3	36	80	0	0	5	11.1	2	4.4	0	0	2	4.4	45	100	0	0	45	
EPTB	0	0	73	82	73	82	1	1.1	12	13.4	0	0	0	0	3	3.3	89	100	0	0	89	
HIV +ve	68	43.3	63	40.1	131	83.4	0	0	11	7	6	3.8	0	0	9	5.7	157	100	0	0	157	
foreign nationals	13	38	9	26	22	65	0	0	6	18	2	6.2	0	0	4	12	34	100	0	0	34	
DR-TB																						
All DR-TB	18	38.2	11	23.4	29	61.7	1	2.1	10	21.2	1	2.1	2	4.2	3	6.3	46	97.8	1	2.1	47	
Interim outcomes for DR-TB 2018 cohort	4	25	5	31	9	56	0	0	2	13	1	6.2	0	0	3	19	15	94	1	6	16	

Notable events on TB and leprosy in the region in 2019

- World TB Day 2019 commemorated; about 2000 delegates attended

Main challenges on TB and leprosy in the region in 2019

- Few TB screening activities done at the police holding cells
- Low uptake of TPT initiation
- TB mass screening not conducted to the maximum due to shortage of materials at NIP

Main achievements on TB and leprosy in the region in 2019

- About 934 people were reached during pre-world activities, 104 were screened, 36 were taken sputum, 1(3%) was found positive and started on TB RX

- Oluno Correctional facility trained eight inmates as health ambassadors (to identify others who are coughing).
- Training of 24 TB patients on how to come up income generating projects (e.g. making of traditional baskets and backyard gardens)
- Five new TB field promoters recruited.

Main activities on TB and leprosy to be conducted by the region in 2020

- Strengthen the allocation of all TB patients to each (CHW) FP/HEW and liaise with other CHWs in other regions
- Strengthen intensifying TB cases finding in the community and congregate settings.

13.11 Oshikoto region

13.11.1 Case notification

The figure below shows that, generally there has been a decline of cases notified for TB in region. However, compared to the cases notified in 2018 a slight increase of cases was been reported in 2019. The increase may be due to outreach activities conducted.

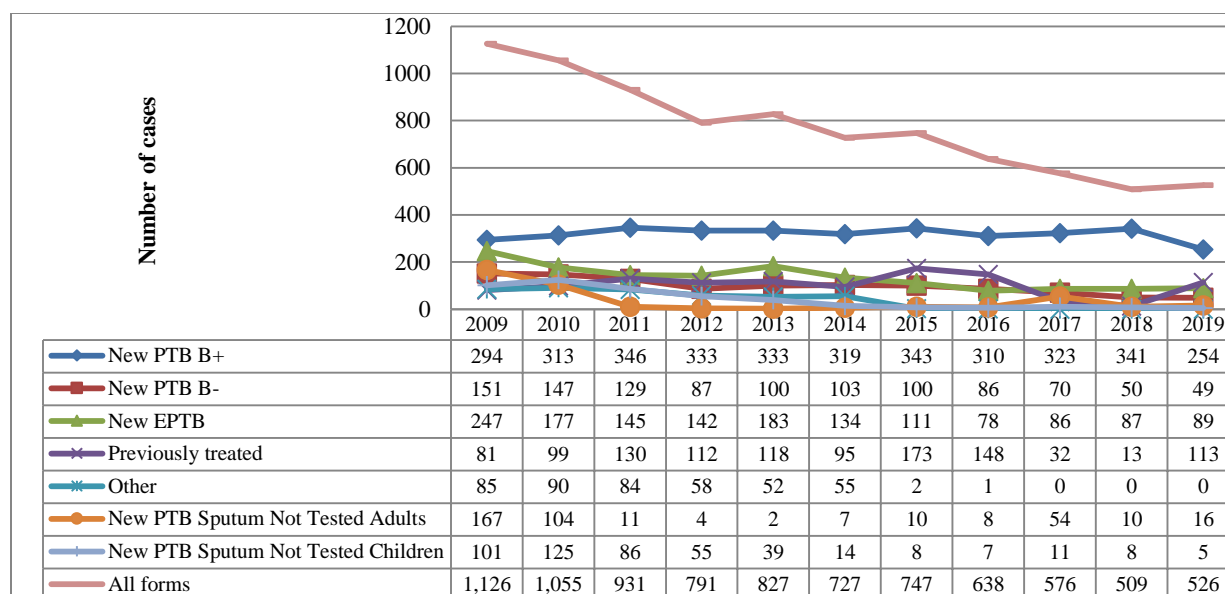


Figure 61: Trends in TB case finding for Oshikoto region, 2009-2019

13.11.2 Treatment outcomes

The table below shows that there is decline of LTFU in 2018 on new and relapse TB cases 2.6% compared to 2017. High death rate in the region 10.8% affects the regional treatment success rate. Continuing death reviews reveal that TB/HIV co-infection late diagnosis due to LTFU on ART, clients presenting late and other diagnosis contributes to high death rate.

Table 21: Treatment outcomes Oshikoto region

	Cured		Treatment completed		Successfully treated		Died before treatment		Died during treatment		Failed		LTFU before treatment		LTFU during treatment		Total evaluated		Not evaluated (including transfer out)		Total notified
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	N	%	n	%	n	%	n
DS-TB																					
new and relapse	260	52.2 %	157	31.5 %	417	83.7 %	0	0 %	54	10.8 %	14	2.8 %	0	0 %	13	2.6 %	498	100 %	0	0 %	498
new B+ PTB	216	79 %	21	7.7 %	237	87.4 %	0	0 %	15	5.5 %	12	4.4 %	0	0 %	7	2.5 %	271	100 %	0	0 %	271
new B- PTB	-	-	42	70 %	42	70 %	0	0 %	15	25 %	0	0 %	0	0 %	3	5 %	60	100 %	0	0 %	60
relapse TB	44	51.7 %	27	31.7 %	71	83.4 %	0	0 %	12	14.1 %	2	2.3 %	0	0 %	2	2.3 %	85	100 %	0	0 %	85
EPTB	0	0	77	88.5 %	77	88.5 %	0	0 %	9	10.3 %	0	0 %	0	0 %	1	1.1 %	87	100 %	0	0 %	87
HIV +ve	72	40.4 %	64	35.9 %	136	76.3 %	0	0 %	22	12.3 %	13	7.3 %	0	0 %	7	3.9 %	178	100 %	0	0 %	178
foreign nationals	6	31.5 %	6	31.5 %	12	63 %	0	0 %	1	5.2 %	1	5.2 %	0	0 %	5	26.3 %	19	100 %	0	0 %	19
DR-TB																					
All DR-TB	18	60 %	4	13.3 %	21	73.3 %	0	0 %	6	20 %	0	0 %	0	0 %	2	6.6 %	30	100 %	0	0 %	30
Interim outcomes for DR-TB 2018 cohort	0	0	1	8.3 %	1	8.3 %	0	0 %	1	8.3 %	1	8.3 %	0	0 %	0	0	12	100 %	9	75 %	12

Notable events on TB and leprosy in the region in 2019

- TB mass screenings conducted, 3945 people screen for TB, 2 diagnosed with TB started Rx
- Community leaders meeting held in collaboration with TIMS to strengthen community engagement activities for the TB program.
- Health care worker TB screening campaigns conducted

Main challenges on TB and leprosy in the region in 2019

- High death rate 10.8%
- Poor TB screening in police holding cells
- Low TPT completion rate in region 44.4%

- Interruption of supply of GeneXpert reagent for diagnosis TB
- No calibration of audiometers, not all clients eligible for hearing assessment were evaluated.

Main achievements on TB and leprosy in the region in 2019

- TB in the mining sector project in collaboration with TB program established community health committee with 15 volunteers & 2 community mobilizers recruited by CoHeNa.
- 99% of all N + R TB clients notified tested for HIV
- All client tested positive for HIV were link to ART & CPT
- Reduce in Lost to follow-up from 3.9% in 2017 to 2,6% in 2018
- 98% of clients were screen for Diabetes and 1 diagnosed with DM link to treatment

Main activities on TB and leprosy to be conducted by the region in 2020

- New TB guideline trainings
- Commemoration of world TB day & world TB week
- Conduct death audits
- Correctional & police holding cells TB screening
- Conduct all TB/HIV reviews

13.12 Otjozondjupa region

13.12.1 Case notification

The number of all forms of TB patients notified reduced by 11% compared to 2018. Cases of bacteriologically confirmed TB remained slightly constant with a difference of less than two cases

of the previous year. The number of previously treated TB patients has increased from 16 to 79, compared to 2018.

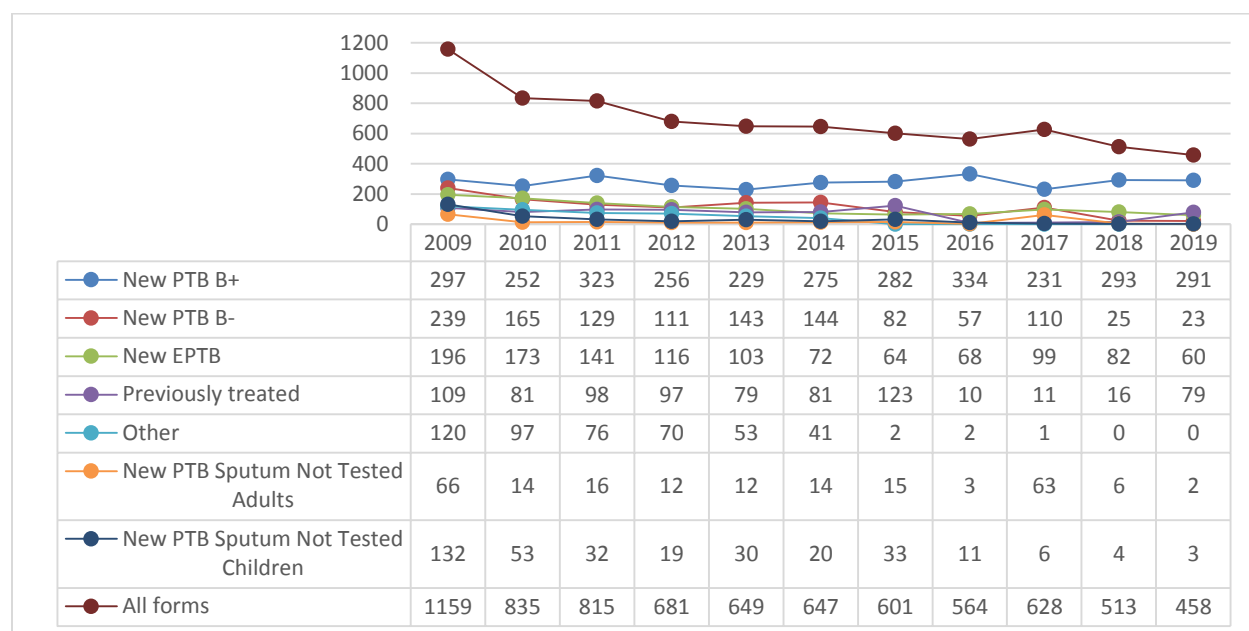


Figure 62: Trends in TB case finding for Otjozondjupa region, 2009-2019

13.12.2 Treatment outcomes

Table below shows that Otjozondjupa region achieved 89.1% treatment success rate for new PTB+ and 90.1% for EPTB. DR TB cases, 24.4% were LTFU. The 2018 interim outcome looks promising with 40.4% of successfully treated, 4.2% died while on treatment and 34% are still on treatment.

Table 22: Treatment outcomes Otjozondjupa Region

	Cured		Treatment completed		Successfully treated		Died before treatment		Died during treatment		Failed		LTFU before treatment		LTFU during treatment		Total evaluated		Not evaluated (including transfer out)		Total notified
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	N	%	n	%	n	%	n
DS-TB																					
new and relapse	267	53.7%	168	33.8%	435	87.5%	1	2.0%	35	7.0%	13	2.6%	0	0	13	2.6%	497	100%	0	0	497
new B+ PTB	222	75%	42	14.1%	264	89.1%	1	0.3%	13	4.3%	9	3%	0	0	9	3%	296	100%	0	0	296
new B- PTB	0	0	21	87.5%	21	87.5%	0	0	3	12.5%	0	0	0	0	0	0	24	100%	0	0	24
relapse TB	45	51.1%	25	28.4%	70	79.5%	0	0	11	12.5%	4	4.5%	0	0	3	3.4%	88	100%	0	0	88
EPTB	0	0	73	90.1%	73	90.1%	0	0	7	8.6%	0	0	0	0	1	1.2%	81	100%	0	0	81
HIV +ve	86	49.1%	62	35.4%	148	84.5%	1	0.5%	21	12%	4	2.2%	0	0	1	0.5%	175	100%	0	0	175
foreign nationals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	100%	1	100%	0	0	1
DR-TB																					
All DR-TB	8	17.7%	17	37.7%	25	55.5%	0	0	7	15.5%	2	4.4%	0	0	11	24.4%	45	100%	0	0	45
Interim outcomes for DR-TB 2018 cohort	11	23.4%	8	17%	19	40.4%	0	0	7	14.8%	3	6.3%	0	0	2	4.2%	47	100%	0	0	47

Notable events on TB and leprosy in the region in 2019

- Hand-over of two GeneXpert diagnostic equipment and vehicle to Tsumkwe constituency.
- Commemoration of TB day per district done with limited funding
- Collaboration with CoHeNa on TB case finding among Miners and charcoal workers.
- Tsumkwe soup kitchen for TB patients still functional.
- Quarterly regional and Zonal TB Meeting successfully conducted.

Main challenges on TB and leprosy in the region in 2019

- TB case management training not conducted pending TB curriculum review (Funds).
- Lack of transport

- Stock out of TB commodities and diagnostic reagents.
- Tsumkwe DR TB is of great concern.
- Region vastness and poor roads infrastructure.
- LTFU and death cases are still worrisome.

Main achievements on TB and leprosy in the region in 2019

- Reappointment of TB Field Promoters.
- 87.5% success rate among N&R TB cases.
- 95.5% of clinical staff and 91.5% of non-clinical staff screened.
- 99.7% HIV testing rate among N&R TB cases.
- Reduction on TB notification among B-, EPTB and smear not done.

Main activities on TB and leprosy to be conducted by the region in 2020

- Quarterly supervisory support visit
- Monthly death audit in the district and Quarterly for the region.
- Allocation of TB patient among community health workers for DOT.
- Training of Health care workers on case management.
- Conduct Regional and Zonal TB review meetings.
- Training of all category of staff (MOs, Nursing staff and RMT supervisors).
- Tsumkwe constituency TB mass screening campaign.

13.13 Zambezi region

13.13.1 Case notification

The figure below shows a reduction in number of all forms of TB. The decline in cases has been more significant from 2015 to 2019. Bacteriologically confirmed accounted for most cases through the three years period, followed by new PTB bacteriologically not confirmed, New EPTB and previously treated.

There has been a decline in smear not done in both adults and children.

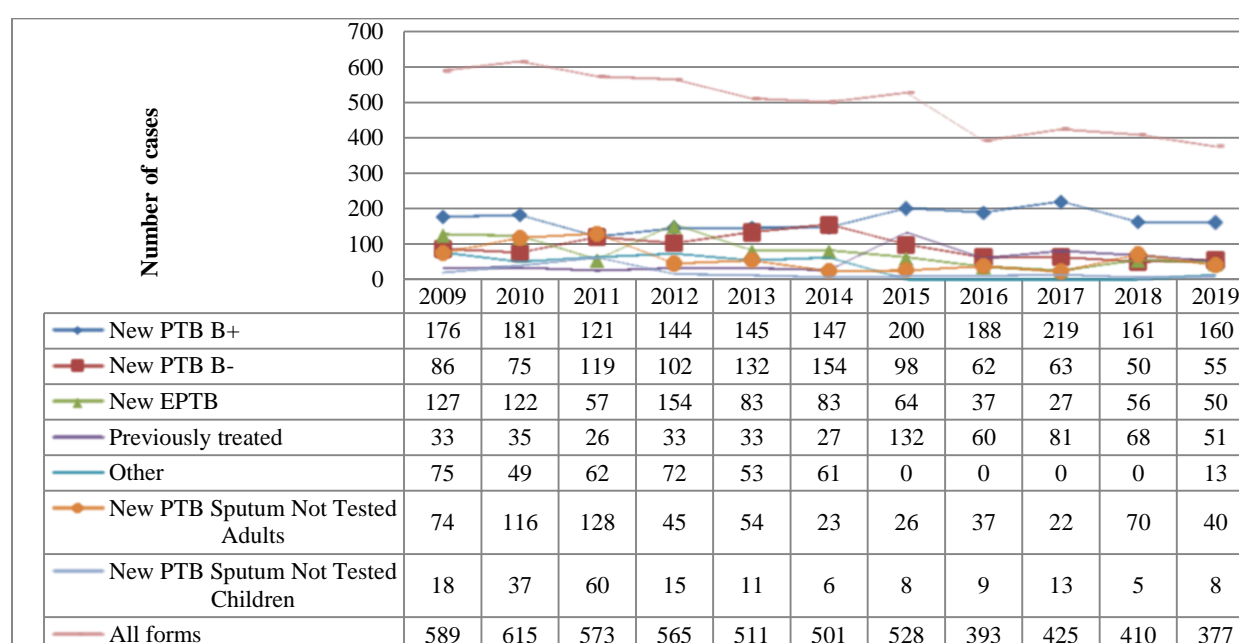


Figure 63: Trends in TB case finding for Zambezi region, 2009-2019

13.13.2 Treatment outcomes

The table below shows that, treatment success rate (TSR) for all new and relapse TB cases stood at 86%, almost equal to 85.9 % for the 2017 cohort. The TSR for bacteriological confirmed cases increased from 86.3 in 2017 to 88.2% in 2018, with a death rate of 3.9 % compared to 4.6 in 2017 outcome. This could be because of high TB/HIV co-infection that stood at 57% in all forms of TB. 1.7% of patients failed while

6.2% were LTFU. Treatment success rate for all DR-TB 2017 cohort was 100%. 2018 cohort interim outcomes 1(25%) cured, 2(50%) completed and 1(25%) died. Lastly, there was no foreign nation reported.

Table 23: Treatment outcomes Zambezi region

	Cured		Treatment completed		Successfully treated		Died before treatment		Died during treatment		Failed		LTFU before treatment		LTFU during treatment		Total evaluated		Not evaluated (including transfer out)		Total notified the previous year (cohort)
DS-TB																					
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	N	%	n	%	n	%	n
new and relapse	146	40.1	167	45.9	313	86	1	0.3	32	8.8	3	0.8	0	0	15	4.1	364	100	0	0	364
new B+ PTB	130	73	27	15.2	157	88.2	0	0	7	3.9	3	1.7	0	0	11	6.2	178	0	0	0	178
new B- PTB	0	0	17	89.4	17	89.4	1	5.3	1	5.3	0	0	0	0	0	0	19	100	0	0	19
relapse TB	16	29.6	29	53.7	45	83.3	0	0	6	11.1	0	0	0	0	3	5.6	54	100	0	0	54
EPTB	0	0	43	91.5	43	91.5	0	0	3	6.4	0	0	0	0	1	2.1	47	100	0	0	47
HIV +ve	72	33.4	109	50.7	181	84.1	1	0.5	24	11.2	1	0.5	0	0	8	3.7	215	100	0	0	215
foreign nationals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DR-TB																					
All DR-TB	12	100	0	0	12	100	0	0	0	0	0	0	0	0	0	0	12	100	0	0	12
Interim outcomes for DR-TB 2018 cohort	1	25	2	50	3	75	0	0	1	25	0	0	0	0	0	0	4	0	0	0	4

Notable events on TB and leprosy in the region in 2019

- Conducted a joint (RACOC) TB, HIV and Malaria awareness campaign through the regional council in the Linyanti constituency, 3392 were reached with messages and 60 of them were screened for TB. No positive case was reported
- Joined the combined health awareness campaign in the Kongola constituency where TB was part of the awareness
- Screened 24 clients for TB on the 25th of March 2019 (WTB Day), no one tested positive at Chotto compound
- Conducted random TB screening at Chetto (Masambo village) 2 people tested B+ and also at Kasheshe 4 people and none tested positive

- 341 clients were screened after giving health education and 22 tested B+

Main challenges on TB and leprosy in the region in 2019

- 73% cure rate in bacteriological confirmed cases
- Conducted an assessment on negative attitude toward TB screening by health workers
- Inconsistent screening at police holding cells
- Isolation facilities for inmate awaiting trial not provided
- Lack of information on TB/HIV among police officers and inmates

Main achievements on TB and leprosy in the region in 2019

- Continuous slight decline in TB case notification
- 100% DR TB treatment success rate, 100% CPT and 99.7% HIV testing
- Availability of TB Field Promoters, assisted a lot with contact and defaulter tracing, follow-up sputum collection
- Collaboration of TB activities with other sectors through RACOC

Main activities on TB and leprosy to be conducted by the region in 2020

- Commemoration of WTB day spearheaded by Regional Council (RACOC)
- Advocate for TB screening of all HCWs on assumption of duty
- Conduct quarterly scheduled TB screening at police holding cells
- Advocate for designation of isolation facilities for inmates
- Capacitate HCWs on TB management, strengthen contact tracing and TPT initiation

ANNEXURE A: Health Facilities providing TB services in Namibia

	ZAMBEZI	OTJOZONDIIPA	OSHIKOTO	OSHANA	OMUSATI	OMAHEKE	OHANGWENA	KUNENE	KHOMAS	KHARAS	KAVANGO	HARDAP	ERONGO
Facilities	1	4	3	1	4	1	3	3	2	3	4	2	4
Revised* TB-IC plans	1	4	3	1	3	1	3	2	2	3	4	2	1
Outdoor waiting areas	1	1	2	1	0	0	3	0	0	0	1	0	0
Facilities	3	2	3	5	6	1	2	3	2	3	7	3	2
Revised TB-IC plans	3	2	3	5	5	1	2	2	2	3	7	3	0
Outdoor Health waiting centres	3	2	3	3	0	0	2	3	0	2	4	2	0
Facilities	26	19	23	13	40	13	27	26	10	13	45	12	18
Revised TB-IC plans	14	16	23	8	28	13	27	17	10	13	45	12	1
Outdoor Clinics waiting areas	13	12	21	10	19	9	27	21	7	8	43	9	7
Facilities	6	9	2	4	4	0	1	5	7	1	3	0	4
Revised TB-IC plans	0	7	1	4	2	0	1	1	7	1	3	0	0
Outdoor waiting areas	6	1	2	4	3	0	1	0	7	1	3	0	0

ANNEXURE B: HIV/Diabetes summary for TB patients

	ERONGO	HARDAP	KAVANGO	KHARAS	KHOMAS	KUNENE	OHANGWENA	OMAHEKE	OMUSATI	OSHANA	OSHIKOTO	OTJOZONDJUPA	ZAMBEZI
Total New and relapse	838	561	568	415	1299	223	876	514	503	391	504	446	364
Patients with known HIV Status	833	536	566	413	1276	223	876	514	501	387	503	445	363
HIV Positive patients	240	160	171	138	455	68	266	93	144	143	185	138	205
HIV positive patients on ART	235	154	171	138	443	68	266	92	143	143	185	136	205
HIV positive patients on CPT	239	160	171	138	452	68	266	93	144	143	185	138	205
TB patients tested for diabetes	547	553	292	414	302	223	577	376	450	287	498	441	8
Number patients test positive for diabetes	7	4	0	2	2	0	0	2	1	7	1	0	0
Number of DR-TB patients notified	30	13	34	12	50	6	35	5	18	24	18	47	6
Number of DR-TB patients with known HIV status	30	13	34	12	50	6	35	5	18	23	18	47	2
Number of DR-TB patients who are HIV positive	11	7	10	7	23	5	16	1	7	13	10	11	2
Number of DR-TB patients who are on ART	11	6	10	7	20	5	16	1	7	13	10	11	2

ANNEXURE C: Number of TB patient with Xpert MTB/RIF tests results

Region	Total New & relapse	Total All Forms	Number of presumptive TB cases in laboratory registers				Number of New patients in TB treatment Register			
			GxP +ve	GxP -ve	No GxP results	Total	GxP +ve	GxP -ve	No GxP results	Total
ERONGO	837	843	464	2458	1491	4413	355	82	227	664
HARDAP	561	582	233	1220	1969	3425	163	27	225	420
KAVANGO	568	587	281	1824	1753	3858	232	38	254	524
KHARAS	414	423	217	806	1901	2924	157	19	146	322
KHOMAS	1299	1329	747	5360	1806	7913	572	22	707	1119
KUNENE	223	225	140	1703	444	2288	129	21	60	211
OHANGWENA	876	917	325	1782	3088	5195	252	49	486	787
OMAHEKE	517	522	104	225	1311	1640	69	27	320	416
OMUSATI	503	524	186	1305	2031	3522	145	20	269	434
OSHANA	391	405	169	1290	747	2206	136	13	195	344
OSHIKOTO	504	526	185	2235	2516	4936	126	30	256	412
OTJOZONDJUPA	446	458	311	2274	843	3428	227	30	122	379
ZAMBEZI	364	377	74	715	899	1688	54	30	228	312
TOTAL	7503	7718	3436	23197	20799	47436	2617	408	3495	6344

ANNEXURE D: Total value of TB and Leprosy pharmaceutical products

STOCK DESCRIPTION	DRAW	SUM OF SHIP QTY	SUM OF INVVALUE
KANAMYCIN 1G INJ	10	1230	135933.45
LINEZOLID 600MG/300ML INFUSION	10	52	243695.42
STREPTOMYCIN SULPHATE 1GM PFI	100	36	28219.32
BEDAQUILINE 100MG TABS (Sirturo)	188	282	2434902.4
CLOFAZIMINE 100MG TABS	100	1162	3578226.94
DELAMANID 50MG TABS	48	461	3239206.86
DELAMANID 50MG TABS	672	33	998844
ETHAMBUTOL 100MG TABS	100	721	187654.67
ETHAMBUTOL HCL 400MG TABS	672	570	313926.54
ETHIONAMIDE 250MG TABS	100	2424	777085.92
ETHIONAMIDE 250MG TABS	250	150	41170.5
ETHIONAMIDE 125MG TABS	100	547	142367.69
ETHIONAMIDE 250MG TABS	28	863	67548
ISONIAZID (INH) 100MG TABS	1000	1074	195534.086
ISONIAZID (INH) 300MG TABS	672	10043	1272548.53
ISONIAZID (INH) 300MG TABS	1000	3940	1490147.4
RIFAMPICIN 600MG DAPSONE 100MG (MDT PB Adult)	186	5	46.05
RIFAMPICIN 600MG DAPSONE 100MG CLOFAZIMINE 50MG(MDT MB Adult)	372	42	236.46
RIFAMPICIN 450MG DAPSONE 50MG (MDT PB Child)	186	3	0.18
LINEZOLID 600MG TABS	10	2723	2046688.87
PYRAZINAMIDE 150MG TABS	100	115	1914.75
PYRAZINAMIDE 400MG TABS	672	116	105800.12
PYRAZINAMIDE 400MG TABS	1000	635	299058.05
PYRIDOXINE HCL 25MG TABS	500	6032	170946.88
PYRIDOXINE HCL 25MG TABS	1000	5424	341945.86
RIFAMPICIN 150MG CAPS	100	629	44526.91
RIFAMPICIN 450MG CAPS	100	644	160742.4
RIFAMPICIN 150+PYRAZINAMID 400 ISONIAZID75+ETHAMBUTOL 275MG	672	64	54597.952
RIFAMPICIN 150+PYRAZINAMID 400 ISONIAZID75+ETHAMBUTOL 275MG	84	25020	3741212.43
CYCLOSERINE 250MG TABS	100	1601	1035418.43
RIFAMPICIN 150+ISONIAZID 75+ ETHAMBUTOL 275MG TABS	672	5286	4403202.915
CAPREOMYCIN SULF 1G INJ	1	2232	241547.04
RIFAMPICIN 75MG+ISONIAZID 50MG DISPERSABLE	84	2574	321404.3805
RIFAMPICIN 75MG+ISONIAZID 50MG PYRAZINAMIDE 150MG TABS (DISPERSABLE)	84	1526	217015.9595
PARA AMINOSALICYLIC ACID (PAS) GRANULES 4G SACHET	30	1453	1216404.14
PARA AMINOSALICYLIC ACID (PAS) GRANULES 4G SACHET	25	800	369600
MOXIFLOXACIN 400MG TABS	5	20530	721424.2
LEVOFLOXACIN 250MG TABS	5	36907	1034134.14
LEVOFLOXACIN 250MG TABS	100	242	251941.36
FACE MASK PARTICULATE RESPIRAT CONE-SHAPE N95 - 1860 REGULAR	120	538	1221748.144
FACE MASK PARTICULATE RESPIRAT CONE-SHAPE N95 - 1860 SMALL	120	213	489629.6925
		138942	N\$ 33638199.04