

KINGDOM OF SWAZILAND
MINISTRY OF HEALTH

ANNUAL NATIONAL TUBERCULOUS CONTROL (NCTP) PROGRAM REPORT



Monitoring & Evaluation Unit
Strategic Information Department



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This report would not have been a success without the following individuals:

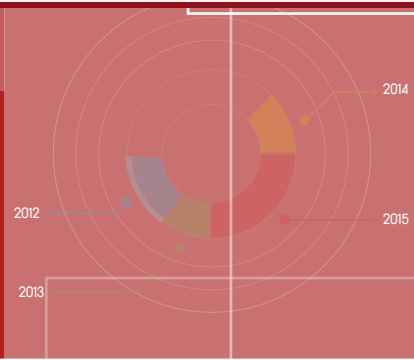
Sanelisiwe Tsela	NTCP
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Thabo Hlophe	ICAP
Fannie Khumalo	EGPAF
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KEY INDICATORS

Thematic Area	Indicator	Baseline 2011	2015 Achievement	Target 2015	Progress Status
TB Screening	Number of people screened for TB	175,787	240,051	Not available	
Case detection	Case detection rate		56%	70%	
	Case notification rate	867/100,000	440/100,000	Not available	
Treatment	% of TB patients initiated on ART	35% (2,752/7,788)	93% (3,151/3,401)	90%	
	Treatment success rate (All forms)	73%	81%	85%	
	Treatment success rate (HIV-positive TB patients)	72%	80%	85%	
MDR-TB	Final treatment outcomes	18% (2008 cohort)	64% (2012 cohort)	70%	

Legend	
	Target off-track, requires action
	Target on-track, likely to be achieved
	Target achieved.

CHAPTER 1: INTRODUCTION



1.1. Background

Swaziland is a landlocked country in southern Africa with a land surface area of about 17,364 square kilometres. It is divided into four administrative regions namely Hhohho, Lubombo, Manzini and Shiselweni. It is further subdivided into 55 Tinkhundla (constituencies) and chiefdoms and towns. The estimated population of the country is 1,119,375¹ people in 2015, with 52 percent under the age of 20 years, while 52.7% are females. The country is classified as a Low-Middle Income Country with an income per capita of \$3,550 in 2014².

1.1.1. Development challenges

Swaziland's economic growth has been declining since 2013, and was reported 1.7% in 2015³. The downward trend is due to continued drought and a difficult external environment, especially from South Africa, leading to a sharp decrease in SACU revenues. The loss of preferable trade under African Growth and Opportunity Act (AGOA) in January 2015 has had a negative impact on exports and jobs, given that about one third of total apparel exports are destined to the U.S. market.

The primary development challenge for the Kingdom of Swaziland is to address the high rate of poverty and inequality in the country. An estimated 63% of the population lives below the poverty line, and about 29% lives below the extreme poverty line. Inequality is very high with a Gini coefficient of 49.5. Between 2001/02 and 2009/10 consumption of the bottom 40% of the population grew very slowly. Poverty is strongly correlated with unemployment which is about 28.5% overall and 52.4% among the youth. Poverty is also associated with the high burden of communicable diseases. The HIV/AIDS prevalence of 26% of the population is the highest in the world and life expectancy has fallen to approximately 49 years.

1.2. Introduction

Globally Tuberculosis (TB) remains a major global health problem, responsible for ill health among millions of people each year. TB ranks as the second leading cause of death from an infectious disease worldwide, after the human immunodeficiency virus (HIV). In 2014, there was an estimated 9.6 million incident cases of TB (range, 9.1 million-10.0 million) globally, equivalent to 133 cases per 100 000 population. The absolute number of incident cases is falling slowly at an average rate of 1.5% per year 2000-2014 and 2.1% between 2013 and 2014. The cumulative reduction in the TB incidence rate 2000-2014 was 18%.⁴ According to the WHO TB Global TB report 2015, in 2014 there were 1.5 million TB deaths, of which 1.1 million were among HIV negative people, and 0.5 among HIV positive people. Men globally account for more TB related deaths. TB mortality is unacceptably high given that most deaths are preventable if people can access health care for a diagnosis and the correct treatment is provided. Short-course regimens of first-line drugs that can cure around 90% of cases have been available for decades.

1.2.1. Burden of TB in Swaziland

The burden of TB disease is measured in terms of incidence, prevalence mortality caused by TB in a given time period, usually one year. According to the Global TB Report of 2015, Swaziland has an estimated TB Incidence of 9.3 (CI: 6.8-12.0) per 1000 population, including HIV positive people. The incidence rate of 733 (CI: 533-963) places Swaziland amongst the highest burdened countries in the world. WHO estimates case detection to be at 60% (CI: 46-83) during 2014 and this means that the country is able to identify 60% of all suspected TB cases. The current National TB Strategic Plan plans to increase TB case detection from 46% in 2013, to 70% in 2017, and 80% in 2019⁵.

TB case notification in Swaziland for 2014 was estimated to be 5 583 people, including new and relapsed cases. Of the estimated new cases; 2 540 were bacteriologically confirmed, 1606 were clinically diagnosed, and 756 were extra-pulmonary cases. Of the reported relapsed cases; 322 were bacteriologically confirmed, and 350 were extra-pulmonary cases⁶.

1. Swaziland Population Projections 2007-2030, Central Statistics Office

2. Swaziland Country Profile, World Bank. Accessed at: <http://data.worldbank.org/country/swaziland>

3. Swaziland Country Profile, World Bank.

4. Global TB Report 2015, WHO

5. Global TB Report 2015, WHO

6. Global TB Report 2015, WHO

Swaziland faces a double burden of HIV and TB. TB incidence among HIV patients was estimated to be 5.9 (CI: 4.2-7.9) per thousand people. Mortality rates for TB are worse among patients that are co-infected with an estimated 1.7 (CI: 1.2-2.4) per thousand deaths in 2014. Mortality due to TB among patients was estimated to be 2.4 (CI: 1.7-3.1) per thousand in 2014, and for HIV negative patients it was 0.65 (CI: 0.400-0.950) per thousand patients⁷.

1.2.2. TB Strategic Plan 2015-2019

In 2015 the country began implementing the new National TB Strategic Plan 2015-2019. The Goal of the 2015-2019 TB National Strategic Plan (TB NSP) is to achieve a 35% reduction of TB prevalence rate by 2019 to 907/100,000. The NSP is based on five objectives for the next five years as follows:

1. To increase TB case detection rates from 46% in 2013 to 70% in 2017 and 80% by 2019
2. To increase TB treatment success rates for all bacteriologically confirmed cases from 72.9% in 2013 to 90% by 2019
3. To implement and expand country-wide collaborative TB/HIV activities and management of co-morbidities by 2019
4. To provide treatment and support to all drug-resistant TB cases and reduce the MDR-TB prevalence rate amongst new TB cases to less than 5% by 2019
5. To strengthen the capacity of the National Tuberculosis Control Program to effectively implement, coordinate and evaluate TB prevention, treatment and care interventions

1.3 The Purpose of the Report

In Swaziland, TB services are provided by the Ministry of Health and coordinated by the National TB Control Program. Every year the NTCP compiles a report that provides an overview of the progress made towards the control of TB in the country. This document therefore serves as the 2015 progress report, intended to share the main national achievements of the TB program in a concise manner.

The report also attempts to look beyond NTCP indicators and other activities, including TB/HIV collaborating activities and TB research that supports the NTCP strategic Framework. The data is presented using national level statistics, disaggregated in population subgroups such as those defined by age, sex, and regions of the country. The level of analysis in the report is primarily descriptive and is particularly useful in tracking progress of the program activities. This report will be useful to policy makers, health care professionals, development partners and the TB Program office for planning and decision-making.

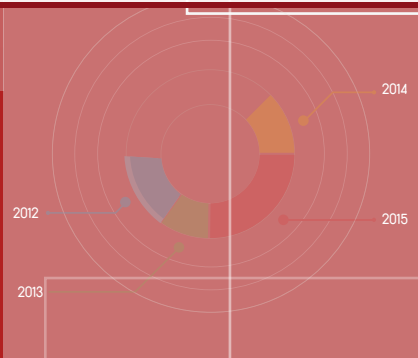
1.3.1. Report Writing

The TB report writing process is led by NTCP Monitoring and Evaluation department, in collaboration with program staff. The 2015 report is aligned to the NTSP 2015-2019 and ensures that it is results based. TB data presented in the annual report is based on routine data collected throughout the year from community and facility levels and then compiled and verified by the TB program quarterly. The data is reviewed quarterly by the health facilities in regional quarterly review meetings and consolidated into national reports quarterly and annually. An analysis workshop was held in April 2016 with other MOH programs, and SID. A final report writing workshop that included stakeholders was conducted in May 2016 to finalize the report.

7. Global TB Report 2015, WHO

CHAPTER 2:

Program Description



The Government of Swaziland, through the Ministry of Health is committed to “The Paradigm Shift- End TB Strategy”, also known as the Global Plan to End TB (2016-2020), with the vision of “A world free of tuberculosis-zero deaths, disease and suffering due to tuberculosis. Within the Ministry of Health, the National TB Control Program (NTCP) forms part of the public health programs and is responsible for planning, coordination and monitoring and evaluation of TB control activities in Swaziland.

2.1. ORGANIZATION OF THE TB PROGRAM

The NTCP is structured at four levels namely the National, regional, facility and community levels, and reports to the Directorate of the Ministry of Health, which is in turn under the responsibility of the Principal Secretary and the Honourable Minister. At national level, the NTCP has the following thematic areas:

- I. Directly Observed Treatment
- II. Programmatic Management of Drug Resistant TB
- III. Paediatric TB
- IV. TB/HIV Collaboration
- V. Advocacy, Communication and Social Mobilisation (ACMS)
- VI. Laboratory
- VII. Central Medical Stores
- VIII. Monitoring, Evaluation and Research

At regional level there are four regional coordinators and 4 Infection Prevention and Control (IPC) coordinators. The TB regional coordinators are part of the Regional Health Management Teams (RHMT) of their respective regions where they coordinate and support all TB/HIV activities at facility and community level. At facility level the TB services are provided through TB focal persons in each of the 109 TB health facilities i.e. TB screening officer, TB/HIV adherence officers, TB expert clients and TB/HIV lay counsellors.

At community level the TB control program works closely with partners i.e. CBOs, NGOs to provide support to TB patients through care givers; treatment supporters and community health volunteers.

2.2. POLITICAL COMMITMENT AND LEADERSHIP

Swaziland has adopted the Post-2015 Global TB Strategy launched at the 67th World Health Assembly in May 2014. The 2015-2019 NSP is based on this framework whose vision is a world free of tuberculosis – zero deaths, disease and suffering due to tuberculosis. Thus, the NSP objectives have been aligned to comprehensively embrace the principles, pillars and components of the Post-2015 Global TB Strategy:

Principles:

1. Government stewardship and accountability, with monitoring and evaluation
2. Strong coalition with civil society organizations and communities
3. Protection and promotion of human rights, ethics and equity
4. Adaptation of the strategy and targets at country level, with global collaboration

SUSTAINABLE DEVELOPMENT GOALS:

The Sustainable Development Goals (SDGs) will be the focus of global priorities for development cooperation and will also guide national priorities in most countries for the coming 15 years. Swaziland committed to the SDGs in September 2015 during the United Nations (UN) General Assembly. In line with this, the country has committed to ending the TB epidemic by 2030 which is one of the targets under **Goal 3; “ensure healthy lives and promote well-being for all at all ages”**.

GLOBAL PLAN TO END-TB STRATEGY
90%-90%-90% TARGETS

Reach at least

 **90%**

**OF ALL PEOPLE
WITH TB**

and place all of them on appropriate therapy - DS - TB, DR-TB & IPT as required

as part of this approach, reach at least

 **90%**

**OF THE KEY
POPULATIONS**

the most vulnerable, underserved, at-risk populations (children, miners, etc)

Achieve at least

 **90%**

**TREATMENT
SUCCESS**

for all people diagnosed with TB through affordable treatment services, adherence to complete and correct treatment, and social support.

2.3. Program Components:



2.4. Technical and Financial Support

The NTCP is funded mostly by the Swaziland Government. The program has an established budget line that covers some human resources, first and second line anti-TB drugs and administrative costs. The programme works in partnership with global and national partners under the umbrella of WHO. The global commitments to ending TB has resulted in commitment to funding TB services, supplies, commodities, and human resources.

COORDINATION STRUCTURES

1. National and Regional Quarterly Review Meetings.

The Quarterly Review Meetings (QRMs) continue to be one of the important coordination forum for the national TB program. In 2015, all QRM's at regional and national level were conducted with a main objective to bring partners to review TB data, share best practices and lessons learnt in the implementation of TB services at facility and national level. The NTCP has institutionalized the QRM not only as a knowledge management mechanism for health care workers working in TB facilities in Swaziland but also a vehicle through which data quality assurance mechanisms can be implemented to generate quality information for TB.

2. Quarterly TWG Meetings

The TB Technical working group is comprised of TB experts with comparative strengths e.g Lab, clinical, epidemiology, TB/HIV, pharmaceuticals etc and play a major role in providing policy direction and technical expertise with regards to TB control in the country . Expert quarterly meeting where partners are brought together to be updated on the TB implementation progress. In this TWG, emerging technical issues are brought for discussion and solutions. They also assist and review TB research proposals, introduction of new strategies and pharmaceuticals.

Major TWG activities in 2015 were;

- Drafting DR-TB proposal
- Introduction of bedaquiline and delamanid regimen
- Monitor the MDR short course pilot regimen
- Reviewed national diagnostic algorithm
- Development of the Active case finding strategy

3. TB Partner Forum

This forum consists of all NTCP collaborating partners and provides a platform for partners to present TB workplans in order to identify areas of duplication and areas needing support. The partners provide support to the NTCP using their different comparative strengths. They also provide emergency solutions e.g provision of out of stock supplies.

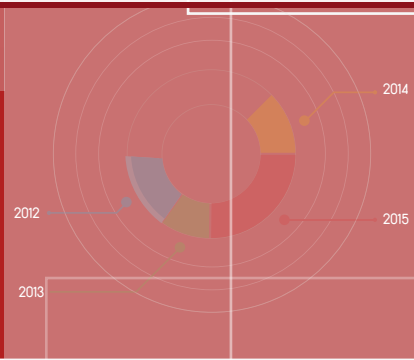
4. National Coordination Committee-TB/HIV (NCC-TB/HI

The TB/HIV National Coordination Committee provide programmatic and operational guidance on WHO recommended TB/HIV collaborative activities. The TB/HIV NCC is co-chaired by the Program Managers for the NTCP and SNAP. It is comprised of representatives from NTCP, SNAP, WHO, NGOs, development partners, Civil Society Organizations (CSO), academic institutions, Armed forces: HIS Majesty Correctional services etc PLHIV, regional Activities

- Successfully submission of the TB/HIV Concept note to GFATM in 2015
- Launched the National TB/HIV Guidelines in January, 2015
- Launched the TB in the Mines (TIMS) Partnership Forum

CHAPTER 3:

Program Results



3.1. COVERAGE OF TB SERVICES

There are 287 health facilities in the country, of these 109 facilities (38%) are Basic Management Units (BMUs), The programme targets to have scaled up access to accurate TB diagnosis, treatment and close monitoring to 145 sites by 2019 and has therefore achieved 75% of its targeted reach. It should be noted that the non-BMUs provide some form of TB services which include TB screening, sputum collection, TB Preventive therapy and the referral of patients to the BMUs. Generally, TB services are evenly distributed across all the four regions as duplicated by Table 2 below. The Lubombo region has the highest number of health facilities offering TB treatment compared to all the others regions, whereas the Manzini and Shiselweni regions have the least. Provision of Xpert and Microscopy services remain unchanged from the previous year. Twenty four (24) of the TB testing sites offer GeneXPERT and microscopy services while the remaining 2 sites offer Xpert only.

Table 1: Facilities that are providing TB Services 2015

Region	Number of Health facilities	Total number of BMUs	Xpert and microscopy sites	Culture Facilities
Hhohho	82	27	5	1
Manzini	121	25	11	0
Lubombo	48	32	8	0
Shiselweni	36	25	4	1
Total	287	109	28	2

3.2 TB diagnosis

3.2.1 Systematic screening for active tuberculosis

WHO recently developed guidelines on systematic screening for active tuberculosis (TB) based on a thorough review of available evidence, adaptation to the local setting is still to be done. Early detection of TB is essential to early initiate on anti TB drugs and to reduce TB transmission more effectively. Systematic screening in high risk groups is a possible complement to efforts to improve the patient-initiated pathway to TB diagnosis (that is, diagnosing TB among people who actively seek care with TB symptoms, also called “passive case finding”).

The Swaziland TB program utilizes a standard TB screening tool that have identified symptoms used to investigate patients for TB. TB diagnosis is bacteriological confirmed through GeneXpert, culture and other tests however; there are other none-bacteriological methods acceptable for TB diagnosis including clinical symptoms staging by the medical officer, X-ray diagnosis for cases where sputum cannot be obtained from patients though collection of sputum for any patient starting TB treatment is recommended.

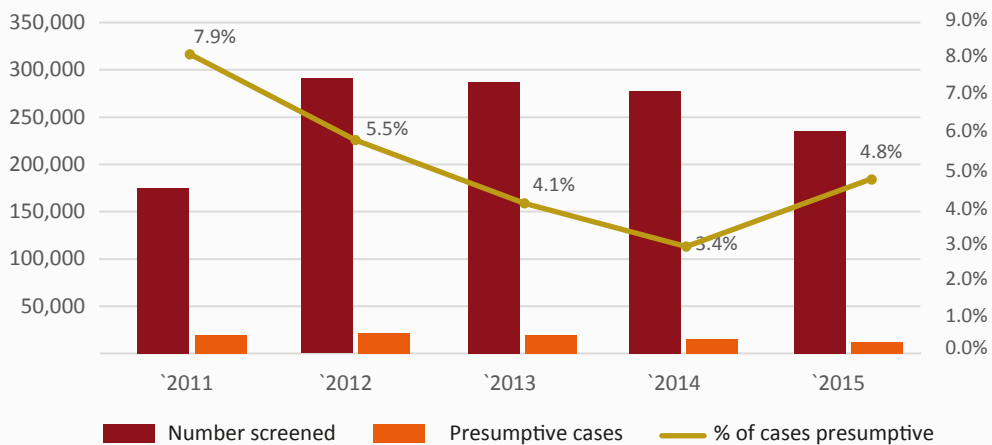
Table 2: Number of TB Screenings for period 2010 to 2015

	Number screened	Presumptive cases	% of cases presumptive	Number diagnosed	% of presumptive +	Number enrolled on Rx	% enrolled on RX
2011	175 787	13 879	7,9%	1 017	7,3%	907	89,2%
2012	294 611	16 140	5,5%	1 671	10,4%	1 428	85,5%
2013	294 590	12 001	4,1%	1 281	10,7%	1 239	96,7%
2014	286 073	9 744	3,4%	838	8,6%	715	85,3%
2015	240 051	11 641	4,8%	1 139	9,8%	958	84,1%

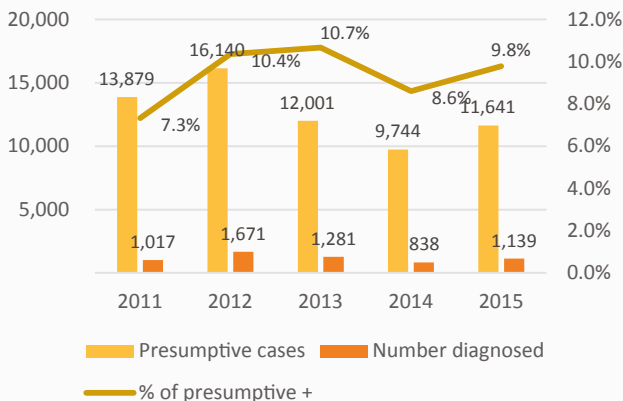
*Please note that the number screened are screenings performed not the number of people screened.

Table 1 above shows the number of TB screens performed by year starting in 2011 to 2015. It can be noted that over the years that about 10% of all cases screened positive where diagnosed with TB using the highly sensitive TB Screening tool.

TB SCREENING AND PRESUMPTIVE CASES 2011-2015



NUMBER OF PRESUMPTIVE CASES DIAGNOSED, 2011-2015



PROPORTION OF CASES ENROLLED ON TB TREATMENT, 2011-2015

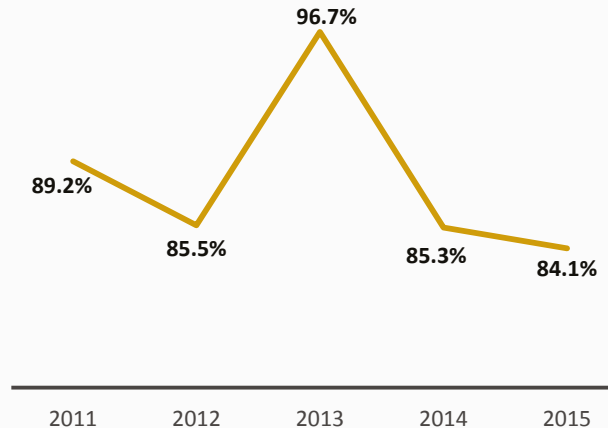


Figure 1: TB Screening Diagnosis and Treatment

3.2.2 Case Detection

Case detection is based on identification of presumptive TB cases attending health facilities through sputum examination. In line with WHO recommendations the NTCP adapted the standardized diagnostic algorithms for diagnosing smear positive; smear negative pulmonary and extra pulmonary TB in adult and pediatric patients. Drug resistant TB cases are diagnosed using liquid culture DSTs/LPA. Comparative accuracy of GeneXpert/ Cartridge Based Nucleic Acid Amplification test (CBNAAT) is used for diagnosing TB and DR-TB in all sites.

Case notification rates of all forms of TB had been steadily declining since 2010, as shown in Figure 2 below but however the country is expected to notify more cases as per the WHO estimates. According to WHO estimates the prevalence and incidence rates showed a steady increase in the past years until 2013 where there was a decrease. Even though WHO estimates show a slight decrease in the prevalence and incidence rate the country is still far below the WHO estimates. Current data on notification is also far less than the WHO estimates.

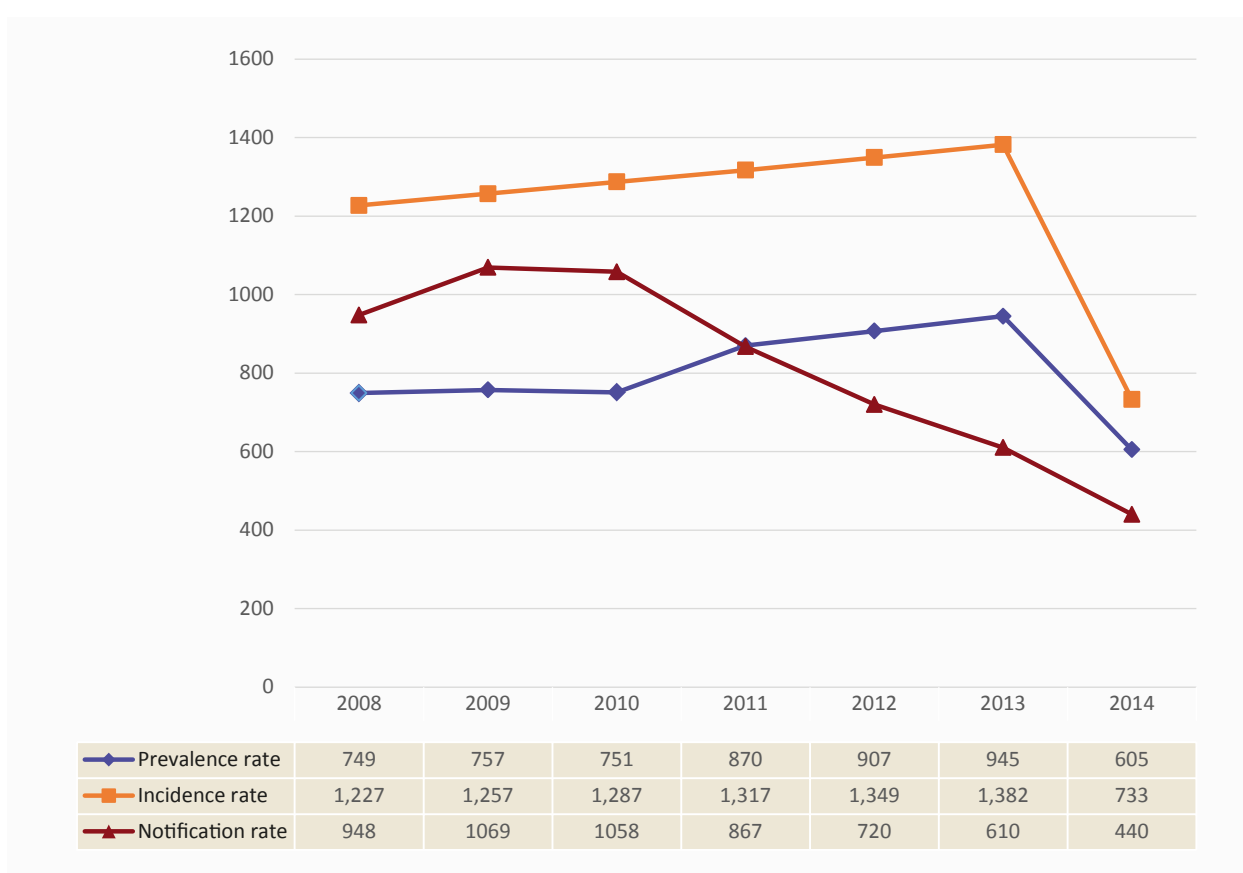


Figure 2: Estimated Prevalence, Incidence and Notification Rate (Actual), Swaziland 2008-2014

a) Case Notification of TB: All Forms

Every quarter, the National TB program receives aggregate case-finding, TB/HIV, sputum conversion and treatment outcome information for patients registered under the program from 109 BMUs in the country. The NTCP follows the global method of cohort analysis for describing case finding and treatment outcomes. Timely data collection and dissemination remain the hallmarks of the NTCP surveillance and data management system. The data from the quarterly reports are analyzed and disseminated in the public domain as quarterly performance reports before the end of the subsequent quarter and as an annual report.

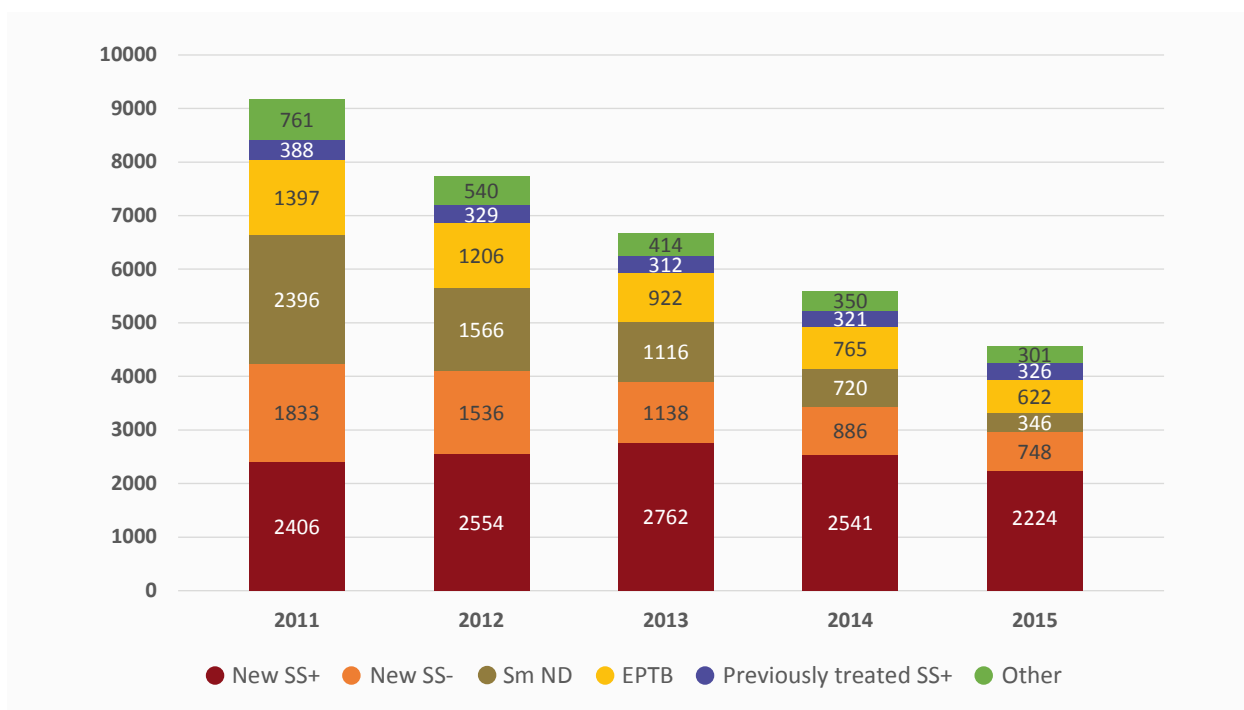


Figure 3: Number of Notified TB cases by types, 2011-2015:

Figure 3 above, shows the number of TB cases that were notified by health facilities from 2011 to 2015. Overall, a decline in the number of cases have been noted over the years. Furthermore, the same trends have been noted for Sputum Smear positive (SS+) cases even though the aim of the program is to increase the number of TB cases diagnosed as Sputum smear positive compared to the other types of diagnosis. This downward trend could be showing signs that the TB burden might have reached its peak and it has begun declining.

New SS- cases have nonetheless been decreasing since 2011, these have reduced by over 50% from 2011 to 2015. Similarly, a continued improvement has also been noted among Smears Not Done (SND), due to health care workers being capacitated on sputum induction and gastric lavage among pediatrics as well as strengthening health education on sputum production. On another note, previously treated TB cases have remained constant over the years and a majority of these are relapse cases. This is a cause for concern for the program since such high number of relapse cases are proxy for Drug resistant TB.

b) Trends for TB notification rates

Case-detection rates for each country are published in WHO's annual report on global TB control. For describing the notification in this section, the data from the reports of the 4 quarters in a calendar year have been combined and is presented in the form of annual data. The data presented below extend from the year 2011 up to 2014. The rates presented in this section are all per 100,000 populations and the assumption made was that all TB units have been operating for the duration of the year. In addition, the population used for the regions and the country are estimates based on 2007 census.

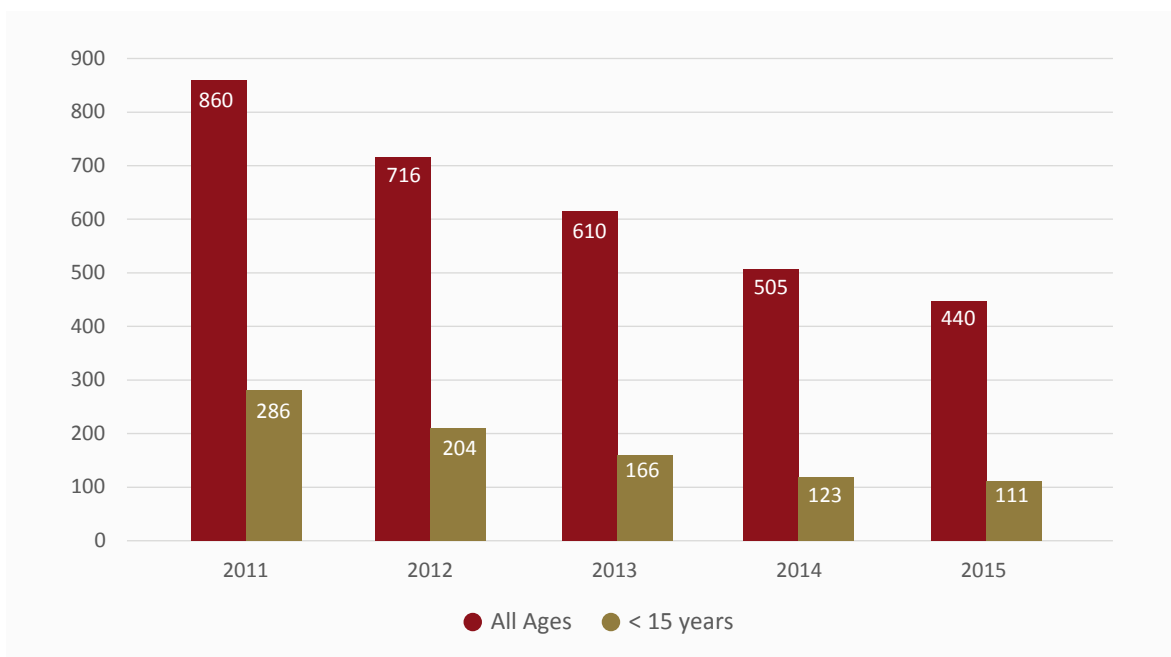


Figure 4: Trends for TB notification rates per 100,000 population: all forms of TB by age (2011-2015)

Figure 4 above, compares the TB notification trends for all forms with new cases from 2011 to 2015. The actual notification rates for Swaziland have been gradually declining from 860/100 000 in 2011 to 440/100 000 population at the end of 2014. These inconsistencies might reflect the acknowledged deficiencies of the WHO estimates and the growing demand for country specific TB surveys to determine the TB burden based on population level data.

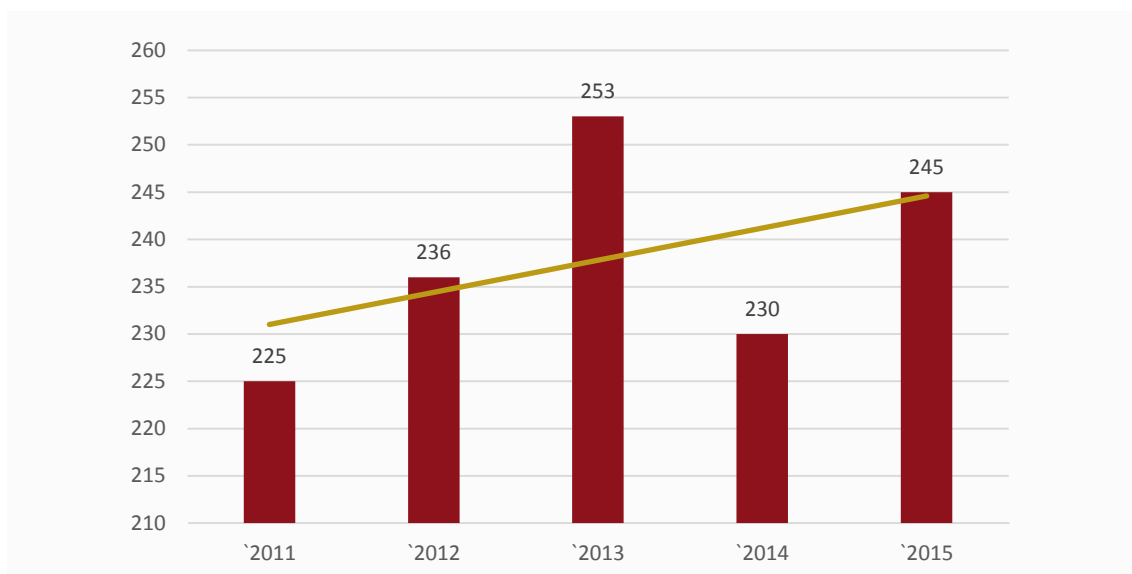


Figure 5: Trends in Smear Positive TB Case (2010-2014), per 100,000 population

Figure 5 above, presents TB notification trends for New Smear Positive cases from 2011 to 2015. In 2013, the program reported the highest smear positive cases (253/100 000 population), whilst 2011 had the lowest (225/100 000 population). It can be noted that there has been an overall increase over the years as indicated by the trend line, thus there is a need for interventions to reduce the TB positivity.

c) TB/HIV collaborative activities

According to the Global Report 2015 the estimated HIV-positive incident TB cases were at 5900. TB and HIV act in a deadly collaboration. HIV infection increases the risk of TB infection on exposure, progression from latent infection to active TB, risk of death if not timely treated for both TB and HIV and risk of recurrence even if successfully treated.

TB is the most common opportunistic infection and cause of mortality among people living with HIV (PLHIV), difficult to diagnose and treat owing to challenges related to co-morbidity, pill burden, co-toxicity and drug interactions. In Swaziland, 106 health care facilities offer collaborative TB/HIV services.

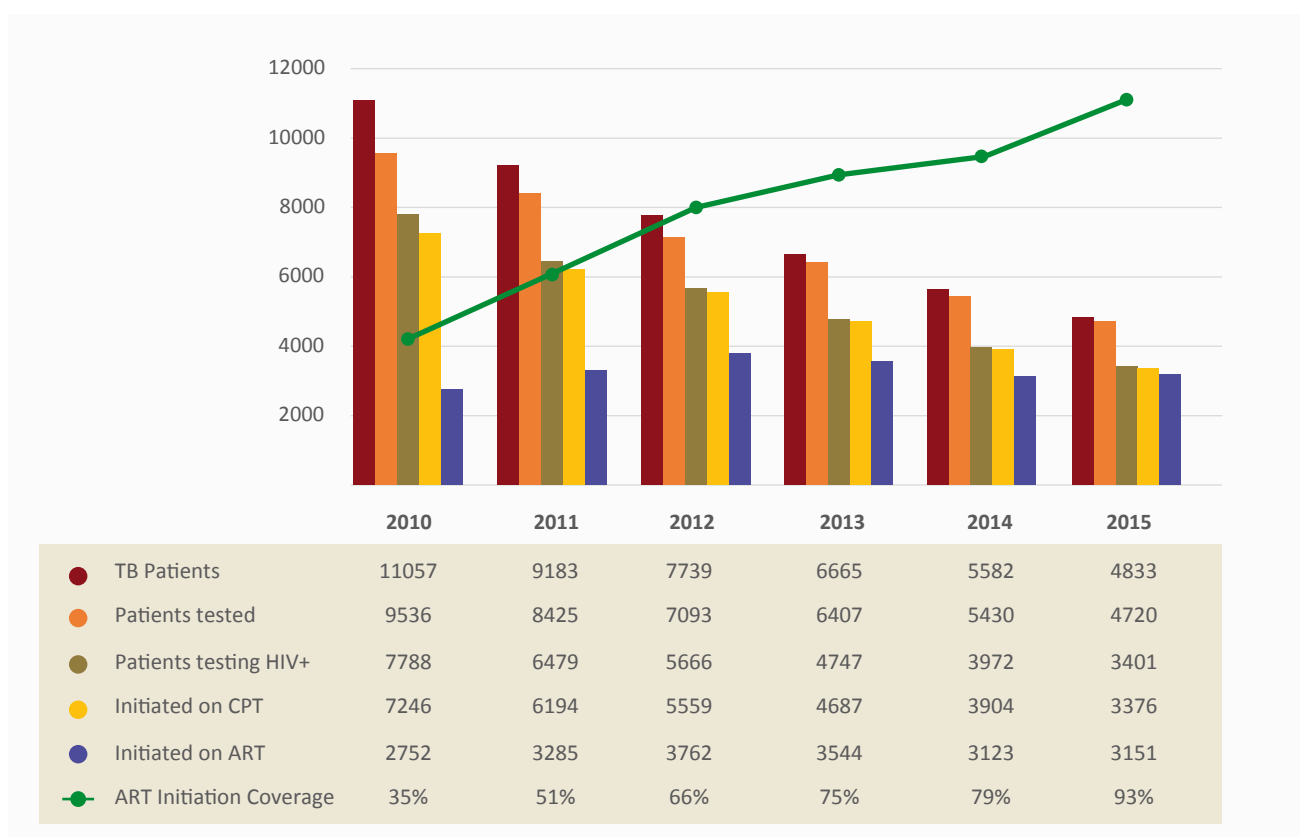


Figure 6: TB/HIV collaborative services, 2010-2015

The scale of the HIV-related TB epidemic demands urgent, effective and coordinated action to improve diagnostic, care and prevention services for people living with HIV and TB. Figure 6, above presents HIV testing results and uptake of ART by TB patients. HTC uptake by TB patients has been increasing over the period 92% in 2011 to 99% (4720/4833) in 2015. This can be attributed to the improved TB/HIV collaborative activities which aim to give the TB patients proper HIV testing information, counselling, stigma reduction and access to ART. Furthermore, a very significant improvement on ART initiation coverage standing at 93% in 2015 from 35% in 2010 is observed. Nonetheless, TB/HIV co-infection remains high, in 2015 TB/HIV co-infection stood at 72% (3401/4720).

The programme has managed to reduce the burden of HIV gap in CPT and ART continues to improve as more initiation is closing in (becoming narrow). ART initiation among TB/HIV co-infected patients stood at 79% (3151/3376) in 2015 showing a significant increase in 51% (3285/6194) reported in 2011. However much as the gap between ART initiation and CPT initiation is decreasing, there is still a significant gap that needs to be closed/ addressed by the program.

3.3. TB treatment

Rifampicin(R), INH (H) Pyrazinamide (Z) and Ethambutol (E) are used in the treatment of TB patients. A new case of TB patient will receive 6 months of treatment with 2 months of intensive phase (RHZE) and 4 months of continuation phase (HR). Re-treatment TB case will receive 8 months of treatment with 3 months of intensive phase (RHZE) and 5 months of continuation phase (HRE). Follow-up sputum smear examinations are done at the end of the intensive phase, 2 months into the continuation phase and at the end of treatment. If the smear is positive at the end of the intensive phase, the same drugs are given for one more month and then the continuation phase is started. The treatment outcome is determined according to the results of the follow-up smear examinations done during treatment. For pediatric TB patients; asymptomatic children under 5 years who are household contacts of bacteriologically pulmonary TB patients; chemoprophylaxis with isoniazid (10 mg/kg body weight) is administered daily for a period of 6 months.

Table 3: Number TB cases starting TB treatment (new and retreatment cases), [2011-2015]

Year	HHOHHO	MANZINI	LUBOMBO	SHISELWENI	TOTAL
2011	2,537	3,581	1,339	1,723	9,180
2012	1,986	3,151	1,344	1,250	7,731
2013	1,783	2,771	1,236	874	6,664
2014	1,458	2,323	961	840	5,582
2015	1298	1850	787	632	4567

Table 4 above shows the number of TB cases between 2011 and 2015. A decline has been noted in the number of people starting TB treatment over the years. In 2015, a total number of 4567 people started TB treatment in 2015, showing 50% decline from the 9,180 in 2011.

3.3.1 Sputum Smear Conversion

In accordance with these guidelines, the TB program monitors progress of TB patients once started on treatment and documents this for future programmatic interventions and corrective actions when needed.

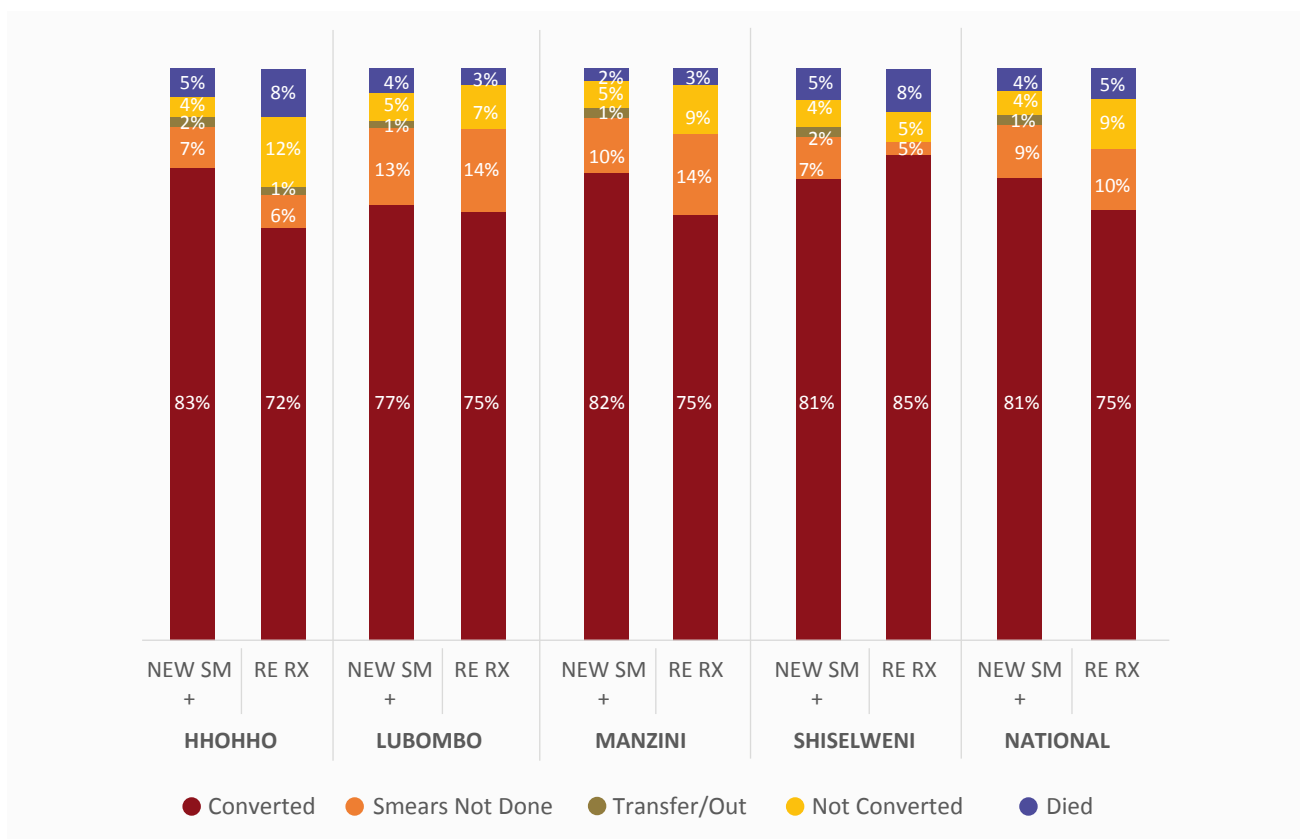


Figure 7: Sputum conversion among new and retreatment cases in 2015

Figure 7 above, presents sputum smear conversion rates among new and retreatment cases across the four regions. In 2015, the sputum conversion rates for new smear positive and retreatment cases stood at 81% and 75% respectively. This is an improvement when compared to 2014 data (new smear positive 73% and retreatment cases 64%).

In the year under review, smear not done remained high for both new smear positive (9%) and retreatment cases (10%). The national TB treatment guidelines stipulates that, patient follow-up should be done at month two or three, five and end of treatment through sputum microscopy. Manzini (new sputum smear positive=10% and retreatment cases=14%) and Lubombo (new sputum smear positive=13% and retreatment cases=14%) regions contributed the highest proportion of smear not done for both new sputum smear positive and retreatment cases. Overall, it can be noted that smear not converted was high amongst the retreatment cases at 9% in 2015. Hhohho region had the highest smears not converted at 12% while Shiselweni had the least at 5%. These figures are considerably high indicating high chances of Drug Resistance TB.

3.3.2. Treatment Outcomes

According to the End TB Strategy, the aim of the TB program is to achieve 90% treatment success for all patients diagnosed with TB and started on treatment. The TB treatment success rate among new sputum smear positive cases has continued to show a steady increase over the years. In 2015, the TB treatment success rate stood at 82% showing a significant increase from the 70% reported in 2011. It can be noted that TB cure rates have been increasing gradually over the years from 46% in 2011 to 68% in 2015. The increase in cure rates coupled with the decreasing completion rates are in line with the programs aspirations. Figure 8 below further illustrates the outcomes for New Sputum Smear Positive cases.

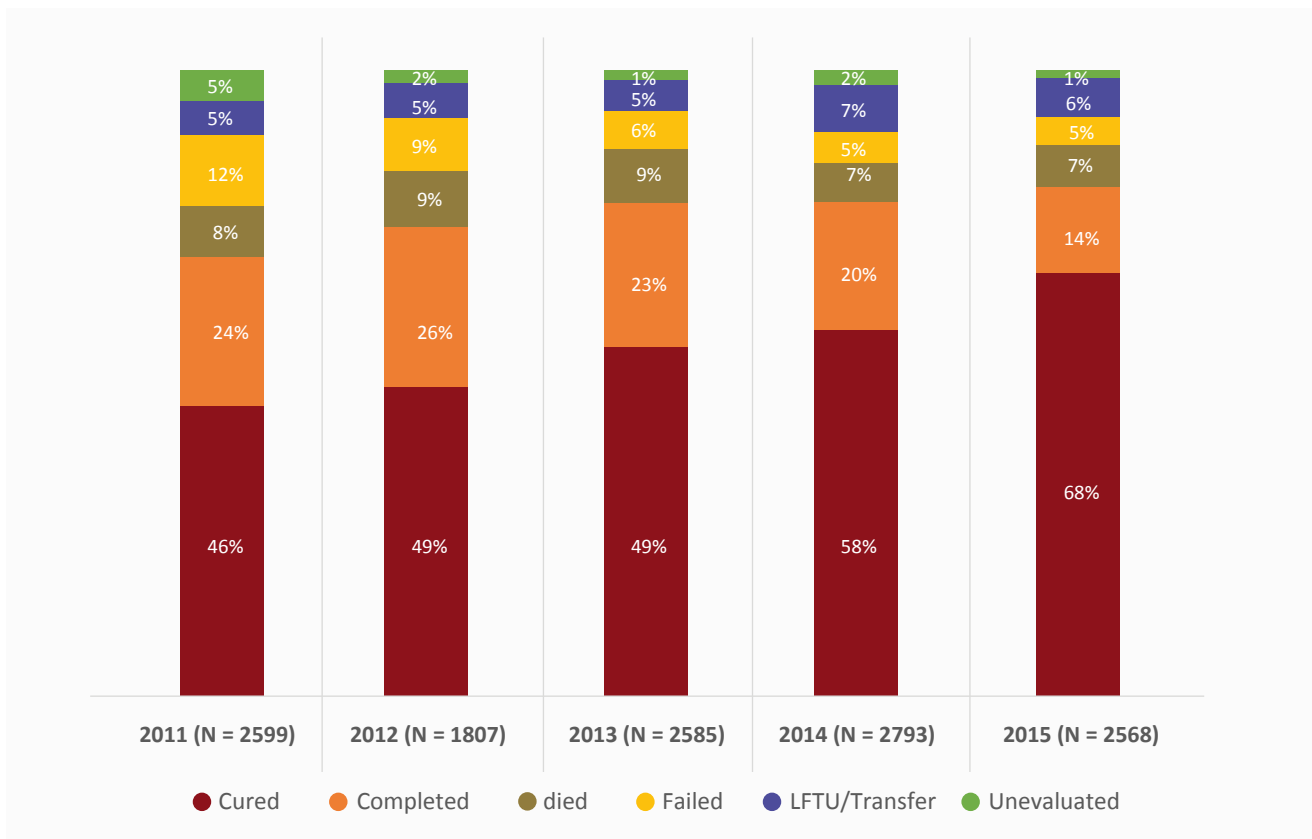


Figure 8: Treatment outcomes of all New Sputum Smear Positive TB cases [2011-2015]

Figure 9 represents TB treatment outcomes for all forms of TB between 2012 and 2015. The overall TB treatment success rate for all forms of TB cases (new and re-treatment cases) increased from 70% in 2011 to 82% in 2015. It is noted that despite the overall increase in treatment success, completion rates remain very high, ideally cure rates should be higher than completion rates. Death rates have been slowly declining from 13% in 2012 to 11% in 2015. However, this is still high compared to the National targets (5%).

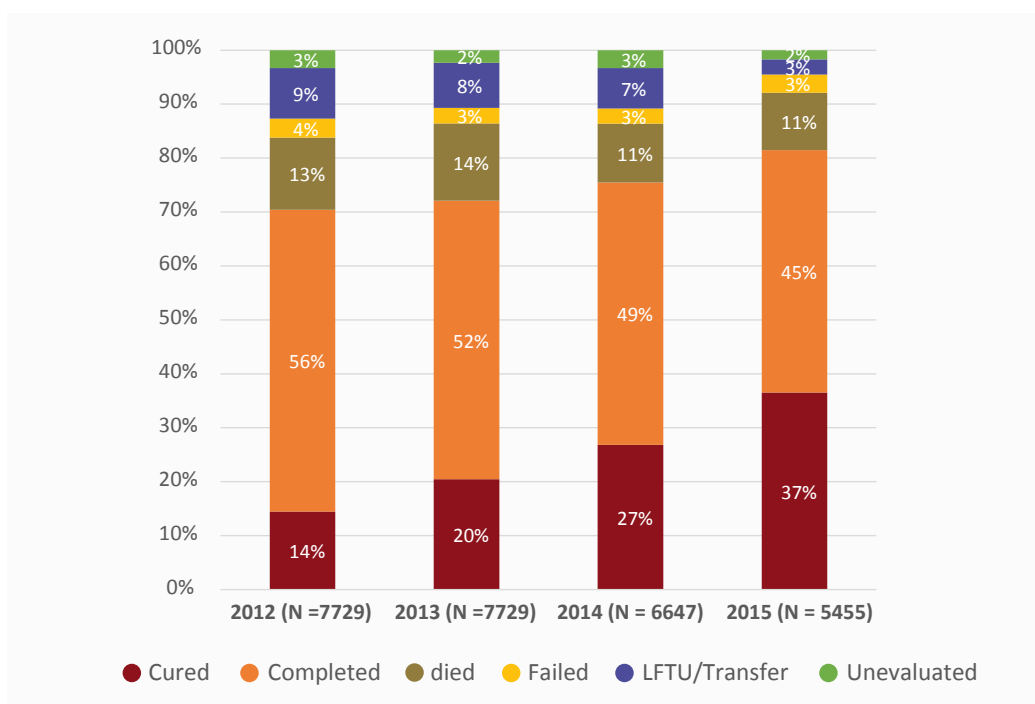


Figure 9: Treatment outcomes of all forms TB cases [2015]

Figure 10 below, presents treatment outcomes for HIV positive TB patient cohorts for the period 2012 to 2015. TB treatment success rate among TB/HIV co-infected in 2015 stood at 78% with not much increase from the 75% reported in 2014. Unacceptably high death rate (11%) and lost to follow up and transfer-out rate (6%).

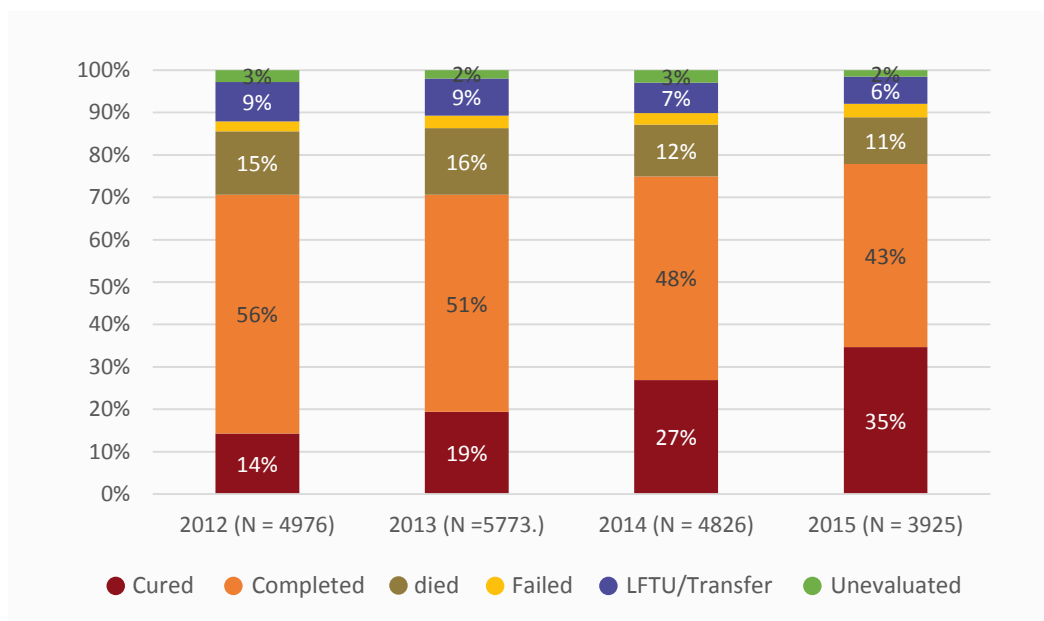


Figure 10: Treatment outcomes for HIV+ TB patient cohorts, 2012 -2015

Figure 10 above, present’s treatment outcomes for HIV positive TB patient cohorts for the period 2012 to 2015. TB treatment success rate among TB/HIV co-infected in 2015 stood at 78% with no much increase from the 75% reported in 2014. Unacceptably high death rate (11%) and lost to follow/transfer-out rate (6%).

3.4. Burden of paediatric TB in the country

Globally, about 1 million cases of paediatric TB are estimated to occur every year accounting for 10-15% of all TB cases; with more than 100,000 estimated deaths every year becoming one of the top 10 causes of childhood mortality. Though MDR-TB and XDRTB is documented among paediatric age group, there are no estimates of overall burden, mainly because of diagnostic difficulties and exclusion of children in most drug resistance surveys.

Table 4: Childhood TB Burden and HIV testing 2010-2015

	2011	2012	2013	2014	2015
# of cases	1,144	829	671	502	347
tested for HIV	975	735	607	465	347
HIV+	546	421	277	222	184
Initiated on CPT	529	402	268	218	184
Initiated on ART	277	262	195	176	175
% on ART	51%	62%	70%	79%	95%

The table above shows the childhood TB burden and HIV testing between 2010 and 2015. Over the years a declining trend has been noted in the number of paediatric TB cases notified in the country 1,144 in 2011 to 347 in 2015.

Among paediatric TB/HIV collaborative activities, a gradual increase in the uptake of ART has been noted over the years. Of the 347 notified pediatric TB cases in 2015; all cases were screened for HIV, 53% (184) of these tested HIV positive. Furthermore, all (184) TB/HIV pediatric patients were put on CPT whilst ART uptake stood at 95% (175) when compared to 51% reported in 2011. This improvement can be attributed to the integration of childhood TB in routine child health services (Expanded Program and Immunization and Integrated Management for Childhood Illnesses), the clinical diagnosis of TB and expansion of GeneXpert.

On the other hand, paediatric sputum specimen collection has also increased over the years, e.g. from 18% reported in 2011 to 60% in 2015 which also enhances TB diagnosis. This improvement can be attributed to the capacitation of health care workers of methods enhancing sputum induction among paediatrics including gastric lavage and this allows for better management of paediatrics TB cases.

3.5. Drug Resistant TB

While there have been major achievements made in TB control over the years, Swaziland has the highest TB rate per capita in the world (Global Health Report, 2013) with a severe MDR-TB epidemic of 7.7% among new TB cases and 33.9% among previously treated cases (2009, MOH DR Survey).

The NTCP with collaborating partners has achieved significant success in recent years where the program in 2014 enrolled 376 patients on MDR-TB treatment and the outcomes for the 2011 TB cohort stood at 56% with only 17% failed treatment (Annual TB Program Report, 2014). There has also been an increase in sputum conversion rates and an increase in treatment success rates from 44% to 50% which have been systematically triggered by the variable access and scaling up of DR-TB sites with the decentralization of DR- services from the central level to community level in cognizance of infection prevention and control.

In spite of all the achievements, cases on DR-TB are increasing and the NTCP has prioritized Drug Resistant TB in its National Strategic Plan (2015-2019) by including strengthening of the prevention of drug resistant TB transmission, improving diagnostic and treatment pathways and reduction of systemic leakages which contributes to loss to follow-up as well as embarking on a Drug Resistant Surveillance (DRS) Survey.

Enrollment

The figure presents DR TB cases disaggregated by age in 2015. An increase from 375 in 2014 to 483 cases in 2015 is observed in the number of DR TB cases reported. Among the cases reported in 2015, 97% were adults and 3% were pediatrics. The data also reveals that amongst adults 52% (245) presented with Rif Resistant TB, followed by Polydrug- resistant TB with 18% (83) and clinically diagnosed/presumptive being the lowest 3% (15). Worth noting is that a similar trend was observed in 2014 calling for further improvement in the management of DR-TB within the TB program. Childhood MDR remains underdiagnosed among children, as they are rarely sputum positive, currently only 3% of all MDR-TB cases are paediatric cases compared to 6% in 2015.

MDR Trends

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Confirmed MDRTB cases	12	14	183	206	242	279	196	403	120	94
Confirmed MDRTB cases started on treatment	0	23	119	169	197	152	152	430	375	483

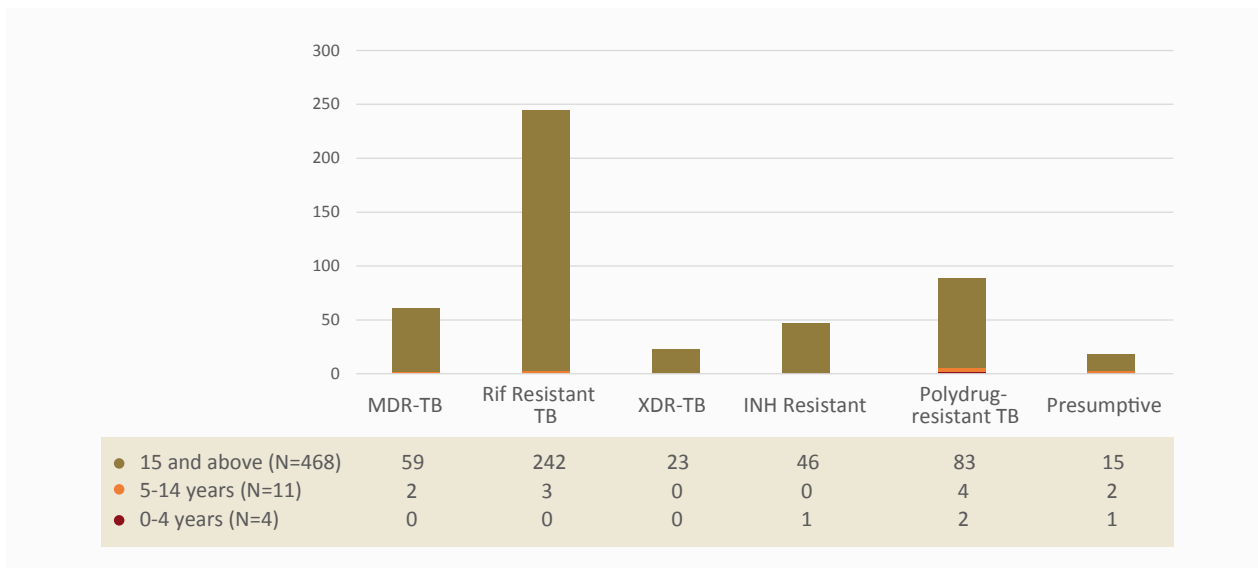


Figure 11: DR-TB Patients Enrolled on Treatment in Swaziland disaggregated by age, 2015

3.5.2 Multi-Drug Resistant TB Interim Outcomes

The Programmatic Management of Drug resistant TB (PMDT) guidelines postulates all bacteriologically confirmed MDR-TB patients receive intensive phase for 6–8 months in a hospital setting until sputum conversion, followed by 12-16 months of continuation phase in the community, based on the WHO updated guidelines in 2012. This was not feasible due to increased numbers of DRTB cases, HR issues, low bed capacity issues at the TB hospital, infection control measures (nosocomial infection), patients refusing admission for longer duration, associated with depressive moods etc..

A standardized treatment regimen is used which includes five drugs namely: Kanamycin/Amikacin, Levofloxacin, Ethionamide, Cycloserine/terizodone, Pyrazinamide and PAS. Baseline investigations are done for all patients and sputum smear microscopy and culture examinations are performed every month to monitor the patient’s bacteriological response to treatment.

MDR-TB SIX MONTHS INTERIM OUTCOMES

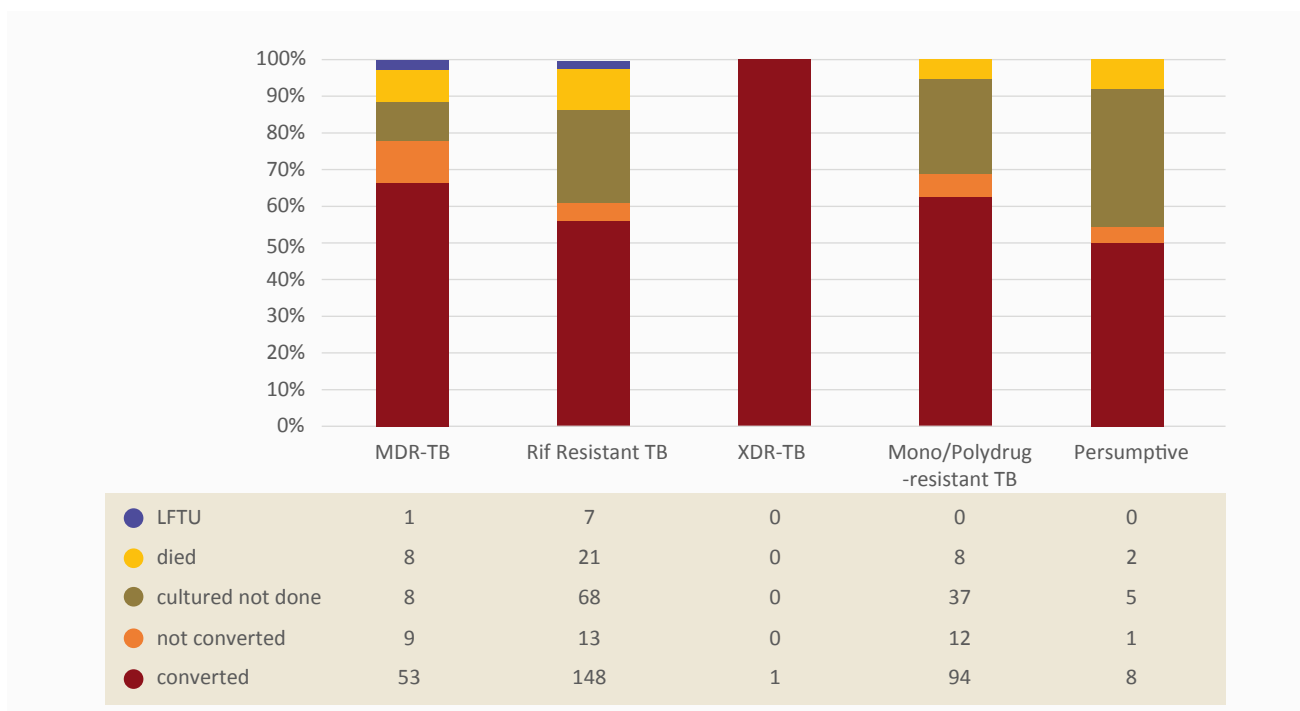


Figure 12: Interim treatment outcomes, 2015

Figure 12 above, presents interim (end of the intensive-phase) treatment outcomes. Between April 2014 and March 2015, there were 504 bacteriologically confirmed DR-TB patients whose outcomes were evaluated at the end of the intensive phase. Among all patients enrolled on treatment, 39(7%) patients died, 8 (2%) were LFTU and the remaining 457 (91%) were alive and on treatment at the end of the intensive phase. A total of 118 (23%) of the patients who were alive at the end of intensive phase had no culture done, 304 (60%) became culture negative. Out of those who died, 54% were Rif resistance cases followed by MDR TB cases (21%).

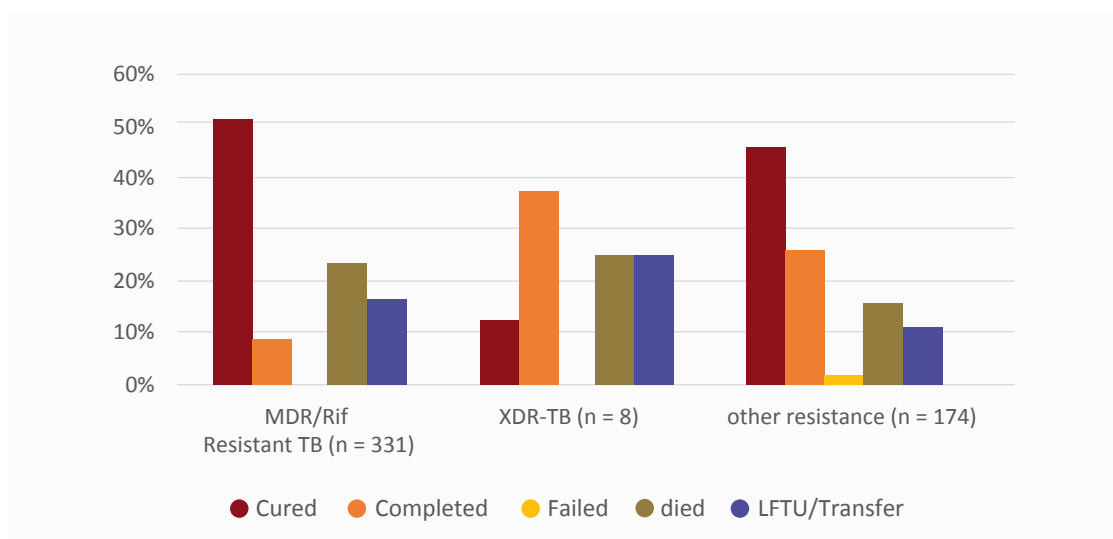


Figure 13: Final outcomes for all DR-TB patients who initiated treatment in 2012

DR-TB treatment outcomes remains generally poor but shows some improvement, particularly among those with XDR-TB. According to the WHO 2014 report, the global MDR-TB treatment success rate was 48% with a loss to follow up (LFTU) rate of 25%, while the global XDR-TB treatment success rate was 22%, with rates of 35%, 10% and 33% for death, treatment failure and LFTU, respectively.

DR-TB treatment outcomes in Swaziland are defined according to WHO recommendations. Final treatment outcomes are assigned upon completion of the recommended 36 months’ duration of treatment or following premature termination of treatment due to death, treatment failure or LFTU (WHO, National Tuberculosis Profile, 2014). In Swaziland, the rate of treatment success among XDR-TB patients who started treatment in 2012 was 50%, while 25% of patients died and 25% were LFTU or not evaluated against a target of <5%. The rate of treatment success among MDR-TB patients who started treatment in 2012 was only 61%, while 24% of patients died and 16% were LFTU or not evaluated. Such high death may be due to poor counselling before start of treatment; late diagnosis of MDR patients; limiting regimens for XDR before new drugs were procured, poor DOTS implementation; patients stopping treatment and coming back when they have deteriorated. Loss to follow up above the target of <5% are a result of patients defaulting because of the longer duration of the treatment, no money for transport and or hard to reach areas since DR facilities are few.

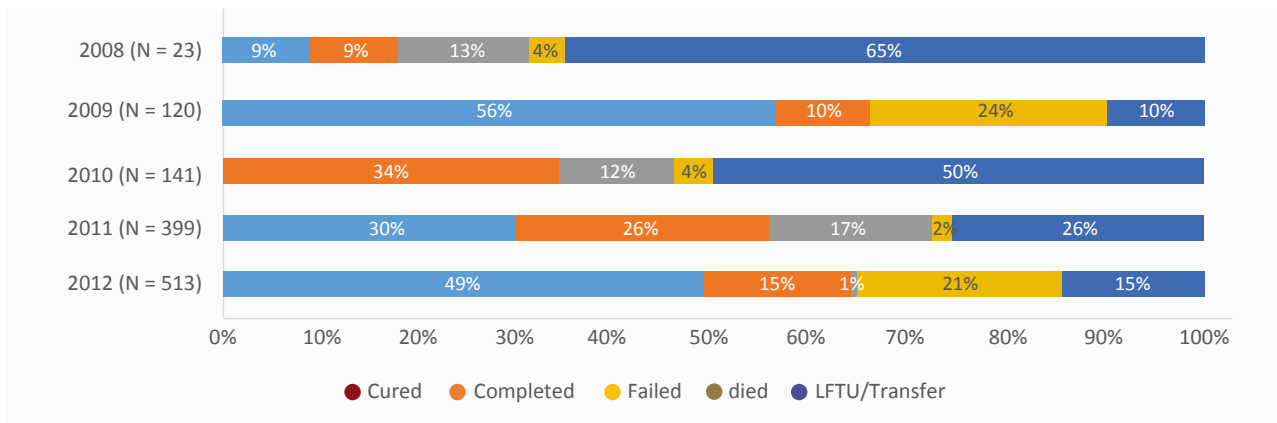
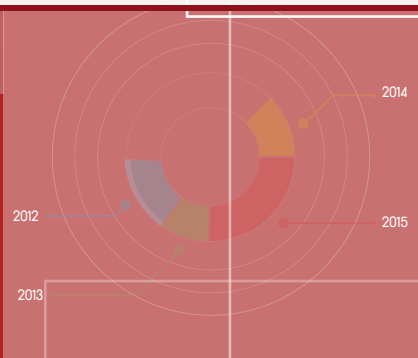


Figure 14: Final outcomes for all DR-TB patients who initiated treatment from 2008 through 2012

Figure 14 above, shows final outcomes for all DR-TB patients who initiated treatment from 2008 through 2012. Treatment success rates for patients initiating DR-TB treatment in Swaziland shows some improvement but remain stable at average of around 60% for the last 2 cohorts. Given the availability of resources and patient support activities, the slow improvement outcomes may be due to the long duration of standardized treatments that are poorly tolerated.

Encouragingly, treatment success rates have improved following the decentralization of MDR-TB services from National TB hospital in 2012, to 8 DR sites countrywide by 2015. There has been an increase in DR-TB case detection, coupled with comprehensive processes to treatment initiation which has led to a larger proportion of DR-TB cases linked to care. This may contribute to reduced DR-TB transmission within the broader community.

CHAPTER 4: Program Achievements and Challenges



The overall aim of the NTCP is to decrease mortality and morbidity due to TB and cut transmission of infection until TB ceases to be a major public health problem in Swaziland. Even in 2015, the program realized improvements in the key indicators monitored. The program managed to achieve some of its planned activities with documented challenges for actions in 2016.

4.1.1. ADVOCACY, COMMUNICATION AND SOCIAL MOBILIZATION (ACSM)

ACHIEVEMENTS

- As part of advocacy, the NTCP was able to provide messages and information on TB prevention, treatment and adherence to over 300 women during the marula season.
- TB information was also provided to almost one thousand people in the Shiselweni region during World TB commemoration.
- Over 300 people were reached during the Swaziland Trade Fair Exhibition which happens on an annual basis.
- Sensitization meetings were held with traditional leaders in all four regions of the country as means to sensitize the on the implementation of the Active Case finding project that will happen in all 369 chiefdoms of the country.

CHALLENGES

- Most of the ACSM activities lack funding as the NTCP has been unable to secure funding for ACSM activities which include Information, Education and Communication (IEC) materials which poses as a major challenge as facilities do not have material to use when conducting health sessions.
- There is still need to engage communities and empower them with information on TB as knowledge still proves to be a gap as some people still have myths with regards to the disease.
- Continued need for advertising on the various media channels to raise awareness through TB messages.

4.1.2. DOTS

ACHIEVEMENTS

- The current DOTS coverage is at 66.7% which is 3048 patients on DOTS out of 4567 registered cases.
- The DOTS programme capacity was strengthened through the engagement of the Psychosocial Officer, 9 adherence officers and 20 TB screening officers to ensure improved screening which resulted in 240 051 cases screened, of these 11641 were presumptive cases and 1139 were diagnosed. A total of 958 were enrolled on treatment and provided with extensive supervision and support.
- Improved case notification through the involvement of community structures such as Treatment supporters, Expert clients and TB screening officers resulting in 4567 people started TB treatment in 2015.
- All susceptible TB patients started on treatment with treatment supporters to improve adherence and treatment success rate which is showing a significant increase. The involvement of family supporters in susceptible TB has shown significant improvement as show in this annual report of 82% from the 70% reported in 2011. Death rates have been slowly declining from 13% in 2012 to 11% in 2015 due to effective Treatment support.
- To strengthen patient support and involvement of treatment supporters, the TB program engaged 4 regional DOTS officers to strengthen supervision of DOTS treatment supporters, TB Expert clients, adherence officers and TB screening officers including TB/HIV collaborative efforts at regional level.
- An increase of DR TB cases from 375 in 2014 to 483 cases in 2015 was observed and adherence was improved through the introduction of a comprehensive reporting form for community treatment supporters for DR TB DOTS PLUS

CHALLENGES

- Frequent breakdown of motorbikes for defaulter tracing thus making it difficult to reach clients with no mobile contacts.
- Lack of nutritional support for DR TB patients thus affecting adherence
- Stigma thus resulting in some patients refusing to start treatment and noncompliance to treatment.
- Some patients still have challenges in producing sputum thus hindering with their management during treatment.

PEDIATRICS

ACHIEVEMENT

- The department has successfully capacitated approximately 49 health workers (9 doctors and 40 nurses) on comprehensive management of childhood DS-TB and 35 doctors on the management of MDR-TB in children. Most children are now bacteriologically confirmed due to the improved capacity of health care workers.
- There has also been extensive capacitation of nine clinicians on imaging reading and interpretation in the diagnosis of TB in children.
- The program is now able to compound paediatric formulation for children with MDR -TB through pharmaceutical training.

CHALLENGES

- The diagnosis of childhood TB presents a major challenge as bacteriologic confirmation is rarely achieved. Because of the paucibacillary nature of disease in children, the yield from sputum will be increased by culture yet the problem with reliance on culture is that it takes 6–8 weeks for a result yet a decision to treat for TB or not in children usually needs to be made instantly.
- The diagnosis of childhood TB then depends mainly on clinical features and the subjective interpretation of the Chest X-ray (CXR) even though the CXR has well-recognized limitations and requires skilled clinicians.
- Children rarely develop sputum smear-positive TB so may be excluded from recording and reporting practices seriously under estimating the burden of the disease in the country and also making it very difficult for future monitoring and evaluation purposes.
- Even though Isoniazid preventive therapy (IPT) has proven efficacy to prevent active disease after documented TB infection, the uptake and adherence to this drug seems to be very poor.
- Nutritional support for children suffering from the TB infection has remained a serious challenge. An HIV-infected child has higher caloric requirements, even in case of non-advanced immunosuppression. This need rises further in case of additional consummating infections as PTB. Providing additional nutritional can be a crucial intervention for children with HIV and PTB but getting such support has been difficult.

4.1.5 MINERS AND EX-MINERS

ACHIEVEMENTS

- Swaziland National Network of People with HIV /AIDS (SWANNEPHA) and Swaziland Migrant Mine Workers Association (SWAMMIWA) held a cross border campaign at Mahamba border gate in December 2015 to sensitise mobile populations on access to health, harmonised treatment and adherence to protect families and communities at large.
- As an advocacy effort for TB and Miners, The World TB Day and World AIDS day were commemorated through technical and financial support from International Organization on Migration (IOM). Promotional material and IEC material to educate the miners and the masses on TB and HIV transmission, prevention and treatment were distributed.
- As part of implementing the Declaration of TB in the mining sector, 37 health care professionals were trained in Lung Health including doctors and nurses and lung health care was piloted in four health facilities. A total of 565 minors were screened and 428 were found to be silicosis, 39 asbestosis and 70 were put on TB treatment. Since the silicosis and asbestosis are incurable illnesses, the patients have been put on treatment to manage the illness and prolong their life.

CHALLENGES

- The main challenge is that the project has a short time span due to the fact that resources are not secure.
- The TB in the Mines project has largely concentrated in the Shiselweni region yet other regions like Hhohho have not been assisted.

TB/HIV INTEGRATION:

ACHIEVEMENTS

- TB/HIV integrated services has been decentralized to 106 health facilities in the country
- Over 95% TB patients tested for HIV and over 95% received CPT. 79% of TB/HIV co-infected TB patients were enrolled in ART program
- TB screening is implemented in all HIV clinics and 15% of PLHIV received Isoniazid Preventive therapy.
- About 120 health care workers including nurses based at correctional institutions have been trained on TB/HIV, IPC including general infection control by the end of the 2015.
- Medical evaluation of respirator wearer and Respirator fitting for 700 nurses conducted in 20 facilities

CHALLENGES

- Programmatic management of Latent TB Infection among PLHIV in the country needs to be strengthened
- 38 health facilities are providing ART but not TB treatment
- TB/HIV Regional coordinating committees meetings have not been revived
- TB/HIV service integration has been compromised by IPC non-compliance health facilities
- The IPC program not in full scale implementation in one of the four regions due to inadequate human resource capacity in the region.
- Implementation of TB surveillance among health care workers has not done
- Different sizes and models of N95 respirators not available
- TB/HIV service integration has been compromised by IPC non-compliance health facilities

4.1.8 PROGRAMATIC MANAGEMENT OF DRUG RESISTANT TB (PMDT)

ACHIEVEMENTS

- Through decentralization of DR-TB services, initiation sites have been increased from 8 to 10 and this has resulted into increased access to treatment enrolment from 375 patients in 2014 to 483 in 2016.
- The deployment of Regional DR-TB doctors and nurses has improved supervision and initiation of treatment nearer to the community.
- Swaziland is among the few countries who have piloted the 9 to 12 months' short term MDR-TB regimen and preliminary results show improved adherence to treatment and better outcomes.
- Introduction of second line DST in the country enhanced the diagnosis of XDR-RB and that facilitated the speedily initiating of patients on right treatment than to wait for weeks for
- Strengthened case management by establishing a clinical access program (CAP) committee to review cases that need to be initiated on new drugs and ensure appropriate initiation of eligible patients. The committee consists of 15 members from implementing partners and international experts. In addition, quarterly DR-TB expert clinical meetings have been established to update knowledge and skills through information sharing.

CHALLENGES

- Patient support is not standard in all the 4 regions. As only 2 regions supported by partners who provide full patient support covering monthly food parcels, transport allowance and stipend for community treatment supporters. Whilst the other 2 regions are supported with transport allowance for treatment supporters.

LABORATORY

ACHIEVEMENTS

- Introduction of the Second Line Drug Sensitivity Testing (SL DST); previously this test method was done outside of the country resulting in long turn-around-time (TAT) of results. This has also cut down costs of courier services and processing of samples as they were very high. TAT has been reduced by over a month and patients are now put timely on the correct treatment regimen.
- Development of the National Laboratory Testing Algorithm – This will help guide requesting clinicians to know which test to order at which stage of TB diagnosis and/or treatment monitoring. Currently, the country has adapted to the WHO guidelines of using gene xpert as an initial test for diagnosing Mycobacterium tuberculosis
- Purchase of five (05) additional National Sample Transportation System vehicles – This reduced the time of getting samples to testing laboratories thus improving the turnaround time for results to be released and treated where necessary.
- Capacitation of NTRL staff in culture, 1st and 2nd line DST which has resulted in accurate, reliable and timely results

CHALLENGES

- Most equipment in the laboratory are in operation without service contracts – resulting in delays of diagnosis when these equipment fail to function properly.
- Lack of a Gene Xpert alert system – some Mycobacterium tuberculosis Rifampicin resistant and/or sensitive cases may not have TB culture and DST done which are vital methods of diagnosis and patient treatment monitoring.
- Poor maintenance of national sample transportation vehicles and motorbikes which compromised the turnaround time for samples.
- Poor quality management systems at site level laboratories

4.1.10. MONITORING & EVALUATION (M & E)

ACHIEVEMENT

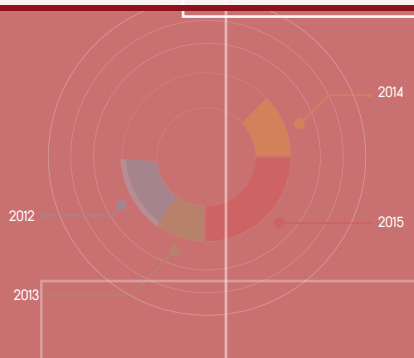
- The NTCP has a functional data collection and verification system led by the TB M&E unit which has been able to collect regionally acceptable quality data throughout the year.
- Regional and national quarterly review meetings were conducted periodically to present achievements, lessons learned, information-sharing with health facilities and partners so as to ensure high quality patient care. All 4 regional meetings and national meeting were held in all the 2015 quarters.
- The capacity for health care workers has been strengthened through training on recording and reporting tools on a continuous basis using the available forums such as QRMs and other trainings due to the high rotation of health care workers.

CHALLENGES

- The NTCP M&E plan remains at draft level. There have been delays in securing TA to revise the M&E performance framework and its targets following the new findings of the WHO TB assessments in 2012.
- Following the WHO redefinitions, the program revised the TB DS and DR recording and reporting tools registers to accommodate the new definitions. The new tools will be presented to the Health Information System Coordinating Committee and rolled out by end of 2016.
- The DR-TB electronic system is under development and will be finalized in 2016.
- Lack of ArcGIS software skillset for utilisation in data analysis as most of our systems incorporate location based services.

CHAPTER 5:

Conclusions and Action Points



5.1. Conclusions

The National TB control Programme in 2015 continued to implement and coordinate TB prevention and control activities in all the 4 region of the Country. The programme continues to witness a decline in TB case notification calling for the country to fast-track the implementation of the TB prevalence survey and active case finding efforts to ensure that no cases are missed. Also further improve the routine reporting system to accurately report all TB cases. GeneXpert machines were also rolled out to additional TB diagnostic sites to improve TB program performance.

5.2 Action Points

- Establish TB laboratory Technical working group with well-defined TORs and coordinate partner activities and align with SHLS operational plans
- Strengthen and improve the NTRL EQA program (for smear microscopy and GeneXpert)
- Develop a sustainable sample transportation maintenance plan and procure additional vehicles
- Develop a comprehensive DR – TB outreach team composed of a doctor, nurse, psychosocial counselor, adherence officer including Standardize patient support and regular transport and schedule.
- Develop Standardized DR TB supervision/mentoring tools by partners in all regions
- Improve on pharmacovigilance
- Finalise the NTCP M&E plan 2015 -2019 together with the TB recording and revision tools.
- Develop the TB Research agenda and conduct the DR and TB prevalence Survey
- Pilot and roll out the DR-TB electronic system
- Finalise TB laboratory operational and the strategic plan
- Mapping of routes for national transportation system
- Develop TB IEC material
- ACF allocated regional cars.
- Regional and national QRM.
- Continuous supply of tools e.g. M/E tools and stationary.
- Regional Servicing sites for working equipment e.g. bicycles and GIS.
- Advocacy on Supply Chain Management e.g. Laboratory supplies.
- A clear algorithm for handling injuries of ACFs.
- Introduction of timesheet to ACFs to monitor.
- Purchase motorbikes for defaulter tracing to further improve adherence and treatment success rate
- Nutritional Support for DR TB patients

