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JULY 2014 – JUNE 2015 ANNUAL REPORT

Tuberculosis and Other Respiratory communicable Diseases Control in Rwanda

RWANDA BIOMEDICAL CENTER
INSTITUTE OF HIV/AIDS, DISEASES PREVENTION AND CONTROL
TUBERCULOSIS AND OTHER RESPIRATORY COMMUNICABLE DISEASES DIVISION

CONTROL OF TUBERCULOSIS, OTHER RESPIRATORY COMMUNICABLE DISEASES AND LEPROSY IN RWANDA

The mission of control of Tuberculosis (TB) and other respiratory communicable diseases in Rwanda is:

- To reduce the global TB epidemic, by promoting universal and equitable access to quality diagnosis and appropriate treatment of TB, MDR-TB, and TB/HIV patients and by enhancing prevention of the disease.
- Objectively, we aim to:
    - Provide early TB detection in general population and intensify case-finding in prioritized high-risk groups so that the proportion of presumptive cases identified among HRG increases from 11% to at least 30% by mid-2018.
    - Increase treatment success rate from 85% to 87% for bacteriological confirmed TB cases and maintain it at 87% for MDR-TB.
    - Improve TB prevention (TB infection control in health facilities, behavioral change in the general population and prevention by medication) so that the percentage of population with adequate knowledge on TB increase from 56% to 75% by 2018.
    - Improve managerial capacities of the TB program; enhance the monitoring, evaluation system and operational research, by implementing and make functional* an electronic TB register in all CDTs.

We are also in charge of combating Leprosy in Rwanda. Our 2014-2018 objectives against Leprosy are to:

- Improve the early detection of leprosy and reduce the percentage of new cases with grade 2 of disabilities at less than 10%.
- Improve the completion rate of treatment to 90% for MB cases and 95% for PB cases and handle properly disabilities related to leprosy.
- Strengthen the quality Leprosy control services and the improve capacity of healthcare workers as well as community health workers.
- Facilitate socio-economic reintegration of leprosy-affected people.
- Increase outreach efforts, information and communication, to reduce the stigma and discrimination of people and families affected by leprosy.

The TB & other respiratory communicable disease (TB & ORD) Division is in charge of coordinating development of related strategies, policies and guidelines, their dissemination, provides oversight of implementation at peripheral level and ensure national reporting. Implementation involves national public and private partners as well as international partners.

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FOREWORD

I am pleased to introduce the July 2014 - June 2015 Annual Report of the Tuberculosis and other respiratory communicable diseases control in Rwanda.

This report has been developed, based on data provided by the TB & ORD surveillance system from across Rwanda.

It provides a comprehensive picture of the occurrence and management of TB & ORD and Leprosy in Rwanda.

It is structured based on the 2013-2018 Rwanda TB national strategic plan (2013-2018 TB NSP) and on the 2014-2018 Rwanda Leprosy national strategic plan (2014-2018 Leprosy NSP).

Actions needed toward elimination of TB & ORD and Leprosy in Rwanda will require strengthened and more integrated national and peripheral health services which ensure consistent, evidence based prevention, treatment and support to patients, their families and other contacts, as TB & ORD and Leprosy do not exist in isolation from other health and social concerns.

I trust that we can all work together to ensure that this vision is achieved.

This report was prepared by The TB & other respiratory communicable disease (TB& ORD) Division and was made possible through the collaboration with its technical partners.

We grateful acknowledge all those who contributed information at central, intermediate and peripheral levels of the TB & ORD and Leprosy control in Rwanda.

Finally, the M&E team of our Division is kindly thanked for his coordination and leadership at the beginning and at the end of this assignment.

We thank you all for open discussions and contributions.

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ABBREVIATIONS

ART	Antiretroviral Therapy
CDT	Centre for Diagnosis and Treatment of Tuberculosis
CHW	Community health worker
CPT	Cotrimoxazole Preventive treatment
CT	Centre for Treatment of Tuberculosis
DOT	Directly Observed Treatment
DST	Drug Susceptibility Testing
EPTB	Extra Pulmonary TB
E-TB	electronic Tuberculosis surveillance system
FY	Fiscal year
HIV	Human Immune Virus
HMIS	Health Management Information System
HRG	High Risk Group
IC	Infection control
JANS	Joint Assessment National Strategic
LTFU	Lost to follow up
MDR-TB	Multidrug Resistant Tuberculosis
M&E	Monitoring and Evaluation
MPPD	Medical Production and Procurement Division
NRL	National reference laboratory
NSP	National Strategic Plan
NTPB+	New pulmonary bacteriological confirmed
PAL	Practical Approach for Lung diseases
PBF	Performance-based Financing
PF	Performance framework (of the Global Fund consolidated project)
RBC	Rwanda Biomedical Center
RDQA	Routine Data Quality Audit
SPIU	Single Project Implementation Unit (MOH)
SS+	Sputum Smears Positif
SS-	Sputum Smear negative
SS0	Sputum Smear not done
SSF	Single source of Funding
SOPs	Standard Operating Procedures
TAF	treatment after failure
TB & ORD	Tuberculosis and Other Respiratory Communicable Diseases
TH	Traditional healer
TSR	Treatment Success rate
WHO	World Health Organization

CHAPTER I: TUBERCULOSIS AND OTHER RESPIRATORY COMMUNICABLE DISEASES CONTROL

I.1. Objective 1: Provide early TB detection in general population and intensify case-finding in prioritized high-risk groups (HRG) so that the proportion of TB cases all forms identified among HRG increases from 14% to at least 24% by mid-2018

This objective focuses on intensifying and improving early Tuberculosis (TB) cases finding to detect many cases of TB as early as possible. This requires a comprehensive set of activities, beginning from improved quality of screening at peripheral levels, ensuring the availability of basic quality TB diagnosis services, expanding access to rapid and sensitive tests and intensified case finding in high risk groups.

I.1.1. Provide early rapid and quality diagnosis for TB, MDR-TB, and TB/HIV

I.1.1.1. Tuberculosis screening

TB screening in general population is based on 5 questions (cough of ≥ 2weeks, fever, night sweats, weight loss, and contact history). Community, community health workers (CHWs) play a big role in identification and referring potential presumptive TB cases to health centres for early screening thus bringing TB services to community.

The total number of presumptive TB cases is **198,773** with a positivity rate of **2.1%.** This shows an increase of **1%** as compared to the last fiscal year report (197,024). Presumptive TB cases brought by CHWs represent 48.6% of all presumptive TB cases contributing up to **26.4%** of all SS+ TB cases detected.

Table 1 : TB detection and contribution of each screening level in Rwanda, July 2014-June 2015

Detection		CDT	CT	CHWs	THs	Total
Presumptive TB cases	N	55,012	45,735	96,609	1,417	198,773
	%	**27.7%**	**23.0%**	**48.6%**	**0.7%**	
AFB+ among presumptive TB cases	N	2,104	988	1,117	23	4,232
	%	**49.7%**	**23.3%**	**26.4%**	**0.5%**	
Positivity rate	**%**	**3.8%**	**2.2%**	**1.2%**	**1.6%**	**2.1%**

AFB: acid fast bacilli. CDT: centers for TB diagnosis and treatment. CT: centers for TB treatment.
THs: traditional healers.

I.1.1.2. Tuberculosis notification

The TB surveillance system in Rwanda reported **5,828** TB cases, with **72.6%** (4,229) being bacteriological confirmed new and relapse and **25.8%** (1,501) clinically diagnosed for the fiscal year July 2014 - June 2015 period. The 5,828 notified cases represents 98.9% of the program target.

Newly treated TB cases represented **90.3%** (5,260) and **9.7%** (568) were previously treated.

Overall pulmonary localisations represented **84.0%** (4,898).

TB was more diagnosed among men, with a male: female ratio for all-forms TB cases of **1.9**. The male predominance was more observed among bacteriological confirmed cases (new or previously treated) and TB cases of age of ≥15 years, male and female were equally reported among non-bacteriological confirmed cases and among cases aged less than 15 years as previous years.

Of all-forms TB cases, **77.9%** (4,539) were reported among 15-54 years, while children <15 years and elderly of ≥55 years represented respectively **6.5%** (379) and **15.6%** (910).

CHWs contributed up to **19.2%** (1,117) of all-forms TB cases diagnosed.

Table 2 : Notification of TB cases by categories, age group and by sex, Jul 2014-Jun 2015

Cases Types	0-14 years		15-24 years		25-34 years		35-44 years		45-54 years		55-64 years		>=65 years		TOTAL		
	M	**F**	**M**	**F**	**M**	**F**	M	F	M	F	M	F	M	F	M	F	TOTAL
NTPB+	34	38	365	322	806	410	556	224	391	133	268	94	177	54	2,597	1,275	**3,872**
Relapses	1	2	16	12	60	15	67	19	73	11	44	9	23	5	284	73	**357**
TAF	0	0	3	3	20	3	9	2	10	1	13	0	3	1	58	10	**68**
TALTFU	0	0	4	1	10	4	6	1	3	0	0	1	0	0	23	7	**30**
NTPB-	11	23	23	7	34	15	36	16	26	27	17	11	14	9	161	108	**269**
NTPB0	88	94	10	16	18	10	9	12	9	15	5	4	5	4	144	155	**299**
NEPTB	43	41	86	92	98	85	85	56	76	38	42	17	32	29	462	358	**820**
Others	1	3	2	2	11	9	25	7	20	4	10	6	10	3	79	34	**113**
TOTAL	**178**	**201**	**509**	**455**	**1,057**	**551**	**793**	**337**	**608**	**229**	**399**	**142**	**264**	**105**	**3,808**	**2,020**	**5,828**

NTPB+ = new pulmonary TB case bacteriological confirmed.
TAF: Treatment after Failures.
TALTFU: Treatment after lost to follow up.
NEPTB=Extra pulmonary TB.
NTPB-: sputum smear negative.
NTPB0: sputum smear not done.
M: male.
F: female.

Table 3 : Notification of TB cases by 2013 WHO categories and CHWs contribution, Jul 2014-Jun 2015

	All forms	NTPB+ and Relapses_Registered	Clinically Diagnosed_ Registered	Newly treated	Previously treated	Overall pulmonary	Positive cases among presumptive cases_CHW
N	5,828	4,229	1,501	5,260	568	4,895	1,117
%		72.6%	25.8%	90.3%	9.7%	84.0%	19.2%

I.1.1.3. Sputum smears microscopy and quality control

In order to improve and sustain the quality control (QC) of smear microscopy, the quality control is conducted quarterly to each CDT. From July 2014 to June 2015, 189 of 200 CDTs (94.5%) were controlled at least 3 times and successfully passed without major error.

Many errors have been observed for slides examined using fluorescence technique (FM) or slides examined using Ziehl-Nelsen (ZN) technique in CDTs-Health Centers. This highlights the need for closely monitoring of the CDTs implementing FM and in CDTs-Health Centers.

Table 4 : Quality control of sputum, Jul 2014-Jun 2015

CDTs (TB lab)	CDTs with QC done at least 3 times and without major error	Pos	Scanty	Neg	HFP	LFP	HFN	LFN	QE
DH (16)	**14 (87.5%)**	**90**	**24**	**811**	**1**	**0**	**0**	**11**	**2**
FM (45)	**42 (93%)**	**204**	**48**	**2,241**	**1**	**0**	**7**	**15**	**2**
CDT (139)	**133 (95.6%)**	**667**	**106**	**7,822**	**4**	**1**	**4**	**5**	**2**
Total (200)	**189 (94.5%)**	**961**	**178**	**10,874**	**6**	**1**	**11**	**31**	**6**

I.1.1.4. Access to sensitive TB diagnosis tests

I.1.1.4.1. Microscopy

In order to improve the accuracy of smear microscopy for Acid Fast Bacilli (AFB) technique, the National Reference Laboratory and Tuberculosis Divisions have started phasing out the old technique, Ziehl Nelsen (ZN) and phase in Light Emitting Diode Fluoresce Microscopy technique (LED-FM). The LED-FM technique is expected to increase an average of 10% of TB smear detection compared to ZN technique. To achieve the advantages of this new technique, Laboratory technologist should be sufficiently trained and closely monitored until they get used to the technique.

Currently, **98 (49%)** of CDTs have received fluorescence microscopy of these, **45** CDTs have already been trained and are implementing the fluorescence microscopy technique; 53 CDTs were trained and expected to implement the technique by August 2015.

I.1.1.4.2. Xpert technology

To improve the accuracy of TB diagnosis, Rwanda has introduced Gen-XPert tests in 16 sites which cover 240 satellites zones. This is facilitated by the sample transportation from CDTs to LNR and from CDT HC to DH with Gen-XPert machines.

The Xpert technology implementation was detailed for TB cases categories to respond to RBF and/or TB NSP ME& indicators. The new RBF model for TB is planned to start with July 2015. To prepare for this, the TB & ORD Division reviewed all recording and reporting tools, to ensure that they are aligned with the mentioned model. The results presented below are for the period of January to June 2015 The coverage in Xpert examination for NTPB+ and previously treated cases registered were respectively **49%** (905) and **66%** (158). The proportion of previously treated the target 66% falls short of the program target of 87%. This is probably due to low coverage of Xpert machines and insufficient coordination of sample collection between health centers and district.

Table 5 : Coverage in Xpert examination, for NTPB+ and previously treated cases registered during Jan 2015-Jun 2015

Eligibility Criteria	Total Eligible	GXP done	
		N	%
NTPB+ cases	1,865	905	49%
All previously treated (treatment after failure, relapse, Treatment after lost to follow up)	239	158	66%
Treatment after Failure	185	122	66%
Relapses	39	22	56%
Treatment after lost to follow up	15	14	93%

I.1.2. Drug resistant Tuberculosis detection and notification

According to RBF model for TB which planned to start with July 2015, recording and reporting tools were reviewed by TB & ORD Division in order to align with the mentioned model and TB NSP ME& indicators. The results presented for coverage in sputum culture, for NTPB+ and previously treated cases are for the period of January to June 2015.

Overall, sputum culture was done for **43%** (830) of NTPB+ cases and **75%** (170) of previously treated cases, all registered during the semester of January – June 2015. **28% (233)** and **21% (35)** of them respectively reported culture positive. **21% (48)** and **11% (4)** of those with culture positive had TB drugs susceptibility test results.

Table 6 : Coverage in sputum culture, for NTPB+ and previously treated cases registered during Jul 2014-Jun 2015

TB case Category	Registered	Number with cultures done		Number with positive cultures		Number with resistance test available	
	N	N	%	N	%	N	%
NTPB+	1942	830	**43%**	233	**28%**	48	**21%**
Relapses	183	134	**73%**	31	**23%**	4	**13%**
Treatment after Failures	30	25	**83%**	1	**4%**	0	**0%**
Treatment after LTFU	15	11	**73%**	3	**27%**	0	**0%**
All previously treated	228	170	**75%**	35	**21%**	4	**11%**

TAF: Treatment after Failures. TALTFU: Treatment after lost to follow up. Reg: registered

Sixty nine (**69**) multi-drugs resistant TB cases were detected, including 68 with bacteriological confirmation of MDR-TB disease. One case was diagnosed with bone TB based on previously history of MDR-TB treatment in January 2010 to 30 November 2011 and Pott disease on x-ray and MRI. 100% of them initiated the short MDR-TB treatment regimen. 28 (41%) of patients were HIV+ and 51 (74%) were men.

Table 7 : Drug resistant Tuberculosis notification and treatment initiation in Rwanda Jul 2014-Jun 2015

Period	Nb of MDR-TB patients enrolled				Site of treatment initiation			
	Confirmed	Empiric	Total		Kabutare	Kibagabaga	Kibungo	Other site
Jul. 2014-Jun. 2015	68	1	69		69	0	0	0

Table 8 : Drug resistant Tuberculosis notification and HIV testing in Rwanda Jul 2014-Jun 2015

Period	Nb of MDR-TB patients enrolled				HIV+		
	Male	Female	Total		**Male**	Female	Total
Jul. 2014-Jun. 2015	51	18	69		25	3	28

I.1.3. Enhance TB case finding in selected and prioritized high risk group

High risk group of TB is any group of people in which the prevalence or incidence of TB is significantly high than in the general population. One of the basic strategy for prevention and control is screening population at high risk for TB, to locate person with TB active and giving complete therapy and prevent contagious diseases. Based on the 2013-2018 TB NSP, five groups at higher risk of TB disease were identified. These include:

- People living with HIV
- TB contacts
- Prisoners
- People >55 years
- Children 0-14 years

I.1.3.1. TB notification in Prisons

Health facilities of prisons continued to screen for TB in new prisoners at their entry, and the central level team conducted active TB cases finding (ACFs) interventions, using chest X-ray as a screening tools. LED and Xpert used for TB diagnosis. This last ACFs activity started with December 2013.

Tuberculosis cases active finding activities using mobile digital chest X-ray machines

TB screening using mobile digital x-ray machine was conducted in the prisons located in areas that had not been covered in the 2013-2014 reporting year. These are Rwamagana, Nyagatare, Ngoma, Bugesera, Gicumbi, Musanze, Rubavu, Rusizi,Nyamagabe, and Nyanza

36,851 (90.5%) prisoners were screened by x-ray mobile and among them 225 new TB+ positive cases were detected, representing a notification rate of **552 per 100,000**

Table 9 : Tuberculosis cases active finding activities using mobile digital chest X-ray machines, Jul 2014-Jun 2015

Period	Population	X-ray screened		X-ray screened positive		Sputum examined		Confirmed TB	
	N	N	%	N	%	N	%	N	CNR
TOTAL	**40,737**	**36,851**	**90,5%**	**4,425**	**12%**	**4,296**	**97%**	**225**	**552**

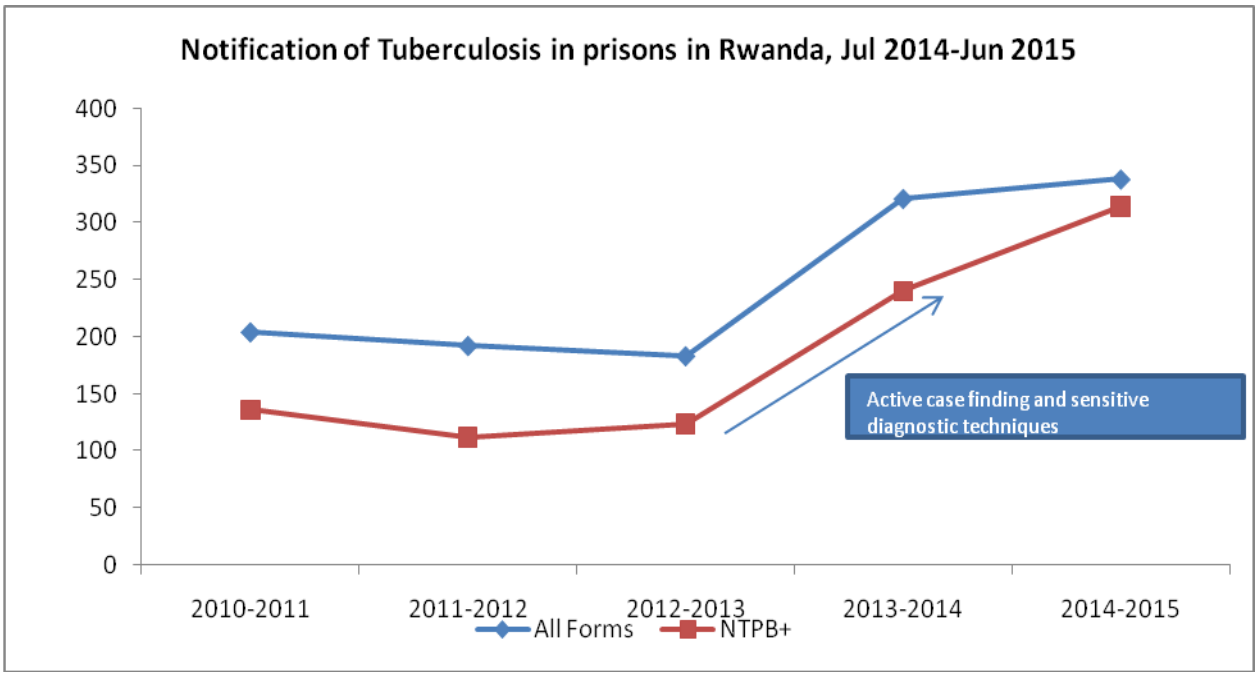
CNR: Case Notification rate per 100,000.

Using passive and active TB screening strategies in all prisons, we were able to detect and report 338 all forms TB cases of which 314 (92.9 %) were pulmonary bacteriologically confirmed cases for both new and relapse. If we compare these results for the period before active case finding activities in prisons, the notification of all -forms and NTPB+ cases remained high.

Table 10 : Notification of Tuberculosis in prisons in Rwanda, Jul 2014-Jun 2015

Period	NTPB+	Relapse	TAF	TALTFU	New SS-	New SS0	EPTB	Others	Total	B+ new & relapse	Clinically diagnosed
TOTAL	287	27	1	0	1	0	15	7	338	314	23
										92.9%	**6.8%**

B+: Bacteriological confirmed
NTPB+ = new pulmonary TB case bacteriological confirmed.
SS0: sputum smear not done.
TALTFU: Treatment after lost to follow up.
SS-: sputum smear negative.
TAF: Treatment after Failures.
EPTB=Extra pulmonary TB.



I.1.3.3. Childhood TB

In order to improve TB detection and management in children, the national TB & ORD Division in collaboration with the Rwanda Pediatric Association, developed a childhood TB guidelines and a TB diagnostic algorithm specific to children during the 2013-2014 FY. The implementation of TB guidelines faces up to many barriers because childhood TB related activities are not clearly integrated into IMCI guidelines & tools.

In collaboration with MCCH /IMCI, a workshop on integration of Childhood into IMCI guidelines was organized.

At the end of the workshop, TB Childhood components were integrated into existing "IMCI algorithm" and "IMCI register".

The proportion of TB cases all forms for children under 15 years is **6.5%** (379/5,828) for all cases notified

Table 11 : Summary results of TB screening and diagnosis among selected high risk groups, Jul 2014-June 2015

Risk group	Screened	Presumptive TB		TB cases
	N	N	%	N
Total cases prisoners for the 2014-2015 FY	58,764	4,414	8%	238
Total number of contacts	23,704	4,050	17%	148
HIV+ persons (exclude prisoners, contacts, children <15 years, elderly≥55 years	194,712	7,750	4%	317
Children < 15 yrs (exclude children prisoners, children contacts)	514,963	9,245	2%	49
Elderly≥55 years (exclude prisoners ≥55 years and contacts ≥55 years	246,633	15,328	6%	196
TOTAL	1,038,776	40,787	4%	948

Nine hundred and forty eight (948) TB cases were confirmed among people at higher risk of TB, representing 16% (948/5,828) of all TB cases

I.2. Objective 2: Increase treatment success rate from 88% to 90% for bacteriological confirmed TB cases and maintain it at 87% for MDR-TB

This objective has six strategic interventions which are:

- Ensure that at least 97% of CDTS have no stock out in TB medicines
- Improve treatment success rate for all forms of TB, specifically to 90% for bacteriological confirmed TB cases
- Increase ART coverage among co- infected patients from 81% to 90%.
- Increase to 95% the treatment success rate for patients managed in the community.
- Maintain treatment success rate at 87% for MDR-TB patients.
- Provide support to MDR-TB patients.

I.2.1. Ensure that at least 97% of CDTs have no stock out in TB medicines

We have conducted a close stock monitoring at all levels and regular follow up of shipment of medicine in pipeline via the RBC Division of medical production and procurement (MPPD). All TB medicines were available at central level.

We have held our monthly technical meeting between TB, MPPD, NRL and all divisions were represented to improve and strengthen TB drugs management at central level. In the meetings we analysed stock levels of all TB commodities, analysed procurement status of TB medicines, consumables and reagents.

All TB commodities were available at central level during the whole year of 2014-2015 except Tuberculin which is out of stock at central and peripheral level due to stop in production from the manufacturer. Stock levels monitoring show risk of expiries of Isoniazid 300 mg due to a delay in extension of IPT for PLWHIV to other sites as recommended by TB-HIV Team working Group (TWG). We tried to give Isoniazid 300 mg as donation to Kenya but they did not send their official request and negotiation with Central African Republic also failed.

Table 12 : Quantification accuracy rate of TB medicines per treatment category

Treatment category/Regimen	Target in Quantification	Cases registered	Quantification accuracy rate
Cat I	5,251	5,045	96.1%
Cat II	505	568	112.4%
Children under paediatrics formulation	293	215	73.4%
MDR TB Short regimen	96	66	68.8%
MDR TB Long regimen	4	1	25.0%

For category I and II, we had high quantification accuracy. Low quantification accuracies were seen for second line and pediatric medicines. As a measure for solution, we agreed partial shipments for MDR TB medicines to lower risk of expiries. A close follow up for pediatric formulations is required to avoid the risk of expiry.

I.2.2. Improve treatment success rate for all forms of TB, specifically to 90% for bacteriological confirmed TB cases

For the July 2014 to June 2015 reporting period, treatment results presented are for the cohort of TB cases registered from 1st July 2013 to 30th June 2014.

Among bacteriological confirmed cases, new and relapse, the treatment success rate (TSR) was **90%**, including **85%** cured. For clinically diagnosed, the treatment success rate was **74%** [Table 13].

For the mentioned two groups, the main unfavourable TB treatment outcome was "died" which represented **5%** for bacteriological confirmed cases, new and relapse and **17%** for clinically diagnosed cases [Table 13].

I.2.3. Increase ART coverage among co- infected patients from 81% to 90%

From July 2014 to June 2015, 99% of all TB patients were tested for HIV infection. 25% of those tested were found HIV infected and 98 % of those HIV infected were receiving Cotrimoxazole preventive treatment [Table 14].

For the cohort of HIV+ TB patients registered during July 2013 to June 2014, the proportion of HIV+ TB patients on antiretroviral therapy (ART) by the end of TB treatment reached **91%** [Table 15].

From 198,773 presumptive TB recorded from July 2014 to June 2015, 99% had an HIV test and 9% of those tested were HIV+ positive [Table 16].

I.2.4. TB treatment outcomes for patients managed in community

The mission of Community health workers (CHWs) in TB control activities is to sensitize communities on clinical features of TB, identify potentials presumptive TB and follow up (giving TB treatment) of some TB patients identified by health facilities.

During the reported period, out of the 5828 TB cases notified from July 2014 to June 2015, Three thousand two hundred and seventy five (56%) were entrusted to CHWs for administration and observation of the TB treatment. This strategy is highly appreciated by the patients because they receive DOT close to their home. The TB treatment success rate among TB patients followed up through the community-DOT (by CHWs) was excellent and, reached **95% (2,728/2,885)**.

Table 13 : TB Treatment outcomes for the TB cohort registered during Jul 2014-Jun 2015 in Rwanda

Cases Categories / Treatment Outcome	New Pulmonary bacteriological confirmed		Relapses		TAF		TALTFU		New SS-		New SS0		Extra pulmonary		Others		B+ new and relapse		Clinically diagnosed	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Cases registered	3,771		294		72		24		478		235		1,001		151		4,065	0	1,865	
Cured	3,216	85%	231	79%	58	81%	10	42%	0	0	0	0	0	0	0	0	3,447	85%	0	0
Treatment completed	192	5%	15	5%	1	1%	3	13%	354	74%	177	75%	741	74%	116	77%	207	5%	1,388	74%
Treatment failed	87	2%	6	2%	5	7%	0	0%	1	0%	1	0%	8	1%	1	1%	93	2%	11	1%
Died	167	4%	27	9%	3	4%	5	21%	103	22%	43	18%	154	15%	26	17%	194	5%	326	17%
Lost to follow up	83	2%	9	3%	4	6%	6	25%	7	1%	7	3%	50	5%	4	3%	92	2%	68	4%
Not evaluated	26	1%	6	2%	1	1%	0	0%	13	3%	5	2%	46	5%	3	2%	32	1%	67	4%
Treatment success	90%		84%		82%		54%		74%		75%		74%		77%		90%		74%	

HMIS Data on 16th September 2015

NTPB+ = new pulmonary TB case bacteriological confirmed.
SS-: sputum smear negative.

TAF: Treatment after Failures.
SS0: sputum smear not done.

TALTFU: Treatment after lost to follow up.
B+: Bacteriological confirmed

Table 14 : HIV infection testing, HIV positivity and CPT among TB cases registered during Jul 2014-Jun 2015

All forms TB Registered	HIV Tested	HIV+	Receiving CTX
5,828	5,793 (**99%**)	1,463 (**25%**)	1,428 (**98%**)

Table 15 : ART provision among HIV+ TB patients registered during Jul 2013-Jun 2014

Nb of TB/HIV patients evaluated	Nb of TB/HIV patients on ART	% on ART
1,475	1,339	**91%**

Table 16 : HIV infection testing among Presumptive TB cases registered during Jul 2014-Jun 2015

Total # of presumptive TB	Known as HIV+	Unknown HIV status			Total tested	Total # of HIV+ presumptive TB
		# to be tested	# and % of Tested	# and % of HIV+		
198,773	16,865 (8%)	180,886 (99%)	179,609 (99%)	1618 (1%)	196,474 (99%)	18,483 (9%)

I.2.5. Treatment outcomes for MDR-TB patients

Out of the 75 confirmed patients enrolled during October 2013-September 2014, 70 (93%) were evaluated at 6 months of treatment (as 5 of them died before six months). 62 of the 75 evaluated (82.7 %) had both negative culture and smear.

Out of 48 MDR-TB cases initiated on second line TB treatment during July2012 - June 2013, the treatment success rate was 88%, with 60.4% cured and 27.1% with treatment completed. Three patients died before completion of the treatment.

Table 17 : MDR Interim results at six months: MDR-TB cases with negative culture at the end of six months of treatment

Treatment start period	Month of evaluation	Nb confirmed MDR-TB	Deaths before 6 months	Nb MDRTB patients evaluated at 6 months	Negative smear and culture	≥ 1 positive smear and/or culture	Smear and/or culture not done	Contaminated culture
Oct 2013-Sep 2014	6 months	75	5	69	62	1	7	0
			7%	92%	**83%**	1%	9%	0%

Table 18 : Treatment success rate among MDR TB cases enrolled on second-line anti-TB during Jul 2012-Jun 2013

Nb registered MDR-TB cases	Nb who initiated the treatment	Cured	TC	TF	Died	LTFU	Still on treatment	NE	TSR
48	48	29	13	0	5	1	0	0	**88%**
		60.4%	27.1%	0%	10%	2%	0%	0%	

TC: Treatment completed. TF: Treatment failed. LTFU: Lost to follow up.
NE: Not evaluated. TSR: Treatment success rate.

I.3. Objective 3: Improve TB prevention (TB infection control in health facilities, behavioral change in the general population and prevention by medication) so that the percentage of population with adequate knowledge on TB increases from 56% to 75% by 2018

I.3.1. Prevent TB by ensuring that a revised package of infection control measures is applied in at least 85% of all Health Facilities

The TB infection control (IC) practices are implemented in CDTs since 2009 and all health facilities since July 2013. The minimum package was defined to monitor the implementation of TB infection. Completeness of reports in HMIS on implementation of TB IC was 99.4% (506/509). The target by end June 2015 was 80% (405/504) health facilities applying all six basics measures and the achieved result is 79.3% (404/509). Three health facilities (HF) didn't report (Kagitumba, Marembo and Mushongi) and FOSACOM were excluded from the denominator.

Standard Operating procedures on TB IC was developed with aim to guide staff from health facilities to implement infection control measures and how to monitor and evaluate them.

During the outgoing fiscal year 2014-2015, we trained different categories of health care providers and managers in health facilities and prisons. The training was focused on the importance of implementation of TB IC measures, increase knowledge on TB IC measures and TB in general, importance of TB surveillance among health care providers and how to report. The table below shows categories of peoples trained and participation rate.

Table 19 : Staff trained on Infection control measures

Description of people trained on IC	Expected number of participant	Participant trained	Participation rate
District Hospital managers	121	118	98%
Prisons manager	42	37	88%
Supervisors in charge of CHWs in Health center	482	482	100%
Supervisor of CHWs in District Hospitals	84	84	100%

The surveillance of TB among health care workers (HCWs) started in the beginning of the 2015. Registers on TB screening among health care workers were developed and distributed in all health facilities. Even if reporting started in HMIS, we still have challenge on the accuracy of report and monitoring will continue to ensure good quality of report

I.3.2. Increase awareness and commitment in TB fighting

I.3.2.1. TB sensitizations in general population

IEC/BCC messages were aired on local private, public (Community radios and National Radio), on international radio stations and in media papers, to increase awareness of general population. During this outgoing fiscal year, 53 radio programs were given covering the following topics: importance of TB screening among health care workers; knowledge on cause, transmission, symptoms, screening and diagnostic of TB; TB among children; detection and diagnose of TB in health centre; extra pulmonary TB; early screening and treatment of TB; Follow up of TB patients; Current situation of multi-drug resistant TB; follow up of MDR-TB patients at home (Prevention of

transmissions to household, nutrition, adherence to treatment and bacteriological follow up) ; The national TB drugs resistant prevalence survey; role of CHWs in TB control and testimonial of TB patients on TB treatment.

Capacity building on TB knowledge was provided to different stakeholders who are involved in sensitization of community: 27 Journalists and 566 in charge of community health workers in health centers and district hospitals were trained. Following topics were covered: TB causes, mode of transmission, symptoms, risk factors and treatment emphasizing that community must have a comprehensive knowledge on TB.

I.3.2.2. TB sensitizations in refugees' camps

Sensitization campaigns were conducted in all refugees' camps (Kiziba, Kigeme, Mugombwa, Gihembe, Nyabiheke). Refresh training were done before sensitization for peer educators and TB leaflets distributed to increase awareness of refugees. Peer educators conducted triage after refresh training and sent TB presumptive cases in the health post. 465 TB presumptive cases were identified and 11 TB cases found.

I.3.2.3. The 2015 World TB day

On 24th March 2015, Rwanda joined the rest of the world to celebrate World TB day. Nyabihu District hosted the event. Around 5,000 population joint the event at Bigogwe Center where speeches were given by the Mayor of Nyabihu District, the Representative of WHO and the Representative of Minister of Health. As well testimonies were given by former TB patients on the importance of early TB screening and TB curability if good adherence to treatment. Live talk shows program for one hour were broadcasted on 5 popular radio in Rwanda (Radio Rwanda and private radio :Contacts FM, KFM, Flash FM, Isango star, Salus) and on all community radios (Rusizi, Musanze, Huye, Rubavu and Nyagatare) in order to increase the knowledge of population. Two community health workers (CHWs) which play a big role in reference of TB presumptive case at HC and one CHW cooperative with functional income generating activities were rewarded with bicycles and a cow by the Ministry of Health encourage them to continue involvement on TB sensitization.

Picture 1 : During the 2015 WTD in Nyabihu District: the Western Province Governor awarding the best performing CHWs Cooperative (Left) and the Minister of Health Representative awarding the Bigogwe Health Center (Right)

I.3.2.4. TB sensitizations in Youth

In collaboration with the National Youth Council (NYC), sensitizations were conducted in eight districts which are Nyaruguru, Muhanga, Ruhango, Gisagara, Nyabihu, Rwamagana, Huye and Nyamasheke. Implementation involved also Health centers staff, Director in charge of health at district, TB focal point in District hospital and NYC coordinator at district level. 155,512 students from 353 schools were sensitized and among them 6,159 students were TB presumptive cases from whom 12 TB cases were identified.

I.3.2.5 TB sensitizations in PLHIV associations

Rwanda network for People living with HIV is an embrella which coordinate all activities related to the people living with HIV. They contribute to increase TB knowledge and identification and reference to health facility of TB presumptive among PLHIV. During this fiscal year the conducted supervision in 22 District covered by this project with aim to verify data of TB presumptive refered by peer educators and enhance collaboration between peer educator and health facilities. A part of supervision, bi annual meeting were conducted in twenty two district to discuss finding from supervision and how to improve their activities.

Peer educators contributed to refer 12624 TB presumptives in health facilities; among them 359 were identified as TB cases which represent 2.8% of positivity rate.

Table 20 : TB presumptive and TB cases referred by peer educators

Period	In association		Apart association		Total	
	TB presumptives	TB cases	TB presumptives	TB cases	TB presumptives	TB case
July -September 2014	1,653	80	1,819	37	3,472	117
October-December 2014	1,172	47	1,524	25	2,696	72
January-March 2015	1,614	50	1,580	39	3,194	89
April-June 2015	1,416	61	1,846	20	3,262	81
Total	5,855	238	6,769	121	1,2624	359

I.3.2.6. TB sensitizations by Pro-Femme Twese Hamwe

The Pro-Femmes/Twese hamwe (PFTH) TB project aims to increase the knowledge of population on TB through awareness session done by trained women volunteers from Pro-femmes/TH associations member and member of National women council in the 41 sectors of the Karongi, Ngoma and Huye Districts.

The key achievements of Pro-Femmes/Twese hamwe during the reporting year were:

refresher training for 162 TB women volunteers from 3 districts Karongi, Ngoma and Huye, organization of 126 community sessions of the TB awareness, distribution of 30,000 TB leaflets and 1,500 TB stickers to the community, awarding the best performing Sector which developed sketch on TB awareness.

I.3.2.7. Civil Society in fight against TB

The civil society organization (CREDI, CARITAS, STRIVE, ACCESS and RPP+) in partnership with TB&ORD, Administrative districts, health authorities and Community Health Workers played a big role in TB prevention activities through the community awareness against TB.

CSOs provide expertise on the following area:

- ✓ Technical assistance to the cooperatives: help cooperative to get legal certificate by ensuring that all files required are available, develop business plan and revise if cooperative statute is complete before submission.
- ✓ Supervision of CHWs to ensure proper provision of quality health care and profitable operation cooperatives: advise cooperative on the viability of project and filling of account tools
- ✓ Technical Assistance to sector and district steering committees of CHWs cooperatives: participate on meetings
- ✓ Capacity building of CHWs: train or coach CHWs cooperative committee on law regulating cooperative and management of cooperative
- ✓ Follow up on whether cooperatives receive PBF on time, where there are delay to collaborate with CHWs to fit that: inform the cooperative on disbursement of fund from MOH and ensure that CHW received 30% of total fund for patient transferred and followed.

Based on the above expertise provided, NGOs achieved on the following:

- ✓ 234 CHWs Cooperative registered in Rwanda Cooperative Agency (Legal Certificate);
- ✓ 320 CHWs Cooperative implemented Viable IGAs
- ✓ 7 News CHWs Coop. were created;
- ✓ 116 CHWs Cooperatives improved their business plan and proper use of accounting tools in 165 CHWs Cooperatives;
- ✓ 452 sessions of coaching were conducted on CHWs Cooperative management;
- ✓ 473 CHWs Cooperatives were assisted to get their PBF on time ;

Table 21 : Key achievement by Civil Society Organization

NGO	Province	#of Distr.	#of CHWs Coop.	#CHWs Coop. Implementing Viable IGAs	#of CHWs Coop. helped to get legal certificate	#of CHWs Coop. followed on disbursement of PBF com	# of visits conducted in the CHWs Coop.	New Coop. created	#of sessions of coaching conducted	# of Cooperatives improved their business plan	#of Cooperatives improved account tools
ACCESS Project	Kigali City & South	11	153	128	127	153	345	0	174	42	54
CARITAS Rwanda	North	5	94	67	32	94	136	6	68	18	37
CREDI	Est	7	110	103	49	110	216	0	96	24	28
Strive Foundation Rwanda	West	7	116	22	26	116	120	1	114	32	46
Total		**30**	**473**	**320**	**234**	**473**	**817**	**7**	**452**	**116**	**165**

I.3.3. Prevent TB through medication (Isoniazid and ART)

I.3.3.1. Isoniazid preventive therapy (IPT) for under 5 years children

The contacts investigation policy recommends to screen all sputum smear positive contacts two times at the beginning and end of TB treatment of TB index case and to initiate the Isoniazid preventive therapy (IPT) for under 5 years children without TB disease. This report shows data of screening of children at the beginning of TB treatment.

During 2014-2015, 95% (1,983/2,094) of all under 5 years children contacts of tuberculosis bacteriologically confirmed were screened for TB. Of them 13% (269/1,983) were identified as presumptive TB cases and 22% (60/269) were TB cases. Among 1,923 children without TB, 87% (1,673/1,923) were initiated IPT. More efforts should be taken to get all under 5 years children non-TB cases initiated on IPT or reasons investigated.

Table 22 : Screening of contact of TPB+ among children under 5 years

Quarter	Contacts of TPB+ < 5 years_ Number	Contacts of TPB+ < 5 years_ Screened	Contacts of TPB+ < 5 years_ Presumptive TB	Contacts of TPB+ < 5 years_ TB cases	Contacts of TPB+ < 5 years put on IPT_ Number	Number supposed to start IPT
Total	2,094	1,983	269	60	1,673	1,923

I.3.3.2 Isoniazid Preventive Therapy (IPT) for PLHIV

Currently, HIV infection is still the most powerful known risk factor for reactivation of latent tuberculosis infection (LTBI) to active tuberculosis (TB) disease. WHO recommends IPT as part of the TB/HIV collaborative activities since 2004 but it is since the publication of the 2010 guidelines for Intensified TB case-finding and IPT for people living with HIV (PLHIV) in resource-constrained settings that there has been a gradual increase in its implementation by the countries affected by both TB and HIV. TB and HIV Division selected 3 sites: Kabgayi DH, Kivumu HC and Kimironko HC, based on the geographical location, level of performance of the HIV service and a combination of district hospital and health centers.

This report summarizes the implementation process and results of IPT from the beginning of July 2014 until June 2015.

Table 23 : Enrollment in IPT from the beginning of the program in July 2014 up to end of June, 2015

	# Patients newly enrolled in the HIV Program	# Patients newly enrolled in the IPT program	# Enrolled in IPT		
			0-4	5-14	> 15
Kabgayi DH	78	8	0	0	8
Kivumu HC	65	65	2	3	60
Kimironko HC	357	253	0	0	253
TOTAL	500	326	2	3	321

A total of 326 patients were enrolled in the IPT program at the 3 selected sites between July 2014 and June 2015, 77.6% at Kimironko HC. 1.5% of the patients were children living with HIV younger than 15 years.

Table 24 : treatment outcomes after 6 months of IPT for patients enrolled during Q1 and Q2, 2014-2015

	# enrolled in IPT	Results at the end of the first phase (6 months)				Stopped IPT because of side effects	Developed TB	Data missing
		INH/ TT	LTFU	Transf. out	Died			
Kabgayi DH	8	6	1	1	0	0	0	0
Kivumu HC	30	28	1	1	0	0	0	0
Kimironko HC	76	55	2	1	0	0	0	18
TOTAL	114	89	4	3	0	0	0	18

Using the IPT register, of 114 patients who enrolled in IPT between July 2014 to December 2014, 89 (78.1%) completed 6 months of treatment, 4 (3.5%) were lost to follow up within the first 6 months and (18) 15.8 % treatment outcomes were missing from the register. None of the patients enrolled during this period died.

I.4. Objective 4: Improve managerial capacities of the TB program; enhance the monitoring, evaluation system and operational research by implementing and make functional an electronic TB register in all CDTs.

I.4.1. Strengthen Political commitment and advocate for domestic and external commitment

During the 2013-2014 FY, we have developed the 2013-2018 tuberculosis national strategic plan (TB NSP), in collaboration with our national and international partners, including non-government organizations (NGOs), Health facilities, Ministry of Health departments, WHO, CDC, etc. The development of this NSP was finalized during the period.

The TB & ORD Division developed the TB/HIV Concept note that will cover the period from 1 July 2015 to 31 December 2017, in collaboration with HIV Division and all stakeholders for both programs. This is a Global Fund new funding model that consists of a set of impact and outcome indicators that the country has to achieve and receive funding based on the level of achievement. The process started with a workshop organized at country level from 14-18th July 2014 followed by a peer review workshop at region level (Johannesburg) from 21-25 July 2014, to improve the draft document of the concept note with inputs from experts (WHO, UNAIDS, PEPFAR, etc) and learn from other countries concept notes. On 15th August 2014, we have submitted the TB/HIV concept note to the Global Fund Secretariat in Geneva. This concept note was approved by GAC-1 (Grant Advisory Committee) in December 2014.
The grant negotiation was held in Geneva from 16th to 18th March 2015, where 21 USD millions were allocated.
The RBF model for TB will start by this new FY, in replacement of SSF model used previously.
In addition, TB activities were included in the COP15 proposal under PEPFAR.
TB control activities received budget from the Government of Rwanda to support activities like TB prevention and detection among high risk groups, infrastructures, staff salaries, etc.

I.4.2. Develop human resources and build capacities

I.4.2.1. Capacity building for the central level staff

Trainings were meant to build capacity of staff at central and decentralized level.

At central level, a training on scientific writing workshop methodology, was organized by the Ministry of Health, in collaboration the University Of Rwanda School Of Public Health and partners (Partners in Health). One TB & ORD staff participated. Participants were introduced on research questions structure, structure of an article and abstract, structure of introduction, methods, results and discussion sections with tenses and punctuations types to be used. From 27th to 30th January 2015 in Rubavu District, a workshop was organized for the 21 staff from TB & ORD Division on PAL strategy..

The TB & ORD Division staff trained decentralized staff on different TB control activities, including TB , TB/HIV and leprosy diagnosis and management, TB among high risk groups (childhood TB), chest X-ray pictures reading, TB infection control, and management and on TB monitoring and evaluation.

Table 25 : Trainings of health facilities staff on different aspects of TB control in Rwanda, Apr-Jun 2015

Type of training	TB program	Type of participants	Number of participants
CXR reading	TB care and treatment	MDs	35
TB, TB/VIH and leprosy diagnosis and management	TB care and treatment	MDs	38
	TB care and treatment	Nurses	673
	TB care and treatment	Nurses students	132
	TB care and treatment	Nurses	88
TB prevention and infection control	TB prevention and infection control	Hospitals managers	156
	TB prevention and infection control	Nurses TOT	568
	TB prevention and infection control	CHWs	568
TB M&E	e-TB	M&E Officers	42
TB M&E	e-TB	TB Focal Point	399
TB M&E	e-TB	Data managers	402
PAL	ORD	TB Focal Point	86
Pharmacy	TB care and treatment	District pharmacy store managers, district pharmacy data managers, assistant pharmacists and MPPD staffs	134
Fluorescence	Laboratory	Lab biotechnologists from CDT	95

I.4.3. Enhance monitoring and evaluation system

I.4.3.1. Implementation of electronic TB register (e-TB)

Since the establishment of the national TB program (TB & ORD Division), the recording system was paper-based. The paper based system was time consuming and long term records archiving challenging, hence the initiative of development of an electronic based system

The development of the electronic TB register was initiated during the 2013-2014 FY with the development of TB interface in HMIS and was expanded in 2014-2015 FY, by addition of MDR-TB and Leprosy interfaces.

After the development of e-TB, trainings were organized at different levels and for different users.

I.4.3.2. The "Epidemiological review and impact analysis of tuberculosis in Rwanda"

The TB surveillance system assessment is composed by the "WHO Standard and benchmark checklist" assessment to characterize the attributes of the TB surveillance system. In Rwanda, the "WHO Standard and benchmark checklist" assessment was implemented in October 2013.

The key findings of the assessment are as follow:

- All CTs & CDTs submit reports online using standard set of indicators
- Data aggregated from HF level upwards (CTs & CDTs, DH, national);
- Quarterly reporting;
- Patient-based management system being finalized (scale-up 2014);
- Conduct of DQA twice a year, covering each DH;

- 5 fulltime M&E staff at central level;
- MEST tool assessment done in 2010 and 2013 (June)

The second component of the TB surveillance system assessment is the "Epi- assessment", also called the "Epidemiological review and impact analysis of tuberculosis". The objectives of the Epi-assessment were to:

- Assess the level of, and trends in, TB disease burden (incidence, prevalence, mortality) using available surveillance, survey, programmatic and other data.
- Assess whether recent trends in TB disease burden indicators are plausibly related to changes in TB-specific interventions taking into account external factors including economic or demographic trends.

From 21 to 25 July 2014, a senior epidemiologist from KNCV, mandated by WHO conducted the "Epi- assessment". The assessment concluded that Rwanda has a well-functioning TB surveillance system with accurate, complete, internally and externally consistent data that provide a good overview of the situation in the country".

I.4.3.3. Annual TB performance review meetings with Districts

The program performance review was conducted from December 2014 to January 2015 to share with stakeholders and implementers the achievements, progress, challenges and new TB control policies. Participants are TB & ORD Division staff and other central level partners (like NRL, SPIU, MPDD, etc), Districts Health Directors, District Hospitals (DH) Directors, DH M&E Officers, DH TB supervisors, DH medical doctors focal points of TB.

For the 2014-2015 FY, topics covered were: The 2013-2018 TB NSP and report of its 1st year (2013-2014), the 2012 TB prevalence survey report and program implications, TB infection achievements and challenges, current status of implementation of the electronic TB register (e-TB), the 2014 new technical guidelines and new WHO definitions and presentations of Health Facilities on their key achievements.

Picture 2 : Participants in one of TB performance review meetings with Districts

I.4.3.4. Revise and update data collection and reporting tools

During the 2014-2015 reporting period, the TB & ORD Division revised and update data collection and reporting tools to comply with new WHO definitions on TB cases definition and reporting framework, the 2013-2018 TB NSP, the RBF process, and the electronic TB register (e-TB). The data collection and reporting tools revised are summarized in the table below.

Table 26 : List of M&E tools reviewed and key changes, Apr-Jun 2015

N⁰	Items	Key changes
1	TB laboratory forms	Xpert eligibility criteria and lab results back information to demanding HF
2	TB Laboratory registers for CDTs	ID number and TB risk factors
3	TB Laboratory registers for CTs	ID number and TB risk factors
4	Registers for TB screening among HCWs	New register initiated for the 1st time in Rwanda
5	TB cases registers	new WHO definitions, all complementary exams given dates of reception of results, completed the contact investigations cascade by adding the number of contacts
6	TB treatment cards	ID number, TB risk factors, new WHO definitions, contacts investigation at month 0 and month 6
7	TB DOT com cards	NA
8	TB drugs report and requisition registers for HFs	NA
9	TB drugs report and requisition registers for DPs	NA
10	IMCI register including TB Component	TB screening questions
11	IMCI shirt booklet	TB screening algorithm
12	Sample transportation result register	New register initiated for the 1st time in Rwanda
13	Quarterly Reporting format	new definitions on TB cases definition, the 2015 WHO revised TB/HIV M&E Guidelines, the current country LED microscopy and Xpert scale up activities, the TB screening and diagnosis among high risk groups approach, strengthen TB surveillance among Health Facilities Workers

I.4.3.5. Supervision, data quality assessment and Mentorship for TB control activities at decentralized level

From 18th -21st May 2015, the TB&ORD Division staff conducted a mentorship program aiming of building capacity of the technical staff in charge of TB program at district hospital and health centers level. The main activities conducted were the following:

- Recall on key data quality checks for TB data entered into R-HMIS, specifically those directly linked with GFATM RBF indicators.
- e-TB completeness for all programs, as it has observed that only presumptive TB were entered, not TB, MDR-TB and leprosy cases.

I.4.4. Enhance operational research

The vision of the Ministry of Health is to provide better quality health services through evidence based policy and planning. The TB & ORD Division has responded to this vision by conducting several operational research to inform and to improve the planning and to

build research capacity of the staff. The following are the key findings of the operational research conducted during the 2014-2015 reporting period.

I.4.4.1. TB case study of the Rwanda's National Tuberculosis Control Program

The objective of this case study was to highlight country TB control achievements during last decades, contributing factors, challenges and how Division leadership and staff overcame them. Key findings are:

- Decentralization and extension of TB services (increase in CDTs and CTs numbers introduction of community DOT, etc),
- Improvement in TB screening at health facility and community level,
- Improvement of TB treatment success rate from 63% in 2002 to 90% in 2013. Contributing factors for this are successful TB/HIV interventions, community DOT, close management of TB cases transferred out and improvement in socio-economic and nutrition conditions of the population
- Initiation and improvement of the ability of MDR-TB detection and treatment,
- Improvement of TB prevention at community level and at health facility level (infection control).
- *"The TB epidemic in Rwanda is declining and prevalence dropped below 100 per 100,000 population, as a result of good program design and implementation of all key recommended TB activities with high performance levels and synergistic efforts in HIV control. Catalyzed by the development of the general health sector in conjunction with rapid economic development. The TB epidemic is becoming more concentrated which supports the expanding focus on risk groups (men, prisoners, PLHIV, TB contacts, elderly) under the new developed national strategy (2013-2018)"*

I.4.4.2. "The Rwanda's case study on the Tuberculosis Risk prioritization tool".

The objective of this case study was to highlight country TB program experiences on TB detection among some groups of population considered to be at high risk of TB, and associated costs as well. Key findings are:

1. Rwanda's screening programs for PLHIV is high yield, well designed, and cost effective.
2. The screening strategy need improvement (contacts investigations, children) or need to be initiated (men, refugee community, health care workers, diabetes, smokers, the elderly, and people with alcohol use disorders)
3. The current TB screening program of prisoners in Rwanda using digital CXR and GXP is a cost efffective investment that should be scaled up.

I.4.4.3. The second drug resistance survey implementation

The objective of this survey is to estimate the current prevalence of drug resistant tuberculosis (to 1st and 2nd line TB drugs) among newly and previously diagnosed TB cases. Data collection from CDTs and CTs has been completed, sputum samples analysis (culture and DST) is ongoing at NRL. The next step will be data management, analysis and dissemination.

I.4.4.4. Implementation of the "Short duration treatment protocol for MDR-TB patients in Rwanda"

The MDR-TB treatment protocol duration is 20 months according to WHO recommendations. Some of the drugs treating MDR-TB patients are subject to a number of side effects and toxicity. Therefore the international union against tuberculosis and other lung disease (the Union) in collaboration with WHO and countries is conducting operational research that seeks to reduce the duration of treatment and side effects and toxicity by substitution of some of the MDR-TB drugs.

Rwanda is implementing the nine month duration regimen for MDR-TB treatment. The first patient has been initiated on this regimen in July 2014. Until June 2015, 66 patients have already been initiated. The patient selection will continue up to June 2016.

I.4.4.5. Publication of the "Latent Tuberculosis Infection and Associated Factors among Health Care Workers in Kigali, Rwanda"

This study demonstrated that latent TB infection (LTBI) was more prevalent among HCWs (62%) than SWs (39%), regardless of facility type, work setting, or occupation. The current status of TB infection control practices should be evaluated in the entire workforce in all Rwandan healthcare facilities. This paper is published in PLOS/One.

I.4.4.6. The TB & ORD Division participation in the 45th Word Conference of Lung Health

The supplement 1 number 11 volume 18 of the International Journal against Tuberculosis and Lung Diseases published 2 abstracts, which were prepared by the TB & ORD Division and presented during the 45th Word Conference of Lung Health of the International Union against Tuberculosis and Lung Disease (The Union) held on 28th October 2014 to 1st November 2014 in Barcelona-Spain. The 2 abstracts are:

- PD-1260-01 Tuberculosis screening in prisons in Rwanda using mobile digital x-ray machine, and
- PD-1080-01 Capacity building on PMDT for eastern Africa: center of excellence (CoE) on PMDT in Rwanda 2010-2013.

I.4.5. Provide training and technical assistance with capacity building focus

To ensure that TB control activities are aligned with international guidelines and standards, and to strengthen the system and for the capacity building purpose, The TB & ORD Division works with national and international technicians. The technical assistance received during 2014-2015 FY are detailed in the table below.

Table 27 : Received external technical assistance, Jul 2014- Jun 2015

Type of TA	Period	Names and Institutions
Drug Resistance Survey (DRS)	14th to 17th July 2014	Dr Ann DEAN from WHO and Dr Moses JOLOBA from SRL-Kampala
Epidemiological review and impact analysis of tuberculosis	21st to 25th July 2014	Dr Eveline Klikenberg from KNCV
Green Light Committee	19th to 28th January 2015	Dr Norbert NDJEKA and Dr Romero RODOLFO from WHO
Drug Resistance Survey (DRS)	23rd to 25th February 2015	Dr Ann DEAN from WHO and Dr Moses JOLOBA from SRL-Kampala
Short MDR-TB treatment regimen	9th to 13th February 2015	Dr Valerie SCHWOEBEL of UNION and Dr Francois CIZA of NTP Burundi
Leprosy control activities	03rd to 08th May 2015	Dr Martine TOUSSAINT from the DAMIAN FOUNDATION

I.4.6. Ensure logistics for TB control activities

The procurement of TB medicines, consumables and equipment was conducted in accordance with both global fund requirements and national procurement regulations. In case of conflict of those different guidelines, the global fund requirements prevailed. In general 79.0% of the planned items were purchased, 14.0% are in pipeline, 3.5% were cancelled from the procurement plan as its counterpart wasn't there and 3.5% were completely failed in tendering proceedings.

The total number of items planned to be bought in this fiscal year was 28. Among them, 3.5% (1 item: Syringe 1ml+needle 26G) was cancelled from procurement plan during tendering process, 3.5% (1 item: Rifampicin 150mg tablet) was failed because the only one prequalified supplier did not respond to the tender request, 79.0% (22 items) were fully purchased as planned and 14% (4 items: Water for injection 5ml water, syringes 5ml, microscope with integrated Led and tuberculin) are still in tendering processes.

The rifampicin failed in procurement procedures however, we didn't face stock out as RBC/TB&ORD division received donation from Damian Foundation.

The Syringe 1ml+needle 26G, used along with tuberculin in the diagnosis of tuberculosis, was cancelled in the needed products because the available stock is not being used as its counterpart, tuberculin , is stocked out.

The tender process of tuberculin failed in previous years and it is in the tender published in May 2015 for which we got successful bidder and it is the reason why the product was not availed in this fiscal year.

During the fiscal year of 2014-2015, we have received 16 items which were planned to be arrived in the fiscal year of 2013-2014

Table 28 : Products planned in 2013-2014 received in 2014-2015

#	Item description	Planned Pack size	Planned Qty	Delivered Pack size	Ordered Qty	Observation
1	Tuberculin syringes 1ml+needle 21G	100	11	100.00	11	Delivered
2	Surgical masks	10	48	50.00	48	Delivered
3	Plastic empty bottle graduated	1	3200	1.00	3200	Delivered
4	Folding wheelchair seat width 45 cm	1	3	1.00	3	Delivered
5	Audiometer	1	10	1.00	10	Delivered
6	Peak flow meter (Debimeter)	1	350	1.00	350	Delivered
7	ECG&SPIROMETER	1	9	1.00	9	Delivered
8	ECG&SPIROMETER'S BIO ADHESIVE	1000	1	1,000.00	1	Delivered
9	ECG KANGAROO	1	1	1.00	1	Delivered
10	OXYGEN CONCENTRATING APPARATUS	1	20	1.00	20	Delivered
11	Peak flow meter (Debimeter)	1	498	1.00	498	Delivered
12	Oxygen saturation reader	1	20	1.00	20	Delivered
13	Crutches for adult	1	3	1.00	3	Delivered
14	Canadian cane aluminum	1	4	1.00	4	Delivered
15	Protection sun glasses	1	10	1.00	10	Delivered
16	Respiratory mask	20	1863	20.00	1863	Delivered

Challenges in procurement supply chain management of TB commodities

Many challenges are met in procurement supply chain management of TB commodities:

- The suppliers who do not comply with the procurement law: some suppliers are no longer participating in our tenders due to the imposition of some terms which are conflicting to the procurement law (Upfront payment without guarantees, the non-provision of the required guarantees,…) and this reduces the competition;
- The suppliers who do not respond to our request while they are the only ones WHO/GF prequalified for some products (case of rifampicin 15mg);
- Delays in supply of TB commodities: some potential suppliers execute their contact in the period beyond the committed one (the delivery period may take up to 5 months while the committed one does not exceed 3thonths normally).
- High target of number of MDR TB and pediatric medicines which may lead to expiry

Challenge mitigation in the future

In order to do not make the TB program to collapse, the above mentioned challenges will be mitigated as follow:

- For products which are used to do not find the suppliers due to different reasons or whose suppliers who do not comply with our procurement law (water for injection, rifampicin 150mg tablet, streptomycin injectable 1g, rifabutin 150mg), they will be bought through Global Drug Facility;
- In additional different measures applied to the supplier who do not execute the contract timely, framework contracts for 3three years will be prepared in order to the time taken in procurement proceedings.

- To conduct quantification review with different stakeholders involved in TB cases detection and procurement supply chain management every quarter

To support the implementation of different TB control activities, including among others the care and treatment and the TB surveillance, different algorithms, forms and registers were distributed to health facilities. Details are given in annexes.

I.4.7. Performance Based Financing system (PBF)

Performance based financing (PBF) is an approach implemented to motivate both decentralized health facilities (HFs) and community health workers (CHWs) in their work toward TB control. For payment a number of indicators have been set and each one has been attributed a score, so that HFs and CHWs are paid based on their performance. These indicators are dynamic and can be changed to make sure that they are continuously in accordance with up to date requirements. During the week of 30thJune to 3rdJuly, 2015, the TB & ORD Division organized a workshop where its partners participated to update PBF indicators for both for quantitative and qualitative. These revised indicators are planned to be used for the 2015-2016 FY.

I.4.8. Scale up PAL strategy

As part of adopting the WHO STOP TB strategy and in line with providing early TB detection in general population and intensify case-finding, the TB&ORD division continues to strengthen health systems based on primary health care and engage all health care providers with an approach that ensures universal access to higher Quality TB Services . Such engagement requires a systematic approach to identifying providers and health facilities that have potential to provide better services for TB, developing and maintaining linkages between these services. The Practical Approach to Lung Health (PAL) is a method based on improving quality of care for all respiratory patients above five years of age and focuses on the primary health care level.

The TB& ORD division has advanced the implementation of the PAL strategy through the development of standardized policy with regard to treatment, preparation of PAL treatment guidelines and training materials, hands-on training of health care providers at both the central and peripheral levels.

In line with advancing the roll out of the Practical Approach to Lung Health (PAL) to all primary health facilities in Rwanda, a policy workshop for central level staff of the TB&ORD division was held 27th – 30th January 2015. The main meeting objectives were:

- Review of policy around quality of respiratory care management
- Improve efficiency of respiratory care services in health facilities
- Review of equipment needs of primary health facilities
- Review of Supply chain needs for primary health facilities
- Preparation and inclusion of PAL based indicators into the reporting systems
- Planning a training on PAL management in primary health facilities

Senior staff attended meeting from the TB&ORD Division, Representatives from CHUB, CDC and WHO. Complete minutes of the meeting are annexed to this report.

In the third quarter of the 2014-2015 year, 72 staff from 40 health facilities received training of the Practical Approach to Lung Health. (PAL).

CHAPTER II: LEPROSY CONTROL

II.1. Objective 1: Reduce by 35%, the rate of 100,000 people for new cases with physical disabilities of 2nd degree, by 2015 in comparison with 2010.

II.1.1. Strengthen the diagnosis of leprosy

Forty two (42) new cases were diagnosed with leprosy in endemic areas from July 2014 to June 2015. Eighteen (18) were Multibacillary (MB) while 24 were Paucibacillary (PB), among there, 27 were female, 6 cases are children aged 0 -14 years old. All new cases were evaluated for physical disability at diagnosis; 8 cases representing 19% of those with MB had grade 2 disability and 2% for grade 1. In general we treated 47 cases, which included 5 cases of retreatment (2 relapses, 3 treatment defaults).

Table 29: Notification of leprosy cases in Rwanda, July 2014-June 2015

LEPROSY CASES	MB	PB	Total
New cases (NC).			
Number of new cases (NC)	18	24	42
Children among new cases (0-14 years)	0	6	6
Women among new cases	10	17	27
Number of cases evaluated for their disability at diagnosis	18	24	42
Number with Grade 1 disabilities	2	0	2
Number with Grade 2 disabilities	8	0	8
Retreatment cases			
Number of relapses	2	0	2
Number of retreatment after default	2	1	3
TOTAL OF CASE	**22**	**25**	**47**

Source: TB Quarterly reports, Leprosy quarterly report, Leprosy register

II.1.2. Capacity building in Leprosy control

District stakeholders and Community Health Workers received capacity building training on Leprosy from teams in the central level to allow them effectively participate in Leprosy control activities. These activities include:

- One hundred and sixty seven (167) students and 46 teachers from the Rwamagana Nursing school and Saint Elizabeth Kabgayi were trained on diagnosis and leprosy control between 22-25 September, 2014
- The e-leprosy platform and leprosy quarterly report form were elaborated and agreed on between 2nd – 4th August 2014 in the Technical Working Group composed by Leprosy Senior Officer, DF Project Manager, Epidemiologist Senior Officer, TB/ TB&HIV Research, IT officer as well a developer Specialist from MSH.
- Special training sessions on leprosy control and case management for 33 health care workers from Nyaruguru and Gisagara districts were done from 09th to 11th February, 2015.

- Forty two (42) M&E officers from district hospitals and 124 TB Focal Points of health facilities in the Eastern Province were trained on e-TB and e-leprosy from 11th-12th June 2015 and 16th-19th June 2015, respectively. Theoretical demonstrations of e-TB system Program stages as well as of e-leprosy were shown (*Patients enrollment / Data entry fields, getting report from the system & data management, Leprosy quarterly forms*).
- Central level staff received training and external technical assistance from Damian Foundation through Dr Martine TOUSSAINT on 03rd -08th May 2015.
- Integrated training on tuberculosis and leprosy was presented to Medical doctors in different private clinics in Kigali from 18th-19th April 2015. Nurses who are working in Kibilizi (26 nurses), Rwinkwavu (26 nurses), Gahini and Kiziguro district hospitals were trained on leprosy in June, 2015. Three hundred and twenty seven (327) community health workers from Bugarama-islamique, Gikundamvura, Bugarama-Muganza and Nyabitimbo sites were trained on typical signs of leprosy. The CHW were able to carry out activities on active case finding in the community after the training.

II.2. Objective 2: Improving quality of leprosy control activities, ensuring adherence to leprosy medication

II.2.1. Leprosy treatment outcomes

The table below shows the treatment success rate for new cases, relapses, and retreatment after default with MB form registered from July 2012 - June 2013. The treatment success rate for new cases was 73.3%, 75%, success rate for relapse cases with MB and 100% for those with PB. We had 100% success rate for cases that had retreatment after default for the July 2013 - June 2014 period.

The success target rate for 2015 was set at 90%, but this was not achieved as 3 (16%) new MB cases were not evaluated at the end of the one-year treatment period, but extended their treatment periods to two years. For the relapse cases 2 (25%) defaulted on treatment.

Table 30: Outcomes of Leprosy cases (MB registered from July 2012- June 2013 and PB registered from July 2013- June 2014)

Cases	New cases		Relapses		Retreatment after default	
	MB	PB	MB	PB	MB	PB
Registered	19	12	8	2	2	0
Treatment completed	14	12	6	2	2	0
Discontinuation of treatment	2	0	2	0	0	0
Died	0	0	0	0	0	0
Not evaluated	3	0	0	0	0	0
Treatment success (%)	73.3	100	75	100	100	-
Disability Grade 2 at end of treatment	4	0	0	0	0	0

II.2.2. Prevent disability due to the leprosy and aggravation

Continuous messages for early detection of leprosy in endemic sites, systematic disability evaluation for patients undergoing treatment are carried out in most health facilities in endemic areas to prevent occurrence and aggravation of disabilities. We also evaluate patients at the end of the treatment period to ensure that there is no aggravation of disability in relation to the start of diagnosis/treatment period.

Supportive activities to the vulnerable group between July 2014 and June 2015

Leprosy is a disease that usually affects the poorest and most vulnerable members of the society. For improved socio-economic status and patient treatment outcomes, the vulnerable groups receive some support that may be in the form of renovation of houses, support to pay medical insurance, payment of medical fees, income generating activities as so on.

The table below shows details of supportive activities carried out from July 2014- June 2015.

Table 31 : Supportive activities to the vulnerable group between July 2014 and June 2015

HFS	Houses renovated	Payment of CHBI*	Payment of Medical fees	IGA* *(Grinding Machine)*	IGA (Goats)	Observation
Bugarama	4	0	3	0	0	
Jarama	3	130	0	0	0	
Nyabitimbo	1	147	0	1	0	*Protection materials supplied (Shoes and basins)*
Kiraramboga	3	0	0	0	13	
Nzangwa	3	101	0	0	0	
Gishali	1	5	0	0	2	
Nyamyumba	1	21	0	0	0	
Gatagara SU*	0	0	5	0	0	
Nyundo	1	148	0	0	0	
Mbazi	1	0	0	0	0	
Karora	0	14	0	0	0	
Rwinkwavu	0	0	1	0	0	
Total	**18**	**566**	**9**	**1**	**15**	

Source: Leprosy quarterly report 2014-2015, Leprosy register, Quarterly financial report 2014-2015

*IGA- Income Generating Activities
* CHBI: Community Health based Insurance,
* SU: Specialized unit

Damian Foundation visit for supportive activities at community level

A visit from an official from the Damian Foundation headquarters to participate in supportive field activities that involved the creation of Income Generating Activities such as a grinding machine, goats, renovation of houses among other activities.

Picture 3 : Supportive activities in the community

To strengthen the referral system

Surgery for leprosy patients with physical disabilities

Nine patients with physical disabilities were referred to GATAGARA Specialized Unit for further management of disability. The most common form of disability was chronic ulcers, which required amputation.

II.2.3. Strengthen leprosy control activities in endemic areas

II.2.3.1. Leprosy active cases finding activities

Regular passive and active detection of Leprosy by Community Health Workers with participation of staff of the ORD unit and Support from cooperatives of former patients are crucial in strengthening Leprosy control activities in the community.

The ORD Unit was able to carry out active case finding activities for leprosy in areas such as Bugesera District (Nzangwa HC, Mazane Island, Rilima HC and Mareba HC), Gisagara District (Kirarambogo HC, Hemba and Nyabisindu villages), Ngoma District (Sangaza HC and Jarama HC) and Rusizi District (Bugarama-Islamique HC, Bugarama-Muganza HC, Nyamitimbo HC, Gikundamvura HC and Kizura Village). Follow up activities for cured cases

are also done and Technical assistance from the Damian Foundation has been used in these activities.

Table 32 : Leprosy active case finding in endemic sites, July 2014-June 2015

District	HFs	femal e	Enfant (0-14)	G2	ACF		Total	Retreatm ent		Total	Total
					MB	PB		MB	PB		
Rusizi	Gikundamvura_Kizura	7	3	1	1	7	8	0	0	0	8
	Bugarama_Muganza	3	1	1	0	2	2	1	0	1	3
	Bugarama Islamique	1	0	1	1	0	1	0	0	0	1
	Nyabitimbo	1	0	1	1	2	3	0	0	0	3
Gisagara	Kirarambogo_Hemba	5	1	0	2	7	9	0	1	1	10
Bugesera	Nzangwa_Mazane	4	0	2	2	5	7	1	0	1	8
Ngoma	Jarama	2	0	1	3	0	3	0	0	0	3
Total		23	5	7	10	23	33	2	1	3	36

*G2 – Grade 2 disability

The table above shows the impact of active case finding activities in early detection of contagious cases of leprosy in the community. Comparing with all new case notified, 33 cases (79%) are tracked through active case finding in the aforementioned endemic areas. The trend of contagious cases (MB) is decreasing while PB is remained at 70%.

Table 33 : Leprosy screening during active case finding by CHWs, July 2014-June 2015

HFs	CHW Trained	Leprosy cases
Bugarama Islamique HC	74	1
Nyabitimbo HC	84	1
Gikundamvura HC	83	1
Bugarama HC	86	2
TOTAL	327	5

The role played by CHW is also a key to identifying the suspects within communities; Three hundred and twenty seven (327) Community Health Workers were trained on diagnosis, care and treatment of Leprosy They were able to track 5 confirmed cases, representing 12% of all new cases diagnosed.

II.3. Objective 3: Increase efforts for sensitization, Behavior communication change, in order to reduce stigmatization among leprosy patients and their families

Behavior Communication Change on prevention and control of leprosy disease were carried out as preparatory steps for active case finding in endemic areas. In addition to this, the leprosy team engaged churches and local administrative leaders on sensitizing local populations on key strategic messages about leprosy including stigma and care. BCC activities were also implemented in all health facilities through partnerships with churches as part of preparatory activities funded by the Damian foundation through associations or cooperatives.

Radio shows in commercial and community based radios were carried out with the aim to sensitize populations on cardinal signs of leprosy, effects of delayed diagnosis and preventive strategies that can be used in the community.

CHAPTER III: FINANCING THE NSP TB

III.1. Introduction

The TB National Strategic Plan (NSP) is a key instrument to guide TB control work in Rwanda in accordance with the most recent World Health Organization (WHO) international guidance.

Rwanda is on track to reach the Millennium Development Goals target, i.e., that TB incidence should be falling by 2015; the Stop TB Partnership target of halving the 1990 mortality and prevalence rate by 2015; and the Stop TB Partnership Global Plan targets on improving treatment success to at least 90%, by 2015.

The major funding sources for the Rwanda TB programs are:

- Government Revenues
- Development Partners contributions through General and Sector Budget Support and Donor funds, partially on budget as seen in the development budget, and partially earmarked and project related. These include the Global Fund for HIV & AIDS, TB and Malaria, USG PEPFAR, Damian Foundation and contribution from One UN (WHO).

III.2. Funding Sources for TB Expenditures in Rwanda FY 2014/15

The Ministry of Health and the Rwanda Biomedical Center in collaboration with its partners worked on the design and development of the Health Resource Tracking Tool (HRTT), where all health sector actors (Government institutions and development partners) report on a periodic basis. The system is designed to collect expenditures and budgets on a quarterly and annual basis. The system is currently operating.

Based on the progress, this system will facilitate on the financing for TB by the NSP 2013-2018 and also the health sector in 2015/2016 fiscal year. To facilitate the collection of financial information for this year's report, a separate data collection process was adopted. The data was collected from the main funding sources, especially from MOH, SPIU (for GF USG PEPFAR) and World Health Organization (One UN).

III.3. Public and external funding sources for TB

The Global Fund for AIDS, TB and Malaria (GFATM) was budgeted to contribute the largest among all external funds with USD 11,338,980 (95% of the total budget for the reporting period).

The United States Government (USG) contributes USD 213,825 representing 2% of the total TB budget.

In the expenditures, GFATM made the largest contribution with USD 10,487,571, followed by GoR with USD 232,240, The USG PEPFAR contributed USD 208,038, Damian Foundation contributed USD 111,922 the One UN (WHO) contributed USD 20,000.

The FY 2014/15 total TB spending of USD 11,074,929 is 93% of the planned budget of USD 11,931,460.

Table 34 : Contribution of Different Funding Sources

TB funding sources Funding Sources	Budget planned in USD	Share as % of Budget	Amount Spent in USD	Share as % of Expenditures
GoR	246,733	2.1%	232,240	2.1%
Global Fund for AIDS, TB and Malaria	11,338,980	95%	10,487,571	95%
USG PEPFAR (CDC)	213,825	2%	208,038	2%
One UN (WHO)	20,000	0.17%	20,000	0.17%
Damian Foundation	111,922	1%	127,080	1.1%
Total	**11,931,460**	**100%**	**11,074,929**	**100%**

Table 35 : GoR TB Funding per MTEF Program Category for the FY 2014-2015

MTEF Program	Total GoR Contribution in Health Sector		GoR Contribution in TB	
	Budget	Spent	Budget	Spent
Administrative and support services	8,057,334	7,835,052	13,132	3,064
Health sector planning and information	140,302	135,375	60,337	59,291
Health human resources	44,944,608	44,944,385	104,312	104,312
Financial and geographical health accessibility	34,395,313	34,321,334		
Policy development and health service regulation	1,279,001	1,266,613		
Maternal and child health	4,234,469	4,195,779	-	-
Specialized health services	21,209,177	14,241,630		
Health quality improvement	14,554,443	879,888	3,162	2,178
Disease prevention and control	6,248,989	8,104,117	53,590	53,590
Grand Total	**135,063,634**	**115,924,173**	**246,733**	**232,240**

Sources: HIV annual report and SMART FMIS / MINECOFIN 2014/2015

As the table shows, for FY 2014-2015 GoR is contributing to TB expenditures the total amount of $232,240, with TB Expenditures by MTEF program ranging from a low of $ 2,178 (1%) for health quality improvement to a high of $104,312 (45%) for Human Resources for Health.

The top 3 MTEF programs are Human Resources for Health, health sector planning and information and disease prevention and control and represent 88% of the total GoR contribution to TB with $104,312, $60,337, and $ 53,590 respectively.

III.4. Government contribution to TB National Strategic Plan

III.4.1. Methodology used to estimate the GOR allocations to various health programs

The GoR funds are allocated to different health programs during the annual planning and budgeting process, which entails prioritization process by the Ministry, RBC and decentralized levels basing on HSSP III and different disease program strategic plans serve as guiding documents. The planning phase also uses the disease burden and services utilization data from HMIS to inform an effective resource allocation.

A part from program specific financing, the estimation of GoR contribution takes into consideration all other health related programs costs, categorized as health systems strengthening costs in the categories of (i) Human resources (salaries) (ii) Infrastructure (including constructions, renovation and equipment) (iii) Quality of services (including Performance Based Financing and accreditation programs (iv) Specialized health services (v) Health commodities (drugs, consumables…) and (vi) Health insurance for indigents.

The percentage utilized to estimate GoR contribution is based on disease burden and services utilization based on HMIS data collected from Rwandan health facilities.

Table 36 : GoR TB NSP Funding per NSP cost category FY 2014/2015

	NSP Cost Category	Budget 2014/2015 in USD	Expenditures 2014/2015 in USD	Expenditure share
1	Human Resources	104,312	104,312	45%
2	Technical Assistance	3,162	2,178	1%
3	Training	11,011	9,805	4%
4	Health Products and Health Equipment	1,189	0	0%
5	Medicines and Pharmaceutical Products	53,590	53,590	23%
6	Monitoring & Evaluation	60,337	59,291	26%
7	Planning & Administration	2,711	0	0%
8	Overhead	10,421	3,064	1%
Total		**246,733**	**232,240**	**100%**

The top 4 NSP cost categories with the highest share of expenditure are Human resources with 45%; Monitoring & Evaluation with 26%; Medicines and Pharmaceutical Products with 23% and Training with 4%. The remaining 4 NSP cost categories are represented with 2%.

5. The Global Fund contribution

For the Global Fund contribution, the budget for the year 2014–2015 was USD 11,338,980 which is 95% of contribution to the TB NSP operational plan for this ending fiscal year. From this budget, a total of USD 10,487,571has been effectively spent by the sub-recipients; that is 95% of TB NSP total expenditures. The balance of USD 851,409 has been committed for infrastructures (lab renovated, motorcycles for health facilities) and health equipment.

Table 37 : GF TB NSP funding per type of budget entity FY 2014/2015

	TB GF Grant Sub recipients	Budget FY 2014-2015 in USD (A)	Expenditures as at 30th June 2015 in USD (B)	Balance (C) = (A) - (B)	Expenditure share
1	MoH (CAAC, CHD& SPIU)	4,591,828	3,644,952	946,876	35%
2	RBC (CS, LNR,MPDD, RHCC, TB DIVISION)	2,292,777	2,958,503	-665,726	28%
3	Health Facilities (DHs&HCs)	3,223,292	2,581,817	641,475	25%
4	Referral Hospitals	244,044	344,625	-100,581	3%
5	Other Public Institutions /CNJR	91,533	92,447	-914	1%
6	NGOs	767,956	771,348	-3,392	7%
7	RRP+	127,550	93,879	33,671	1%
	Grand Total in USD	**11,338,980**	**10,487,571**	**851,409**	**100%**

The table above shows the TB NSP budget execution per type of budget entity of the GF contribution for the FY 2014-2015. The largest expenditure was done by MoH (SPIU inclusive) with 35%; followed by RBC with 28%; Health facilities with 25%, NGOs with 7%, Referral hospital with 3%, other public institutions with 1%; and finally RRP+ with 1%.

Table 38 : TB NSP GF Grant budget execution per cost category as of 30th June 2015

	GF TB NSP Cost Category	Budget 2014/2015 in USD	Expenditures 2014/2015 in USD	Expenditure share
1	Human Resources	2,057,328	1,730,763	16.50%
2	Technical Assistance	-	20,614	0.20%
3	Training	481,742	526,115	5.02%
4	Health Products and Health Equipment	432,806	1,089,254	10.39%
5	Medicines and Pharmaceutical Products	506,832	298,773	2.85%
6	Procurement and Supply Management Costs	40,325	26,207	0.25%
7	Infrastructure and Other Equipment	1,605,398	1,291,415	12.31%
8	Communication Materials	259,985	241,587	2.30%
9	Monitoring and Evaluation	729,621	843,647	8.04%
10	Living Support to Clients/Target Population	3,982,909	3,157,728	30.11%
11	Planning and Administration	622,669	547,162	5.22%
12	Overheads	616,818	710,266	6.77%
13	Other	2,546	4,040	0.04%
	TOTAL	**11,338,980**	**10,487,571**	**100%**

The table above shows the TB NSP budget execution per cost category of the GF contribution for the FY 2014-2015, representing a total rate of 92.5% expenditures over budget.

6. The USG/PEPFAR contribution

The expenditures from USG/PEPFAR for the reporting period are USD 208,038 over budget of USD 213,825 and represents 2% of total TB NSP expenditures.

7. The Damien Foundation contribution

The expenditures from Damien Foundation for the reporting period are USD 127,080 over budget of USD 111,922 and represents 1, 1% of total TB NSP expenditures.

8. One UN Contribution

The One UN / WHO contributed to the implementation of the Second Nationwide TB Drug-Resistance Survey (DRS II) by ensure to support Human resources including salaries of three months for laboratory technicians.

These laboratory technicians were working at National Reference Laboratory (NRL) performing sputum culture and drug susceptibility testing of all eligible samples for the drug-resistance survey. The total budget for this activity planned is USD 20,000 and representing a total rate of 100% expenditures.

CHAPTER III: CONCLUSION

The TB&ORD program has continues to intensify and improve Tuberculosis diagnosis through several channels to ensure early detection of as many cases as possible. There has been increased screening quality at all levels, the availability of basic quality TB diagnostic services with the expansion of rapid and sensitive tests in health facilities and intensified case finding within High Risk Groups. In general, we registered an increase in the positivity rate of confirmed cases, with high achievements for most indicators collected in the program. Community Health workers remain an important resource for TB screening and diagnosis at the community level. The program as also continued to build capacity of health care workers at all levels to ensure improved quality of services to the population.

TB&ORD Division with its stakeholders have achieved most of the indicators of the second objective during July 2014 – June 2015 reporting period. Achieved indicators include indicators on treatment success rate for bacteriologically confirmed TB cases, HIV and community indicators. However for some others we need more attention and effort to achieve preset targets particularly in treatment success rate in clinically diagnosed TB cases and in culture controls for MDR-TB patients.

TB infection control measures were implemented in 80% of health facilities as set in our NSP target. The effective implementation of those measures reduces the risk of exposition and transmission of TB in health facilities settings. Capacity building of 118 district hospitals managers, 37 prison managers and 566 supervisors of CHW on TB infection control measures was conducted. Awareness campaigns on tuberculosis in general population were done through radio program, live talk show, spots, TB world day, and in 355 schools located in 9 Districts in collaboration with NGOs, profemme Twese Hamwe and National Youth Council. For the prevention of TB by medication, 95% of all children less than 5 years for whom active TB has been excluded are receiving INH. This has also been launched for PLHIV in a pilot phase. Efforts should be done to improve monitoring of IPT among PLHIV and take appropriate measures.

For Leprosy control activities for the 2014-2015 FY, there has been continued progress in the expansion of Human resources capacity through trainings and mentorships of community health workers and Health care providers. Care and treatment of cases has continued through active case findings of patients in the communities of endemic areas. Creation and consolidation of a functional Leprosy reporting system was also undertaken in the above mentioned year. Social support to the most vulnerable has also been a key intervention to improve socioeconomic status and patient outcomes those affected by the disease and their families

The GoR funds are allocated to different health programs during the annual planning and budgeting process, which entails prioritization process by the Ministry, RBC and decentralized levels basing on HSSP III and different disease program strategic plans serving as guiding documents. The fiscal year July 2014-June 2015 has been very important for the TB and ORD division with the development and finalization of the TB NSP 2013-2018 and the TB/HIV joint concept note. The TB/HIV joint concept note enabled the TB program to acquire $ 21.3 M from the Global Fund.

CHAPTER IV: ANNEXES

Annex 1 : TB detection outcome indicators in Rwanda, from July 2013 to June 2015.

TB NSP detection outcome indicators	2013-2014		2014-2015	
	Target	Result	Target	Result
Notification rate of new pulmonary bacteriologically confirmed TB cases ***(2013-2018 TB NSP indicator 2)***	3,554 (32.9/100,000)	3,789 (35.1/100,000)	3,504 (31.7/100,000)	3,872 (34.9/100,000)
Notification rate of all TB cases (all forms) ***(2013-2018 TB NSP indicator 1 and RBF indicator)***	55.4/100,000 (5,979)	56.4/100,000 (6,085)	5,895 (53.3/100,000)	5,828 (52.5/100,000)
Proportion of TB cases (all forms) referred by CHW during the evaluated year. ***(2013-2018 TB NSP indicator 3 and RBF indicator)***	19%	**19%** (1,161/6,085)	**20%**	**19.2%** (1,117/5,828)

Annex 2 : TB detection indicators in Rwanda, from July 2013 to June 2015.

NSP result indicators related to TB diagnosis	2013-2014		2014-2015	
	Target	Result	Target	Result
Number and percentage of laboratories showing adequate performance in external quality assurance for smear microscopy among the total number of laboratories that undertake smear microscopy during the reporting period ***(2013-2018 TB NSP o indicator 1)***	91.4%		94%	

Annex 3 : TB treatment outcomes indicators in Rwanda, from July 2013 to June 2015.

NSP result indicators related to TB diagnosis	2013-2014		2014-2015	
	Target	Result	Target	Result
Treatment success rate for bacteriologically confirmed new and relapse TB cases ***(2013-2018 TB NSP outcome indicator 8 and RBF indicator)***	NA	NA	87%	90%
Treatment success rate for clinically diagnosed TB cases (SS-, EPTB and others) ***(2013-2018 TB NSP outcome indicator 9 and RBF indicator)***	NA	NA	76%	74%
Cure rate bacteriologically confirmed new and relapse TB cases ***(2013-2018 TB NSP outcome indicator 10)***	NA	NA	82%	85%
Treatment success rate for TB patients (all forms) receiving DOT through community health workers (CHW) ***(2013-2018 TB NSP outcome indicator 14)***	91.4%		94%	95%

Annex 4 : MDR-TB related indicators Rwanda during July 2013 to June 2015

NSP indicators related to MDR-TB	2013-2014		2014-2015	
	Target	Result	Target	Result
22. Proportion of new bacteriologically confirmed TB cases tested for TB drugs susceptibility (***2013-2018 TB NSP process indicator 5***)	NA	NA	60%	
23. Proportion of previously treated TB cases with result of a test for detection of resistance to rifampicin or rifampicin and isoniazid (***2013-2018 TB NSP process indicator 6, RBF indicator***)	NA	NA	87%	
24. Number of MDR-TB patients enrolled for 2nd line treatment. (**PF indicator 9)** ***(Extended SSF-TB PF output indicator 7)*** ***2013-2018 TB NSP process indicator15***	100	74	100%	69
25. Smear conversion rate of confirmed MDR-TB cases at 6 months (Nb and % with negative smear and culture at month 6). (**PF indicator 10)** ***(2013-2018 TB NSP process indicator17***)	90%	79%	91%	89%
26. Treatment success rate, confirmed RR/MDR-TB (***2013-2018 TB NSP outcome indicator 16, RBF indicator***)	87%	94%	87%	88%

Annex 5 : Indicators related to Tuberculosis in high risk groups in Rwanda during July 2013 to June 2015

NSP indicators related to TB in prisons	2013-2014		2014-2015		
	Targets	Target	Results	Target	Results
Proportion of TB cases notified among high-risk groups (Number and Percentage) ***(2013-2018 TB NSP indicator 7, RBF indicator)***	NA	895/5,979 (15%)	321/6,085 (5%)	18% 1,047/5,895	15% 851/5,828
Treatment success rate of new SS+ TB cases registered in prisons	>85%			NA	NA

Annex 6 : TB/HIV indicators in Rwanda from July 2013 to June 2015

NSP indicators on TB-HIV	2013-2014		2014-2015	
	Target	Result	Target	Result
Number & % of TB patients (all forms) tested for HIV of all TB patients (all forms) registered ***(2013-2018 TB NSP indicator 11)***	98% for the Extended SSF TB 99% for 2013-2018 TB NSP	5,999/6,085 (**98.6%**)	99%	5793/5830 **(99%)**
Number & % of TB/HIV patients receiving ART by the end of TB treatment out of all TB/HIV patients. ***(2013-2018 TB NSP indicator 13)*** ***RBF indicator***	84.9% for the Extended SSF TB 87% for 2013-2018 TB NSP and RBF	1,299/1,439 **(90.3%)**	88%	1339/1475 **(91%)**
17. Number & % of TB presumptive tested for HIV among all suspects with unknown HIV status ***(2013-2018 TB NSP indicator 12)***	94% for 2013-2018 TB NSP	187,408/187,692 (**99.8%**)	95%	196474/198773 **(99%)**

Annex 7 : Indicators related to Communities and Civil Society Organizations involvement in TB control, in Rwanda during July 2010-June 2015

NSP indicators related to community DOTS	2013-2014		2014-2015	
	Target	Results	Target	Results
37. Percentage of notified TB cases (all forms) contributed by community referrals **(RBF indicator, *2013-2018 TB NSP process indicator 3*)**	19%	1,161/6,085 (**19%**)	**20%**	**19.2%** (1,117/5,828)
Number & % of TB patients (all forms) successfully treated among all TB patients managed by CHW. (***2013-2018 TB NSP output indicator 14***)	2,225/2,368 (94%)	2,678/2,853 (94%)	94%	95% (2728/2885)

Annex 8 : Procurement status details

PROCUREMENT STATUS OF TB COMMODITIES FOR 2014-2015						
#	Item description	Planned Pack size	Planned qty	Delivered Pack size	Purchased qty	observation on procurement status
1	RHZE(150/75/400/275) Film coated tablet(s)	672	1765	672	1765	Delivered
2	RH(150/75) Film coated tablet(s)	672	2552	672	2552	Delivered
3	Streptomycin 1000mg Powder for injection	50	825	50	666	Delivered
4	RHE(150/75/275) Film coated tablet(s)	672	399	672	133	Delivered
5	S&N-5/21Gx1.5 and Safety Box Syringe & needle (auto-disabling) 21G Syringe & needle	100	366	100		In pipeline
6	Water for injection 5ml Water	100	466	100		In pipeline
7	RHZ(60/30/150)Dispersible tablet(s)	84	316	84	316	Delivered
8	Ethambutol 100mg Film coated tablet(s)	500	89	100.00	445	Delivered
9	RH(60/30)Dispersible tablet(s)	84	459	84	459	Delivered
10	RH(60/60) Dispersible tablet(s)	84	1057	84	1057	Delivered
11	Ethambutol 400mg Film coated tablet(s)	672	200	10.00	13500	Delivered
12	Rifabutin 150mg Capsule(s)	5	4251	30.00	672	Delivered
13	Pyridoxine 100mg Film uncoated tablet(s)	100	6235		6235	Delivered
14	Kanamycin 1000mg Powder for injection	10	1800	50.00	3600	Delivered
15	Clofazimine 100mg Capsule(s)	100	160	100.00	160	Delivered
16	Rifampicin 150mg Film coated tablet(s)	84	90		0	Failed
17	Cycloserine 250mg Capsule(s)	100	960	100	760	Delivered
18	Levofloxacin 250mg Film coated tablet(s)	100	660	100	660	Delivered
19	Moxifloxacin 400mg Film coated tablet(s)	5	3200	5	3200	Delivered
20	Prothionamide 250mg Film coated tablet(s)	100	700	100	700	Delivered
21	Pyrazinamide 400mg Film uncoated tablet(s)	672	223	672	223	Delivered
22	Tuberculin for tuberculin skin test (TST) for childhood TB diagnosis	10	125		0	In pipeline
23	Respiratory masks	10	4000	20.00	2000	Delivered
24	Surgical masks	10	24	50.00	48	Delivered
25	Microscope with integrated LED	1	25			In pipeline
26	Seringue 1ml+needle 26G	50	36		0	Cancelled
27	Cartridges for geneXpert machine	50	853	50	840	Delivered
28	GeneXpert machine	1	2	1	2	Delivered

Annex 9 : TB tools printed and distributed in Health Facilities in Jul 2014 -Mar 2015

N⁰	Items	TB TOOLS PRINTING		TB TOOLS DISTRIBUTION		Observation
		Quantities printed in Apr-Jun 2015	Quantities planned to be printed in Jul-Sep 2015	Quantities distributed in Apr-Jun 2015	Quantities planned to be distributed in Jul-Sep 2015	
	TB-HIV algorithms	4,386	0		0	Distributed at all health facilities during TB quarterly evaluation meeting
	TB Childhood algorithms	5,166	0		0	Distributed at all health facilities during TB quarterly evaluation meeting
	GeneXpert algorithms	4,387	0		0	Distributed at all health facilities during TB quarterly evaluation meeting
	TB Laboratory registers (CDT and CT)	2,500	0		0	Not yet distributed
	TB screening among health workers	100	0		0	Distributed in Nyamasheke, Rusizi, Rutsiro and Burera Districts
	TB diagnostic algorithms	4,386	0		0	Not yet distributed
	Stock card	43,219	0		0	Not yet distributed
1	TB laboratory forms	2,900	8,100	0	2,047	Distribution during July and October 2015 TB quarterly evaluation meetings
2	TB Laboratory registers for CDTs	1,000	0	0	200	Distribution during July 2015 TB quarterly evaluation meetings
3	TB Laboratory registers for CTs	1,500	0	0	200	Distribution during July 2015 TB quarterly evaluation meetings
4	Registers for TB screening among HCWs	840	0	0	612	Distribution during July 2015 TB quarterly evaluation meetings
5	TB cases registers	550	0	0	200	Distribution during July 2015 TB quarterly evaluation meetings
6	TB treatment cards	10,000	0	0	7,042	Distribution during July 2015 TB quarterly evaluation meetings
7	TB DOT com cards	6,000	0	0	2,934	Distribution during July 2015 TB quarterly evaluation meetings
8	TB drugs report and	430	0	0	400	Distribution during July 2015

	requisition registers for HFs					TB quarterly evaluation meetings
9	TB drugs report and requisition registers for DPs	70	0	0	60	Distribution during July 2015 TB quarterly evaluation meetings
10	TB identification cards	0	10,000	0		Distribution during October 2015 TB quarterly evaluation meetings
11	IMCI register including TB Component	1,812	0	0		This register is distributed to the DH through MCCH Division
12	IMCI shirt booklet	1,812	0	0		This register is distributed to the DH through MCCH Division
13	Sample Tracking register	1,750	0	0	1,750	Special distribution by NRL
14	INH Register	0	550	0		
15	MDR-TB patients files	0	200	0	TBD	
16	TB Prevalence survey report	0	880	0	TBD	