NATIONAL TUBERCULOSIS PROGRAMME
ANNUAL REPORT (2012)

1. Introduction

Tuberculosis is an ancient illness. By all rights as a bacterial disease that is curable with antimicrobial drugs, it should belong to the past. However, according to the Global Tuberculosis (TB) Report (2013), approximately 8.6 million developed TB and 1.3 million people died of TB in 2012. These figures acknowledge that TB is a unique pandemic. A third of the world's population harbours latent TB infection, which can emerge at any time as an airborne and transmittable disease. Reducing this human reservoir of infection will require many years of steady and untiring effort, plus more effective tools than we have today.

The goal of National Tuberculosis Programmes (NTP) is to dramatically reduce the global burden of tuberculosis by 2015 by ensuring all TB patients, including those co-infected with HIV and those with drug-resistant TB, benefit from universal access to high-quality diagnosis and patient-centered treatment.

Despite the efforts of NTP with the support of government and partners, tuberculosis (TB) is still a major health problem in Myanmar. Of the 198 countries reported to World Health Organization concerning Tuberculosis Control, Myanmar is still included in 22 TB high burden countries, in 27 MDR-TB high burden countries as well as in 41 TB/HIV high burden countries. For 2012, WHO estimated that TB prevalence in Myanmar was 489 per 100,000 population, incidence 377 per 100,000 population and mortality 48 per 100,000 population.

NTP, Myanmar was established in 1966. NTP has been running with 14 Regional and State TB Centres with 101 TB teams at district and township levels since 2009. TB control activities have been assimilated with Primary Health Care since 1978. NTP introduced Short Course Chemotherapy (SCC) in 18 townships in 1994 and then rapidly expanded up to 144 townships in 1995, another 9 townships in 1996 (altogether 153 townships), and no further expansion in 1997 and 1998.

In 1997, NTP adopted WHO recommended Directly Observed Treatment, Short Course (DOTS) Strategy. NTP implemented DOTS strategy through primary health care approach, in co-ordination with the other governmental sectors, private sectors and non-governmental organizations. DOTS coverage became increased year by year, and NTP

gained 100% DOTS coverage in 2003. Then, NTP adopted the Stop TB Strategy in Myanmar context in 2007.

TB patients have been treated with WHO recommended regimens using Fixed Dose Combination of first line anti-TB drugs (FDC) since 2004. TB control activities were carried out in line with 5-year National TB Strategic Plan and 'Stop TB Strategy' in order to achieve the global targets and Millennium Development Goals (MDGs). In 2012, Myanmar NTP achieved 78.2% Case Detection Rate and 85.7% Treatment Success Rate. This annual report purposes to record the Myanmar TB situation, progress of TB control activities year by year and to evaluate strength, weaknesses, opportunities, threats and challenges which were detected in 2012.

2. Objectives of NTP

General objectives

- To reduce the mortality, morbidity and transmission of TB, until it is no longer a public health problem
- To prevent the development of drug resistant TB
- To have halted by 2015 and begun to reverse incidence of TB

Specific Objectives

The objectives are set towards achieving the MDGs, 2015.

- To reach the interim targets of halving TB deaths and prevalence by 2015 from the 1990 situation. (MDGs, Goal 6, Target 6.c, Indicator 6.9)
- To reach and thereafter sustain the targets - achieving at least 70% case detection and successfully treat at least 85% of detected TB cases under DOTS (MDGs, Goal 6, Target 6.c, Indicator 6.10)

3. Progress of the Stop TB Strategy

In order to achieve the MDGs by 2015, Myanmar NTP initiated WHO recommended Stop TB Strategy in 2007.

All the planned activities in 5-Year National Strategic Plan for TB Control (2006-2010) were reviewed and revised to be in accordance with the National Health Plan, global and regional plans. The Ministry of Health (MoH) approved the 5-year National Strategic Plan (2011-2015) in 2011. Operational plan for 2 years, Monitoring & Evaluation plan and technical assistance plan were also developed. MDR-TB scale up plan, TB/HIV scale up plan and accelerated case finding plan were appended in the National Strategic Plan (NSP) in 2012.

NTP is implementing the 5-year Strategic Plan (2011-2015) with the support of the government as well as the funding from WHO, Global Fund (GF), Global Drug Facility (GDF), International facility for the purchase of drugs and laboratory commodities for HIV/AIDS, Malaria and Tuberculosis (UNITAID), Japan International Cooperation Agency (JICA), Three Diseases Fund (3DF), United States Agency for International Development (USAID) and the UNION.

There are 6 components in the **Stop TB strategy**:

1. Pursuing high quality DOTS expansion and enhancement
2. Addressing TB/HIV, MDR-TB and the needs of poor and vulnerable populations
3. Contributing to health system strengthening based on primary health care
4. Engaging all care providers
5. Empowering people with TB and communities through partnership
6. Enabling and promoting research

As a result of implementing those components, NTP Myanmar has achieved the Global TB Control targets since 2006. In 2011, the case detection target was revised according to the finding of National TB Prevalence Survey conducted in 2009-2010. Even though, the target for case detection rate was achieved.

i. Pursue high-quality DOTS expansion and enhancement

To enable known constraints to be addressed and new challenges met, further strengthening of the basic components of the DOTS strategy is required on the following lines:

a. Secure political commitment with increased and sustained financing
b. Ensure case detection through quality-assured bacteriology
c. Provide standardized treatment with supervision and patient support
d. Ensure effective drug supply and management
e. Monitor and evaluate performance and impact

a. Political commitment with increased and sustained financing

Myanmar government is increasing the budget for TB control gradually, especially for anti-TB drugs procurement. The government's commitment is to increase its contribution to 3% of the annual anti-TB drug cost, with annual 1% incremental increase thereafter, starting from 2009.

b. Case detection through quality-assured bacteriology

Diagnosis for TB depends mainly on sputum smear microscopy. Sputum Culture is available only at National TB Reference Laboratory (NTRL) in Yangon and at Upper Myanmar TB Laboratory in Mandalay.

Drug Susceptibility Testing (DST) has been available at NTRL since 2001. Upper Myanmar TB Laboratory, Mandalay was upgraded to do culture and DST in 2008-2009. Then, rapid TB, MDR-TB diagnostic methods of line probe assay (LPA), liquid culture and DST using MGIT machine were introduced to Myanmar at both TB laboratories in 2010.

External Quality by Lot Quality Assurance Sampling system (LQAS) on sputum microscopy was introduced in 2006, and expanded in phase wise manner. Private laboratories doing sputum microscopy for AFB could also be covered by EQA and 464 laboratories have been under EQAS in 2012. Binocular microscopes were replaced with Flourescent microscopes at 65 district TB centres. NTP is taking a step to decentralize DOTS units or microscopy centres up to strategic Station Hospitals with quality assurance system.

As an innovative approach, new diagnostic tools were installed in TB control facilities. In 2012, altogether 8 GeneXpert machines were received, 6 by GF and 2 by Canadian International Development Agency (CIDA). Two Xpert machines (CIDA) were set up at Latha TB Diagnostic Centre and NTRL (Aung San) .Six machines (GF) were set up at Latha, Union Tuberculosis Institute (Aung San), Bago, Mawlamyaing, Pathein and Monywa TB centres. For upper Myanmar, 2 GeneXpert machines were installed at Upper Myanmar TB

laboratory (Mandalay) and MGH (Mandalay General Hospital) in late 2011 for accelerating case finding with the support of PICT project (UNION).

Laboratory performance

Routinely three sputum specimens are collected for diagnosis and two specimens are collected for follow-up at all laboratories performing sputum AFB microscopy using Ziehl-Neelsen (ZN) stain. The Union supported 7 Fluorescent microscopes (FM) for Mandalay district and the GF provided 25 FM especially for high case load areas. Township laboratory performances are closely monitored by township medical officer and TB Team Leader. AFB microscopy work performed at Regional and State level is monitored by Regional/State TB officers, Microbiologists and Senior TB Laboratory Supervisors (STLS).

Maintaining the quality of AFB Microscopy

In 1997, NTP developed the framework for the implementation of External Quality Assessment activities using conventional method in which all positive slides and 10% of the negative slides examined were checked. This method increased the workload of NTRL and Regional and State TB Laboratories.

After a pilot study of External Quality Assessment based on Lot Quality Assurance Sampling (EQA-LQAS) method at Yangon and Mandalay Regions, workshops and trainings were given to 20 STLSs assigned by Ministry of Health to reinforce this work. The National Guidelines on EQA-LQAS for AFB Microcopy were developed in October 2007 and the orientation training was given in February, 2008 to Regional/State TB Officers, Pathologists/Laboratory Officers from Regional and State Hospitals and STLSs. The training focused on random selection of slides per month to be sent to Regional and State TB centres for blinded re-checking. Timely feedback to peripheral laboratories and supervisory visits for corrective actions were also important components of this EQA system. Supervisory visits to Regional and State TB laboratories were done by Microbiologists once a year. The quarterly supervisory visits were conducted by STLSs. For places showing major errors, either Microbiologists or responsible STLSs visited those sites.

Laboratory of Mandalay Regional TB Centre took responsibility for EQA for Kachin State, Sagaing, Magway and Mandalay Regions. In 2007, those Regional and State TB Laboratories became stand-alone quality control centres. Feed-back together with

comments was sent back from Regional /State level to township level. Quarterly reports of EQA from all Regional and State TB centres were submitted to central NTP and copied to Consultant Microbiologist of National EQA Management Unit, National TB Reference Laboratory. The INGOs (PSI, MSF-Holland, MDM, Malteser, AHRN, MSF-CH and IOM) and NGO (MMA) laboratories performing AFB Microscopy also sent Quality Control slides to either Lower or Upper Myanmar TB Laboratories. Altogerther 19 PPM hospital laboratories including 2 central jail hospitals, 1 military hospital and 16 PPM hospitals sent their quality control slides to the respective Region/State TB centre laboratories.

Panel slides were sent to Regional and State TB centres and TB Hospitals twice a year from National Health Laboratory (NHL/NTP). Training for newly recruited STLS (5 days) and refresher training for existing STLSs (3 days) were provided. For quality performance of sputum AFB microscopy, 5 days trainings were given to laboratory technicians when they started their job, and for sputum AFB microscopy, 3 days refresher trainings were given to technicians once in 3 years service. TB laboratory annual evaluation meeting was also conducted once a year.

EQA system was successfully established with technical and financial support from JICA (MIDCP). EQA-LQAS was introduced in 2007 at 53 townships, 2 hospitals, 1 diagnostic and referral centre of Yangon and at TB laboratories of Mandalay, Magway, Bago Region (Bago), Ayeyarwaddy, Shan State (Taunggyi) and Mon/Kayin State. EQA coverage was expanded to 325 townships in 2010 after the orientation training, using the National Guidelines on EQA-LQAS for AFB Microscopy. Technicians from Regional and State TB centres or Medical Technologists or Laboratory Officers from the Regional and State General Hospital laboratories were responsible for quality control (QC) with the assignment of Director (Laboratory). For convenience, Pyapon, Kyaiklatt, Daydaye and Nyaungdone townships of Ayeyarwaddy Region sent QC slides directly to National TB Reference Laboratory (NTRL). Thandaung township of Kayin state sent quality control slides to EQA center of Bago regional TB center, Paletwa township of Chin state to EQA center of Rakhine state TB center, and Mindat, Kanpetlet and Matupi townships to EQA Magway regional TB center. Malteser did not provide AFB microscopy service in 2012.

Table 1. Laboratories under EQA (2008-2012)

Year	Tsp.	Township Lab.	Decentralized Lab	PPM Hospitals	Private Lab.	Total	Remark
2008	325	294	51		60*	405	
2009	325	276	31		60*	367	25 expanded labs of Sagaing Region & 10 township labs of Shan State (Kengtong) were dropped due to several reasons
2010	325	298	44	16	59[#]	417	
2011	325	303	61	16	78[$]	458	
2012	**330**	**301**	**66**	**19**	**78[ø]**	**464**	

Private Labs:

* 43 (PSI), 5 (IOM), 12 (MSF-H) for the whole country in 2009 *(60 labs in total)*

[#] 37 (PSI), 4 (IOM), 10 (MSF-H), 3 (MDM) 4 (MMA) and 1 Private Lab (Myodaw) for the whole country in 2010 *(59 labs in total)*

[$] 49 (PSI), 4 (IOM), 13 (MSF-H), 1(MSF-CH), 4 (MDM), 1 (Malteser), and 6 (MMA) for the whole country in 2011 *(78 labs in total)*

[ø] 44 (PSI), 6 (IOM), 13 (MSF-H), 4 (MDM), , 9 (MMA), 1 (AHRN) and 1(Parami private Lab)for the whole country in 2012 *(78 labs in total)*

Decentralized Labs:

62 Station hospitals, 4 TB diagnostic and referral centres in 2012 *(66 labs in total)*

PPM Labs:

2 Central jail hospitals, 1 military hospital and 16 PPM hospitals in 2012 (19 labs. In total)

Table 2. EQA Finding in 2012

	Public Labs	Private Labs	Total Labs
EQA covered Labs.	386	78	464
EQA participated Labs.	369 (95.6%)	78	447

Total laboratories put under EQA were 464 in 2012, increasing from 405 in 2008 (Township labs: 300, Decentralized Labs: 86, Private laboratories: 78). Actively participated laboratories were 447/464 (96.3%).

NTP received the slides for EQA from all 78 private laboratories in 2012. Their slide concordance rate is 97.7%. Among 105 errors of private laboratories, false positive was 15

(14%) and false negative was 90 (86%). Fourty-four PSI laboratories had 91 errors (87%). Nine MMA laboratories created 9 errors (8.6%). Thirteen MSF-Holland laboratories generated 5 errors (4.8%).

Table 3. Major Errors and Minor Errors of public and Private Labs in 2012

No.	Region/State	MCs within R/S	Annual slides for EQA	Major Error		Minor Error			FP	FN	Concordance Rate (%)
				HFP	HFN	LFP	LFN	QE			
1.	Yangon	68	5807	6	43	2	28	11	8	71	98.6
2.	Mandalay	60	5010	4	45	8	42	19	12	88	98.0
3.	Bago	37	2760	2	33	2	9	18	4	42	98.3
4.	Ayeyarwaddy	42	2853	4	32	2	6	4	6	38	98.5
5.	Rakhine	25	1471	1	20	2	6	14	3	26	98.0
6.	Mon	15	1301	1	0	2	0	2	3	0	99.8
7.	Kayin	8	614	0	3	6	1	7	6	4	98.4
8.	Tanintharyi	11	867	0	6	1	5	0	1	11	98.6
9.	Kachin	25	1759	11	19	8	27	19	19	46	96.3
10.	Sagaing	72	6019	17	83	39	30	32	56	111	97.2
11.	Chin	10	612	0	1	0	1	5	0	3	99.6
12.	Shan	55	3875	4	20	9	15	17	13	35	98.8
13.	Magway	31	3220	0	10	0	5	1	0	15	99.5
14.	Kayah	5	539	0	0	0	4	0	0	4	99.3
Total		**464**	**36707**	**50**	**315**	**81**	**179**	**149**	**131**	**494**	**98.3**

FP= False Positive (HFP= High False Positive or LFP= Low False Positive)
FN= False Negative (HFN= High False Negative or LFN= Low False Negative)
QE= Quantification Error

The concordance of quality control result of the whole country was 98.3% in 2012.

Among 625 errors of all laboratories, false positive 131 (20.96%) was less common than false negative 494 (79%) in 2012. False negative was more or less the same in 2012 (1.40%) compared to 2011 (1.36%) and 2010 (1.40%). Discordance rate went down to 1.70% (2012) from 2.10% (2010) but same to 2011(1.70%).

Table 4. Quality control results for public and Private Labs from 2010 to 2012

Year	Annual slides for EQA	FP (HFP+LFP)	FN (HFN+LFN)	Discordance rate
2010	32,515	229	457	2.10%
2011	35,418	113	485	1.70%
2012	**36,707**	**131**	**494**	**1.70%**

Table 5. Major errors and Minor errors of Private Labs in 2012

No.	Category	MCs	Annual slides for EQA	Major Error		Minor Error			FP	FN	Concordance Rate %
				HFP	HFN	LFP	LFN	QE			
1.	PSI	44	2923	6	38	6	46	9	15	79	96.9
2.	MDM	4	273	0	0	0	0	1	0	0	100
3.	Parami	1	36	0	0	0	0	0	0	0	100
4.	MSF-Holland	13	774	3	1	0	1	5	3	2	99.4
5.	MMA	9	497	0	6	0	3	0	0	9	98.2
6.	IOM	6	425	0	0	0	0	0	0	0	100
7.	AHRN	1	42	0	0	0	0	0	0	0	100
Total		78	4970	9	45	6	50	15	18	90	97.7

In 2012, 3 refresher trainings at NTRL and 1 refresher training at UMTBC on sputum smear microscopy were conducted. New recruit trainings for sputum AFB microscopy were also conducted 6 times in Yangon and (2 times in Mandalay for 2012. Two Fluorescence Microscopy trainings were conducted in Yangon and Mandalay Region in 2012.

Decentralized public laboratories and Private laboratories especially PSI are needed to closely monitor and visit for corrective actions in time when major errors happened. Refresher training on TB microscopy is also needed and review workshop should follow for that areas.

Manpower situation of TB laboratories, 2012

Manpower situation of TB laboratories can be seen as shown in the table. There were 2 junior consultant microbiologists, 2 microbiologists each at upper and lower Myanmar, 1 medical technologist, 11 grade I technicians and 158 Grade II technicians. One senior microbiologist and 42 grade II technicians are still vacant.

Table 6. Manpower situation of TB laboratories, 2012

Post	Sanctioned	Appointed	Vacant	Remark
Sr.Consultant Microbiologist	1	0	1	NTRL
Jr. Consultant Microbiologist	2	2	0	One at NTRL One at Latha EQA centre
MO Microbiologists	0	2	0	Attached from other posts One at NTRL One at UMTBC

Medical technologists	1	1	0	NTRL
Grade I technicians	11	11 +6*	0	6 – attached from other posts
Grade II technicians	200	158	42	Grade II technicians are still vacant

Bio-safety level 3 (BSL-3) laboratories and Rapid TB diagnostic tests

The National TB Reference Laboratory, Yangon and Regional TB Laboratory, Mandalay were upgraded and strengthened to introduce newer and faster diagnostic tests for the detection of multidrug resistant (MDR) TB in July, 2010. Support was given by UNITAID through Expand TB Project, including BSL-3 laboratory with negative air pressure system. Expand TB Project was initiated in a joint collaborative effort between UNITAID, Global Laboratory Initative (GLI), Global Drug Facility (GDF) and Foundation for Innovative New Diagnostics (FIND).

These two laboratories are now performing rapid tests for the diagnosis of MDR-TB cases which are confirmed by liquid culture, then followed by DST and molecular testing. Routine solid culture and DST will take about 10-12 weeks to have diagnosis of MDR-TB. Liquid culture and DST can reduce the time for diagnosis. Liquid culture takes about 3 weeks and molecular testing, about 3 days. This early case detection of MDR-TB cases leads to early start of treatment and can reduce the spread of disease.

Liquid culture and Drug susceptibility testing (Mycobacterium Growth Indicator Tube-MGIT system) MGIT-960

This system used liquid medium (Middlebrook 7H9 broth) which has better recovery and faster growth of mycobacteria. Growth supplement and combination of anti-microbial agents PANTA has to be added to suppress the growth of contaminants. The MGIT tube contains an oxygen-quenched flourochrome embedded in silicone at the bottom of the tube. During bacterial growth, the free oxygen in the media was used up for the fluorescence of the flouchrome. The positive tubes are shown by flashing of red indicator lamp on the screen of the machine drawer. Tubes flagged positive were removed after 24 hours and further test for contamination of *M.tuberculosis*. The fluorescence can also be visualized manually under ultra violet light or can be read with MGIT Tube Reader. Liquid Culture is done for both AFB smear positive and negative specimens. Growth can be detected as early as 4 to 12 days. Negative tubes are discarded on the 42nd day.

Identification of M.tuberculosis

The growth from either solid or liquid media is tested for confirmation of *M.tuberculosis* with the lateral flow assay test strip or device in safety hood. The assay is based on the detection of the presence of the *M.tuberculosis* Complex-specific protein MPT64 in culture isolates. The products used are either

- Capilla TB rapid diagnostic test (Tauns Laboratories Inc., South Korea) or
- TB Antigen MPT64 test (SD Bioline, South Korea).

The results are available within 2 hours.

Drug susceptibility testing (MGIT DST)

The drug susceptibility testing is performed in the same MGIT machine. The drugs tested are isoniazid, streptomycin, rifampicin and ethambutol. Results can be available within 3 weeks form the start of culture.

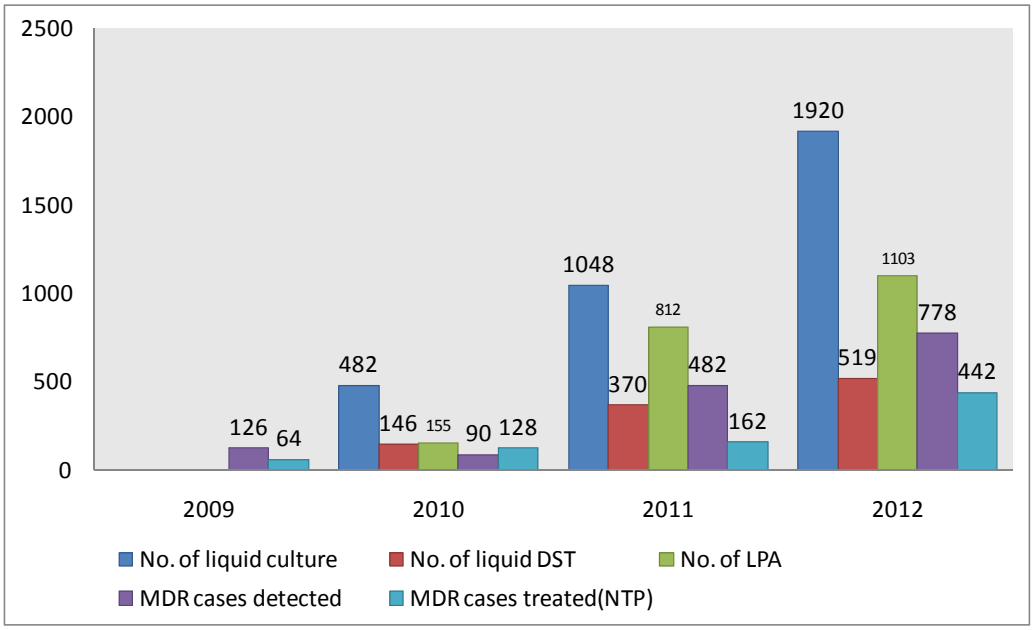
Molecular Testing

Genotype MTBDR *plus* Test (Hain Life sciences) is used. This test determined *Mycobacterium tuberculosis* positivity and rifampicin/isoniazid resistance by Molecular Genetic Assay for identification of resistance to Rifampicin and or isoniazid of the *Mycobacterium tuberculosis* Complex. The Genotype MTBDR plus assay is based on line probe assay (LPA) technology involving polymerase chain reaction (PCR) amplification and binding of amplicons to specific oligonucleotide probes immobilized on a membrane strip. Testing may be performed on DNA isolated from cultures as well as smear positive direct patient material.

GeneXpert

GeneXpert system is intended for rapid detection of TB and rifampicin resistance in sputum samples. It can be used on smear positive and smear negative samples. Instrument is available in 1, 2, 4 or 16 module configuration and is a semi-quantitative nested real – time PCR all within one catridge. It integrates and automates sample processing, nucleic acid amplification, detection of target sequences using real – time and reverse transcriptase PCR. Primers amplify portion of the rop B gene containing the 81 base pair core region. Probes are able to differentiate sequences associated with Rifampicin resistance.

Figure 1. Performance of liquid culture, liquid DST & LPA (2010-2012)



2009- MDR diagnosed (from PMDT sites) by conventional culture

Table 7. Performance of liquid culture, liquid DST & LPA (2010-2012)

Tests	2010	2011	2012
No. of liquid culture	482	1048	1920
No. of liquid DST	146	370	519
No. of LPA	155	812	1103
MDR cases detected	90	482	778
MDR TB treated cases	128	162	442

The liquid culture, liquid DST and LPA could be increasing carried out at both BSL-3 laboratories starting from 2010. In the year 2012, 1920 liquid culture tests, 519 liquid DST and 1103 LPA tests were done. From these tests, 778 MDR TB cases could be diagnosed.

Table 8. Results of Liquid Culture (MGIT) for 2012

Quarter	No. of Culture(+)	No. of Culture(-)	No. of Contaminated	Total
1st Q	160	164	19	343
2nd Q	140	168	11	319
3rd Q	111	380	60	551
4th Q	182	393	95	670
Total	**593**	**1105**	**185**	**1883**

Table 9. Among Liquid Culture (+)ve; Results of Liquid DST, 2012

Quarter	All sensitive	Mono-resistant	Poly-resistant but not MDR-TB	MDR-TB	Total
1st Q	15	5	16	109	145
2nd Q	16	3	3	62	84
3rd Q	15	8	10	75	108
4th Q	11	0	8	97	116
Total	**57**	**16**	**37**	**343**	**453**

Table 10. Line Probe Assay, 2012

Quarter	All sensitive	Resistant			NTM (TUB(-)ve)	Total
		IR	R	I		
1st Q	37	130	19	9	27	222
2nd Q	55	129	12	12	16	224
3rd Q	66	183	29	15	27	320
4th Q	61	195	28	15	20	319
Total	**219**	**637**	**88**	**51**	**90**	**1085**

Table 11. Conventional Culture and DST Results, 2012

Quarter	All sensitive	Mono-resistant	Poly-resistant but not MDR-TB	MDR-TB	Total
1st Q	35	20	13	214	282
2nd Q	44	11	12	209	276
3rd Q	34	3	12	158	207
4th Q	44	6	12	131	193
Total	**157**	**40**	**49**	**712**	**958**

GeneXpert MTB/RIF Testing Report for 2012

Age & Sex Distribution of tested patients

Male		Female		Total
< 15 years	> 15 years	< 15 years	> 15 years	
85	1911	75	1065	3136

Data source (Latha, UTI (Aung San), NTRL, MGH, UMTBC, Bago, Pathein, Monywa, Mawlamyine)

Test Results with previous history of TB

		New	Retreatment	Unknown	Total
Sputum Microscopy	AFB (+)	133	296	37	466
	AFB (-)	1460	927	227	2614
	Not done	36	19	1	56
XPert MTB/RIF	Negative	1311	789	203	2303
	TB with NO Rif-resistance	279	234	43	556
	TB with Rif-resistance	33	208	18	259
	TB with Rif-Indeterminate	6	11	1	18

Test results with HIV status

		HIV (+)	HIV (-)	Unknown	Total
Sputum Microscopy	AFB (+)	50	104	312	466
	AFB (-)	620	386	1608	2614
	Not done	13	12	31	56
XPert MTB/RIF	Negative	554	327	1422	2303
	TB with NO Rif-resistance	103	105	348	556
	TB with Rif-resistance	22	65	172	259
	TB with Rif-Indeterminate	4	5	9	18

XPert versus Sputum Microscopy

	XPert (+)	XPert (-)	Total
Microscopy AFB (+)	450 (97%)	16(3%)	466
Microscopy AFB (-)	368 (14%)	2246 (86%)	2614
Microscopy AFB (Not done)	15	41	56

Case Detection

Usually NTP did passive case finding at all DOTS townships. TB suspects with chest symptoms from the community were referred to the microscopy centres for sputum smear microscopy. At all Regional and State TB Centres except for Shan State (Kyaingtong), Kayin, Chin and Kayah State, chest X'ray facility is available to improve case finding. Utilization of X'ray screening in TB suspect cases is promoted after the survey. NTP continues to use portable X'ray machines at respective TB centres and for mobile team activities after the survey.

Case finding activities were improved by mobile teams, sputum collection points, initial home visits and contact tracing. According to this, in 2012, 38 missions of mobile team activities were carried out in 36 townships and one prison. Total number of TB patients detected by mobile teams was 624 in 2012.

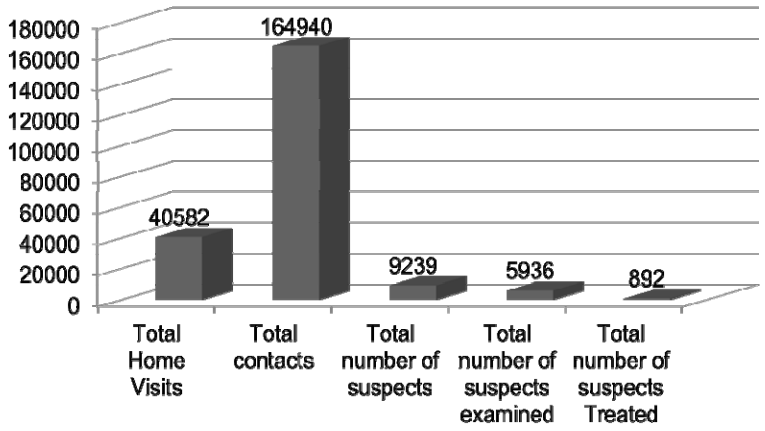
Table 12. Mobile Team Activities in 2012 by townships

No of townships/prisons	No of mobile team missions	No of smear positive cases	All forms of TB	Funding source
36 townships	37	175	567	GF
Insein Prison	1	4	57	Other funding
Total	**38**	**179**	**624**	

*Yangon and Mandalay – two times conducted

Initial home visits and contact tracing were also done at all Regions and States including PPM hospitals. During 2012, all over Regions & States, totally 40,582 home visits could be carried out and 164,940 contacts were met. From contacts, 9,239 persons were suspected for TB and 5,936 suspects could be investigated. And after diagnosing, 892 patients could be put on treatment. Contribution by Initial Home Visits & Contact Tracing to all forms of TB cases was 0.6% (892/148,149).

Figure 2. Initial Home Visits and Contact Tracings performed in Regions/States in 2012



Regarding sputm collection centres (SCCs), 29 sputum collection points were set up with 3DF from 2007 to 2011, and with GF, 30 sputum collection points were established in 2011. Performing SCCs aims to achieve TB targets by helping people in hard to reach areas to get access to diagnosis and treatment. Targeted townships for SCCs are those with low case detection rate and high defaulter rate of remote areas.

As Basic Health Staff (BHS) played a major role in Stop TB Strategy implementation, early case finding and referral for diagnosis and treatment, almost all BHS were trained on TB prevention and control strategies during 2005-2012. Apart from BHS, community volunteers were trained by the implementing partners for improving case finding.

c. Standardized treatment with supervision and patient support

TB patients have been treated with WHO recommended treatment regimens using Fixed Dose Combination (FDC) of first line anti-TB drugs since 2004. The pre-packed patient kits for Category I and III patients were introduced in 2007 at 38 townships in Yangon and Mandalay Regions, then, the whole country became covered with Cat I & III patient kits in the second quarter of 2010. All township treatment units are currently using patient kits.

NTP changed Category III regimen to be used the same as Category I regimen in 2010. Pediatric formulation for management of TB in children has been supported by UNITAID through GDF since 2007. The Standard Operating Procecure (SOP) for childhood TB management was published in 2007. Advocacy and Workshop on childhood TB management was conducted in 2012. It was agreed to follow WHO Rapid Advice on TB Treatment in

Children (to use high dose of anti-TB drugs and 4 drugs regimen). However, children under 8 years of age (not HIV sero positive and/or not suffering from severe forms of TB) are treated using 3 drugs regimen not including Ethambutol.Then, the SOP was revised and updated as Rapid Advice (WHO) in 2012. After that, altogether 17 refresher trainings on childhood TB management were conducted at Regional/State levels.

NGOs also supported NTP with provision of appropriate patient education, including information regarding the regimen, duration and possible treatment outcome. Incentives and transportation cost for community volunteers who acted as DOT provider and defaulter tracing as well as patient support were provided by some NGOs such as MRCS, World Vision International, IOM, PSI and Cesvi.

Directly observed treatment (DOT)

NTP had aimed to improve treatment adherence by using FDC. BHS were assigned as DOT supervisors and decentralization of anti-TB drugs was strengthened.

Township Medical Officers (TMOs) and TB coordinators took all the responsibilities of TB control activities. In townships having TB teams, team leaders (Medical Officer or Health Assistant) were serving as TB coordinators and where there were no TB teams, Township Medical Officers or assigned health personnel were serving as TB coordinators.

For each and every patient, there was a DOT provider. DOT providers were selected either from local BHS or Voluntary Health Workers or members of Non Governmental Organization (NGOs), especially Myanmar Maternal and Child Welfare Association (MMCWA), Myanmar Women's Affairs Federation (MWAF), Myanmar Red Cross Society (MRCS) or family members of the TB patients. All BHS and some pre-selected NGO members were trained when the particular township started the DOTS strategy implementation. DOT providers from community could serve as close to the patients as possible to ensure patients' adherence to the full course of treatment.

d. Effective drug supply and management

An uninterrupted and sustained supply of quality-assured anti-TB drugs is fundamental to TB control. For this purpose, an effective drug supply and management system is essential. A reliable system of procurement and distribution of all essential anti-TB drugs to all relevant health facilities should be in place. The TB recording and reporting

system should be designed to provide the information needed to plan, procure, distribute and maintain adequate stocks of drugs.

NTP carried out distribution of drugs and supplies according to schedule without interruption. NTP also developed the transitional and sustainability plan for uninterrupted anti-TB drug supplies for the country. A sustainable anti -TB drugs supply is essential to all TB patients. Interrupted supply of first line TB drugs would cause devastating consequences such as increased spread of MDR-TB, XDR-TB and TB-HIV, increased deaths and hampering the progress towards the Millennium Development Goals concerning TB.

Drugs, laboratory supplies and equipment for National Tuberculosis Programme are mainly supplied by WHO, GF, GDF, JGA and Ministry of Health. GDF supported first line anti-TB drugs from 2002 to 2008, and exceptionally continued the support for one year in 2009 before 3DF came. 3DF supported anti-TB drugs for 2010. After 3DF and before GF, Japan's Grant Aid (JGA) provided the first line anti-TB drugs for 2011 to fill up the critical gap till 4th quarter 2012. UNITAID supported second-line anti-TB drugs from 2009-2011 and paediatric drugs till now. Currently, Global Fund Round 9 Grant supports secure first line anti-TB drugs and it will be till 2015.

Quarterly drug distribution system is using in NTP. Central TB medical store, Yangon distributes drugs to Upper and Lower Myanmar stores according to case load. Upper Myanmar store has to distribute nine Regional/State TB Centres (Mandalay, Magway, Shan (South), Shan (East), Shan (North), Kayah, Chin, Kachin and Sagaing) and Lower Myanmar store distributes seven Regional/State TB Centres (Yangon, Ayeyarwaddy, Mon, Kayin, Bago, Rakhine and Tanintharyi). Again, the Regional and State levels distribute drugs to townships, quarterly according to their case load of previous quarter. At township level, TMOs distribute monthly to RHC level.

To partners, NTP supplies drugs in return for quarterly reports and joint monitoring mission to their project sites. PSI collects drugs from Lower Myanmar TB store, Yangon and distributes to their PPM Scheme III clinics. MSF-Holland and MMA collects drugs either from Regional and State level or township level where they are implementing.

SOP for Drug and supplies management was also revised and refresher trainings on drug and supplies management were provided to TMOs and TB coordinators in 2012. Drug transportation cost (from airport warehouse to central TB store, central store to Upper/Lower Myanmar stores, Upper/Lower Myanmar stores to Regional/State level TB

stores and up to township level) was provided by 3DF from September 2007 to August 2011. Then, the drug transportation cost is provided by GF till now. Besides, laboratory supplies, reagents and equipments could be distributed from Regional/State TB Centres to DOTS townships with 3DF and GF.

Laboratory equipments and supplies were funded by GF, JICA, FIND and WHO. GFATM supported 2 X-ray machines (500mA, HITACHI) and 11 X-ray machines (63-200mA, SHIMADZU) which were set up at all Regional/state TB Centres except Kyaington, Chin and Kayah. Kayin State (Hpa-an) TB centre installed X'ray Machine in 2012. X-ray films, fixer and developer were supported by WHO and GF to improve case finding and distributed to Regional /State TB Centers and PPM Hospitals.

e. Monitoring and evaluation system and impact assessment

Establishing a reliable monitoring and evaluation system with regular communication between the central and peripheral levels of health system is vital. This requires standardized recording of individual patient data, including information and treatment outcomes, which are then used to compile quarterly treatment outcomes at the district level to identify local problems as they arise, at Regional/State or National level to ensure high-quality TB control.

Recording & Reporting

NTP used standardized recording and reporting system at all levels. The reports from basic DOTS units were sent to townships, then to Region/State level and finally compiled and sent to central NTP. All the implementing partners also provided reports.

At Central level, all the reports received were verified, data were kept in Excel worksheet as final compilation, and after evaluating these data, appropriate feedbacks were given to the concerning areas. The performance and impact were also assessed at central using long term trends on case finding by notified age and sex distribution of patients.

Regular monitoring of patients' progress was carried out at every DOTS township. Desktop monitoring on case finding, sputum conversion and treatment outcome through quarterly reports was held at all levels. Feed-back mechanism from top to bottom using quarterly assessment form was also applied. The capacity and skill for proper data

management and information management system was improved by providing trainings every year. Data management trainings were conducted at district level to oversee the epidemiological implication of the programme. NTP trained central M&E responsible persons on Geographical Information System (GIS) with the support of JICA.

Monitoring indicators were standardized and will be standardized more among the partners. The NTP planned to develop and provide adequate recording and reporting forms to ensure timely reporting of all care providers delivering TB care according to the Stop TB Strategy. NTP is now revising the currently used M&E plan. Data Assistants were hired under WHO and placed at Regional/State TB Centers to facilitate the timely reporting and quality of report.

Moreover, NTP aimed to install the computerized data management system at district level. Electronic recording & reporting system for monitoring MDR-TB patients was also introduced in 2012 with the support of WHO.

Supervision

Services for TB care should identify and address factors that may make patients interrupt or stop treatment. Supervisions must be carried out in a context-specific and patient-sensitive manner, and it meant to ensure adherence on the part both providers and of patients. Intensive supportive supervisory visits by NTP could strengthen the programmatic management.

All Regions and States were supervised at least once a year by national level staff. Annual supervisory visits by central NTP staff were conducted to townships implementing community based DOTS. Regional/State TB officers as well as team leaders and National Technical Officers did supervisory visits once a year to district/township level health facilities.

Laboratory consultants supervised Region and State TB laboratories at least once a year. Senior TB Laboratory Supervisors (STLS) also went to township laboratories for supervision once a year, but if there was major error at that township, it was needed to do supervision again to that particular township.

Supervisory visits by NTP staff to townships implementing TB/HIV collaborative activites were done once a year. For MDR-TB management in Mandalay and Yangon,

supervisions by central NTP staff and MSF-Holland staff were held every quarter. The regional DOTS-Plus committee also supervised townships under MDR-TB project. Regarding PPM activites, NTP also provided annual monitoring and supervision to townships implementing PPM activities as well as to PPM hospitals.

The following table shows the frequency of supervisory visits conducted by various supervisors. It was found that more visits could be carried out at all levels compared to 2011.

Table 13. Supervisory visits down to grass root level (2011 and 2012)

Level of supervision		No. of visits (2011)	No. of visits (2012)	
			Planned	Achievement
Central to	Region/State	10	17	12 (71%)
	TB/HIV townships	5	18	12 (67%)
	Border townships	1	6	4 (67%)
	PPM Hospitals	21	40	20 (50%)
Region & State to townships		158	312	212 (80%)
Microbiologists supervision		13	17	7 (41%)
NTOs supervision		233	404	324 (80%)
STLS supervision		58	241	241 (100%)
CBTBC supervision		46	107	107 (100%)

Evaluation

Annual evaluation meetings with stakeholders are carried out at national level, followed by regular planning and budgeting meetings. Inter-departmental coordination and collaboration meeting for programme management was conducted every year.

Biannual evaluation meetings at regional and state levels and quarterly evaluation meetings at township level with all implementing partners provide information and support for programme management. Quarterly cohort review meetings are also held at low performance townships to assess the TB control activities, to find out the problems and to give possible solutions.

National annual TB evaluation workshop, 2012

National annual TB evaluation workshop was held at held at Ayeyar River View Hotel, Bagan on 30th and 31st March, 2013. The workshop was funded by Ministry of Health, Myanmar and Global Fund to fight against AIDS, TB and Malaria.

The objectives of conducting evaluation workshop are

- to monitor the TB control activities done at the Regional and State levels during 2012
- to evaluate the progress of TB control activities for the whole year
- to hear the feedback and suggestions of all the attendees from different levels.

On the first day, the opening speech was delivered by Dr. Moe Swe (Regional Health Director, Mandalay Region) mentioning the current TB situation and the importance of evaluation meeting for assessing the strength and weakness of TB control activities.

At this meeting, the presentations include the activities done in 2012 according to the recommendations from the annual evaluation meeting, 2011, and the achievements and challenges faced during 2012.

The discussion points include consideration of gender equity regarding access to TB treatment; the importance of the quality TB/HIV data from the townships implementing TB/HIV collaborative activities and necessity of collaboration between Regional/State TB officers and Regional/State Health Directors in TB control activities. In inquiring the difference between the prevalence of HIV positivity among TB patients gained from TB/HIV collaborative activities and that gained from HIV sentinel surveillance (HSS), Deputy Director responded that the percentage of HIV sero-positivity from HSS was based on new TB patients from 25 sentinel sites, and so it was different from the data of TB/HIV collaborating townships which came from counseling and testing of all types of adult TB patients. When asking about IPT, it was answered that NTP would take the responsibility to procure Isoniazid and production of recording/reporting forms and registers.

When the attendees discussed the assignments for the vacant posts, it was replied that the official letter was needed to release out for filling especially the laboratory technicians, statisticians and junior TB workers for the vacant posts.

In Shan (Kyaingtong) presentation, it was noted that sputum positive patients from MatMann (which was the non-reporting township before) were started on treatment this year.

Regarding MDR-TB management, it was pointed out that the importance of data quality assurance in all sectors especially in Programmatice Management of MDR-TB (PMDT) in order to know the waiting list accurately. Regarding the MDR-TB, provision of more incentives for BHS and the nutritional support for MDR-TB patients, expansion of MDR-TB follow-up sites and close supervision for treatment adherence by Regional/State TB Officers, team leaders and Township Medical Officers were discussed.

After that, the childhood TB management guideline was recommended to revise and to assess the childhood TB management particularly diagnosis and to ensure the capacity building of paediatricians. On asking the prevalence of different types of childhood TB according to the age groups, she mentioned that BCG could prevent only TB meningitis and related research studies were needed to carry out.

When asking the most effective activity between community based TB care (CBTC) and Active Case Finding (ACF), it was answered that not easy to measure and compare the impacts by those activities.

One of the participants pointed out to make sure the number of patients referred by local NGOs and stated that there could be unlinked information between General Practitioners (GPs) and Township Medical Officers (TMOs). He also said that some drug shops could prescribe anti-TB treatment by themselves, and it was dangerous as it could lead to MDR-TB development.

On discussing about the effects of stigma & discrimination because of having TB, more Advocacy, Communication and Social Mobilization (ACSM) activities were needed to reduce stigma. Regarding the incentives given to the volunteers for community based TB care, the program manager agreed to give the transportation cost. There were overlapping of the volunteers in the organizations implementing CBTC activities and repeated training for one volunteer by different organizations, and so, mapping for the volunteers was suggested to avoid that kind of overlapping.

Based on the presentation facts and discussion points, the **recommendations for the coming year** were established as follows:

1. To ensure TB control activities included in township integrated health plan
2. To establish the electronic database & monitoring system on PMDT linking with laboratory data
3. To improve DQA of the reports on community-based TB care

4. To assess childhood TB management particularly diagnosis and ensure advocacy meetings with all senior paediatricians
5. To improve infection control measures and put up the estimated expenditure for renovation/ new infrastructure to DoH through proper channel
6. To arrange and assign TB team leader medical officers in border areas such as Tachileik, Muse, Kawthaung, Myawaddy, Tamu and Maungdaw
7. To increase the patient support and BHS support for MDR-TB management
8. To revise TB/HIV guideline
9. To fill up all the vacant posts especially laboratory and team leader posts
10. To develop laboratory strengthening plan and mobilize necessary resources

Regional and State TB evaluation meetings

Annual Regional and State level TB evaluation meetings were carried out at all Regions and States. The activities were conducted with the support of Global Fund, and bi-annual Regional TB evaluation meetings in Yangon and Mandalay Regions as well as township quarterly evaluation meetings at 10 low performance townships of Yangon and Mandalay Regions were carried out with the support of JICA (MIDCP). Some townships conducted township quarterly TB evaluation meetings unfunded.

Cohort review meetings were also conducted at 30 low performance townships with the support of Global Fund. Conducting quarterly evaluation meetings at the township level was also a kind of productive activity. Health Assistants had to present about their RHCs concerning TB control achievement in that quarter and TMOs reset up the guidelines according to their needs. After one year when improvement was observed, NTP moved the resources to other low performance townships. However, previous townships would continue the meeting unfunded.

Table 14. TB Biannual Evaluation meetings at Regional/State level (2012)

Regional/State level	Date	No. of participants
Kachin State	8.6.2012	26
	4.12.2012	28
Kayah State	20.6.2012	16
	12.12.2012	29
Shan State (Taunggyi)	28.6.2012	40
	20.12.2012	40
Shan State (Kengtong)	12.5.2012	19
	1.11.2012	20
Shan State (Lashio)	26.9.2012	20
	18.12.2012	25
Mon State	19.6.2012	22
	16.11.2012	22
Kayin State	26.6.2012	14
	23.11.2012	17
Chin State	28.5.2012	10
Rakhine State	17.7.2012	34
Mandalay Region	21.5.2012	40
	22.10.2012	40
Yangon Region	23.5.2012	64
	26.12.2012	64
Sagaing Region	26.12.2012	35
Magway Region	26.6.2012	31
	26.12.2012	30
Bago Region	3.5.2012	29
	7.12.2012	54
Bago Region (Pyay)	5.6.2012	30
Ayeyarwaddy Region	25.6.2012	56
	12.10.2012	56
Taninthayi Region	28.12.2012	30

ii. Address TB/HIV, MDR-TB and other challenges

a. Implement collaborative TB/HIV activities

The HIV epidemic fuels the TB epidemic. HIV promotes the progression of recent and latent *Mycobacterium tuberculosis* infection to active TB disease; it also increases the rate of recurrent TB. The HIV epidemic has caused a substantial increase in the percentage of smear

negative pulmonary and extrapulmonary TB cases. HIV positive patients with smear negative pulmonary TB have worse treatment outcomes and higher mortality than HIV positive patients with smear positive pulmonary TB. [*Strategic framework to decrease the burden of TB/HIV*. Geneva, World Health Organization, 2002 (WH/CDS/TB/2002.296).]

National TB-HIV coordinating body has been built up since 2005, and reformed in 2012. Current activities were planned for 2011-2015. Annual meetings and national TB-HIV evaluation workshops were done in order to provide a forum for overall planning and oversight of all planned TB-HIV collaborative interventions. Meetings at the community level were also held in all townships implementing TB-HIV activities to enhance community involvement. Trainings were regularly given to the different categories of health staff from both NTP and NAP.

Collaborative TB/HIV activities are carried out in the areas where NAP could provide ART and technical assistance was provided by WHO. Totally 18 townships are implementing TB/HIV collaborative activities. Nationwide TB/HIV scale up plan is developed, and almost all townships will be covered with collaborative TB/HIV activities by 2015.

Including data from partners, altogether 55.4% (17540/31661) of registered TB patients could be tested for HIV during 2012, and among tested, (4954/17540) 28.2% were found HIV positive. Cotrimoxazole preventive therapy (CPT) could be given to 5663 HIV positive patients. It was noted that number of patients given CPT was higher than that positive because some patients were already known positive who did not do testing at TB centres. Regarding Anti-Retroviral Treatment, 4158 HIV positive patients could be put on treatment in 2012.

Table 15. TB/HIV collaborative activities (2012)

Sr. no	Name of townships	No.of registered TB patients (≥ 15 years)	No. of VCCT accepted & HIV tested	% of VCCT tested	No. of HIV sero (+)ve among tested	% of HIV (+)ve among tested TB patients	No. of TB/HIV patients started on CPT *	No. of TB/HIV patients started on ART
1	Mandalay (7) tsps.	2653	2429	91.5%	579	23.8%	Union	Union
2	Monywa	383	235	61.3%	17	7.2%	440	225
3	Magway	773	339	43.9%	33	9.7%	37	186
4	Pakokku	412	397	96.4%	40	10.1%	569	759
5	Lashio	625	475	76%	22	4.6%	74	44
6	Taunggyi	458	377	82.3%	39	10.3%	80	60
7	Myitkyina	1408	353	25.1%	40	11.3%	110	24
8	Pathein	1071	554	51.7%	42	7.6%	73	
9	Tachileik	275	159	57.8%	15	9.4%	27	9
10	Mawlamyine	856	668	78%	49	7.3%		
11	Dawei	410	111	27.1%	1	0.01%	10	4
12	Pyay	600	174	29%	28	16.1%	11	18
Total (18) townships		**9924**	**6271**	**63.2%**	**905**	**14.4%**	**1431**	**1329**

*** No. of patients on CPT was more than HIV positive detected because some positive patients had been already tested from other place.**

Isoniazid Prventive Therapy (IPT)

Isoniazid Preventive Therapy (IPT) project was started in June, 2009 at 9 townships and expanded to 15 townships in 2012. NTP has planned to conduct national level IPT workshop in 2013 to set up IPT as a policy for PLHIV.

HIV sentinel surveillance among new TB patients

Routine HIV Sentinel Surveillance was conducted by NAP. With the collaboration with NAP, it started to include new TB patients in 2005 at 5 sentinel sites, and expanded to 10 sites each in 2006, 2007 & 2008, then to 15 sites in 2009, 20 sites in 2010 and 2011 and to 25 sites in 2012.

Unlinked anonymous testing was used for surveillance among new TB patients. One hundred and fifty new TB patients were included from each sentinel site. The duration of serum collection was 12 weeks (from March to May), but if not completed, 4 more weeks could be continued. If not finished again, serum samples could be collected by requesting from neighbouring INGOs.

According to the results from 2012 survey, overall HIV prevalence among new TB patients decreased to 9.7% in 2012 from 9.9% in 2011. HIV prevalence among new smear positive TB patients was 5.6%, among smear negative was 13.1% and among extrapulmonary patients was 12.6%.

The trends of HIV prevalence among new TB patients at different sites are helpful for both NAP and NTP to develop the scale up plan of TB/HIV collaborative activities where HIV prevalence is high.

The overall HIV prevalence among TB patients showed fluctuation from 2005 to 2012. Looking at between 2011 and 2012, sentinel sites getting increased HIV prevalence were Yangon, Pha-an, NyaungU, Bago, Loikaw, Tachileik, Sittway and Myingyan. These sites require much attention. Those sites having decreased prevalence from 2011 were Pyay, Mawlamyaing, Magway, Myeik, Pyinmana, Meikhtilar, Dawei and Taunggu. Monywa and Bahmo showed only a slight decrease from 2011, but Hinthada showed no chage. Five sentinel sites: Myaungmya, Shwebo, Pyinoolwin, Kyaingtong and Maubin were just started in 2012.

Figure 3. Trend of HIV prevalence among new TB patients (2005-2012)

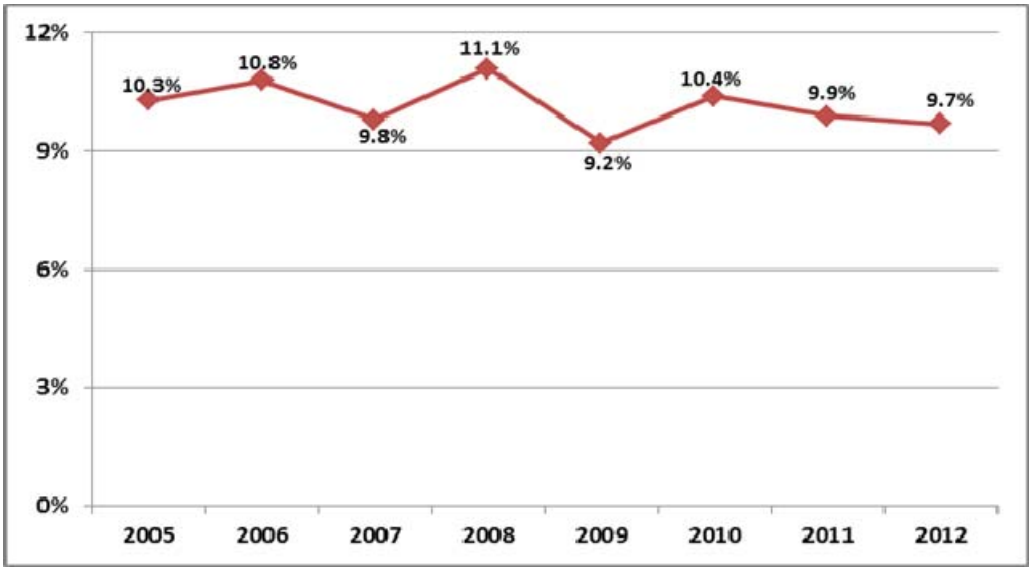
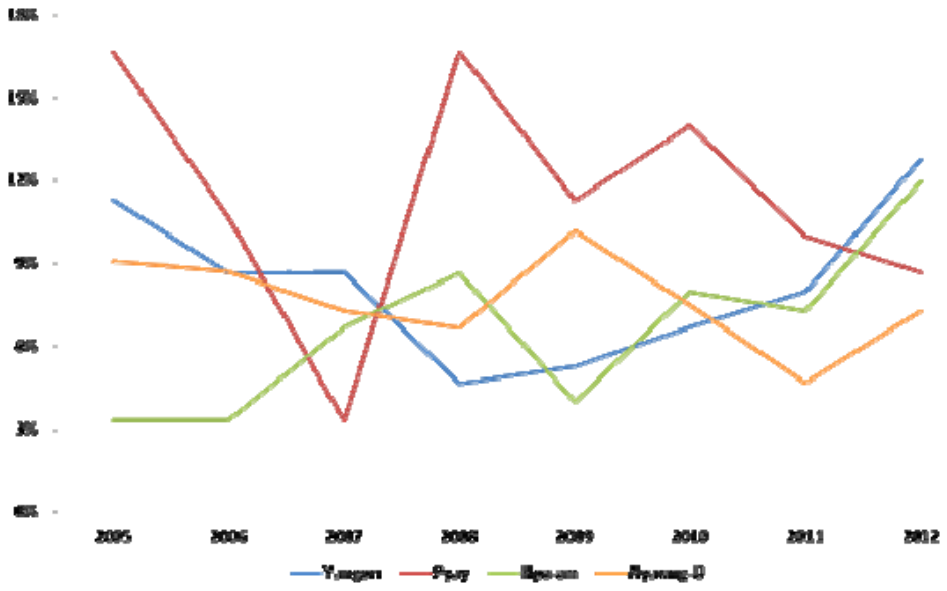
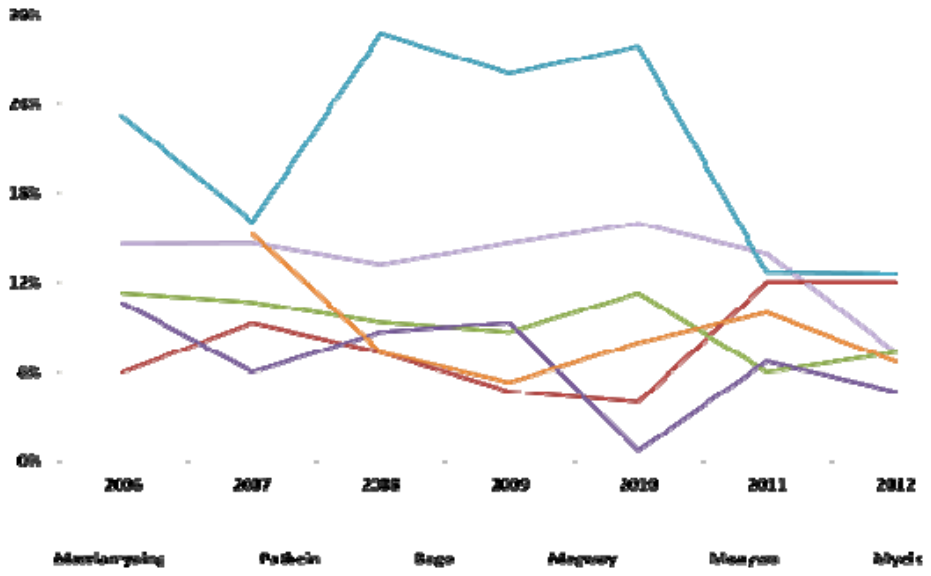
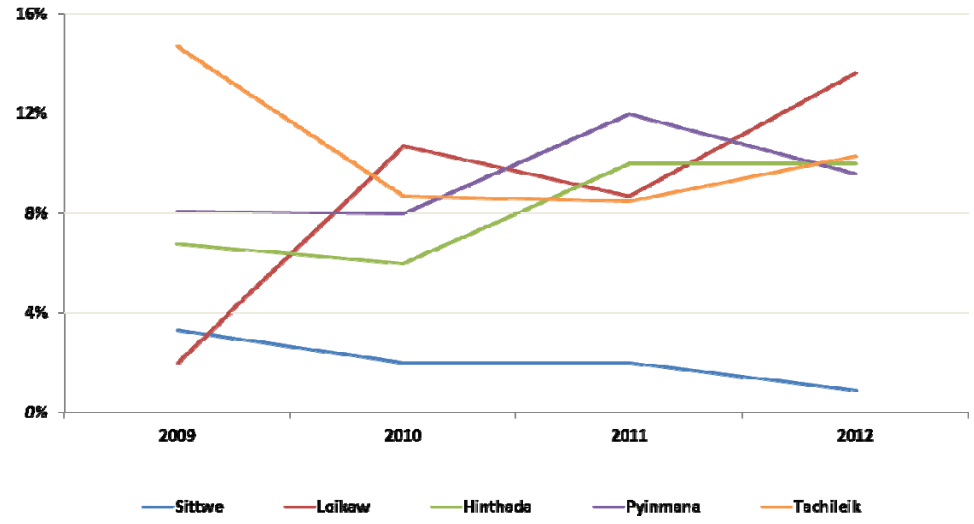


Figure 4: HIV Prevalence among New TB Patients by sites (2005-2012)






16%
12%
8%
4%
0%
2009
2010
2011
2012
Sittwe
Loikaw
Hinthada
Pyinmana
Tachileik

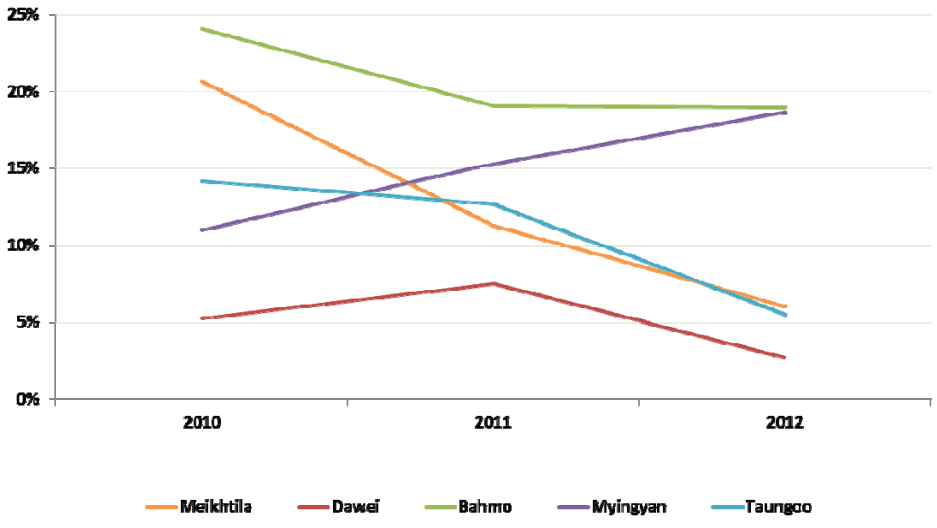

25%
20%
15%
10%
5%
0%
2010
2011
2012
Meikhtila
Dawei
Bahmo
Myingyan
Taungoo

Table 16. HIV prevalence among new TB patients, sentinel surveillance (2005- 2012)

No.	Sentinel sites	2005	2006	2007	2008	2009	2010	2011	2012
1	Yangon	11.30%	8.70%	8.70%	4.67%	5.3%	6.7%	8%	12.8%
2	Pyay	16.70%	10.70%	3.30%	16.67%	11.3%	14.0%	10%	8.7%
3	Bago		11%	10.70%	9.33%	8.7%	11.3%	6%	7.3%
4	Hpa-an	3.30%	3.30%	6.70%	8.67%	4%	8.0%	7.3%	12%
5	Nyaung U	9%	9%	7.30%	6.67%	10.2%	7.5%	4.7%	7.3%
6	Magway		1%	6%	8.67%	9.3%	0.7%	6.7%	4.7%
7	Monywa		23%	16.10%	28.77%	26.1%	27.9%	12.7%	12.6%
8	Myeik			15.30%	7.33%	5.3%	8.0%	10%	6.7%
9	Pathein		6%	9.30%	7.33%	4.7%	4.0%	12%	12%
10	Mawlamyine		15%	14.70%	13.33%	14.7%	16.0%	14%	10.7%
11	Tachileik					14.7%	8.7%	8.5%	10.3%
12	Sittway					3.3%	2.0%	2%	9%
13	Loikaw					2%	10.7%	8.7%	13.6%
14	Hinthada					6.8%	6.0%	10%	10%
15	Pyinmana					13.4%	8.0%	12%	9.6%
16	Dawei						5.2%	7.5%	2.7%
17	Myingyan						11.0%	15.3%	18.7%
18	Taungoo						14.2%	12.7%	5.5%
19	Meikhtila						20.7%	11.3%	6%
20	Bahmo						24.1%	19.1%	19%
21	Myaungmya								7.3%
22	Shwebo								8.7%
23	Pyinoolwin								10.4%
24	Kyaingtong								10.6%
25	Maubin								11.3%
Total		**10.30%**	**10.90%**	**9.80%**	**11.10%**	**9.15%**	**10.4%**	**9.9%**	**9.7%**

b. Prevent and Control MDR-TB

Evidence shows that MDR-TB is a threat to global TB control. This is aggravated by inadequate treatment of those who are already affected with MDR-TB. The rise in drug resistance results from the widespread misuse of second line anti-TB drugs, and the absence of new effective drugs to treat TB.

Programmatic Management of Drug Resistant TB (PMDT) is one of the integral parts of Five Year National Strategic Plan (2011-2015). National Drug Resistant TB committee was formed in 2006. Standard Operating Procedure (SOP) for management of MDR-TB was finalized in 2009. National DR-TB Expert Committee is still updating that SOP to be transformed as a national guideline. DOTS-Plus Pilot Project was started in 2009, and concluded in 2011. MDR-TB pilot project could cover 10 townships (5 townships each from Yangon & Mandalay Regions). A total of 309 MDR-TB cases were enrolled, 6 patients died before starting treatment.

A scaling up towards 1800 MDR-TB patients is envisaged under the Global Fund Round 9 TB component (2011-2015), for which 492 patients could be put on treatment during Phase I (2011-12) in 22 townships (11 townships each from Yangon and Mandalay Regions). Now, Myanmar PMDT is applying community based model for uncomplicated cases. In 2013, altogether 38 townships will be expanded for treating MDR-TB patients.

Figure 5. Treatment outcome of MDR-TB patients in Pilot Project
(At the end of December, 2012)

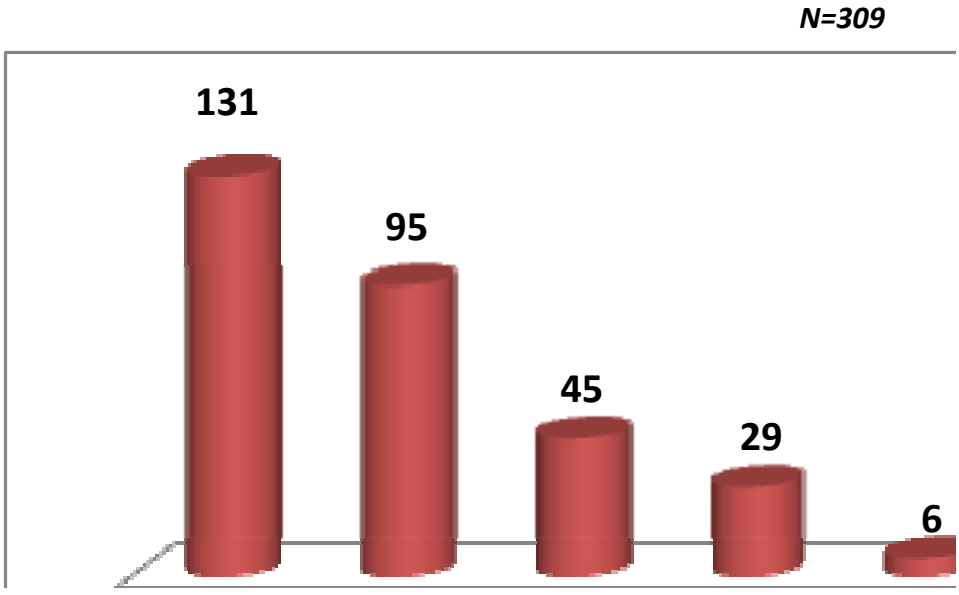
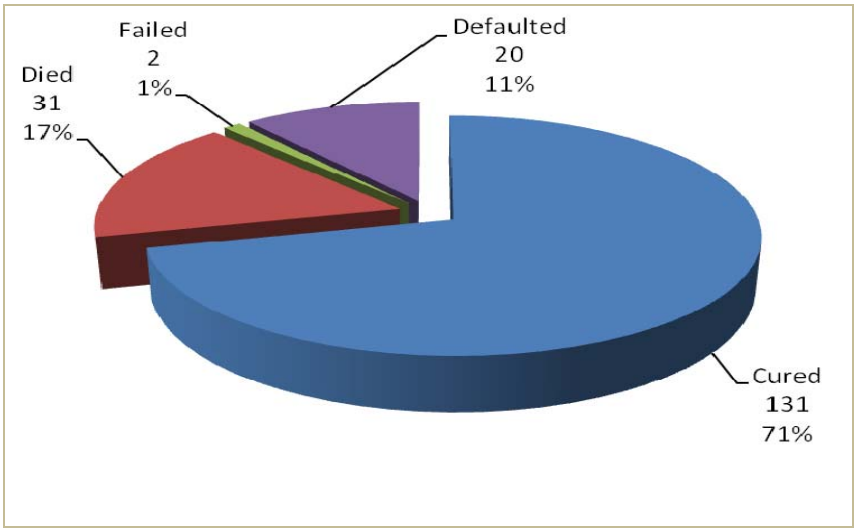


Figure 6. MDR-TB Treatment Outcomes in Pilot Project
(Cohort of 3rd Quarter, 2009 to 4th Quarter, 2010)

N=184



c. Address prisoners, refugees and other high-risk groups and special situations

TB control needs to pay special attention to certain population groups and special situations that are associated with a higher TB risk. The risk groups that need special attention include prison populations, refugees and other displaces people, migratory workers, illegal immigrants, cross-border populations, the orphaned and homeless, ethnic minorities, other marginalized groups, alcohol abusers and injecting drug users. People with diabetes and smokers are other common examples of risk groups. Special situations requiring extra attention include unexpected population movements such as occur, for example, when there is political unrest, war or natural disaster.

Looking inside prisons, TB is a major cause of sickness and death along with HIV, malnutrition, mental illness etc. Thus, NTP initiated TB control activities among prisoners in collaboration with Ministry of Home Affairs (MoHA). Coordinating mechanism for TB in prisons was developed in 2012 between Ministry of Health and Ministry of Home Affairs (MoHA). As an output, referral/transfer mechanism for continuation of treatment after release and policies and operational guidelines for TB screening among prisoners were developed. Then, NTP started implementation at 3 prisons (Yangon, Mandalay and Pyay). In forthcoming years, NTP will arrange necessary medical and administrative packages for TB control in prisons.

In border townships, NTP strengthened community based DOTS under Global Fund. Meeting for proposal development of cross border health activities was held in Bangkok,

Thailand. Most of the work on this issue was related to the equity to access TB treatment and care for all migrating people. This activity was also intended to overcome geographical, social and cultural barriers to health care. Special interventions were done in hard to reach areas where there were low case detection rates.

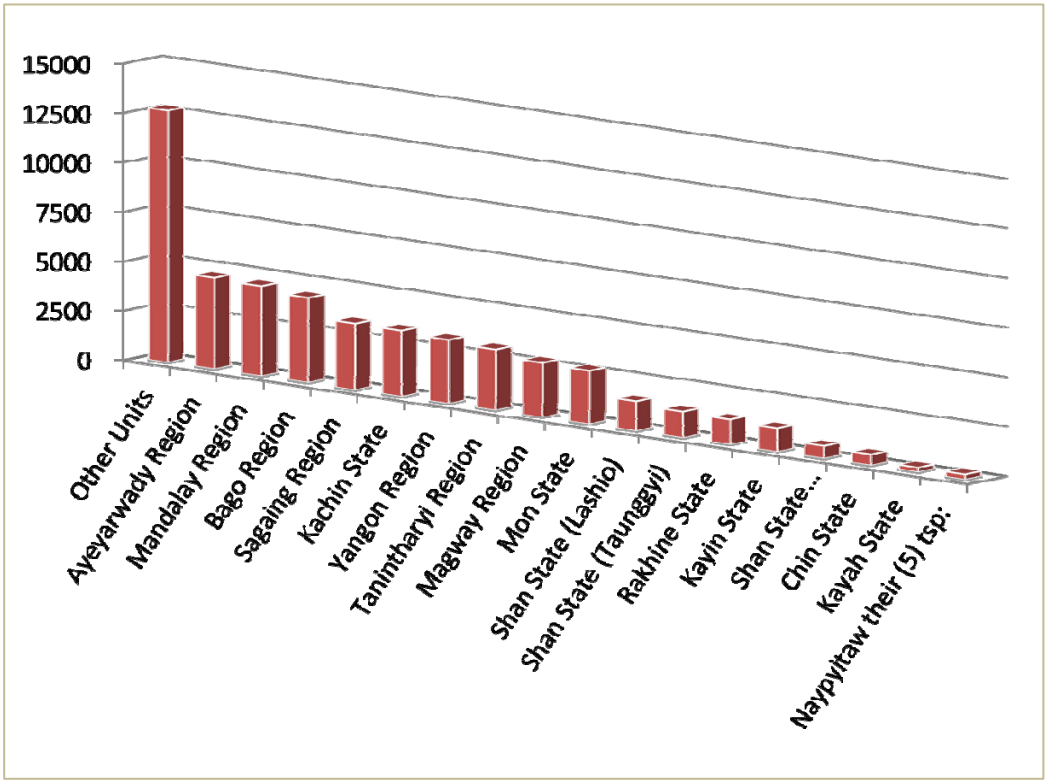
As a special activity to know disease burden in hard to reach areas, NTP went to Wa Special Region in 2012 with the guidance of the Ministry of health and Department of Health. Healthcare services were provided by using mobile team activities there, aiming to detect hidden TB cases, to provide proper treatment, to increase community awareness about TB and to build a good relationship with Wa Special Region authorities.

d. Childhood TB

There is also an urgent need to improve the prevention, diagnosis and treatment of TB in children. The engagement of all persons providing care to children is crucial. National guideline for the management of TB in children was developed in 2007, published and disseminated. TB medical officers in Yangon and Mandalay participated in the training-of-trainers course on the policies and practices for TB control in children. Following that, all senior paediatricians working in general hospitals at the Regional and State level as well as township medical officers were trained. According to the agreement on advocacy and workshop on childhood TB management, WHO Rapid Advice on TB Treatment in children to use high dose isoniazid and four drugs regimen was used. However, children under 8 years of age (not HIV sero-positive and/or not suffering from severe forms of TB) will be treated using three drugs regimen not including ethambutol.

Also to improve diagnosis of childhood TB, Tuberculin Testing was intervened in Yangon and Mandalay. According to WHO guidance, NTP focused on treating TB in children and treated 28.5% (42434/148149) of childhood TB cases in 2012, which is higher than 26.4% (37733/143164) children in 2011.

Figure 7. Childhood TB cases detected by Regions & States (2012)



Strengthen infection control in health services, other congregate settings and households

Infection control measures were installed at health centres where MDR-TB and TB/HIV patients were taking treatment. N95 respirators, gowns and caps were provided for health staff.

With the support of USAID/WHO funding: NTP could strengthen infection control measures at the following health centres:

- Renovation of TB ward in Aung San TB hospital
- New building of patient waiting area in Latha TB diagnostic and referral centre
- Separate laboratory room for Mayangone township
- Separate laboratory room for Insein township
- Renovation of staff room in Patheingyi TB hospital MDR-TB ward
- Renovation of Upper Myanmar TB laboratory
- Renovation of TB diagnostic and referral centre in Mandalay
- Installation of stand fans, exhaust fans in 5 MDR-TB pilot townships' TB centres
- Running water and wash basins at Pyigyitagon township

iii. Contribute to health system strengthening

a. Actively participate in efforts to improve system-wide policy, human resources, financing, management, service delivery and information systems

A sound health system consisting of all organizations, people and actions can promote, restore or maintain health. Health systems strengthening refers to activities and initiatives that improve the underlying health systems of a country for achieving more equitable and sustainable health services and health outcomes related to the diseases.

Myanmar Country Coordinating Mechanism (M-CCM) was established in October 2008 to oversee the national response related to the three diseases of HIV, TB and Malaria as well as related health issues such as maternal, newborn and child health and other health-related Millennium Development Goals. This Governance Manual sets out the guidelines for the M-CCM members to oversee the implementation of national responses for AIDS, TB and Malaria and related health issues including the implementation of the Global Fund grants in Myanmar.

The Technical and Strategic Group (TSG) TB coordinates with all implementing partners in monitoring and evaluation of programme implementation. The National TB programme coordinated with M-CCM, is contributing to health system development in a number of ways. NTP organization structure was expanded according to the necessities. There were only 7 Regional/State TB centers in 1982 and expanded to 14 Regional and State TB centers in 2007, covering 17 Regions and States.

All the township laboratories were equipped with binocular microscopes and sputum microscopy centres were expanded to some station hospitals. In 2012, 65 fluorescent microscopes were set up at district levels together with trainings. The facility for culture and drug susceptibility testing (DST) was upgraded at Upper Myanmar TB Laboratory, Mandalay with the support of FIND, USAID, 3DF and UNION.

Two MDR-TB pilot hospitals are following infection control measures recommended by infection control mission. Health personnel from MDR-TB project townships were also trained for infection control measures, equipments in need were installed and infrastructures were renovated. Biosafety Level-3 Laboratories in Yangon and Mandalay are also functioning under proper maintenance.

NTP also supported public health management capacity through working with HIV/AIDS and malaria programmes on strengthening of health services at all levels. Health

infrastructures (computers, vehicles, communication means) were also invested at primary care level. Innovative service delivery strategies such as PPM approaches and community-based care were expanded.

b. Share innovations that strengthen systems, including the Practical Approach to Lung Health

NTP integrated the TB control activities for primary health care services. In 2012, NTP conveyed several trainings in relating with human resource development. Trainings on Management of TB at District level and health facility using the translated and revised WHO modules have been conducted since 2006 with the support of GFATM, JICA and WHO. For capacity building of laboratory technicians, new recruit laboratory technicians were provided refresher training as required.

Regular trainings on TB control were given at all Medical Universities, Training Schools of midwives lady healh visitors and nurses as well as training for public health supervisors II at Regional/State Health Departments.

For improving patients' treatment adherence, counseling trainings were provided after development of guideline for TB counseling. These trainings could cover not only for TB treatment but also for TB/HIV and MDR-TB treatment.

Table 17. TB control activities in 2012 with GF Funding

Training Activities of National Tuberculosis Programme (2012)								
No.	***Region/State***	***Township***	***Training Period***		***No. of Attendees***			***Funding Source***
			From	***To***	***Male***	***Female***	***Total***	
Refresher training for BHS on Management of TB for health facility staff								
1	Kayin	Pha-an	18.1.12	20.1.12			30	Global Fund
2	Mon	Paung	25.1.12	27.1.12			30	Global Fund
3	Mon	Paung	9.2.12	11.2.12	8	22	30	Global Fund
4	Shan(South)	Kalaw	8.2.12	10.2.12		30	30	Global Fund
5	Mandalay	Wundwin	6.2.12	8.2.12	4	26	30	Global Fund
6	Mandalay	Yemathin	18.1.12	20.1.12			30	Global Fund
7	Kachin	Moegaung	13.2.12	15.2.12	6	23	29	Global Fund
8	Nay Pyi Taw	Nay Pyi Taw	23.2.12	24.2.12			19	Global Fund
9	Kachin	Moegaung	27.2.12	19.2.12	6	23	29	Global Fund

10	Rakhine	Munaung	20.1.12	22.1.12	4	24	28	Global Fund
11	Rakhine	Munaung	23.1.12	25.1.12	4	26	30	Global Fund
12	Bago	Thanatpin	23.2.12	25.2.12			30	Global Fund
13	Bago	Thanatpin	26.2.12	28.2.12	21	39	60	Global Fund
14	Bago	Kyauktada	8.5.12	10.5.12			30	Global Fund
15	Bago	Kyauktada	11.5.12	13.5.12			30	Global Fund
16	Yangon	Bahan	14.2.12	16.2.12	1	33	34	Global Fund
17	Shan(South)	Hsihsen	8.3.12	10.3.12	7	23	30	Global Fund
18	Yangon	Taikkyi	21.2.12	23.2.12			70	Global Fund
19	Sagaing	Wetlet	20.2.12	22.2.12	7	23	30	Global Fund
20	Sagaing	Wetlet	23.2.12	25.2.12	8	22	30	Global Fund
21	Sagaing	Monywa	4.6.12	6.6.12	1	29	30	Global Fund
22	Sagaing	Monywa	7.6.12	9.6.12	9	21	30	Global Fund
23	Shan(South)	Hsihseng	3.4.12	5.4.12	2	28	30	Global Fund
24	Mandalay	Taungtha	11.3.12	13.3.12	4	25	29	Global Fund
25	Mandalay	Taungtha	8.3.12	10.3.12			29	Global Fund
26	Nay Pyi Taw	Nay Pyi Taw	16.5.12	17.5.12	31	23	54	Global Fund
27	Magway	Gangaw	10.2.12	12.2.12	4	26	30	Global Fund
28	Magway	Gangaw	13.2.12	15.2.12	7	23	30	Global Fund
29	Magway	Htilin	16.2.12	18.2.12	3	27	30	Global Fund
30	Magway	Htilin	19.2.12	21.2.12	2	28	30	Global Fund
31	Kachin	Moegaung	13.2.12	15.2.12	6	23	29	Global Fund
32	Kachin	Bamaw	17.6.12	19.6.12	7	22	29	Global Fund
33	Kachin	Bamaw	20.6.12	22.6.12	6	22	28	Global Fund
34	Nay Pyi Taw	Nay Pyi Taw	16.5.12	17.5.12			39	Global Fund
35	Shan(South)	Kalaw	12.5.12	14.5.12	9	21	30	Global Fund
36	Tanintharyi	Kyunsu	25.5.12	26.5.12	5	25	30	Global Fund
37	Tanintharyi	Kawthaung	29.5.12	30.5.12	4	26	30	Global Fund
38	Chin	Mindat	29.5.12	31.5.12	8	22	30	Global Fund
39	Chin	Kanpalet	9.6.12	11.6.12	5	25	30	Global Fund
40	Magway	Saw	2.6.12	4.6.12	6	24	30	Global Fund
41	Magway	Saw	5.6.12	7.6.12	5	25	30	Global Fund
42	Yangon	Khayan	8.5.12	10.5.12	5	47	52	Global Fund
43	Yangon	Kunchangone	12.6.12	14.6.12	10	34	44	Global Fund
44	Mon	Thaton	20.6.12	22.6.12	2	25	30	Global Fund
45	Shan(South)	Taunggyi	11.7.12	13.7.12	3	27	30	Global Fund
46	Shan(East)	Tachileik	28.5.12	30.5.12	5	25	30	Global Fund
47	Shan(East)	Mongyaung	28.6.12	30.6.12	3	24	27	Global Fund
48	Shan(North)	Muse	4.6.12	6.6.12	3	27	30	Global Fund
49	Shan(North)	Muse	7.6.12	9.6.12	4	26	30	Global Fund
50	Ayeyarwaddy	Myaungmya	18.6.12	20.6.12	3	27	30	Global Fund
51	Ayeyarwaddy	Myaungmya	21.6.12	23.6.12	4	26	30	Global Fund

52	Nay Pyi Taw	Nay Pyi Taw	9.8.12	10.8.12			40	Global Fund
53	Shan(North)	Hsipaw	16.7.12	18.7.12	1	29	30	Global Fund
54	Shan(North)	Hsipaw	19.7.12	21.7.12	2	28	30	Global Fund
55	Mon	Thaton	25.7.12	27.7.12	4	26	30	Global Fund
56	Shan(South)	Namsan	15.8.12	17.8.12	6	24	30	Global Fund
57	Rakhine	Thandwe	1.9.12	3.9.12	5	25	30	Global Fund
58	Kachin	Moehnyin	19.8.12	21.8.12	5	23	28	Global Fund
59	Kachin	Moehnyin	22.8.12	24.8.12	6	21	27	Global Fund
60	Yangon	Mingalartaungnyunt	14.8.12	16.8.12	8	22	30	Global Fund
61	Mandalay	Myingyan	10.8.12	13.8.12	7	23	30	Global Fund
62	Mon	Thaton	28.8.12	30.8.12	2	25	27	Global Fund
63	Bago	Nattalin	9.9.12	11.9.12			30	Global Fund
64	Bago	Nattalin	17.9.12	19.9.12			30	Global Fund
65	Ayeyarwaddy	Maubin	17.9.12	19.9.12	2	28	30	Global Fund
66	Ayeyarwaddy	Maubin	20.9.12	22.9.12	4	26	30	Global Fund
67	Rakhine	Kyaukphyu	8.10.12	10.10.12	9	21	30	Global Fund
68	Rakhine	Kyaukphyu	11.10.12	13.10.12	3	26	29	Global Fund
69	Rakhine	Thandwe	28.8.12	30.8.12	4	26	30	Global Fund
70	Bago	Lapandan	11.11.12	13.11.12			30	Global Fund
71	Bago	Lapandan	14.11.12	16.11.12			30	Global Fund
72	Mon	Thaton	28.8.12	30.8.12	2	25	27	Global Fund
73	Ayeyarwaddy	Phyarpon	10.12.12	12.12.12			42	Global Fund
74	Ayeyarwaddy	Phyarpon	13.12.12	15.12.12			47	Global Fund
75	Mandalay	Myittha	11.12.12	13.12.12			45	Global Fund
76	Mandalay	Sintgaing	21.11.12	23.11.12			45	Global Fund
77	Shan(South)	Taunggyi	3.10.12	5.10.12	4	26	30	Global Fund
78	Shan(South)	Pinlaung	17.10.12	19.10.12	3	27	30	Global Fund
79	Yangon	Yankin	13.11.12	15.11.12	1	28	29	Global Fund
80	Kachin	Mansi	16.12.12	18.12.12	4	25	29	Global Fund
81	Chin	Tonzang	20.11.12	22.11.12			30	Global Fund
82	Sagaing	Kalay	8.10.12	9.10.12	7	25	32	Global Fund
83	Sagaing	Kalay	11.10.12	13.10.12	6	25	31	Global Fund
84	Sagaing	Layshi	13.12.12	15.12.12			28	Global Fund
85	Sagaing	Laha	18.12.12	20.12.12			30	Global Fund
Sub Total							**2725**	
Training on Cohort review meeting								
1	Ayeyarwady	Pantanaw	9.2.12				30	Global Fund
2	Kachin	Moegaung	30.1.12		7	23	30	Global Fund
3	Mon	Ye	31.1.12		3	27	30	Global Fund
4	Kayin	Pha-an	31.1.12		6	24	30	Global Fund
5	Shan(South)	Hopong	13.3.12		3	27	30	Global Fund
6	Shan(South)	Hsihseng	11.3.12		6	24	30	Global Fund

7	Sagaing	Ayadaw	23.1.12		8	22	30	Global Fund
8	Sagaing	Myaung	24.1.12		6	24	30	Global Fund
9	Sagaing	Ye-U	21.1.12		6	24	30	Global Fund
10	Ayeyarwady	Kyeilat t	28.2.12				30	Global Fund
11	Bago	Waw	20.2.12			30	30	Global Fund
12	Yangon	Taikkyi	24.2.12		15	55	70	Global Fund
13	Mon	Thaton	30.1.12		3	27	30	Global Fund
14	Rakhine	Sittwe	31.1.12		5	25	30	Global Fund
15	Yangon	Bahan	17.2.12		1	34	35	Global Fund
16	Bago	Shwedaung	16.2.12					Global Fund
17	Mandalay	Nyaung-U	19.3.12		6	24	30	Global Fund
18	Mandalay	Yemathin	14.3.12		4	26	30	Global Fund
19	Tanintharyi	Dawei	1.2.12				30	Global Fund
20	Kachin	Mohnyin	27.2.12		6	24	30	Global Fund
21	Kachin	Banmaw	5.3.12		2	28	30	Global Fund
22	Shan(E)	Kyaington	20.1.12		5	25	30	Global Fund
23	Magway	Pakokku	30.1.12		13	51	64	Global Fund
24	Magway	Thayet	5.10.12		3	27	30	Global Fund
25	Magway	Yaesagyo	31.1.12		19	35	54	Global Fund
Sub Total							**823**	
Refresher training on Childhood TB Management								
1	Bago	Pyay	4.5.12		14	16	30	Global Fund
2	Mon	Mawlamyaing	25.4.12		14	16	30	Global Fund
3	Yangon	Latha	24.4.12				48	Global Fund
4	Kayin	Hpa-an	26.4.12		12	8	20	Global Fund
5	Ayeyarwaddy	Pathein	21.5.12				54	Global Fund
6	Kayah	Loikaw	22.5.12		6	10	16	Global Fund
7	Shan(S)	Taunggyi	26.6.12		14	16	30	Global Fund
8	Mandalay	Patheingyi	14.6.12				53	Global Fund
9	Kachin	Myintkyina	7.6.12		11	11	22	Global Fund
10	Magway	Magway	9.7.12		8	22	30	Global Fund
11	Sagaing	Monywa	21.5.12		22	20	42	Global Fund
12	Sagaing	Monywa	22.5.12		13	23	36	Global Fund
13	Rakhine	Sittwe	18.7.12		18	16	34	Global Fund
14	Shan(E)	Kengtung	13.5.12		4	18	22	Global Fund
15	Bago	Bago	3.4.12		14	15	29	Global Fund
16	Tanintharyi	Dawei	18.6.12		7	19	26	Global Fund
Sub Total							**522**	
Training on TB Counseling								
1	Mandalay	Pyinmana	23.1.12	25.1.12	9	12	21	Global Fund
2	Mandalay	Kyaukse	30.1.12	1.2.12			20	Global Fund

3	Ayeyarwady	Bogalay	15.2.12	17.2.12			20	Global Fund
4	Kachin	Moenyin	24.1.12	26.1.12	5	15	20	Global Fund
5	Shan(South)	Nyaungshwe	27.2.12	29.2.12	5	15	20	Global Fund
6	Kayin	Pha-an	22.2.12	24.2.12	4	16	20	Global Fund
7	Sagaing	Sagaing	29.2.12	2.3.12	10	10	20	Global Fund
8	Yangon	Latha	13.3.12	15.3.12	2	18	20	Global Fund
9	Ayeyarwady	Laputta	14.3.12	16.3.12			20	Global Fund
10	Bago	Pyay	8.3.12	10.3.12	6	14	20	Global Fund
11	Magway	Minbu	14.3.12	16.3.12	5	15	20	Global Fund
12	Magway	Gangaw	7.2.12	9.2.12	7	13	20	Global Fund
13	Kayah	Deemawso	15.3.12	17.3.12	5	15	20	Global Fund
14	Tanintharyi	Dawei	29.1.12	31.1.12			20	Global Fund
15	Mon	Ye	27.2.12	29.2.12	3	17	20	Global Fund
16	Sagaing	Katha	19.9.12	21.9.12	4	17	21	Global Fund
17	Shan(E)	Mongpuak	5.6.12	7.6.12	4	18	22	Global Fund
18	Chin	Hakha	15.11.12	17.11.12	4	16	20	Global Fund
Sub Total							**364**	
Training of External Quality Assessment for Controllers								
1	Yangon	Insein	22.10.12	26.10.12	1	10	11	Global Fund
Sub Total							**11**	
Training on sputum collection center								
1	Bago	Thelgone	2.2.12	2.2.12	9	21	30	Global Fund
2	Kayah	Demosoe	18.3.12		3	27	30	Global Fund
3	Ayeyarwaddy	Maubin	1.3.12				30	Global Fund
4	Mandalay	Wundwin	21.3.12					Global Fund
5	Rakhine	Thandwe	16.2.12		7	23	30	Global Fund
6	Kachin	Moenyin	23.1.12		6	24	30	Global Fund
Sub Total							**150**	
Training of NTP/NAP staff on TB/HIV								
1	Nay Pyi Taw	Nay Pyi Taw	6.2.12	8.2.12			20	Global Fund
2	Mon	Mawlamyaing	12.3.12	14.3.12	6	19	25	Global Fund
3	Bago	Pyay	17.3.12	19.3.12	7	13	20	Global Fund
4	Tanintharyi	Dawei	30.5.12				20	Global Fund
Sub Total							**85**	
Training for Isoniazid Preventive Therapy								
1	Mon	Mawlamyaing	15.3.12		4	16	20	Global Fund
2	Bago	Pyay	20.3.12		9	11	20	Global Fund
3	Tanintharyi	Dawei	31.5.12				30	Global Fund
Sub Total							**70**	
Training for community volunteers on DOTS strategy (including initial TOT) for MWAF, MMCWA and MRCS								
1	Rakhine	Maungdaw	28.2.12	29.2.12	8	22	30	Global Fund
2	Nay Pyi Taw	MMCWA	26.1.12	27.1.12			32	Global Fund

3	Shan(South)	Taunggyi	1.2.12	2.2.12			12	Global Fund
4	Mandalay	Chanmyatharzi	14.2.12	15.2.12	5	25	30	Global Fund
5	Shan(North)	Lashio	23.1.12	24.1.12			16	Global Fund
6	Thanintyaryi	Dewi	14.2.12	15.2.12		9	9	Global Fund
7	Mandalay	Pyigyitagon	13.2.12	14.2.12			30	Global Fund
8	Sagaing	Tamu	6.3.12	7.3.12	2	25	27	Global Fund
9	Mandalay	Chanayetharzan	15.2.12	16.2.12	8	22	30	Global Fund
10	Thanintyaryi	Dawei	16.2.12	17.2.12			31	Global Fund
11	Thanintyaryi	Yebuy	22.2.12	23.2.12			30	Global Fund
12	Thanintyaryi	Thayetchaung	18.2.12	19.2.12			30	Global Fund
13	Thanintyaryi	Lunglong	20.2.12	21.2.12			30	Global Fund
14	Kayin	Hpa-an	14.2.12	15.2.12			30	Global Fund
Sub Total							**367**	
Training for new project area of MRCS volunteer								
1	Sagaing	Depeyin	14.2.12	16.2.12			67	Global Fund
2	Mandalay	Lewei	20.2.12	22.2.12			45	Global Fund
3	Mandalay	Sintgaing	27.2.12	29.2.12			20	Global Fund
4	Mandalay	Pyawbwe	12.3.12	14.3.12			20	Global Fund
Sub Total							**152**	
Advocacy and training for people with TB								
1	Ayeyarwady	Hinthada	15.2.12				50	Global Fund
2	Yangon	Insein	6.2.12		9	27	36	Global Fund
3	Rakhine	Thandwe	15.2.12		27	22	49	Global Fund
4	Yangon	Thalyin	8.2.12		12	13	25	Global Fund
5	Mon	Thaton	6.3.12				50	Global Fund
6	Sagaing	Sagaing	28.2.12		29	15	44	Global Fund
7	Yangon	North Okkalapa	10.2.12		17	15	32	Global Fund
8	Magway	Pakokku	5.2.12		20	34	54	Global Fund
9	Shan(North)	Kyaukme	14.3.12				25	Global Fund
10	Kachin	Banmaw	7.2.12				45	Global Fund
11	Tanintharyi	Myeik	25.3.12		11	9	21	Global Fund
12	Mandalay	Kyaukse	24.5.12				28	Global Fund
13	Mandalay	PyinOoLwin	23.5.12		18	17	35	Global Fund
Sub Total							**494**	
Training on leadership and management								
1	Kachin	Myitkyina	19.2.12	21.2.12	12	7	19	Global Fund
2	Tanintharyi	Myeik	24.12.12	26.12.12			20	Global Fund
Sub Total							**39**	
Training on EQA for pathologist/microbiologist/ laboratory officers								
1	Yangon	Insein	29.11.12					Global Fund
Sub Total								

Refresher training on sputum microscopy for Grade II lab. Technicians								
1	Yangon	Insein	7.5.12	9.5.12	3	17	20	Global Fund
2	Mandalay	Pathingyi	2.5.12	4.5.12	5	11	16	Global Fund
Sub Total							**36**	
Training on tuberculin testing								
1	Yangon	Insein	19.11.12	20.11.12		10	10	Global Fund
Sub Total							**10**	
Training on sputum microscopy for new lab. Technicians								
1	Mandalay	Pathingyi	28.5.12	1.6.12	5	10	15	Global Fund
2	Yangon	Insein	18.6.12	22.6.12	8	6	14	Global Fund
Sub Total							**19**	
Training on sputum microscopy for general hospitals and private laboratories								
1	Yangon	Insein	20.8.12	22.8.12	1	15	16	Global Fund
2	Mandalay	Patheingyi	20.8.12	22.8.12	5	14	19	Global Fund
Sub Total							**35**	
Training on Management of MDR-TB for TB hospital staffs								
1	Yangon	Insein	1.2.12	3.2.12		22	22	Global Fund
Sub Total							**22**	
Training on PPM DOTS								
1	Kayin	Pha-an	15.2.12	17.2.12	6	29	35	Global Fund
2	Tanintharyi	Dawei	27.2.12	29.2.12			60	Global Fund
3	Mon	Mawlamyaing	19.2.12	21.2.12				Global Fund
Sub Total							**95**	
Training on DOTS strategy for health staff from MoHA								
1	Naypyitaw	Naypyitaw	3.12.12	4.12.12			35	Global Fund
2	Naypyitaw	Naypyitaw	5.12.12	6.12.12			35	Global Fund
Sub Total							**70**	
Refresher training for MRCS volunteers								
1	Mandalay	Yamethin	14.11.12		5	17	22	Global Fund
2	Yangon	Twantay	8.10.12		10	10	20	Global Fund
3	Yangon	Thongwa	5.10.12		10	10	20	Global Fund
4	Naypyitaw	Tatkon	2.10.12		9	11	19	Global Fund
5	Yangon	Kyauktan	6.10.12		8	12	20	Global Fund
6	Yangon	Kungyangon	10.10.12		10	10	20	Global Fund
7	Yangon	Kawhmu	11.10.12		4	16	20	Global Fund
Sub Total							**141**	
Grand Total							**6230**	**Global Fund**

Note: 212 trainings were documented & 21 trainigs were entitled.

Table 18. Training activities with other funding sources (2012)

No.	*Region/State*	*Township*	*Training Period*		*No. of Attendees*			*Funding Source*
			From	*To*	*Male*	*Female*	*Total*	
Management of MDR- TB								
1	Magway	Pakokku	20.12.12	22.12.12			35	WHO
2	Magway	Pakokku	27.12.12	29.12.12			35	WHO
3	Magway	Pakokku	31.12.12	2.1.13			35	WHO
4	Magway	Magway	10.12.12	12.12.12			35	WHO
5	Magway	Magway	13.12.12	15.12.12			35	WHO
6	Magway	Magway	17.12.12	19.12.12			35	WHO
7	Magway	Monywa	10.12.12	12.12.12			35	WHO
8	Magway	Monywa	13.12.12	15.12.12			35	WHO
9	Sagaing	ChaungOo	17.12.12	19.12.12			35	WHO
Sub Total							**105**	
Refresher training for BHS on management of TB for Health facility staff								
1	Yangon	Yangon	13.9.12	15.9.12	6	29	35	Union
2	Mandalay	Mandalay	6.9.12	8.9.12			39	Union
Sub Total							**74**	
Training for 3rd Drug Resistant TB Survey								
1	Yangon	NTP, Yangon	24.9.12	24.9.12	36	56	92	WHO
Sub Total							**92**	
Training for Geographical Information Software (GIS)								
1	Naypyitaw	Naypyitaw	24.10.12	26.10.12	10	17	27	JICA
Sub Total							**27**	
Laboratory training on sputum microscopy for newly recruited lab technicians								
1	Yangon	Insein, NTRL	4.6.12	8.6.12	7	15	22	JICA
Sub Total							**22**	

Table 19. International Trainings, Meetings & Workshops attended by NTP staff

No.	Name and Designation	Duration	Country	Attended training/ workshop/ meeting
1	Dr. Thandar Lwin, DD (TB) Dr. Myo Su Kyi, MO, NTP (central)	8.2.12 to 11.2.11	Cambodia Phnom Penh	Workshop on repeat TB disease prevalence survey
2	Dr. Win Maung, Director (DC) Dr. Thandar Lwin, DD (TB) Dr. Tin Mi Mi Khine, Yangon Region TB Center Officer Dr. Thandar Twin, TB specialist, Mandalay Region TB center	8.3.12 to 9.3.12	Thailand Bangkok	CAP-TB meeting
3	Dr. Thin Lei Swe, Microbiologist, NTRL, Mandalay Dr. Wint Wint Nyunt, Microbiologist, NTRL, Yangon	17.4.12 to 19.4.12	French Annecy	4th Global Lab: Initiative (GLI) Partners Meeting for TB: action for care delivery and sustainability
4	Dr. Kyaw Naing, MO, Team Leader Yangon Regional TB Center	9.5.12 to 4.7.12	Japan Tokyo	Stop TB action training course
5	Dr. Thin Thin Nwe, AD(TB) Dr. Tin Tin Mar, Microbiologist, NTRL	4.9.12 to 6.9.12	Indonesia Jakarta	Regional Workshop on Gene Xpert in the South East Asian region
6	Dr. Thandar Lwin, DD (TB) Dr. San San Shein, Yangon Region TB center Dr. Saw Thein, RTBO, Mandalay Region TB center	17.9.12 to 21.9.12	Thailand, Chiang mai	Regional workshop on programmatic Management of MDR-TB
7	Dr. Moe Zaw, AD (TB)	17.9.12 to 21.9.12	Nepal Kathmandu	1st SEARO inter country workshop on using research evidence for policy making
8	Dr. Thin Lei Swe, Microbiologist, NTRL, Mandalay	26.9.12 to 20.10.12	Japan, Kiyosei	Stop TB Hand on Laboratory practice management for HIV & MDR-TB
9	Dr. Thandar Lwin, DD (TB)	2.10.12 to 4.10.12	Switzerland, Geneva	Finalize guidelines on screening for Active TB
10	Prof. Dr Win Naing, YGH Dr. Thandar Lwin, DD (TB) Dr. Myint San, STBO, Bago region Dr. Thandar Twin, TB specialist, Mandalay Region TB center, Dr. Ohmar Myint, MO, NTP(central)	13.11.12 to 17.11.12	Malaysia, Kuala Lampur	43rd UNION World Conference on Lung Health,
11	Dr. Moe Zaw, AD(TB) Dr. Myo Su Kyi, MO, NTP(central) Dr. Thant Zaw Win, Prison department	10.12.12 to 14.12.12	Indonesia, Jakarta	Regional workshop on scaling up engagement of prisons in TB control

c. Adapt Innovations from other fields

To respond to all six components of the Stop TB Strategy, NTP is trying to adapt approaches that have been applied in other priority public health fields and build on some of the common systems that are already in place. Such approaches may include: further integration of TB control activities within the community; primary care outreach pursued in maternal and child health programmes; social mobilizations along the lines used by HIV/AIDS control programme & partners; regulatory actions that have been used in tobacco control; and financing initiatives and means to reach the poorest that have been developed by immunization services. They may also include further collaboration with broader information platforms (surveys, etc.) to advance TB surveillance and programme monitoring. Effective integration of delivery systems depends on testing, adapting, scaling up and evaluating common approaches.

iv. Engage all care providers

a. Public-Public and Public-Private Mix (PPM) approaches

In most settings, patients with symptoms suggestive of TB seek care from a wide array of healthcare providers apart from the public sector TB services. These may include private clinics operated by formal and informal practitioners, and institutions owned by the public, private, voluntary and coporate sectors. These non-NTP providers could serve a large proportion of TB patients and suspects.

Public-Public

Public-Public Mix DOTS has been launched in 4 specialist hospitals (New YGH, East and West YGH, Thingungyun Sanpya General Hospital) in Yangon with the 3DF bridging fund since May 2007; then expanded to Insein General Hospital, 1000-bedded Hospital (NayPyiTaw), Mingalardon Specialist Hospital, Aung San TB Hospital and Patheingyi TB Hospital. Public-Public Mix DOTS was initiated as a pilot phase, aiming to strengthen the TB control services between public hospitals and public TB centres. Advocacy meetings were conducted, followed by training for hospital staff on TB control and PPM-DOTS. Hospital DOTS Committees were formed for each hospital chaired by Medical Superintendents and members from heads of clinical disciplines. Assistant Medical Superintendents were assigned as a PPM TB-Coordinators. Roles of laboratory technicians, nurses, medical social

workers and pharmacist were identified and involved in major role. In 2011, the number of PPM hospitals became increased to twelve. The newly established ones during 2011 were North Okkalarpa General Hospital, 300-bedded Hospital (Mandalay) and Pathein General Hospital. Dawei General Hospital, Hpa-an General Hospital and Mawlamyaing General Hospital were expanded in 2012 for PPM-DOTS activities. However, Dawei general hospital was replaced with Myeik General Hospital in late 2012.

PPM-DOTS hospitals run with four options:

Option 1: Diagnosis of TB cases + prescription of treatment regimen in hospital followed by referral to Health Centre for DOT, with clinical follow-up at hospital

Option 2: Same as Option 1 without clinical follow-up at hospital

Option 3: Diagnosis of TB cases + starting Directly Observed Treatment (DOT) in hospital followed by referral to Health Centre during treatment

Option 4: Diagnosis of TB cases + providing full treatment (DOT) at hospital

Currently all hospitals are practising both option 3 and 4. NTP and WHO conducted joint monitoring and supervisory visits regularly. Htantabin TB hospital, Central Jail Mandalay Hospital, MBH 1 Mandalay Nantwin, MBH 1 PyinOoLwin and Workers TB hospital under the Ministry of Labor are also collaborating with NTP.

In 2011, PPM-Hospitals contributed 1% to total new smear positive (NSP) TB patients and 3% to total all forms of TB cases. In 2012, 1.4% (NSP) and 2.8% all forms of TB could be contributed by the efforts of PPM Hospitals.

Table 20. New Smear Positive TB Patients and All Forms of TB Patients of PPM DOTS Hospitals implementing Option 4 (2012)

No.	Hospitals	New Smear Positive	Total TB cases
1.	New YGH	39	155
2.	East YGH	12	102
3.	West YGH	17	68
4.	Thingangyun Sanpya Hospital	13	100
5.	Insein General Hospital	5	20
6.	1000 bedded hospital (Naypyitaw)	75	265
7.	Wabargi Hosipital (North Okkalapa)	35	195
8.	Pathein General Hospital	46	302
9.	300-bedded Teaching Hospital (Mdy)	30	145
10.	AungSan TB Hospital	52	270
11.	Mingalardon Hospital	127	1413
12.	Patheingyi TB Hospital	24	68
13.	No.1 MBH (PyinOoLwin)	45	277
14.	No.1 MBH (Mandalay Nantwin)	13	61
15.	Central Jail (Mandalay)	33	78
16.	Tharketa HIV Hospital	40	674
17.	Htantabin TB Hospital	24	85
18.	North Okkalapa General Hospital	35	195
19.	Mawlamyaing General Hospital	Nil report	
20.	Pha-an General Hospital		
21	Myeik General Hospital		
Total		**665**	**4473**

Table 21. Outcome of new smear positive TB patients of PPM-DOTS Hospitals implementing Option 4 (2011 cohort)

No.	Hospitals	Cured	TSR	Died	Failed	Defaulted	Transferred out
1.	New YGH	76%	76%	5%	8%	15%	11%
2.	East YGH	100%	100%	0%	0%	0%	0%
3.	West YGH	55%	68%	5%	14%	14%	0%
4.	Thingangyun Sanpya Hospital	73%	73%	18%	9%	0%	0%
5.	Insein General Hospital	100%	100%	0%	0%	0%	0%
6.	1000 bedded hospital (Naypyitaw)	66%	79%	6%	1%	8%	6%
7.	Wabargi Hosipital (North Okkalapa)	Nil report					
8.	Pathein General Hospital	17%	33%	0%	0%	67%	0%
9.	300-bedded Teaching Hospital (Mdy)	29%	57%	14%	0%	0%	29%
10.	AungSan TB Hospital	58%	60%	10%	13%	15%	2%
11.	Mingalardon Hospital	42%	50%	36%	3%	7%	3%
12.	Patheingyi Hospital	17%	61%	13%	3%	10%	13%
13.	No.1 MBH (PyinOoLwin)	50%	69%	4%	8%	8%	12%
14.	No.1 MBH (Mandalay Nantwin)	92%	92%	0%	8%	0%	0%
15.	Central Jail (Mandalay)	65%	65%	14%	0%	0%	22%
16.	Tharketa HIV Hospital	55%	63%	16%	0%	8%	14%
17.	Htantabin TB Hospital	72%	72%	11%	0%	6%	11%
Total		**69%**	**81%**	**5%**	**5%**	**7%**	**2%**

Annual evaluation meeting for PPM-DOTS Hospitals is conducted every year and the recommendations from 2012 meeting were as follows:

1. To provide trainings/refresher trainings including laboratory trainings for PPM DOTS hospitals (central, regional & state levels)
2. To conduct quarterly regular supervisions to newly expanded PPM hospitals and annual supervisions to the old ones
3. To carry out monthly Continuous Medical Education to supervise on PPM-DOTS activity at OPDs, Laboratories and DOTS corners (Training materials will be used)
4. To conduct quarterly hospital PPM-DOTS committte evaluation meetings and report to NTP
5. To follow SOP of drug and supply management of NTP

6. To establish the referral system for culture and drug sensitivity testing for all registered retreatment cases to appropriate TB reference laboratories
7. To strengthen the coordination between PPM hospitals and townships for proper feedback system
8. To facilitate Mingalardon Specialist Hospital, Tharketa Hospital, Waybergi Hospital, AungSan TB Hospital, Patheingyi TB Hospital and Htantabin Workers Hospitals to become fully established PPM hospitals
9. To follow the SOP of childhood TB management in PPM hospitals

Public-Private

Public-Private Mix (PPM) DOTS is implemented with MMA, PSI and JICA. Some Private Practitioners (PPs) use scheme (I) in which they educate about TB and refer TB suspects to TB centres. Some PPs prefer to use Scheme (II) acting as DOT providers.

Other International Non Governmental Organizations (INGOs) participated in TB Control by community involvement strategy.

Table 22. Implementing partners and activities

Name of NGOs	Area Coverage and activities
MMCWA	Community based TB care at 10 townships in Mon State, 27 townships in Bago Region except Kyaukgyi township, expanded to 26 townships in Mandalay Region, 3 townships (Pyinmana, Tatkone & lewei) in NayPyiTaw, 2 townships (Pha-an & Hlaingbwe) in Kayin State & one township (Twantay) in Yangon Region.
MWAF	Community based TB care at all 26 townships of Ayeyarwaddy Region, 9 townships in Shan (Kengtong) Region, 2 townships in Kayah Region, 16 in Shan (Lashio) State, 12 in Shan (Taunggyi) & 9 townships in Tanintharyi Region.
MMA	PPM-DOTS activities, mainly scheme I covering altogether 116 townships of which 24 townships were implementing scheme III. MMA was functioning with 1266 GPs for Scheme I and 190 GPs for Scheme III. 77 volunteers were trained & 67 actively participated.
MRCS	Multiplier training (Peer Education) for Red Cross Volunteers, comprehensive IEC Campaign, Defaulter Tracing, case detection and

	referral, home based care and support at 5 townships (Kungyangon, Kawhmu, Twantay, Thonegwa & Kyauktan) in Yangon Region, 2 townships (Lewei & Takone) in NayPyiTaw Council Area, 3 townships (Yamethin, Pyawbwe & Sintgaing) in Mandalay Region & 1 township (Depeyin) in Sagaing Region.
MHAA	Community mobilization and empowerment to reduce the burden of TB at 3 townships (Meikhtilar, Thazi & Mahlaing) in Mandalay for 2012.
Name of Bilateral agency	**Area Coverage and activities**
JICA	Supported TB control activities at 6 townships (South Dagon, Hlaing, Kyauktan, South Oakkalapa, Taikkyi & Twantay) in Yangon and 5 townships (Chanmyatharzi, Maharaungmyay, Nahtogyi, Ngazun & Pyinmana) in Mandalay Region.
Name of INGOs	**Area Coverage and activities**
PSI	TB diagnosis & treatment through Sun Quality Health Clinics (SQHC) at 185 townships by 894 Sun Quality Health Providers (SQHP), through active case finding by 1627 Sun Primary Health Providers (SPHP). TB-REACH project through 526 pharmacies and by 60 interpersonel communicators (IPC) in 38 townships.
MSF- Holland	Treatment of TB and TB/ HIV patients at 3 townships (Hlaingtharyar, Insein & Tharketa) in Yangon Region, 5 townships (Myitkyina, Bahmo, Waingmaw, Moegaung, Pharkant) in Kachin State, 3 townships (Lashio, Muse, Mongshu) in Shan (Lashio) State & 3 townships (Sittwe, Butheetaung & Maungdaw) in Rakhine State. MDR-TB management in Yangon Region.
MSF-Switzerland	TB/HIV control at all townships of Tanintharyi Region, Dawei District (4 townships) for TB diagnosis and HIV testing. Mainly focused on fishermen and migrant workers
World Vision International	Helps to improve case finding in Hlaingthayar (Yangon Region), Loikaw (Kayah State), Thanphyuzayat (Mon State), Dewei, Myeik, Longlon,

	Thayetchaung, & Kawthaung (Taninthayi Region).
IUATLD	Supported Integrated TB/HIV care at 7 Townships of Mandalay district, Pakkoku township from Magway Region, Taunggyi township, Lashio township from Shan State, and then expanded to Myingyan and Meikhtilar townships in Mandalay Region, Monywa township in Sagaing Region, and Tharketa township in Yangon Region. PICT project with TB REACH support started in 2011 in Mandalay district & finished in 2012.
IOM	Care and support to TB patients at 6 townships (Mawlamyaing, Mudon, Kyikmayaw, Thanphyuzayat, Ye & Belin) in Mon State and at one township (Bogalay) in Ayeyarwaddy Region.
Malteser	Referral of TB patients & giving care to TB patients at Maungdaw & Buthidaung townships in northan Rakhine State.
Pact Myanmar	Community mobilization, behavior change communication and health education session at targeted villages of 3 townships (Pale, Htigyaint & Kawlin) in Magway Region & 2 townships (Kyaukpadaung & Magwe) in Sagaing Region.
Merlin	Improved case finding through community based approach at Laputta township of Ayeyarwaddy Region, at Tamu and Homalin townships in Sagaing Region, at Hakha & Htantalang townships in Chin State & Kutkai township in Shan (Lashio) State.
AHRN	Operating to reduce the incidence of TB, TB/Drug use related issues and TB/HIV co-infection among drug users at Lashio & Laukkai in Shan (Lashio) State, Pharkant, Waingmaw & Bamaw townships in Kachin State.
Cesvi	Sensitization and Health education on TB at 90 villages of 3 townships (Naungcho, Kyaukme and Hsipaw) townships of Shan (Lashio) State for TB control by promoting case finding and referral by trained Voluntary Health Workers.
MDM	TB diagnosis, treatment provision and follow-up at Hlaing township of

	Yangon Region, and Myitkyina, Moegaung and Mohnyin townsips of Kachin State.
Projeto	Nutritional support to TB patients at Magway township.
JATA	Technical support.

Table 23. Contribution of MMA PPM-DOTS Scheme I / III (2012)

Main townships

No.	Name of townships (main)	No. of TB suspects referred for diagnosis	No.of feedbacks received	Smear (+) TB patients put on TB treatment		Smear (-)TB patients put on TB treatment			No. of Total TB	No. of Non TB
				Cat I	Cat II	Cat I	Cat II	Cat III		
1	Insein	287	284	63	14	53	8	4	143	141
2	North Dagon	136	135	37	2	24	0	0	63	72
3	South Dagon	143	143	50	10	47	5	15	127	16
4	North Okkalapa	135	97	19	2	25	2	7	55	42
5	S.Okkalapa	176	175	26	9	81	6	12	134	41
6	Shwepyithar	52	51	11	0	6	2	8	27	24
7	Thanlyin	264	248	55	7	26	2	10	100	148
8	Thakata	196	168	58	8	32	1	8	107	61
9	Kyimyindine	208	208	39	1	15	4	16	75	133
10	Hlaingtharyar	194	171	52	14	23	7	46	142	29
11	Latha	29	26	7	0	7	1	0	15	11
12	Taikkyi	95	87	25	1	18	1	1	46	41
13	Bago	316	310	30	12	51	9	64	166	144
14	Pyay	187	178	43	1	33	4	38	119	59
15	Mawlamyaing	130	130	20	0	16	1	14	51	79
16	Hpa-an	275	251	90	1	127	0	13	231	20
17	Sittway	20	16	3	2	6	0	1	12	4
18	Phyarpone	328	278	102	5	99	2	61	269	9
19	Aung MyayThar Zan	210	202	38	5	31	6	5	85	117
20	Chan Aye Thar Zan	134	134	33	0	45	0	0	78	56
21	Chan Mya Thar Si	81	79	13	1	3	0	1	18	61
22	Mahar Aung Myay	148	148	32	3	37	5	3	80	68
23	Kyaukse	87	87	25	1	20	0	30	76	11
24	Myingyan	126	97	12	2	16	5	18	53	44
25	Meiktila	300	202	21	1	12	2	102	142	60
26	Pyinmana	113	106	26	0	2	0	5	33	73
27	Magway	64	55	7	1	7	1	4	20	35
28	Pakokku	160	160	6	2	45	3	39	95	65

29	**Monywa**	280	213	65	7	24	1	9	106	107
30	**Lashio**	50	50	7	0	6	1	14	28	22
31	**Kyaukme**	104	104	46	3	27	2	26	104	0
32	**Muse**	0	0	0	0	0	0	0	0	0
33	**Taung Gyi**	251	218	20	0	5	0	22	47	171
34	**Myitkyinar**	112	98	10	1	29	9	24	73	25
35	**Pathein**	150	149	26	0	38	1	44	109	40
Total		5541	5058	1117	116	1036	91	664	3029	2029

Attached Townships

No.	Name of townships (attached)	No. of TB suspect referred for diagnosis	No.of feedback received	Smear (+) TB patients put on TB treatment		Smear (-)TB patients put on TB treatment			No. of Total TB	No. of Non-TB
				Cat I	Cat II	Cat I	Cat II	Cat III		
1	Pharkhant	0	0	0	0	0	0	0	0	0
2	Namkam	10	10	0	0	0	2	2	9	1
3	Thipaw	3	3	0	0	0	0	0	3	0
4	Kalaw	0	0	0	0	0	0	0	0	0
5	Naungshwe	0	0	0	0	0	0	0	0	0
6	Pindaya	0	0	0	0	0	0	0	0	0
7	Pyinoolwin	168	168	0	2	6	2	1	22	146
8	Amarapura	24	24	0	0	7	1	0	12	12
9	Patheingyi	30	27	3	0	3	0	1	7	20
10	Pyigyitagon	41	41	0	0	1	1	2	24	17
11	Myitthar	140	140	0	1	45	1	60	140	0
12	Sintkaing	110	110	0	1	49	2	39	110	0
13	Taungtar	4	1	3	0	0	0	0	1	0
14	Natogyi	35	33	2	0	12	0	8	24	9
15	Sagaing	42	42	0	0	15	0	8	29	13
16	Naypyitaw (Laway)	5	5	0	0	0	0	2	4	1
17	Nyapyitaw (Tatkone)	29	28	1	0	0	0	7	28	0
18	Wundwin	43	15	28	0	1	0	7	13	2
19	Ma Hlaing	3	1	2	0	0	0	0	0	1
20	Tharzi	21	14	7	0	0	0	11	12	2
21	Pyawbwe	70	41	29	1	2	0	18	32	9
22	Yamethin	133	120	13	0	16	2	35	81	39
23	Padaung	56	56	0	4	11	1	17	51	5
24	Pauk kaung	319	319	0	13	69	4	120	318	1
25	Shwetaung	105	105	0	4	0	0	4	41	64
26	Thayawaddy	37	29	8	0	2	0	1	9	20
27	Lapatan	58	41	17	0	4	0	3	18	23
28	Minhla	85	74	11	0	0	0	0	10	64

29	Oakpho	16	11	5	0	0	0	0	4	7
30	Gyobingyauk	7	2	5	0	0	0	0	0	2
31	Nattalin	11	7	4	0	0	0	0	0	7
32	Zigone	42	36	6	0	2	0	1	11	25
33	Paungde	116	73	43	0	1	0	0	17	56
34	Thanutpin	2	2	0	1	0	0	0	1	1
35	Waw	5	5	0	0	2	0	1	5	0
36	Taungoo	15	12	3	0	3	0	0	12	0
37	DaikOo	159	150	9	2	4	4	89	150	0
38	Oaktwin	65	59	6	1	2	1	9	33	26
39	Phyuu	231	201	30	0	6	0	157	186	15
40	Yetarshay	37	19	18	0	1	0	2	13	6
41	Sanchaung	25	25	0	1	4	1	1	17	8
42	Ahlone	43	43	0	3	4	0	0	17	26
43	Kamaryut	92	92	0	2	23	4	0	63	29
44	Lanmadaw	36	28	8	0	8	0	0	17	11
45	Pabedan	93	60	33	0	17	0	7	33	27
46	Kyauktada	27	21	6	1	6	0	0	9	12
47	Dawpon	79	71	8	5	10	1	3	42	29
48	Pazuntaung	27	20	7	3	9	1	2	19	1
49	Botahtaung	33	25	8	1	10	1	2	19	6
50	Mingalataungnyunt	51	42	9	2	17	0	4	34	8
51	East Dagon	78	78	0	0	27	1	3	51	27
52	Dagon Seikkan	17	17	0	0	8	0	1	17	0
53	Bahan	0	0	0	0	0	0	0	0	0
54	Tarmwe	49	35	14	2	6	2	1	31	4
55	Thingungyun	130	130	0	9	68	3	9	130	0
56	Mayangone	51	51	0	1	18	0	0	33	18
57	Hlaing	68	58	10	0	14	1	13	44	14
58	Mingaladone	11	10	1	0	1	0	2	3	7
59	Hmawbi	58	58	0	0	10	1	2	24	34
60	Hlegu	33	21	12	0	2	0	8	11	10
61	Kyuaktann	27	26	1	0	3	0	3	13	13
62	Seikkyi-Kanaungto	0	0	0	0	0	0	0	0	0
63	Dala	102	101	1	5	45	3	20	97	4
64	Khayan	31	29	2	2	3	0	4	21	8
65	Tonekwa	52	49	3	0	5	2	2	22	27
66	Twantay	93	76	17	3	10	0	4	26	50
67	Kungyangone	50	38	12	0	0	0	6	12	26
68	Kawhmu	30	25	5	0	5	1	3	11	14
69	Paung	56	56	0	0	1	0	40	50	6
70	Mudone	19	19	0	0	0	0	4	18	1
71	Kyeikmayaw	37	37	0	0	3	0	12	17	20

72	Hlaingbwe	146	146	0	6	0	3	78	143	3
73	Pauk Taw	0	0	0	0	0	0	0	0	0
74	Kyauktaw	15	15	0	0	9	0	0	15	0
75	MraukU	7	7	0	1	1	0	2	7	0
76	Kyaiklatt	165	162	3	0	7	0	127	154	8
77	MaUbin	21	21	0	0	2	1	6	16	5
78	Nyaungtone	113	113	0	0	15	3	11	72	41
79	Pantanaw	0	0	0	0	0	0	0	0	0
80	Kangyidauk	71	71	0	3	17	0	3	65	6
81	Kyaunggon	182	182	0	3	2	0	0	37	145
Attached Total		4495	4082	413	83	654	50	988	2840	1242
Main total		5541	5058	1117	116	1036	91	664	3029	2029
Grand Total		10036	9140	1530	199	1690	141	1652	5869	3271

*There are 5 TB patients (3 from Meiktila, 1 from insein & 1 from Hlaing) referred to NTP and diagnosed as MDR - TB.

Table 24. Contribution of MMA Scheme III (2009-2012)

Years	TB suspected cases screened	Cat I (+)	Cat I (Neg. & EP)	Cat II	Cat III	Total
2009	2,329	558	469	114	654	1,795
2010	3,778	655	677	109	812	2,253
2011	4,902	799	900	149	1148	2,996
2012	4,204	872	904	141	1189	3,106

Table 25. Contribution of PSI Myanmar (2004-2012)

Years	TB suspected cases screened	Cat I (+)	Cat I (Neg. & EP)	Cat II	Cat III	Total
2004	3,530	840	256	199	927	2,222
2005	11,048	2,262	571	396	2,311	554
2006	19,798	3,560	1,200	556	4,116	9,432
2007	23,607	3,837	1,694	589	4,023	10,143
2008	24,307	4,137	1,921	598	3,683	10,339
2009	31,881	5,262	2,761	694	6,628	15,345
2010	37,076	5,624	3,461	809	6,854	16,748
2011	44,519	6,380	4,223	974	9,055	20,632
2012	**58,820**	**7,235**	**4,371**	**1,119**	**11,186**	**23,911**

Note: Transferred in Patients were not included.

Population Services International (PSI) started collaborating with NTP in March 2004. PSI has organized the Private Practitioners and run the "Sun Quality Clinics" as DOT units. TV spots concerning TB are also aired every year. The achievement of PSI became improved on expanding the township coverage.

Data from PSI for 2007-2011, described in previous annual reports were less than those described here because of early reporting to NTP. Therefore, actual data from PSI for 2007-2011 were updated in this report.

Figure 8. Proportion of New Smear Positive TB Patients contributed by NTP and Partners (2012)

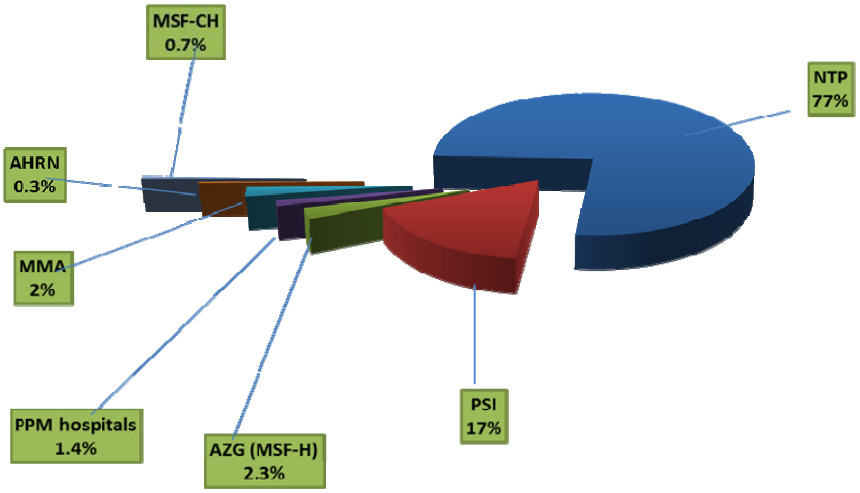
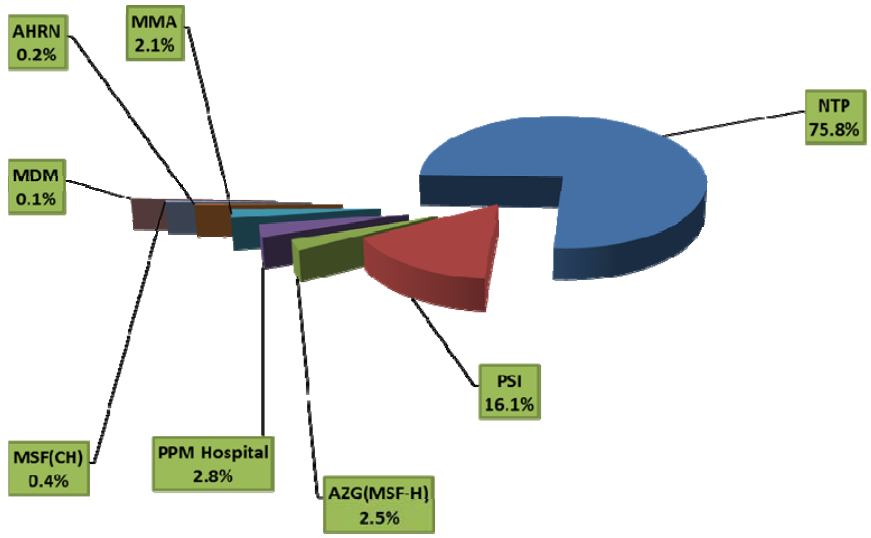


Figure 9. Proportion of All Forms of TB Patients contributed by NTP and Partners (2012)



The Case Detection Rate (CDR) of new smear positive cases for 2012 was 77% (Partners' contribution counted). Looking at partners' contributution to new smear positive cases detected in 2011, PSI found 17%, MMA 2% and MSF-Holland did 2.3% each, MSF-Switzerland 0.7%, AHRN 0.3%, MDM 0.04% and PPM hospitals 1.4%. For all forms of TB cases, PSI contributed 16.1%, MSF-Holland did 2.5%, MMA 2.1%, MSF (CH) 0.4%, AHRN 0.2%, MDM 0.1% and PPM hospitals 2.8%.

NTP started collaborating with Medicines Sans Frontiers (MSF-Holland) in 2001 at Waingmaw and Moemauk townships in Kachin State. Kachin State TB centre supported anti-TB drugs to MSF, starting in November, 2004. In 2011, MSF-Holland (MSF-H) worked in Kachin, Rakhine, Shan States and Yangon Region. MSF-H mainly focused on HIV co-infected TB patients, providing not only diagnosis and treatment, but also food and patients support during the treatment. Some of the HIV co-infected TB patients got ART at MSF clinics in Kachin State. MSF-Switzerland also treated TB patients and sent reports to NTP.

b. International Standards for Tuberculosis Care

The international Standards for Tuberculosis Care (ISTC) have been based on a wide global consensus of appropriate practices in TB diagnosis and treatment. They are complementary to the PPM approaches described above and should be actively promoted and used to help engage all care providers. The standards of care are evidence-based. They can be used to secure a broad base of support for TB control efforts.

NTP introduced ISTC in Myanmar since 2009 and disseminated to all the medical universities and Regions/States. MMA also disseminated ISTC to General Practitioners in their project townships and other professional associations. In 2012, ISTC (21) standards were disseminated at all the Regions/States and academic institutions.

v. Empower people with TB and communities

a. Advocacy, communication and social mobilization

In the contest of wide-ranging partnerships for TB control, advocacy, communication and social mobilization (ACSM) embrace: *advocacy* to influence policy changes and sustain political and financial commitment; two-way *communication* between the care providers

and people with TB as well as communities to improve knowledge of TB control policies, programmes and services; and *social mobilization* to engage society, especially the poor, and all allies and partners in the campaign to Stop TB. Each of these activities can help build greater commitment to fight TB.

People with TB and community members can make TB services more respective to community needs, but they are not yet organized broadly for their involvement in TB control. The activity to involve registered TB patients in TB Control was started at 6 townships in 2008. TB registered patients served as informers in the communities and referred the TB suspects to TB centres for diagnosis, but it was not much effective due to the limited funding. Most of the implementing partners started the community based TB care at different areas with the support of 3DF since 2007-2008. Therefore, NTP developed the guideline with WHO after conducting two central level workshops.

Based on the findings from nationwide Knowledge, Attitude and Practice (KAP) Survey, NTP developed the Advocacy, Communication and Social Mobilization (ACSM) materials together with Health Education Bureau of Department of Health so that ACSM activities could be held at different levels. To review the effectiveness of ACSM and community involvement activities, a second nationwide KAP survey was planned for 2017.

Workshops on ACSM activities were also accomplished, and ACSM packages and new IEC materials were produced. Besides, public service announcement, air campaign TV spot, communication materials and production of video clips were developed with Global Fund support. Targeted media campaigns were also organized in Yangon and Mandalay with media and journalists. Old TB patients were advocated to be involved in TB control, and patient empowerment workshops were conducted in all Regions and States.

NTP has also commemorated World TB Day/Week ceremony and activities every year since 1996. In 2012, commemoration ceremonies were carried out at central, all regions/states and district levels.

World TB Day Activity, 2012

The Central level World TB Day commemoration ceremony was held on 24th March, 2012 at Banquet Hall, Myanmar International Convention Centre (MICC) in Nay Pyi Taw. The Slogan for the year 2012 was “Stop TB in my lifetime” and it was translated as “**တစ်သက်တာတီဘီကင်းဝေးရေး၊ အားလုံးပါဝင်ဆောင်ရွက်ပေး”** in Myanmar language. NTP achieved the

highest political commitment in World TB Day 2012 since the Vice-President Dr. Sai Mauk Kham delivered the opening speech in commemoration ceremony. Dr. Pe Thet Khin, Union Minister for Health, read out the formal message of the President of the Republic of the Union of Myanmar.

Figure 10. The Vice-President delivering the opening speech in commemoration ceremony

Figure 11. The Union Minister for Health reading out the formal message of the President of the Republic of the Union of Myanmar

Then, Dr. H.S.B. Tennakoon, WHO Resident Representative read out the message of the Regional Director of WHO Southeast Asia Region.

The Vice-President, the Minister for Health, and invited guests viewed the World TB day mini exhibitions presented by NTP and implementing partners. There were (370) attendees from Ministry of Health, other Ministries, UN Agencies and implementing

partners. The donated materials such as World TB Day pamphlets, posters, bags, T-Shirt, handkerchief from implementing partners were distributed at the ceremony.

b. Community participation in TB care

Community participation in primary health care is not a new idea. It implies establishing a working partnership between the health sector and the community – the local population, especially the poor, and the TB patients, both currently on treatment and cured. Community participation in effective TB control can result in improved case detection rates and treatment success rates through decreased default and transfer out rates.

Community-based TB Care

Community-based TB care activity was introduced in 2011. Implementation of community-based TB care is under the guidance and support of NTP. All local NGOs and some INGOs take part in community TB care. Workshop on evaluation of partners' contribution on CBTC was conducted in February 2013. Guideline for community based TB care (CBTC) is being developed by CBTC working committee currently.

Figure 12. Contribution by community volunteers to total TB cases (2012)

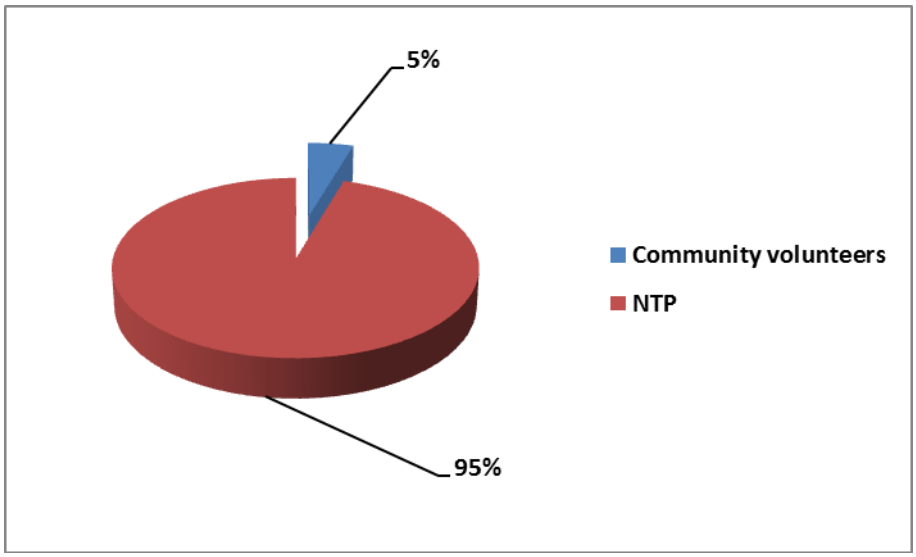
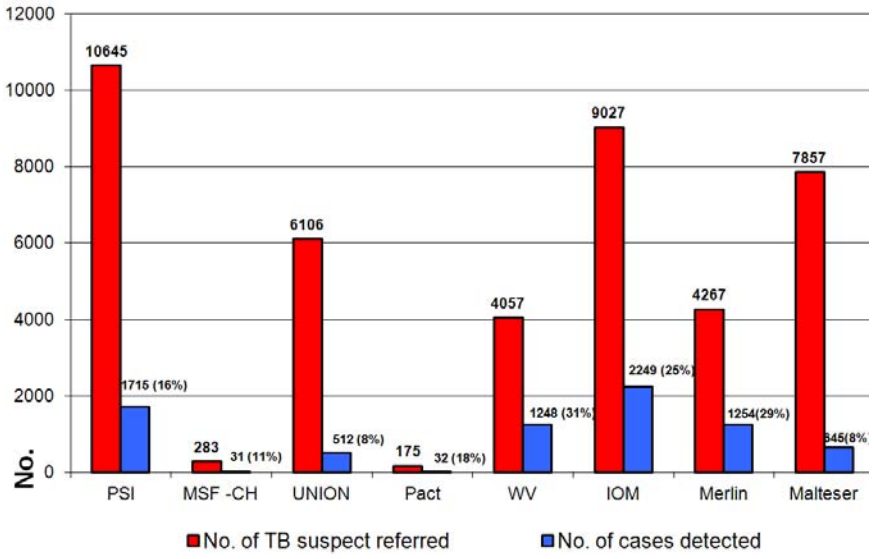
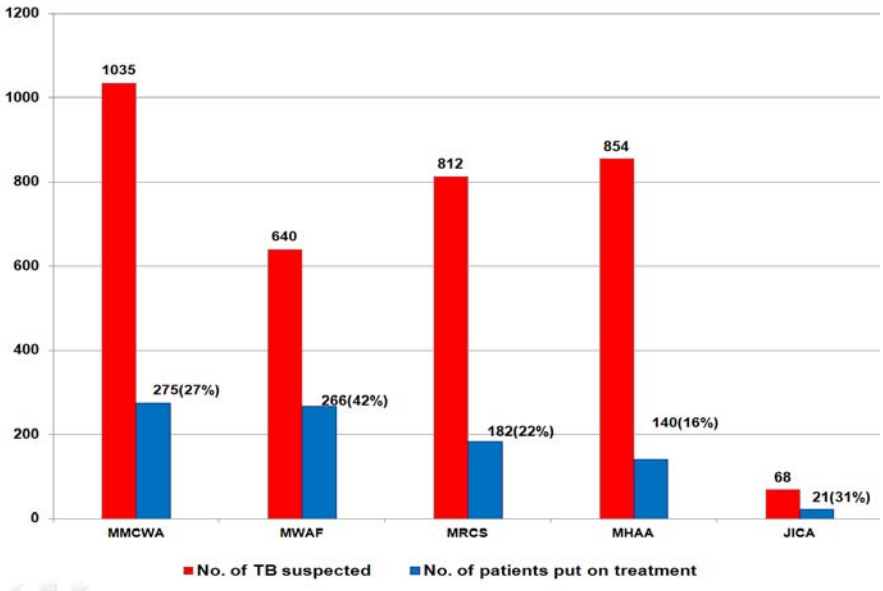


Figure13. Contribution of INGOs in TB case detection (all forms) using community volunteers (2012)



The figure showed the community based TB care activities conducted by the implementing partners (PSI, MSF-CH, Union, Pact Myanmar, World Vision, IOM, Merlin, Malteser) and the number of people screened for TB and TB cases (all forms) detected.

Figure 14. Contribution of Local NGOs in TB case detection (all forms) using community volunteers (2012)



c. Patients' Charter for Tuberculosis Care

The Patients' Charter outlines the rights and responsibilities of people with TB and complements the ISTC for healthcare providers. It is based on the principles of various international and national charters and conventions on health and human rights. Its purpose is to empower people with TB and communities through this knowledge and to make the patient-provider relationship mutually beneficial.

vi. Enable and promote research

a. Programme-based operational research

The Stop TB Strategy consolidates DOTS implementation and involves the implementation of several new approaches for tackling the challenges facing NTP. In order to put these approaches into practice, programme-based operational research should be a core component of NTP work. Designing and conducting locally relevant operational research can help in identifying problems and workable solutions, testing them in the field and planning for the scaling up of activities.

National TB prevalence Survey was conducted in 2009, concluded in 2010 and the report was already published and disseminated on 15th December, 2010. Comparing with the 1994 national survey, the 2009-2010 survey showed a higher prevalence of smear-positive TB, using both CXR and symptoms as screening tools.

Nationwide knowledge, attitude and practice on TB control survey was also conducted in 2010, and planned for the second time in 2017.

In order to measure progress towards achieving the MDGs, national TB prevalence survey and TB mortality survey will be conducted in 2015. Tuberculosis Mortality Survey was planned to conduct in early 2013 at two sites as a preliminary survey for the nationwide one. Third nationwide drug resistant TB survey was also held in 2012, but still not concluded yet. In addition, surveys on second line anti-TB drug resistance among MDR-TB cases will be performed. TB-HIV annual sentinel surveillance will also be continued, in collaboration with NAP, at 25 sentinel sites and will be expanded up to 40 sites at the end of 2015.

Operational research studies depending on the problems are conducted as necessary in collaboration with Departments of Medical Research and other academic Institutions.

NTP conducted necessary surveys and presented the findings at national and international research congress. The abstracts of the presented posters and published papers are recorded.

Development of a model of community DOTS in Pyinmana township, Myanmar

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2 Japan International Co-operation Agency (JICA- MIDCP)

Abstract

Background: National TB Prevalence Survey conducted in 2009 revealed that the prevalence of TB is more than WHO expected. Therefore, NTP needs to strengthen all measures of case finding. In July 2011, NTP decided to introduce Community DOTS in order not only to treat but also to find more TB cases in the communities. The most distinctive feature of this Community DOTS is no monetary incentives for the community health volunteers (CHVs) even though some INGOs already working on Community DOTS in Myanmar provide high monetary support.

Objective: To identify facilitating and hindering factors at the initial phase of development of Community DOTS.

Method: NTP gave advocacy and training in accordance with the guideline for referral of TB suspects, health education and provision of DOT. Total (29) CHVs (10 from rural, 19 from urban) were trained. Monthly evaluation meeting, supervisory visits were regularly conducted.

Results: During the first (7) months, (21) TB suspects were referred while health education was given to the total of 838 people in their community. Out of 21, 12 (57%) were confirmed as TB cases and provided DOT. Only one patient was found out of (77) TB suspects by doing contact tracing. During evaluation meeting, we found that activities of CHWs are limited because sputum transport charges from their villages to township were needed. A selection criterion for the volunteer is crucial to present the drop out and yield of TB cases.

Conclusion and recommendation: Technical support by the NTP staff facilities CHVs' activities in the initial stage of Community DOTS. Some CHVs face the challenges to gain the trust of TB patients and the communities. Selection of the CHVs is vital role in successful Community DOTS.

(*Poster presented at **43rd Union World Conference on Lung Health, 13-17 November 2012, Kuala Lumpur, Malaysia-PC-431-17***)

Role of informal health care providers in TB control in selected township, Myanmar

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1 National TB control Programme, Department of Health

2 Department of Medical Research (Lower Myanmar),

3 MMA TB project

Abstract

A cross- sectional survey was conducted in Bago township to explore the role of voluntary health workers (VHWs) and untrained health care providers in TB management and control. A total of 137 participants participated in quantitative survey, which included 24 quacks. In-depth interviews were conducted with 14 quacks. Seventy five percent of quacks and 15% of volunteers are practicing health care for main earning. About 87% believed TB is a health problem in their region. Majority of the respondents had correct knowledge regarding transmission however, there are still misconceptions. Chronic cough (73%), fever (62.8%) and weight loss (52.6%) are the most mentioned symptoms. Low knowledge on TB treatment was found. According to qualitative findings, quacks are giving TB treatment to some extent in rural areas. Misuse of TB drugs is found to be common among the quacks. Eighty five percent stated they have collaboration with local health centres, mostly for referring TB suspect cases. Seventy eight percent desired to undertake a training on TB. VHWs and quacks may have a role in identifying TB suspects and timely referral for effective treatment. Based on the findings, it is recommended to engage these health care providers in community based TB care and control , to provide training focusing on case detection, health education, referral and DOT provision, to reinforce the existing drugs legislation (emphasizing on anti-TB drugs), and to establish the monitoring mechanism for informal health care providers. Based on the recommendations, TB training will be provided to VHWs and untrained health care providers in Bago township in 2012.

Poster presented at ***43rd Union World Conference on Lung Health, 13-17 November 2012, Kuala Lumpur, Malaysia- PC-467-17***

Success and challenges for engaging all GPs in PPM DOTS: Lessons learnt from pilot project in two selected townships, Myanmar

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3 Department of Medical Research (Upper Myanmar), Pyin Oo Lwin, Myanmar

Abstract

Introduction: Public-Private Mix DOTS (PPM-DOTS) was established in Myanmar in 2003 with Myanmar Medical Association (MMA) and Population Services International (PSI). However, engaging all General Practitioners (GPs) under PPM DOTS was still a challenge. Objective: to describe challenges and possible ways to engage all GPs under PPM-DOTS through township coordination.

Methods: Utilization focused evaluation which is a cyclical process of conducting assessment and action. All GPs (148) in two townships were involved for questionnaire survey. Twenty three key informant interviews with staffs from public sector, MMA and PSI were conducted in 2010.

Results:
Initially 48% of GPs did not participate in PPM-DOTS. Conducting proper advocacy meeting, invitation of GPs in person by visiting from one clinic to another, including agenda of the meeting in invitation letter and selecting preferred topics and time of GPs for meetings were key factors for organizing more GPs. Most concern for GPs to involve in PPM DOTS was burden of paper works. About 80.5% of GPs suggested conducting township coordination meeting over the weekends and 45.3% preferred 1pm to 3 pm. Turnover rate of GPs, attitude of public staff and funding support to organize regular meetings were identified as main challenges. Almost all participants convinced that township coordination meetings are beneficial for GPs and public sector. It should be initiated through Township Health Department in collaboration with private sectors and also linked with other health projects.

Conclusion: Engaging all GPs in PPM framework would be possible while recognizing the existing challenges. Township coordination is essential and feasible. This is the first initiative in Myanmar. It should be conducted not only for TB control but also for other diseases.

Poster presented at ***the 2nd Global Symposium on Health Systems Research, Beijing, China (31Oct-3Nov2012).***

Identifying effective health education channels for TB control by community participation in rural and urban areas of Myanmar

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2. National Tuberculosis Programme, Myanmar

3. Department of Health, Myanmar

4. World Health Organization, Country Office for Myanmar

5. World Health Organization

Abstract

Background: Advocacy, Communication and Social Mobilization (ACSM) has an important role in the control of TB which is a major public health problem in Myanmar. It is necessary to identify ACSM strategies by involvement of local community.

Objectives: The study aims to identify effective health education channels for TB control according to different geographical regions in Myanmar.

Methods: Face-to-face interviews were conducted with 7519 community members in 50 townships. Preferable and effective methods for health education and their reasons were explored by 28 Focus group discussions (FGDs) and pair wise ranking in rural and urban areas.

Results: About 93.9% have heard about TB and 45.9% heard about DOTS. The most common source of information about TB was from family members and friends (55.6%) television (TV) and video (45%), health workers (25.2%), and radio (17.9%) respectively. However, qualitative findings showed TV was the least effective since majority did not watch TV. Survey findings showed 60.5% of community preferred health education talk although it had some limitations such as most men did not attend and less opportunity to ask questions. Majority of participants especially in rural areas of states highlighted that radio broadcasting through FM in the local language became popular and accessible for general public. It was suggested as the most practical way to disseminate health messages particularly for ethnic groups in rural areas.

Conclusion: The findings from this study were incorporated for developing ACSM tools and intensifying ACSM strategies for TB control in Myanmar.

Poster presented at ***43rd Union World Conference on Lung Health, 13-17 November 2012, Kuala Lumpur, Malaysia-PC-868-15***

Effectiveness and role of TB patient Self Help Groups in TB control activities in Myanmar: An Operational Research

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2 National Tuberculosis Programme, Nay Pyi Taw, Myanmar

3 World Vision Myanmar, Yangon, Myanmar

Abstract

Background: Previous studies in Myanmar showed that old TB patients influenced choice of treatment for TB suspects. It is essential to examine ways of facilitating TB patient's involvement in addressing TB, one of 6 STOP TB strategies, in Myanmar. The study aimed at describing the development of Self Help Groups (SHGs) and their roles in addressing TB.

Method: Intervention with SHG strategy and intervention without SHG strategy were assigned to communities that were matched with demographic information in two townships. Baseline and endline assessments were carried out in both areas through face-to-face interviews with 1020 TB patients and family members, document review, 14 focus group discussions, 28 key informant interviews and observations.

Results: Activities of SHGs contributed to 23% of the total referral and 13% of the sputum positive TB cases of two townships. The mean difference in knowledge and attitude scores between the baseline and endline measurements were significantly higher in the areas where the SHG strategy was used than the control area. (mean knowledge 3.01 v.s 1.76 and mean attitude 2.26 v.s 1.15) Main activities of SHGs were referral, health education and providing DOT. Moreover, SHG members gained self reliance and confidence to carry out their activities over one year.

Conclusion: Empowering TB patients through SHGs is an effective strategy for TB control. Consistent and systematic supervision and support to SHGs by the implementing organizations, appraising the role of SHGs by public sector and local authority and strong support from key stakeholders and donors are essential for yielding impact.

Poster presented at ***43rd Union World Conference on Lung Health, 13-17 November 2012, Kuala Lumpur, Malaysia-PC-624-15***

Evaluation of clinical, bacteriological, pharmacological factors and immunological responses of Pulmonary Tuberculosis Patients

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Aye Aye Win[1] ,Min Wun[1], Khin Hnin Pwint[1] and Kyi Kyi Myint[1]

1 Department of Medical Research (Lower Myanmar)

2 National TB Program, Department of Health

Abstract

Tuberculosis is one of the five major diseases in Myanmar and treatment failure is one of the unwanted outcomes in tuberculosis management. An analytical study was carried out from January 2011 to December 2011 at Mingalardone and Mingalar Taung Nyunt TB center, Yangon to evaluate the clinical, bacteriological, immunological responses and pharmacokinetics of Rifampicin and Isoniazid. Out of 1290 TB patients, 50 newly diagnosed sputum positive patients, 50 Category I cured and 50 Category I treatment failure patients were randomly selected for socio-economic, clinical and immunological study, among which 30 patients were reselected for the pharmacokinetic evaluation. Methodology involved the use of proforma for details on knowledge, economic and other factors influencing their treatment responses, ELISA test for immunological study, culture and drug sensitivity testing for bacteriological study and chromatographic analysis for pharmacokinetic study. Serum Interferon – γ level for immunological responses showed significantly higher in treatment failure cases than new cases and blood concentration of rifampicin was significantly lower in Cat I regime failure patients than cured patients. In bacteriology study of 15 Cat I treatment failure patients, MDR TB was found in 4 (26.6%) isolate, 3 (20%) isolates were resistant to Isoniazid and Ethambutol and 8 (53.3%) isolate were sensitive to all 4 drugs. In this group, 8 (53.3%) patients were still sputum positive after completion of the Cat II regime. It was concluded that pharmacological factors (reduced bioavailability) and bacteriological factors (drug resistant strain) are major risk factors of treatment failure and the development of MDR-TB.

Poster presented at ***Myanmar Health Research Congress 2012 and won Best poster award for 3rd Prize***

Community-based TB care and control: involvement of volunteers trained by international organizations in Myanmar

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Abstract

To assess existing situation of involvement of international non-governmental organizations (INGO) in TB control activities through community volunteers, a cross-sectional study was conducted during 2012 in Loikaw and Mudon Townships where World Vision and International Organization for Migration are working. After getting consent, 54 volunteers were asked by questionnaire and 58 respondents by guideline in detail by trained interviewers. Volunteers, who are DOT provider, received some incentives. Almost all volunteers from both organizations involved actively in case detection, TB suspect referral, getting sputum results and health messages dissemination. During last one year, volunteers referred more TB suspected patients than contacts (maximum 55 and 90 TB suspected patients vs. maximum 34 and 10 contacts from the organization respectively). They are well recognized, accepted and heavily depended by community. During treatment course, patients received care and free supports from the organization through volunteers. This condition is questionable to sustain such activities for the long run, if international support will stop one day. Midwives were rarely contacted by patients because midwives could not spare time for accompanying patients to TB centre, sending sputum cups and getting sputum results due to routine duties and unaffordable for transportation expense. A little weak collaboration between midwives and volunteers at township level was observed. Findings revealed that volunteers contributed to NTP in raising community awareness, case detection, treatment completion and treatment success to some extent. It also indicated of possibility to utilize trained volunteers by the respective township health department once the INGOs will pull out someday.

Poster presented at ***Myanmar Health Research Congress 2012***

Community participation in TB control:

Willingness of TB patients in participating TB control in selected Townships, Upper Myanmar

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2 National TB Programme, Department of Health

Abstract

The cross-sectional descriptive study was conducted in Laukkai and Kunlong Townships, Northern Shan State, Myanmar using both quantitative and qualitative methods to explore wiliness of TB patients in participating TB control in hard-to-reach area. One hundred face-to-face interviews and 24 in-depth interviews were done with TB patients taking treatment at Laukkai and Kunlong District Health Departments and Asian Harm Reduction Network, Laukkai during 2012. Most patients were Kokang (67%) and Bamar (12%). Common age group was 25-34 years, male female ratio was 2.03: 1 and 76% were married. Forty-five percent had never attended school and 49% were farmers. Fifty-eight percent were Buddhist and 34% worshiped ancestors. Seventy-five percent were from Laukkai, 25% from Kunlong Township. Eighteen-percent were retreated and 94% took the treatment without a provider. Ninety-nine percent of them were willing to help symptomatic patients getting treatment such as referring or accompanying them to health facilities. Some of them could take the anti-TB drugs from the health facility instead of the patients during follow up. Almost all of them said they could help patients from the same community only. Reasons for not being able to help patients from other community were time constraint, transportation and financial limitation and being not familiar with the patients. Although 88% had positive attitude to be DOT provider, they perceived that family members were the most suitable person as it was a daily-job. Most of the patients had medium and good knowledge level on TB and its management and they could share their experiences to the symptomatic patients in their community but none of them could provide the information properly.

Conclusion: TB patients from hard-to-reach area could be included in case finding in their community provided with proper training.

Assessment of General Practitioners' participation on TB management and treatment outcome in PPM DOTS in Myanmar: Patients' Perspective

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1) MMA PPM TB Project 2) Research Scientist, DMR 3) Formerly Research Scientist, DMR 4) Program Manager, NTP, DOH

Abstract

Tuberculosis (TB) is one of the major public health problems in Myanmar. According to Stop TB strategy, PPM approach for TB control in Myanmar initiated in 1998 and established in 2003. It is known fact that involvement of private GP is essential for effective TB control. Yet, there had been still lacking information on management of patients, patients' treatment outcome, regular accessibility to GPs, acceptability of patients on GPs' DOTS management.

Objectives :1) To document case notification, treatment outcomes of TB patients registered and treated under MMA PPM GP clinics through record review **2)**To determine the patients' perspectives on accessibility, availability and affordability of PPM DOTS services under MMA PPM GP Clinics. **3)** To explore the strength and weakness of GPs ' participation in PPM DOTS implementation in Myanmar by qualitative approach

Methodology: Cross sectional descriptive study was conducted. Record review was done for all registered TB patients treated in MMA PPM GP clinics within 4thQr 2010 to 3rdQr 2011. Study population includes all forms of TB patients, age 15 years and above, their family members, community leaders and members in MMA PPM implementing (6) townships. Data collection was conducted during Aug & Sept 2012. 297 respondents (258 TB patients & 39 proxy) were interviewed using structured questionnaire. In depth interviews (IDIs) were conducted with (9) TB patients. (11) respondents were conducted for KII. Epidata 3.1, SPSS version 16 and "r" were used for data analysis. Qualitative data from IDI and KII were transcribed and analyzed according to themes and subthemes. Ethical approval was obtained from the Protocol and ethical review board of the DMR (Lower Myanmar).

Findings and discussion: It was found that there were high treatment success rate and good accessibility, affordability and availability of TB patients under MMA PPM DOTS services. However, only 21% of respondents knew the risk of drug resistant TB if there was treatment interruption. Only 17% of TB patients expressed that GPs provide information on infection control. There was a need for more programmatic support from MMA PPM TB Project for poor TB patients and also called for health talks about TB. It will be better if the project provides multivitamin supports for poor TB patients. Despite current PPM TB activities have been gaining momentum, need of some areas for improvement.

Conclusion: MMA PPM TB Project need to expand social and patient support program for poor TB patients and it also need to expand community based TB care. There will need to improve GPs' health education to clients with emphasis on infection control. Further research will be needed on GP's practice on screening contacts of index TB patients.

Research in progress

1. Effect of providing health education message on TB in local language through FM Radio in Southern Shan State (Dr. Saw Saw, Dr. Si Thu Aung, Dr. Thida, Dr. Thandar Lwin, Daw Khin Su Hlaing, Dr. Zaw Myint and Daw Khin Sandar Oo)
   Collaborations: DMR (LM), NTP and Health Education Department
   Grant: WHO/VC
2. Cost of alternative strategy for tuberculosis control in selected township, Myanmar: Focusing on TB patient Self Help Groups (Dr. Wai Wai Han, Dr. Saw Saw, Dr. Thandar Lwin, Dr. Tin Mi Mi Khaing and Dr. Thet Aung)
   Collaborations: DMR (LM), NTP and World Vision Myanmar
   Grant: WHO
3. Infection control measures in public TB centres in Myanmar: Focus on health facility, health care providers and patients (Dr. Yin Thet Nu Oo, Dr. Saw Saw, Dr. Thandar Lwin, Dr. Le Le Win, Dr. San San Shein, Daw Khin Sandar Oo)
   Collaborations: DMR (LM) and NTP
   Grant: WHO
4. Management of TB by public and private health care providers in hard-to-reach areas, Northern Shan State, Myanmar (Dr. Thida, Dr. Saw Saw, Dr. Thandar Lwin, Dr. Kyaw Zaw)
   Collaborations: DMR (UM), NTP and DMR (LM)
   Grant: WHO
5. Assessment of Effectiveness of active case detection using mobile team activities in hard-to-reach area, Laukkai Township, Northern Shan State, Myanmar (Dr. Thida, Dr. Thandar Lwin, Dr. kyaw Oo, Dr. Saw Thein & Dr. Thandar Thwin)
   Collaborations: DMR (UM) and NTP
   Grant: WHO

Surveys on process

1. Third Nationwide Drug Resistant Survey (Dr. Thandar Lwin, Dr. Si Thu Aung, Dr. Wint Wint Nyunt, Dr. Thyn Lae Swe and Dr. Aye Aye Thwe)
   Collaborations: NTP, NTRL and Upper Myanmar TB Laboratory (UMTBL)
   Grant: WHO/USAID

2. TB mortality survey in Pa-daung and Kawkareik Townships (Dr. Tinzar Naing, Dr. Ko Ko Zaw, Dr. Thandar Lwin, Dr. Wai Wai Han, Dr. Yin Thet Nu Oo, Dr. Kyi Maw Than)
   Collaborations: NTP and DMR (LM)
   Grant: WHO

b. Research to develop new diagnostics, drugs and vaccines

In Myanmar NTP cannot do the research to develop new diagnostic, drugs and vaccine.However, one study was conducted by DMR (LM) on diagnostic accuracy of Loop-mediated isothermal amplification (LAMP) method in diagnosis of tuberculous lymphadenitis.

Diagnostic accuracy of Loop-mediated isothermal amplification (LAMP) method in diagnosis of tuberculous lymphadenitis

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Abstract

While pulmonary TB is the most common presentation, extrapulmonary TB is an important clinical problem because the radiological and clinical features are often atypical and diagnostic confusion may arise when sputum smears are negative. Tuberculous lymphadenitis is one of the most frequent causes of lymphadenopathy and its diagnosis is usually made by histopathological examination (HPE). However it is not specific, needs high expertise and takes time, a diagnostic method that is less time consuming and has high sensitivity and specificity is desirable. Therefore this study was aimed to identify *Mycobacterium tuberculosis* in lymphadenitis cases using LAMP method and its comparative evaluation with HPE considered as gold standard was determined. A total of 72 left over lymph node samples from Pathology Department, Yangon General Hospital were investigated during November 2011 to September 2012. Out of them, 55(76%) were diagnosed as tuberculous lymphadenitis and 17(24%) were non-tuberculous lymphadenitis by HPE. LAMP diagnosed 57(79%) and 15(21%) as tuberculous lymphadenitis and non tuberculous lymphadenitis respectively. The sensitivity and specificity of LAMP compared to HPE were 93% and 65% respectively. The positive and negative predictive values of LAMP were 89% and 73% respectively. The agreement between two tests was 60% (Kappa=0.6). It was also found that area under the ROC curve= 0.817 (95% confidence level) showing diagnostic accuracy of LAMP method is good compare to HPE. These results indicated that

LAMP method was acceptable and because of rapidity, ease of application and cost effective make it to be a powerful tool for diagnosis of tuberculous lymphadenitis.

Poster presented at ***Myanmar Health Research Congress 2012***

Research in progress

1. Establishment of a research laboratory for molecular strain typing of *Mycobacterium tuberculosis* in Myanmar Under the project "Establishment of Laboratory for Research on Communicable Diseases" of DMR (LM) supported by KOICA (Korean International Cooperation Agency)

4. Special occasions

External technical support

Technical support was provided by WHO and GDF, Green Light Committee, JICA/JATA for NTP, Myanmar.

Table 26. International visitors in 2012

No.	Name and Designation	Duration	Remarks
1.	Dr. Knut Jakob Loennorth	17.1.2012 to 20.1.2012	World Health Organization
2.	Dr. C.N. Paramasivan	27.1.2012 to 1.2.2012	FIND
3.	Dr. Feng Cheng	19.2.2012 to 23.2.2012	USAID/RDMA FMS MDR-TB Project
4.	Dr. Michael Leonard Rich Ms. Minda Nicolas	7.3.2012 to 11.3.2012	World Health Organization
5.	Mr. Chandra Prakash Jain	2.4.2012 to 4.4.2012	World Health Organization
6.	Dr. Nevin Charles Wilson Dr. Phillipe Clevenbergh	27.4.2012 to 6.5.2014	International Union against Tuberculosis and Lung Diseases (IUATLD)
7.	Mrs. Chiharu ABE	11.5.2012 to 12.5.2012	International Techno Centre
8.	Dr. Puneet Dewan	11.7.2012 to 18.7.2012	World Health Organization
9.	Mr. Hazim TIMIMI Dr. Antoine PIERSON Mr. Flavien GUEDEZ	10.12.2012 to 18.12.2012	World Health Organization
10.	Ms. Nigorsulton Muzafurova Dr. Maya Kavtaradze	12.12.2012 to 13.12.2012	GDF mission

Global Fund Round 9 Year 2

The Global Fund galvanizes support for the fight against AIDS, TB and Malaria, working with partners to support the most effective prevention and treatment. New advances in science are seized and practical experience is applied to defeat these diseases and remove them as threats to public health.

Myanmar country coordinating mechanism submitted the application with the title of "Scaling up of Tuberculosis control in Myanmar" to Global Fund round 9 grant in June, 2009. The GF round 9 grant included 2 phases, phase I is from 2011 to 2012 and phase II, 2013 to 2015. The Global Board approved the funding for initial two years of the proposal after Technical Review Panel (TRP) clarification was completed.The MOU between Ministry of health and GF was signed on July 2010.

The agreement between National Tuberculosis program (sub recipient) and united nation office for project services (principal recipient) for implementation of a grant in Myanmar was signed on March 2011. In June 2011, the proposal term (Phase 1) was started, which covers 289 out of 330 townships. Global Fund is a performance-based funding which ensures that funding decisions must be based on a transparent assessment of results along with time-bound targets. According to the portfolio of GF, total approved fund was USD 28,663,713 and USD 12,280,571 was disbursed in 2011 (year1). For the 2012 (year2), total USD 4,867,999 was disbursed in accordance with the budget line. The allotted budget for NTP was 14,455,550 USD for Phase I. The activities could start only in May, 2011 due to delay process in some areas.

According to performance framework of year 1 and year 2, there were four program indicators:

- Pursuing high quality DOTS: enhancing the quality and expanding services to all TB patients, to sustain and further improve case detection and treatment success rate.
- Addressing TB/HIV, MDR-TB and other challenges such as TB care for high risk groups in border areas and infection control
- Engaging all health care providers through Public-Private Mix DOTS, Public-Public Mix DOTS and introducing the International Standards of TB Care (ISTC) in other sectors
- Advocacy, Communication, Social Mobilization (ASCM) and community based DOTS in hard-to-reach areas by partner agencies.

NTP has shown momentous progress in “Top Ten” indicators of GF round 9 grants significantly six top ten indicators were achieved in target. Of 148,149 TB patients notified in Phase I Year 2, 42,909 patients were new smear positive. Totally 42,310 new smear positive TB patients were successfully treated achieving treatment success rate (TSR) of 85.7%. For Health System Strengthening, 2,757 Basic Health Staff were trained on TB management. Beside that 6,271 TB patients (aged 15 years and above) were tested for HIV at TB/HIV collaborative sites. In MDR- TB portion, 442 laboratory confirmed MDR TB patients were enrolled.

At the end of Phase I, NTP's achievement was A2 as shown as below:

Quantitative Indicator Rating (P8)

TB Grant → A 2

Performance Rating	
A1	> 100%
A2	100-90%
B1	60-89%
B2	30-59%
C	<30%
AVG performance on Top 10 TRAINING Indicators only	92%
AVG performance on TOP TEN indicators (including TRAINING)	91%
Number of TOP TEN indicators with B2 or C Rating	0
TOP TEN indicators rating	A2
AVG performance ALL indicators	99%
ALL indicators rating	A2
Intermediary Result for Quantitative Indicator rating	See Rating highlighted in the Matrix

	ALL indicators rating				
Top 10 Indicators Rating	A1	A2	B1	B2	C
A1	A1	A1	A2	A2	A2
A2	A2	A2	A2	B1	B1
B1	A2	B1	B1	B1	B2
B2	B1	B1	B2	B2	B2
C	B2	B2	B2	C	C

Intermediate Quantitative Rating result from the Matrix above	A2
Final Quantitative Rating	A2

The Global Fund has developed a new funding model that will allow it to invest more strategically, engage implementers and partners more effectively and achieve greater global impact. Myanmar NTP will start activities for new funding model in 2013.

Table 27. TB control activities under Global Fund (January 2012 to December 2012)

Service Delivery Area : Improving Diagnosis					
Activity	***Measurement unit***	***Planned***	***Completed***	***Achievement***	***Remark***
Mobile team activities (periurban and urban)	No.of mobile team missions	22	19	86%	
Active case finding using mobile team (hard to reach areas)	No.of mobile team missions	9	9	100%	
Active case finding using mobile team	No. of mobile team missions	20	17	85%	
Volunteer incentive for X ray operation	No.of townships	8	6	75%	Monywa, Myeik, Lashio, Myikyina, Pyay, Sittwe
Transport of sputum samples to Supra National TB Reference Laboratory (SNRL), Thailand	Frequency of transporting sputum samples to SNRL	1			Other funding used
Transport of sputum samples to Culture labs (NTRL & Upper Myanmar TB Lab) from Regions/States	No.of R/S transporting sputum samples to culture labs	17	13	76%	
Sputum collection centres	No. of townships conducting rotatory SCC at all RHC	60	48	80%	
Initial home visit and Contact tracing done by Basic Health Staff	No. of townships conducting contact tracing	294	282	96%	
Service Delivery Area : Monitoring and Evaluation					
Activity	***Measurement unit***	***Planned***	***Completed***	***Achievement***	***Remark***
Technical Strategic Group (TSG) Meeting	No. of meetings conducted	4	3	75%	
Annual Laboratory Evaluation Meeting (National)	No. of meetings conducted	1	1	100%	
Annual TB Evaluation Meeting (National)	No. of meetings conducted	1	1	100%	
Bi-annual TB Evaluation Meeting (Region/State)	No. of meetings conducted	34	34	100%	

Quarterly TB Evaluation meeting (200 selected townships)	No. of meetings conducted	800	752	94%	
Evaluation meeting on community based TB control activities done by MRCS in Mandalay	No. of meetings conducted	1	1	100%	
Quarterly cohort review meeting at 30 low performance townships	No. of meetings conducted	120	116	97%	

Service Delivery Area : Programme Management and Administration

Activity	*Measurement unit*	*Planned*	*Completed*	*Achievement*	*Remark*
Advocacy meeting and Training on GeneXpert installation	No.of meeting/training conducted	8	1	13%	
Evaluation meeting with Prison doctors in Nay Pyi Taw	No.of meetings conducted	1	1	100%	
Technical review meeting at the central level	No.of meetings conducted	4	1	25%	
Supervision from Central to Regions/States (17 S/D x 1 time)	No. of supervisory visits conducted	17	12	71%	
Supervision from Central to TB/HIV townships (once a year)	No. of supervisory visits conducted	18	12	67%	
Supervision from Central to border DOTS townships (once a year)	No. of supervisory visits conducted	6	4	67%	
Supervision of Microbiologist	No. of supervisory visits conducted	17	7	41%	
Supervision from Central to Public Public Mix DOTS hospitals (quarterly)	No. of supervisory visits conducted	40	20	50%	
Supervision from Regions/States to townships (once a year) including 22 MDR-TB townships, and Lab. Supervision	No. of supervision visits conducted	312	212	68%	

Service Delivery Area : Human Resource Development					
Activity	***Measurement unit***	***Planned***	***Completed***	***Achievement***	***Remark***
Training on leadership and management	No. of training sessions conducted	3	3	100%	
Refresher training on childhood TB management	No. of training sessions conducted	17	17	100%	
Training on DOTS strategy for health staff from Ministry of Home Affairs	No. of training sessions conducted	2	2	100%	
Refresher Training for BHS on 'Management of TB for health facility staff'	No. of training sessions conducted	92	90	98%	
Training on cohort review meeting	No. of training sessions conducted	32	32	100%	
Training on TB counseling	No. of training sessions conducted	20	20	100%	
Training on EQA for pathologist/microbiologist/ laboratory officers	No. of training sessions conducted	1	1	100%	
Training on External Quality Assurance (EQA) for STLS	No. of training sessions conducted	2			Used other funding
Training on External Quality Assurance (EQA) for controllers	No. of training sessions conducted	1	1	100%	
Refresher training on sputum microscopy for Grade II lab. technicians	No. of training sessions conducted	2	2	100%	
Training on tuberculin testing	No. of training sessions conducted	1	1	100%	
Training on sputum microscopy for new lab. Technicians	No. of training sessions conducted	2	2	100%	
Training on sputum microscopy for general hospitals and private laboratories	No. of training sessions conducted	2	2	100%	
Training on sputum collection centres	No. of training sessions conducted	10	10	100%	
Training for NTP/NAP staff on TB/HIV collaborative activities	No. of training sessions conducted	4	4	100%	
Training on Isoniazid Preventive Therapy (IPT)	No. of training sessions conducted	3	3	100%	
Training on Management of MDR-TB for TB hospital staff	No. of training sessions conducted	1	1	100%	

	Training for new project areas of MRCS volunteers	No. of training sessions conducted	4	4	100%	
	Refersher training for MRCS volunteers	No. of training sessions conducted	7	7	100%	
	Training on Public-Public Mix DOTS	No. of training sessions conducted	3	3	100%	Hap-an, Daewai Mawlamyaing
	Training for community volunteers on DOTS strategy	No. of training sessions conducted	74	74	100%	
	Advocacy and training for people with TB	No. of training sessions conducted	15	15	100%	
	Training on logistic Management Information System	No. of training sessions conducted	17	17	100%	
Objective : Address TB/HIV, MDR-TB and other challenges	***Service Delivery Area : TB/HIV***					
	Activity	***Measurement unit***	***Planned***	***Completed***	***Achievement***	***Remark***
	Meeting of central TB/HIV coordination body	No. of meetings conducted	1	1	100%	
	National evaluation workshop on TB/HIV	No. of meetings conducted	1	1	100%	
	Township TB/HIV committee meeting	No. of meetings conducted	72	63	88%	
	TB/HIV Sentinel surveillance	No. of sentinel sites	25	25	100%	
	Advocacy meeting for TB/HIV collaborative activities at newly expanded townships	No. of meetings conducted	3	3	100%	
	Service Delivery Area : MDR TB					
	Activity	***Measurement unit***	***Planned***	***Completed***	***Achievement***	***Remark***
	MDRTB Patients enrolled and bagan second line treatment	No. of patients	400	442	110%	42 patients were carried over from 2011 Budget
	Service Delivery Area : TB Care for High Risk Groups					
	Activity	***Measurement unit***	***Planned***	***Completed***	***Achievement***	***Remark***
	Township Advocacy meetings with stakeholders, political and health authorities for border TB control programme	No. of meetings conducted	6	5	83%	
	Border Health committee bi-annual meeting	No. of meetings conducted	6	6	100%	

	Quarterly evaluation meeting	No. of meetings conducted	24	23	96%	
	Initial home visit by BHS and CHW at border townships	No. of townships conducted by BHS for initial home visit and contact tracing	24	20	83%	calculated from Myawaddy, Tamu, Maungdaw, Kawthaung and Muse
	Health talk at RHC	No. of townships conducted health talks	24	21	88%	
Objective: Engage all care provider	***Service Delivery Area : PPM***					
	Activity	***Measurement unit***	***Planned***	***Completed***	***Achievement***	***Remark***
	Annual national level meetings(Public - Public Mix)	No. of meetings conducted	1	1	100%	
	National/State/divisional levels international standard of TB care seminar	No. of seminar conducted	3	3	100%	
	Defaulter tracing cost for Public Public Mix hospitals	No.of defaulter tracing done by PPM hospitals	60	30	50%	
	Travel allowance for TB coordinator from hospitals (Public Public Mix)	No.of travel allowance for TB coordinator from hospitals	60	37	62%	
	Initial home visit of hospital staff (Public Public Mix)	No. of visits done by hospital staff for contact tracing	60	43	72%	
Objective: Empower people with TB, and communities through	***Service Delivery Area : Advocacy, Communication and Social Mobilization (ACSM)***					
	Activity	***Measurement unit***	***Planned***	***Completed***	***Achievement***	***Remark***
	World TB Day Ceremony at central and Regional/State levels	No. of events	19	19	100%	Central Naypyitaw,Pyinmanaand 17 Regions and States
	World TB Day Ceremony at district level	No. of events	48	48	100%	
	World TB Day activities at township level (MRCS)	No. of events	11	11	100%	
	Monthly meeting with TB patients (Patient charter)	No.of meetings	177	164	93%	
	Patient empowerment Workshop	No. of workshop	15	15	100%	

Service Delivery Area : Community Based TB Care					
Activity	***Measurement unit***	***Planned***	***Completed***	***Achievement***	***Remark***
Health talks at RHC level (44times/year/townships) (Sagaing 32 tsps, Magway 25 tsps)	No.of townships conducted Health Talk	228	221	95%	
Health talks at RHC level (44 times/year/ township) (10 tsp. each in Shan State South & North)	No.of Health Talk (times)	80	74	95%	
Quarterly meeting at divisional level (10 tsp. each in Shan State South & North)	No.of meetings conducted	8	7	88%	
Quarterly meeting at township level (10 tsp. each in Shan State South & North)	No.of meetings conducted	80	77	96%	
Quarterly meeting at divisional level (Sagaing 32 tsps, Magway 25 tsps, 10 tsp. each in Shan (S) and Shan (N))	No. of meetings conducted	5	5	100%	
Quarterly meeting at township level (Sagaing 32 tsps, Magway 25 tsps, 10 tsp. each in Shan (S) and Shan (N))	No. of meetings conducted	228	213	93%	

5. BCG immunization

BCG immunization was started in 1951 to those who were tuberculin test negative. In 1963, Freeze Dried BCG Vaccine was introduced. Direct BCG vaccination was implemented in 1969. BCG Vaccination has become part of the Expanded Programme on Immunization (EPI) and the BCG team of NTP has been integrated into Regional and State Health Department since 1978. The BCG technicians and BCG supervisors are responsible for training of BHS, supervision and evaluation on immunization activities of BHS in each and every Region and State. BCG coverage became increased from 76% in 2005 to 93% in 2011, then decreased to 87% in 2012.. (Source: EPI programme).

Table 28. BCG coverage (2005-2012)

State/Region	2005	2006	2007	2008	2009	2010	2011	2012
Ayeyarwaddy Region	75%	64%	85%	84%	92%	92%	89%	89%
Bago Region (Bago)	74%	81%	89%	94%	95%	94%	92%	93%
Bago Region (Pyay)	90%	90%	94%	86%	95%	96%	94%	91%
Chin State	99%	119%	93%	63%	79%	84%	84%	60%
Kachin State	89%	108%	95%	89%	95%	92%	77%	74%
Kayah State	81%	83%	83%	96%	94%	96%	80%	91%
Kayin State	60%	63%	85%	85%	82%	80%	91%	79%
Magway Region	85%	89%	90%	92%	93%	95%	110%	81%
Mandalay Region	68%	75%	86%	77%	94%	94%	94%	94%
NayPyiTaw Council Area								91%
Mon State	86%	80%	94%	92%	96%	97%	96%	93%
Rakhine State	106%	76%	92%	107%	96%	94%	97%	70%
Sagaing Region	88%	83%	91%	94%	94%	98%	90%	89%
Shan State (Kengtong)	42%	38%	85%	83%	89%	82%	54%	60%
Shan State (Lashio)	60%	68%	70%	75%	86%	80%	80%	67%
Shan State (Taunggyi)	84%	71%	83%	83%	86%	86%	87%	85%
Taninthayi Region	93%	91%	97%	97%	97%	95%	96%	64%
Yangon Region	61%	65%	94%	92%	98%	97%	97%	103%
Country	**76%**	**76%**	**89%**	**89%**	**93%**	**93%**	**93%**	**87%**

Data source: EPI

6. Manpower situation of NTP

NTP is made up of 101 vertical TB teams over 15 Region/State TB centres. 47 District TB teams (40 led by Team Leader medical doctors and 7 led by Health Assistants) and 54 Township TB teams (led by Health Assistants) are running TB control activities as well as providing technical support, supervision, monitoring and evaluation activities.

In 2012, one Senior Consultant Microbiologist and one Junior Consultant Microbiologist (Mandalay), 14 TB team leader (medical officers), 2 team leaders (H.A), 21 trained nurses and 56 Grade II Lab. technicians were vacant. **(Details in Annex 3)**.

7. Budget and external technical support

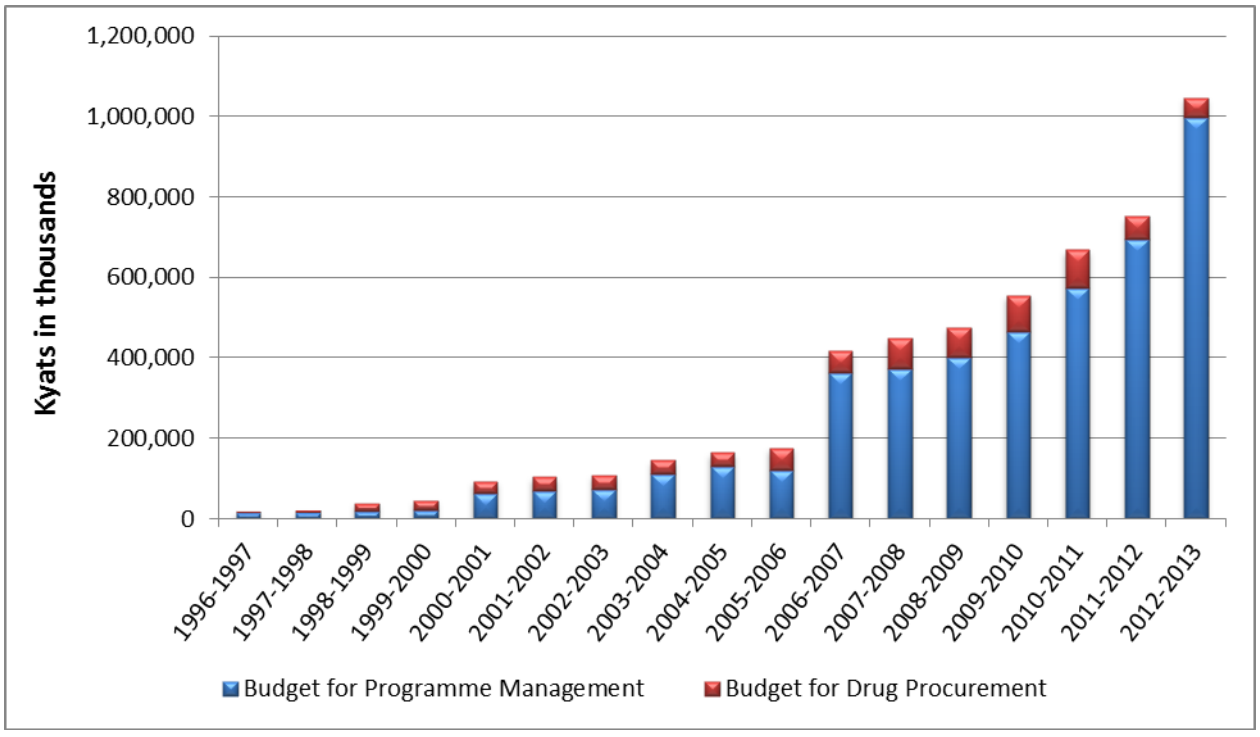
a. Government budget for NTP

Government budget was only 14 million Kyats in 1995-1996, and increased to 1047 million Kyats in 2012-2013. Fifty million Kyats were used for purchasing drugs in 2012-2013, which had been only 0.78 million Kyats in 1995-1996.

Table 29. Government budget for NTP

Year	Regular Budget (Kyats in thousands)	Drugs purchase (Kyats in thousands)	Total (Kyats in thousands)
1995-1996	13,711	782	14,493
1996-1997	14,527	1,614	16,141
1997-1998	16,017	5,000	21,017
1998-1999	18,777	19,600	38,377
1999-2000	20,509	25,000	45,509
2000-2001	62,747	30,000	92,747
2001-2002	68,470	35,000	103,470
2002-2003	74,349	35,000	109,349
2003-2004	109,667	35,000	144,667
2004-2005	129,300	35,000	164,300
2005-2006	119,955	55,000	174,955
2006-2007	361,974	55,000	416,974
2007-2008	373,126	74,700	447,826
2008-2009	400,146	74,700	474,846
2009-2010	465,190	90,011	555,201
2010-2011	574,785	94,396	669,181
2011-2012	693,564	58,251	751,905
2012-2013	**996,995**	**50,025**	**1,047,020**

Figure 15. Government contribution for NTP (1996-1997 to 2012-2013)



b. External Financial Support

Up to the end of year 2009, GDF provided first line anti-TB drugs (FLD) (2 Million USD). NTP conducted partners meeting in December 2008 and successfully mobilized 3.1 Million USD from 3DF for one year (2010-2011) and 308 Million Yen from Japanese Government through Japan Grant Aid for one year supply of FLD for the year 2011-2012.

UNITAID provided Pediatric formulation (Pediatric HRZ and Pediatric HR) for 3 years (2008-2010) and NTP prepared to apply for the second term.

Second line anti-TB drugs for MDR-TB was supported by UNITAID and the patients and programme support expenditure were supported by USAID, WHO and 3DF. The establishment of Biosafety Level 3 laboratory with rapid diagnostic test at NTRL and Upper Myanmar TB Laboratory was supported by Expand$_x$ TB Programme (FIND).

Global Fund Round 9 (Phase I) was successfully concluded in 2012, and Phase II activities are now being implemented.

Table 30. External Financial support for NTP, Myanmar (2012)

2012	Global Fund	WHO	JICA	UNITAID	USAID	FIND	3DF	Total USD
First line TB drugs (including Paediatric TB drugs)	3,410,810			834,223				4,245,034
Staff working for TB control	590,676				369,240		41,644	1,001,560
Routine programme management and supervision activities	717,862	55,200	191,238		13,738		20,108	998,146
Lab. supplies and equipment for smears culture and DST	822,289	7,000			20,000	900,000		1,729,289
PAL (Practical Approach to Lung Health)								-
PPM (Public-Public, Public-Private Mix DOTS)	24,130	5,000					8,400	37,530
Collaborative TB/HIV activities	82,492	5,000			10,000			97,492
Second line drugs for MDR-TB	1,650,152							1,650,152
Management of MDR-TB	101,800	10,000			27,000		92,610	231,410
Community involvement	416,411	6,250					33,480	456,141
ACSM: Advocacy, communication and social mobilization	112,425	10,030						122,455
Operation research		38,520						38,520
Surveys								-
Other budgetlines for TB (e.g. technical assistance)								-
Total	**7,929,047**	**137,000**	**191,238**	**834,223**	**439,978**	**900,000**	**196,242**	**10,627,729**

8. Constraints

i. Pursuing high-quality DOTS expansion and enhancement

- Limitation of human resource capacity
- Inadequate access to TB services
- NTP guidelines and SOPs (Drug and supplies management, EQA etc.) are not followed in some areas
- Limitation in supervision especially laboratory services
- Limitation in reaching the un-reach
- Constraints in ensuring patient support

- Limitation of diagnostic existing algorithm to detect smear negative culture positive patients.
- Limitation of data management and utilization of data, provision of feedback
- Weak utilization of data based soft ware developed for the use of NTP, Myanmar (DHIS)

ii. Addressing TB/HIV, MDR-TB and other challenges

- Limited funding to scale up TB/HIV and MDR-TB management
- Limited funding for Infection Control for health facilities and congregate settings

iii. Contributing to health system strengthening

- Limitation in health financing and health work force
- Limited service delivery in hard to reach area
- Weak coordination mechanism at Regional/ State level and below with partners

iv. Engaging all care providers

- Limited skills of health care providers
- Limitation to scale-up PPM-DOTS
- Weak mechanism on monitoring of PPM-DOTS especially data verification at township level

v. Empowering people with TB, and communities

- Low community awareness
- Weak initiation of community involvement in TB control
- No SOP, guideline for community involvement
- Lack of appropriate materials for ACSM

vi. Enabling and promoting research

- Limited funding for Operational Research

Measuring the Progress of NTP in 2012

This annual report was based on the Regional and State TB Centre annual reports and quarterly reports from DOTS townships received during 2012 and those from other reporting units and partners.

9. Case Finding and Case Holding

a. Case Finding

NTP targeted to achieve at least 70% case detection of estimated new smear positive patients in the community. The estimated number of new smear positive TB patients in 2012 for the whole country was 54,837, however NTP could notify 42,909 new smear positive cases. Therefore, case detection rate of new smear positive cases for 2012 was 78.2% over 319 reporting townships (including partners' contribution).Total number of smear positive cases in 2012 was 49,659.

The case detection rates (CDRs) in 6 Regions including Nay Pyi Taw council and 4 States went beyond the target of 70%. Two States (Kayah and Chin) fell into the group of CDR <40%.

Table 31. Case Detection Rate by Regions and States for 2012

Regions and States	CDR for 2012	
	NTP only	NTP + other reporting Units
Kachin State	66%	89%
Kayah State	31%	31%
Chin State	23%	29%
Sagaing Region	46%	54%
Magway Region	45%	54%
Mandalay Region	51%	70%
Shan State (Tauggyi)	42%	43%
Shan State (Kengtong)	80%	87%
Shan State (Lashio)	54%	66%
Kayin State	77%	84%
Tanintharyi Region	64%	91%
Bago Region	68%	83%
Mon State	69%	81%
Rakhine State	56%	58%
Yangon Region	71%	112%
Ayeyarwaddy Region	65%	74%
NayPyiTaw Council Area	75%	90%
Union	**60%**	**78.2%**

In 2012, among 319 reporting townships, 137 townships (43%) achieved the target of ≥70%. 80 townships (25%) had CDR < 40% which need much attention to improve the case finding.

Figure 16. CDR of Regions & States by NTP alone and NTP with Partners (2012)

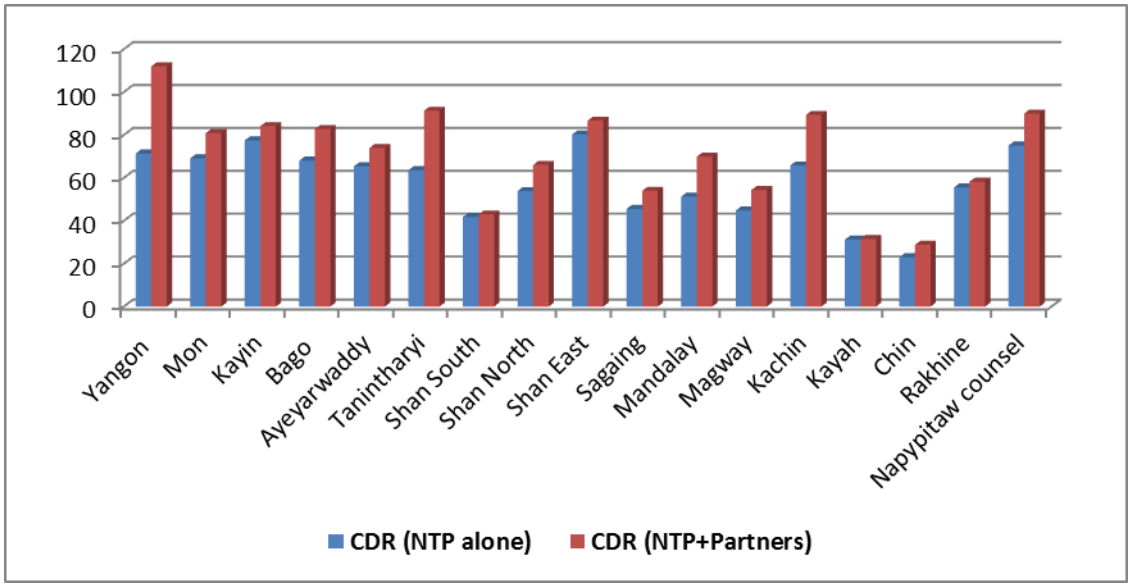


Figure 17. Proportion of all smear positive TB cases detected in Region/State out of *NTP's* total smear positive TB cases in 2012

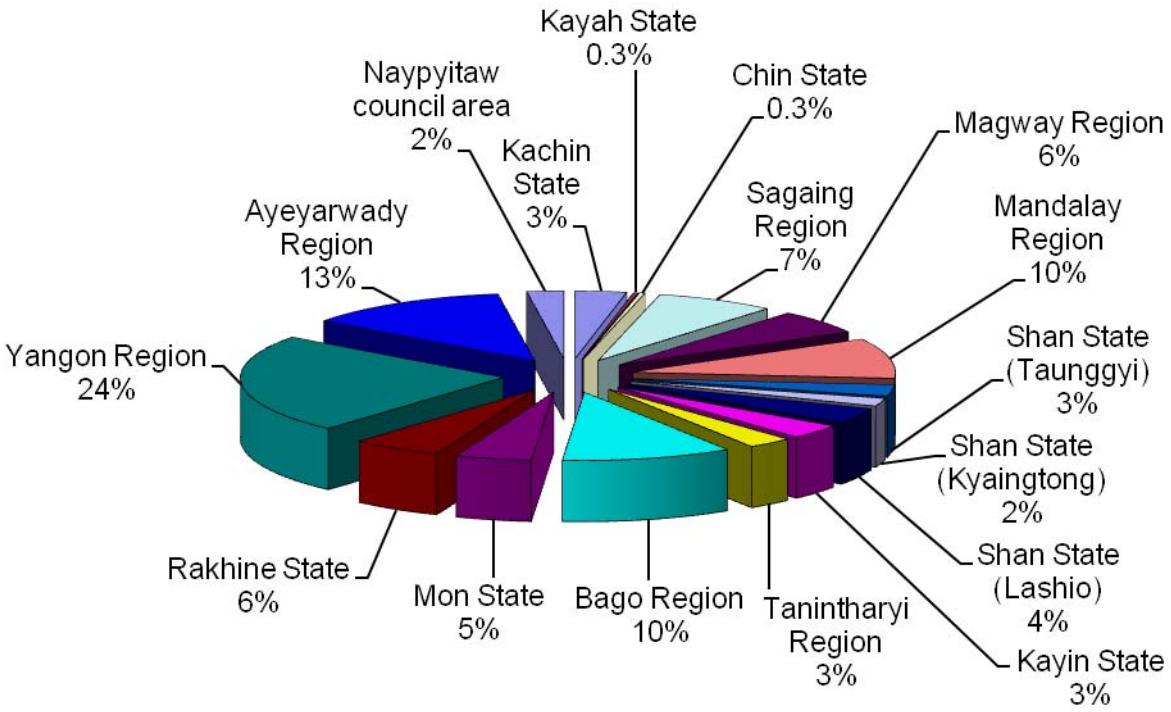


Figure 18. Proportion of new smear positive TB cases detected in Region/State out of *NTP's* total smear positive TB cases in 2012

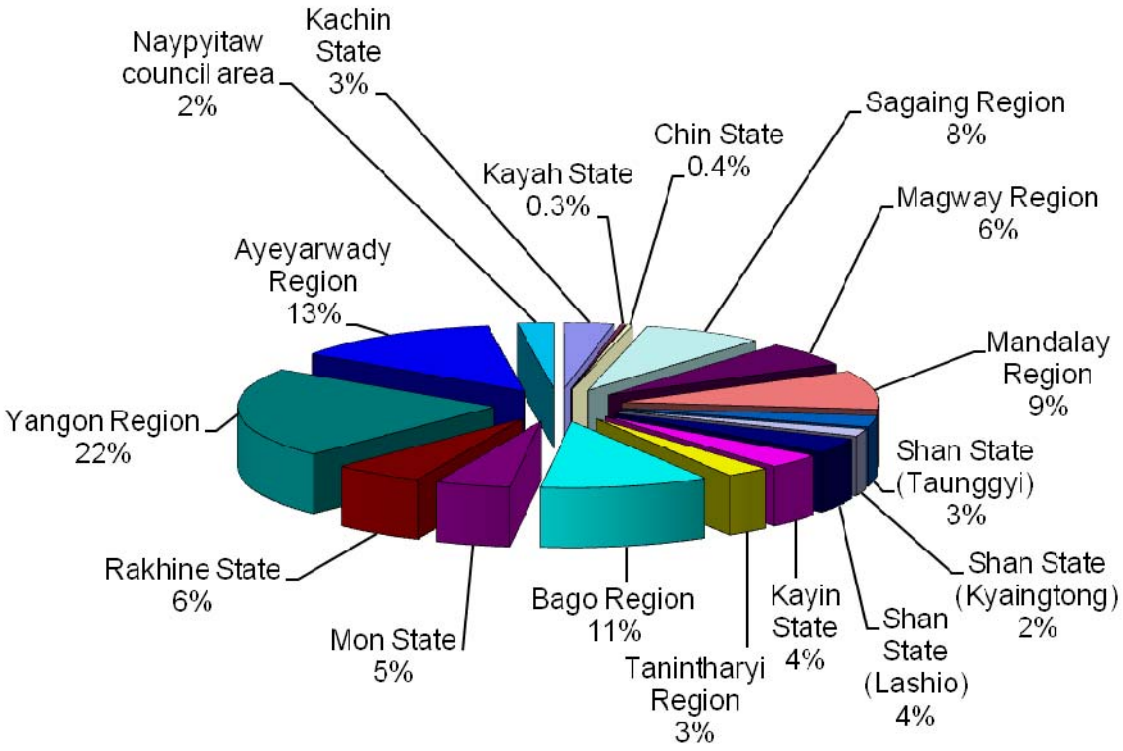


Table 32. Categories of CDR for Townships in Regions and States (2012)

No.	States and Region	No. of township with CDR					Total no. of township	No. of tsp. from which reports not received
		≥ 70%	60-69%	50-59%	40-49%	<40%		
1.	Kachin State	7	0	2	0	5	18	4
2.	Kayah State	0	1	1	0	5	7	0
3.	Chin State	0	0	1	0	8	9	0
4.	Sagaing Region	6	2	6	10	13	37	0
5.	Magway Region	4	6	1	4	10	25	0
6.	Mandalay Region	12	5	3	5	3	28	0
7.	Shan State (Taunggyi)	6	1	0	5	9	21	0
8.	Shan State (Kyaingtong)	6	0	0	1	2	10	1
9.	Shan State (Lashio)	9	1	1	3	4	24	6
10.	Kayin State	4	0	0	2	1	7	0
11.	Tanintharyi Region	4	0	0	3	3	10	0

12.	Bago Region (Bago)	19	4	3	1	1	28	0
13.	Mon State	6	2	2	0	0	10	0
14.	Rakhine State	7	3	3	1	3	17	0
15.	Yangon Region	31	7	2	3	2	45	0
16.	Ayeyarwaddy Region	14	4	4	3	1	26	0
17.	NayPyiTaw Council Area	3	1	4	0	0	8	0
Total		**138 (43%)**	**37**	**33**	**41**	**69 (22%)**	**330**	**11**

The proportion of sputum smear positive pulmonary TB cases among all pulmonary TB cases was 41% and the ratio of new sputum smear positive TB cases to new smear negative TB cases was 0.98:1 (Country figure). If only NTP data were analysed, 41% of all pulmonary TB cases were sputum smear positive TB patients, and the ratio of new smear positive to new smear negative TB patients was 1.006:1.

Proportion of sputum smear positive pulmonary TB cases out of all pulmonary TB cases was lower than 40% in Kachin, Kayah, Kayin, Chin & Mon States, and Sagaing, Bago and Tanintharyi Regions. They detected and treated more sputum smear negative TB cases, and it is needed to assess if the smear positive TB cases are declining or not. The quality of township laboratories should also be checked in those areas.

Again, amongst all notified smear positive TB cases, new smear positive cases occupied 86.4%, and relapse cases, defaulter cases and failure cases did 9.2%, 1% and 3.4% respectively.

Smear negative TB cases were of 29.6% among all notified TB cases and extra-pulmonary TB cases were of 13.9%. Childhood TB cases contributed to 29.6 % (42,434) of all notified TB cases (148,149).

New smear positive TB cases detected by Regions & States, out of NTP's total new smear positive cases

Yangon Region could detect 22% of new smear positive cases out of NTP total new smear positive cases, followed by Ayeyarwaddy Region of 13%, then by Mandalay Region of 9 % and Sagaing Region of 8%. Therefore, three biggest Regions of Myanmar (Yangon, Ayeyarwaddy and Mandalay) contributed to 44% of new smear positive TB cases.

Table 33. Contribution of new sputum smear positive and all TB cases by Regions & States to NTP's total (2012)

No.	State / Regions	DOTS covered Townships in each Region / State	New smear (+) patients out of total new smear (+) TB cases notified to NTP	All forms of TB cases out of all TB cases notified to NTP
1.	Kachin State	18/18=100%	3%	5%
2.	Kayah State	7/7=100%	0.3%	0.6%
3.	Chin State	9/9=100%	0.4%	0.9%
4.	Sagaing Region	37/37=100%	8%	7%
5.	Magway Region	25/25=100%	6%	6%
6.	Mandalay Region	28/28=100%	9%	10%
7.	Shan State (Taunggyi)	21/21=100%	3%	3%
8.	Shan State (Kengtong)	10/10=100%	2%	2%
9.	Shan State (Lashio)	24/24=100%	4%	4%
10.	Kayin State	7/7=100%	4%	3%
11.	Tanintharyi Region	10/10=100%	3%	5%
12.	Bago Region (Bago)	14/14=100%	11%	11%
13.	Mon State	10/10=100%	5%	6%
14.	Rakhine State	17/17=100%	6%	4%
15.	Yangon Region	45/45=100%	22%	19%
16.	Ayeyarwaddy Region	26/26=100%	13%	12%
17.	NayPyiTaw Council Area	8/8=100%	2%	1%

Table 34. Categories of CDR by Regions and States (2012)

CDR					Total
≥ 70%	60-69%	50-59%	40-49%	<40%	
NayPyiTaw, Yangon, Bago, Ayeyarwaddy, Tanintharyi, Mandalay, Mon, Kayin, Shan (Kyaingtong), Kachin	Shan (Lashio)	Sagaing, Magway, Rakhine	Shan (Taunggyi)	Kayah, Chin	
10	**1**	**3**	**1**	**2**	**17**

Regions and States with CDR of less than 50% should be supportively supervised more than before. The appropriate measures should be set up in order to improve case findings.

Countrywide Case Notification Rate (CNR) for all forms of TB cases was 305.3 per 100,000 population, and that for new smear positive TB cases was 88.4 per 100,000 population.

By Regions and States, CNR for all TB cases was the highest in Tanintharyi Region (409/100,000 pop.), Yangon Region (366/100,000 pop.), Kachin State (358/100,000 pop.), Mon State (308/ 100,000 pop.) and Kayin State (270/100,000 pop.).

Regarding CNR for new smear positive cases, it was highest in Yangon Region with (121/100,000 pop.), Shan(Kengtong) State with (84/100,000 population), Kayin State with (81/100,000 pop.) and Nay Pyi Taw with (79/100,000 population). Areas of CNR (new smear positive cases) less than 50/100,000 population were Kayah State, Chin State, Shan State (Taunggyi), Sagaing Region and Magway Region.

Table 35. TB case notification rates by Regions and States, 2012 (NTP only)

No.	States / Regions	Case notification rates of new smear (+) TB patients notified to NTP	Case notification rates of all smear (+) TB patients notified to NTP	Case notification rates of all TB patients notified to NTP
1.	Kachin State	69/100,000 pop.	81/100,000 pop.	358/100,000 pop.
2.	Kayah State	33/100,000 pop.	36/100,000 pop.	241/100,000 pop.
3.	Chin State	24/100,000 pop.	26/100,000 pop.	197/100,000 pop.
4.	Sagaing Region	48/100,000 pop.	53/100,000 pop.	159/100,000 pop.
5.	Magway Region	47/100,000 pop.	53/100,000 pop.	164/100,000 pop.
6.	Mandalay Region	54/100,000 pop.	72/100,000 pop.	178/100,000 pop.
7.	Shan State (Taunggyi)	44/100,000 pop.	50/100,000 pop.	148/100,000 pop.
8.	Shan State (Kengtong)	84/100,000 pop.	100/100,000 pop.	268/100,000 pop.
9.	Shan State (Lashio)	57/100,000 pop.	65/100,000 pop.	193/100,000 pop.
10.	Kayin State	81/100,000 pop.	89/100,000 pop.	270/100,000 pop.
11.	Tanintharyi Region	67/100,000 pop.	77/100,000 pop.	409/100,000 pop.
12.	Bago Region	71/100,000 pop.	81/100,000 pop.	258/100,000 pop.
13.	Mon State	73/100,000 pop.	83/100,000 pop.	308/100,000 pop.
14.	Rakhine State	58/100,000 pop.	65/100,000 pop.	149/100,000 pop.
15.	Yangon Region	121/100,000 pop.	149/100,000 pop.	366/100,000 pop.
16.	Ayeyarwaddy Region	69/100,000 pop.	75/100,000 pop.	218/100,000 pop.
17.	NayPyiTaw	79/100,000 pop.	33/100,000 pop.	205/100,000 pop.
Population of 319 townships =48,531,478		**88/100,000 pop.***	**102/100,000 pop.***	**305/100,000 pop.***

***Data from NTP+Implementing partners**

Age and sex distribution of new sputum smear positive TB cases

The age and sex distribution of new smear positive TB cases reported to NTP in 2012 displayed that 44% of those fell in the group of 25-44 years. Male to Female ratio was 1.9:1.

Figure 19. Age & Sex distribution of New Smear Positive TB Patients (2012)

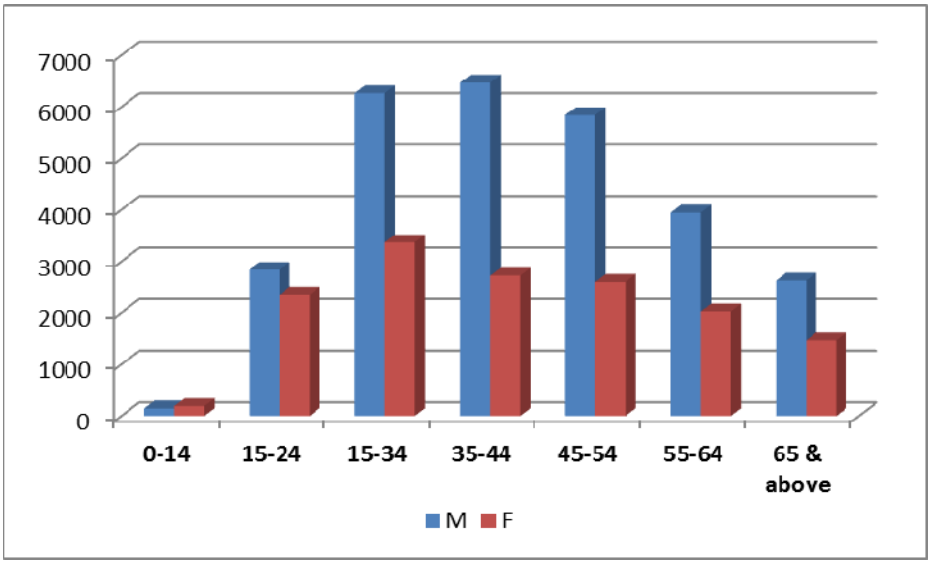


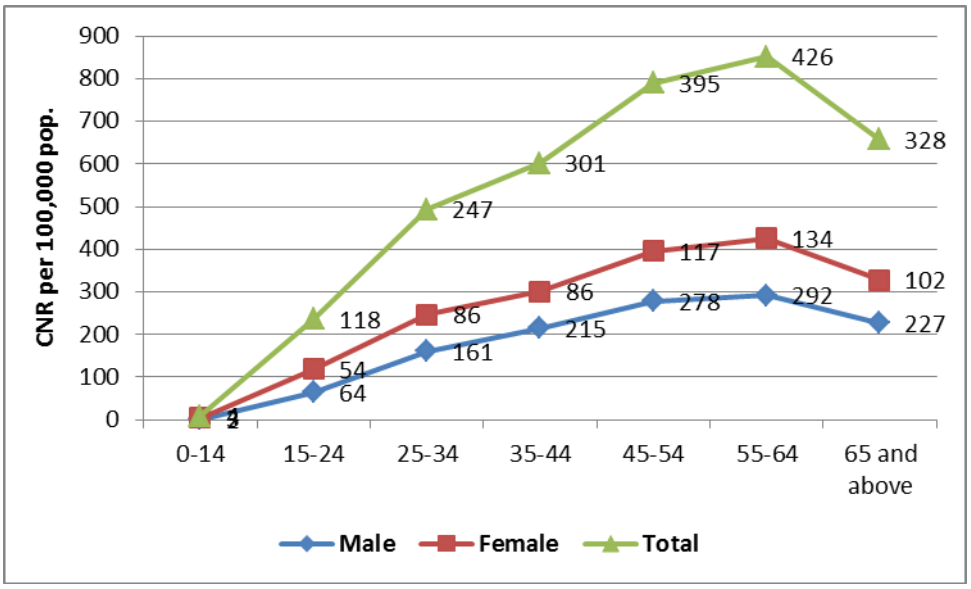
Table 36. Age and sex specific case notification rates of new smear positive cases, 2012 (NTP alone)

Age group	Male		Female		Total	
	TB patients/ pop. *	CNR/ 100,000	TB patients/ pop. **	CNR/100,000	TB patients/ pop. ***	CNR/ 100,000
0-14	146/8,056,128	2	192/7,811,627	3	338/15,867,755	2
15-24	2898/4,558,707	64	2,357/4,345,217	54	5,255/8,903,925	59
25-34	6,263/3,883,343	161	3,368/3,930,225	86	9,631/7,813,568	123
35-44	6,469/3,015,018	214.6	2,721/3,149,062	86.4	9,190/6,164,080	149
45-54	5,837/2,098,453	278	2,600/2,221,431	117	8,437/4,319,884	195.3
55-64	3,945/1,350,728	292.1	2,023/1,513,503	133.7	5,968/1,513,503	208.4
65+	2,626/1,157,767	227	1,464/1,440,269	102	4,090/2,598,036	157
Total	**28,184/24,120,145**	**116.8**	**14,725/24,411,333**	**60.3**	**42,909/48,531,478**	**60.3**

*** All denominators are populations in thousand. (Source: 2008 Statistical Year Book, Ministry of National Planning & Economics Department, Central Statistical Organization)**

Case Notification Rate of new smear positive TB patients was the highest in the age group of 55-64 years in both sexes.

Figure 20. New Smear Positive TB case notification rate/100,000 population by age and sex groups (2012)



Categories of anti-TB treatment regimen

There were totally 148,149 cases reported in TB 07- block-1, but in block-3, there were 150,785 cases because of transferred-in and other cases. Patients treated with Cat I regimen were of 57% (86101/150785), Cat II of 8% (11543/150785) and Cat III 35% (53141/150785).

Figure 21. Proportion of total TB patients treated with different regimens (2012)

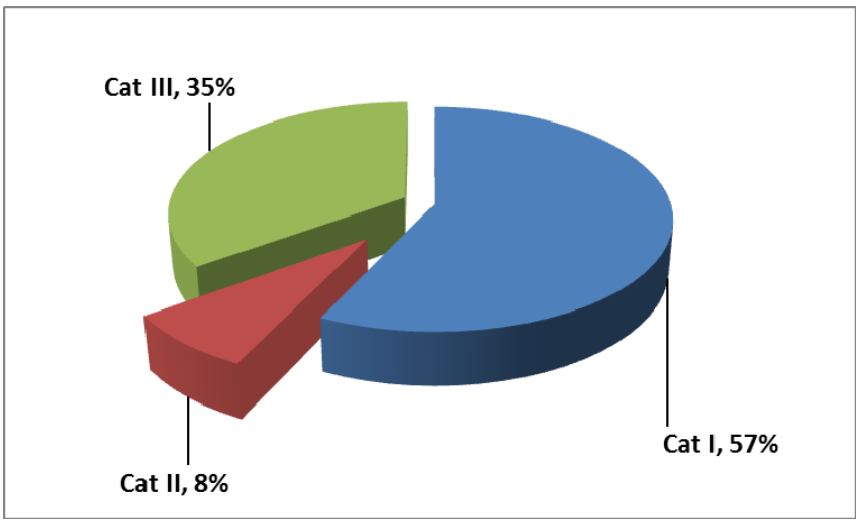
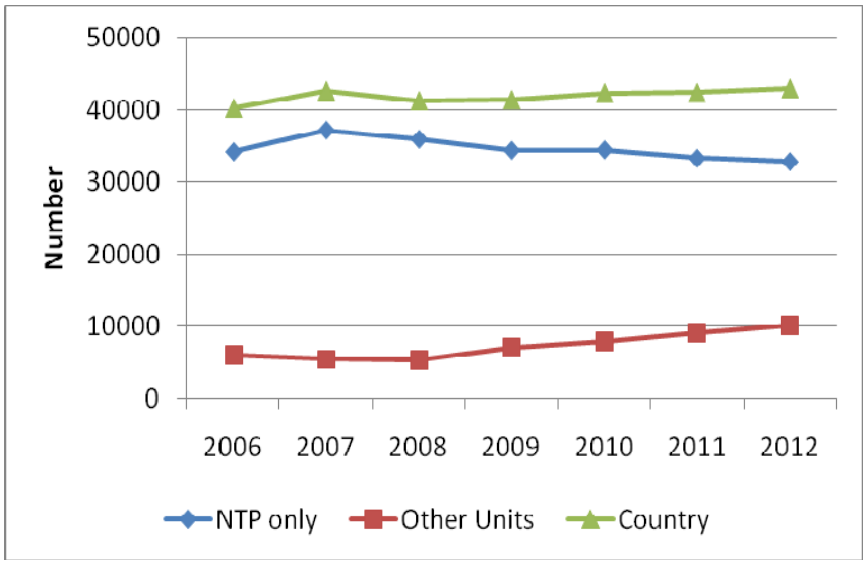
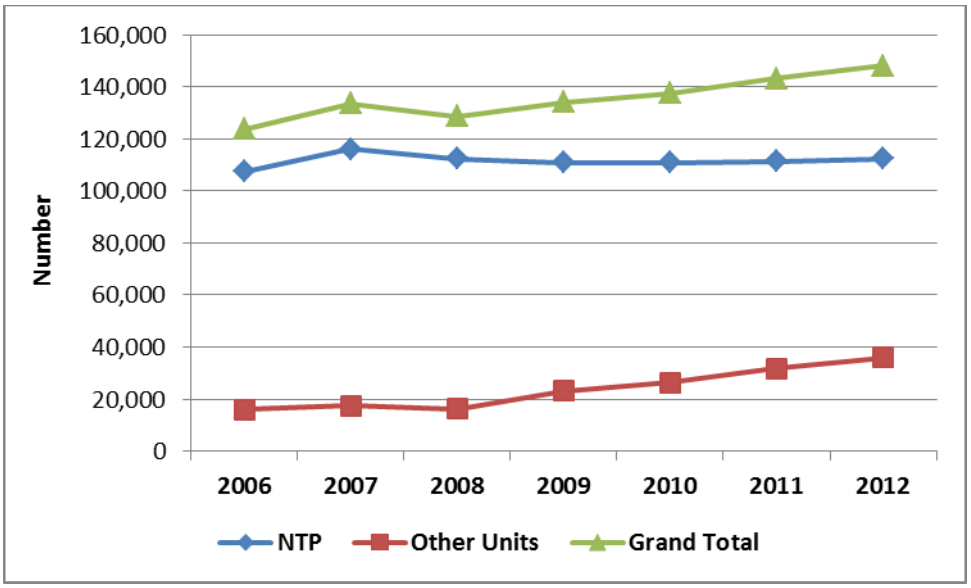


Figure 22. New smear (+) TB cases of NTP and Other Units (2006-2012)



Looking at the graph, total number of new smear positive cases (NTP + other units) became gradually increased between 2008 and 2012, and those contributed by other units were also found increased by years.

Figure 23. All forms of TB patients of NTP and Other Units (2006-2012)



Looking at the figures of all forms of TB cases for 6 years, it was detected that the national figure (NTP+partners) became gradually increased during the period of 2008-2012. Caseload contributed by partners was also noted increasing during that period.

Table 37. Notified New Smear Positive TB Patients and all types of TB patients (2006-2012)

Regions/ States	New Smear Positive TB Patients							Regions/ States	All Types of TB Patients						
	2006	2007	2008	2009	2010	2011	2012		2006	2007	2008	2009	2010	2011	2012
Kachin	1383	1372	1165	1255	1186	1068	1011	Kachin	3959	4408	4471	5169	5255	5266	5235
Kayah	143	127	152	131	127	116	98	Kayah	863	565	679	1177	871	591	721
Chin	187	143	154	151	121	109	119	Chin	1095	1018	1219	1213	1163	1083	971
Sagaing	2439	3662	2818	2909	2685	2760	2493	Sagaing	9373	9702	8605	8116	8261	8234	8299
Magway	2171	2230	2236	2052	1976	1914	1949	Magway	7894	8546	7932	7900	7208	7253	6812
Mandalay	3735	3871	3650	3360	3481	3609	3565	Mandalay	10793	12355	12234	11991	11303	11019	11445
Shan (Taunggyi)	699	797	773	780	802	932	906	Shan (Taunggyi)	2493	2771	2490	2524	2510	2919	3051
Shan (Kengtong)	545	545	555	483	582	462	584	Shan (Kengtong)	1508	1630	1495	1511	2066	2084	1862
Shan (Lashio)	875	939	1084	1140	1254	1179	1233	Shan (Lashio)	2924	3859	3701	3781	3922	4089	4220
Kayin	840	1012	1095	1061	1019	831	1168	Kayin	3382	3920	4092	3940	4709	4145	3876
Tanintharyi	829	842	822	885	824	895	895	Tanintharyi	4898	5312	5399	6092	5163	5021	5478
Bago	1945	1992	1894	1764	1749	1740	1885	Bago	5831	6000	5203	5008	5583	6284	7149
Bago (Pyay)	1539	1642	1715	1588	1440	1511	1592	Bago (Pyay)	5789	4973	5122	4965	4403	4656	5432
Mon	1704	1660	1800	1758	1637	1539	1543	Mon	5107	5755	7026	6508	6291	6031	6563
Rakhine	1845	1816	2230	2199	2292	2083	1881	Rakhine	4403	5962	5473	6698	6737	6253	4812
Yangon	7803	9164	8788	8329	8296	7672	7249	Yangon	23979	25854	24434	22598	22873	22547	21863
Ayeyarwaddy	5472	5327	4966	4507	4943	4721	4336	Ayeyarwaddy	13228	13527	12864	11593	12656	13468	13742
NayPyiTaw						105	270							383	740
TOTAL	**34154**	**37141**	**35897**	**34352**	**34414**	**33235**	**32777**	**TOTAL**	**107519**	**116157**	**112439**	**110784**	**110974**	**111326**	**112271**
Other Units	6087	5447	5351	7037	7904	9089	10132	Other Units	16074	17390	16300	23239	26429	31838	35878
GRAND Total	**40241**	**42588**	**41248**	**41389**	**42318**	**42335**	**42909**	**GRAND Total**	**123593**	**133547**	**128739**	**134023**	**137403**	**143164**	**148149**

Table 38. Categories of Treatment Regimens

Years	Category I				Category II					Category III			Total Cat. I + II + III	Proportion of relapse among all smear positive	Proportion of failure among all smear positive
	Sputum smear positive	Severe form		Total	Relapse	Treatment after default	Treatment After Failure	Other	Total	Less severe form		Total			
		Smear negative	EP							Smear negative	EP				
2000	16923	2608	313	19844	2600	907	386		3893	6157	1962	8119	31856	13	2
2001	20697	4604	485	25786	3072	1042	363		4477	9166	3383	12549	42812	13	2
2002	24203	8063	866	33132	3661	1242	697		5600	10796	9866	20662	59394	13	2
2003	27295	13537	1693	42525	4453	1454	964		6871	12179	16185	28364	77760	13	3
2004	31551	21098	2938	55587	4820	1293	1522		7635	13627	23267	36894	100116	13	4
2005	38598	23164	6234	67996	4817	976	2024		7817	13309	26158	39467	115280	11	4
2006	40742	30031	5620	76393	5229	1007	2852		9088	13924	29141	43065	128546	11	6
2007	43230	29177	6602	79009	4750	757	1208	2795	9510	13077	33986	47063	135582	10	3
2008	41839	27725	6364	75928	4509	633	1140	2954	9236	17306	28897	46203	131367	9	2
2009	42122	29744	6479	78345	4753	606	1349	3323	10031	22865	26088	48953	137329	10	3
2010	43061	35312	7220	85593	4658	523	1536	3969	10686	23086	21369	44458	140737	9	3
2011	**43070**	**35668**	**7391**	**86129**	**4820**	**551**	**1565**	**4433**	**11369**	**27785**	**21055**	**48840**	**146338**	**10**	**3**
2012	**43650**	**34836**	**7615**	**86101**	**4703**	**540**	**1697**	**4603**	**11543**	**38830**	**14311**	**53141**	**150785**	**8**	**3**

b. Laboratory performance

In 2012, there were 316,530 TB suspects examined for sputum microscopy and 15% of these were sputum smear positive (46,223/316,530).

Other reporting units contributed to 20% (63,050/316,530) of TB suspected cases and 21% (9,680/46,223) of sputum positive cases. Sputum positivity rates ranged from 6% to 26%. NayPyiTaw Council Area was found sputum positivity rate of of 26%.

Country TB suspect notification rate increased from 604/100,000 population in 2011 to 652/100,000 population in 2012. It is needed to improve the identification of more TB suspects and referral for TB diagnosis.

Table 39. TB Suspects Notified in Regions and States (2011, 2012)

Region/State	2011			2012			Compared to 2010
	Population	No. of suspects	% came for Dx.	Population	No. of suspects	% came for Dx.	
Kachin State	1,444,608	8,849	61	1,464,154	9,031	62	increased
Kayah State	268,606	1,935	72	299,679	1,829	61	decreased
Chin State	493,684	1,101	22	493,684	1,707	35	increased
Sagaing Region	5,172,918	28,453	55	5,212,668	29,834	57	increased
Magway Region	4,059,582	15,381	38	4,148,020	16,895	41	increased
Mandalay Region	6,369,533	26,666	42	6,370,123	35,791	56	increased
Shan State (Taunggyi)	2,044,848	9,448	46	2,066,678	9,067	44	decreased
Shan State (Kengtong)	647,182	2,638	41	693,542	3,006	43	increased
Shan State (Lashio)	2,362,305	8,204	35	2,181,745	8,857	41	increased
Kayin State	1,442,330	7,340	51	1,435,686	6,763	47	decreased
Tanintharyi Region	1,390,006	6,934	50	1,340,978	7,945	59	increased
Bago Region	2,901,890	10,483	36	2,856,857	11,199	39	increased
Bago Region (Pyay)	2,041,895	10,505	51	2,010,935	10,777	54	increased
Mon State	2,093,913	17,299	83	2,127,556	16,435	77	decreased
Rakhine State	3,284,484	12,966	39	3,225,070	11,744	36	decreased
Yangon Region	5,973,325	45,264	76	5,969,277	47,508	80	increased
Ayeyarwaddy Region	6,359,829	28,313	45	6,316,979	25,063	40	decreased
Nay Pyi Taw	317,847	45	1.4	317,847	29	1	decreased
Other Units		52,185			63,050		
Country	**48,668,785**	**294,009**	**60**	**48,531,478**	**316,530**	**65**	**Increased**

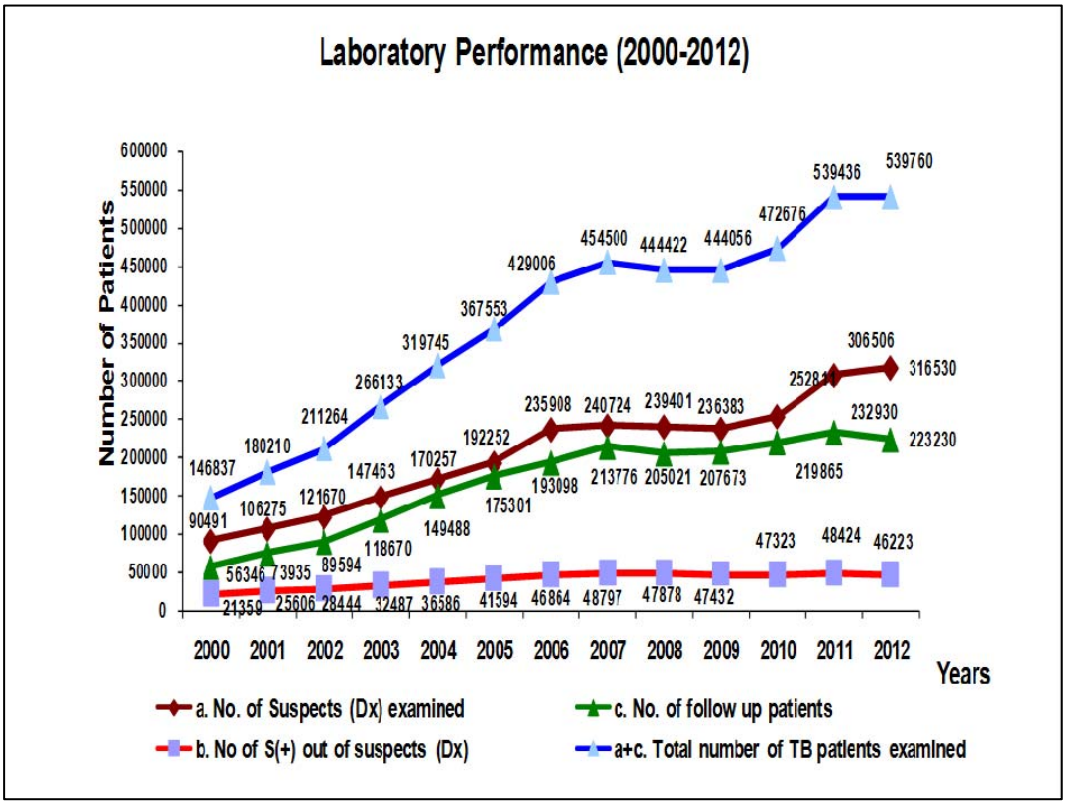
Townships from which reports were not received:

Kachin State: 1. N'gyanyan 2.Hsawlaw 3.Khaunglanbu 4.Naungmon

Shan (Lashio) State: 1.Kongyan 2.Panwine 3.Mongmaw 4.Manphant 5.Narphant 6.PangyanShan (Kengtong) State: 1.Matman

The following figure showed that number of suspects examined TB patients were increased in 2012. Under-reporting of some positive patients in TB 07 Block 4 was observed since smear positive cases detected in laboratories (Block 4) were 46,223 though notified smear positive in Block 1 were 49,659.

Figure 24. Laboratory Performance (2000-2012)



Sputum conversion rate of new smear positive pulmonary TB cases (2011 Cohort)

Looking at sputum conversion of new smear positive (detail in block 5), although there were 42,900 registered new smear positive TB cases in 2012, 38,427 (90%) were reported for follow-up sputum examination at the end of initial intensive phase. Sputum conversion rate over the whole country was 85.5% (36,672/42,900). Sputum conversion rate of less than 85% was observed in Shan (Kengtong), Shan (Lashio) State , Tanintharyi Region & Rakhine State. Sputum conversion rate of all other units (partners & PPM hospitals) was 78%. Proportion of sputum examination not done at 2-3 months was 10.4% (4,473/42,900), and that of sputum remained positive was 4.1% (1,755/42,900). The cases which were still positive at the end of 3rd month can be presumed as failure cases. The areas with ≥ 5% of till remained positive cases were Magwe, Mandalay, Tanintharyi, Bago(Pyay) Regions, Shan (Kyaingtong), Shan(Taunggyi), Shan(Lashio) State , Naypyitaw and Rakhine State.

c. Treatment outcome of TB patients (2011 cohort)

Treatment outcome of the TB patients (2011 cohort) were evaluated from 319 townships (NTP). Cure rate and treatment success rate (TSR) of new sputum smear positive TB patients for Country (National Figure) were 76.5% (32,383/42,310) and 85.7% (36,246/42,310) for 2011 cohort. Looking at NTP data only, cure rate was 78.6% (26,125/33,248) with TSR of 86.9% (28,889/33,248).

Table 40. Categories of TSR of new smear positive cases of townships by Region/State (2011 cohort) (Country)

No.	Regions/States	No. of townships with TSR					No. of tsps. from which reports received	No. of tsps. from which reports not received
		≥85%	75-84%	60-74%	50-59%	<50%		
1.	Kachin State	6	6	1	0	1	14	4
2.	Kayah State	4	3	0	0	0	7	0
3.	Chin State	6	3	0	0	0	9	0
4.	Sagaing Region	27	10	0	0	0	37	0
5.	Magway Region	17	7	1	0	0	25	0
6.	Mandalay Region	13	13	2	0	0	28	0
7.	Shan State (Taunggyi)	12	9	0	0	0	21	0
8.	Shan State (Kyaingtong)	3	4	2	0	0	9	1
9.	Shan State (Lashio)	8	6	4	0	0	18	6
10.	Kayin State	2	5	0	0	0	7	0
11.	Tanintharyi Region	6	4	0	0	0	10	0
12.	Bago Region	26	2	0	0	0	28	0
13.	Mon State	9	1	0	0	0	10	0
14.	Rakhine State	15	2	0	0	0	17	0
15.	Yangon Region	32	12	0	0	1	45	0
16.	Ayeyarwaddy Region	22	4	0	0	0	26	0
17.	NayPyiTaw Council Area	4	4	0	0	0	8	0
Total		**212 (69%)**	**95**	**10**	**0**	**2 (1%)**	**319**	**11**

Townships from which reports were not received:

Kachin State: 1. N'gyanyan 2.Hsawlaw 3.Khaunglanbu 4.Naungmon

Shan (Lashio) State: 1.Kongyan 2.Panwine 3.Mongmaw 4.Manphant 5.Narphant 6.PangyanShan (Kengtong) State: 1.Matman

In 2011 cohort, 319 townships reported to NTP. It was found that 212 townships (69%) achieved the target of TSR ≥ 85%, and no township had TSR of less than 50% in 2011. 105 townships (33%) gained TSR of between 50-84%. Two townships had no new smear positive detected in 2011.

Table 41. Categories of cure rates of new sputum smear positive TB patients of townships by Region/State (2011 cohort) (COUNTRY)

No.	Regions/States	No. of townships with CR					No. of tsps. from which reports received	No. of tsps. from which reports not received
		≥85%	75-84%	60-74%	50-59%	<50%		
1.	Kachin State	2	14	7	1	1	14	4
2.	Kayah State	2	7	1	0	1	7	0
3.	Chin State	4	9	1	1	0	9	0
4.	Sagaing Region	13	37	8	3	1	37	0
5.	Magway Region	8	25	7	3	1	25	0
6.	Mandalay Region	4	28	11	2	1	28	0
7.	Shan State (Taunggyi)	7	21	4	1	0	21	0
8.	Shan State (Kyaingtong)	1	9	6	0	0	9	1
9.	Shan State (Lashio)	4	18	8	1	2	18	6
10.	Kayin State	3	7	0	0	0	7	0
11.	Tanintharyi Region	2	10	5	2	0	10	0
12.	Bago Region	5	28	8	1	0	28	0
13.	Mon State	4	10	3	0	0	10	0
14.	Rakhine State	7	17	7	0	1	17	0
15.	Yangon Region	21	45	5	0	1	45	0
16.	Ayeyarwaddy Region	6	26	11	1	0	26	0
17.	NayPyiTaw Council Area	1	8	3	0	2	8	0
Total		**94(29%)**	**102**	**319**	**16**	**11(3%)**	**319**	**11**

Townships from which reports were not received:

Kachin State: 1. N'gyanyan 2.Hsawlaw 3.Khaunglanbu 4.Naungmon

Shan (Lashio) State: 1.Kongmyan 2.Panwine 3.Mongmaw 4.Manphant 5.Narphant 6.Pangyan

Shan (Kengtong) State: 1.Matman

When CRs of townships were reviewed, only 29% of townships (94/319) achieved the 85% target while 11 townships (3%) were having CR of <50%. The townships which have CR < 50% were found in Kachin, Kayah, Shan (Lashio), Rakhine states and Sagaing, Magway, Mandalay, Yangon regions and Naypyitaw council areas. Among 319 reporting townships 214 townships had CR of between 50-84%.

Table 42. Categories of CR and TSR of new sputum smear positive TB patients of Regions/States (2011 cohort)

≥ 85%		75-84%		60-74%		50-59%		<50%	
CR	**TSR**	**CR**	**TSR**	**CR**	**TSR**	**CR**	**TSR**	**CR**	**TSR**
	Yangon, Bago, Ayeyarwaddy, Sagaing, Magway, Mon, Shan (Taunggyi), Kayah, Chin, Rakhine	Yangon, Bago, Ayeyarwaddy, Sagaing, Magway, Mon, Shan (Taunggyi), Kayah, Chin, Rakhine	NayPyiTaw, Tanintharyi, Mandalay, Kayin, Shan (Lashio), Shan (Kyaingtong), Kachin	Mandalay, Tanintharyi, NayPyiTaw, Kayin, Shan (Lashio), Shan (Kyaingtong), Kachin,					
0	**10**	**10**	**7**	**7**					

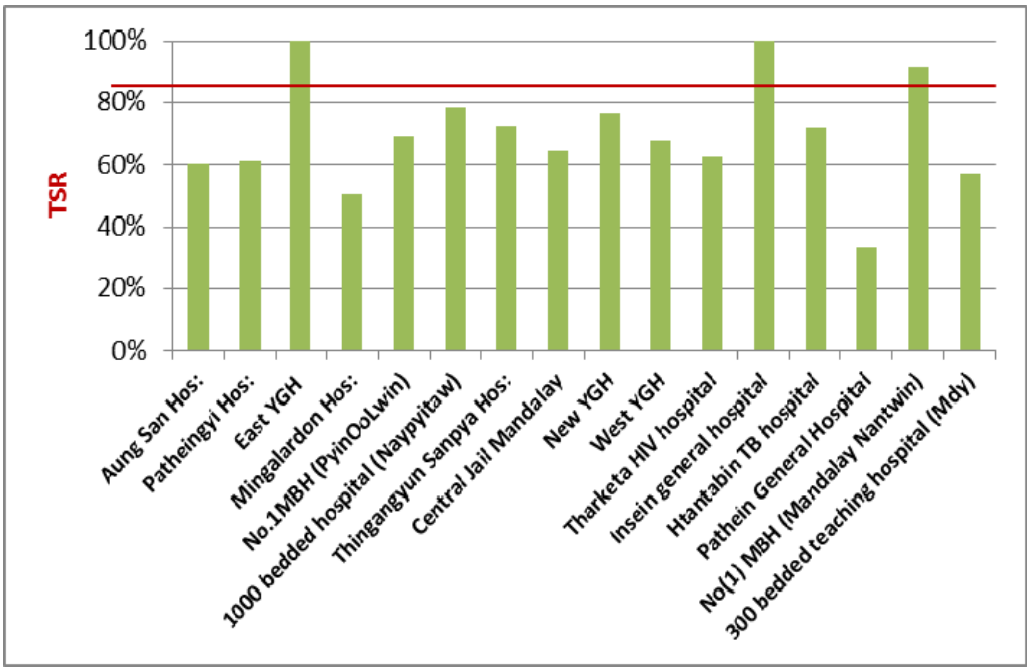
Treatment Success Rate of new smear positive TB patients over the whole country reached 85.7% (2011 cohort) which is beyond the target of 85%. None of the Regions and States achieved the cure rate target of 85%. Therefore, it is still needed to improve treatment adherence at implementation level.

Looking at the unfavourable outcomes, **Defaulter rate for new smear positive TB cases in 2011 cohort** was 4% (1,868/42,310) which was the same as that of 2010 cohort. It was also 4% (1,808/41,177) for patients with unknown HIV status and 5% (60/1,133) for TB/HIV patients.

Case fatality rate (CFR) of new smear positive cases was 5% (2,169/42,310), 5% for TB patients with unknown HIV status and **25% (279/1,133)** for TB/HIV co-infected cases.

Treatment failure rates were 3% (1,386/42,310) for all smear positive TB cases, 3% (1,355/41,177) for those with unknown HIV status and 3% (31/1,133) for HIV co-infected TB patients.

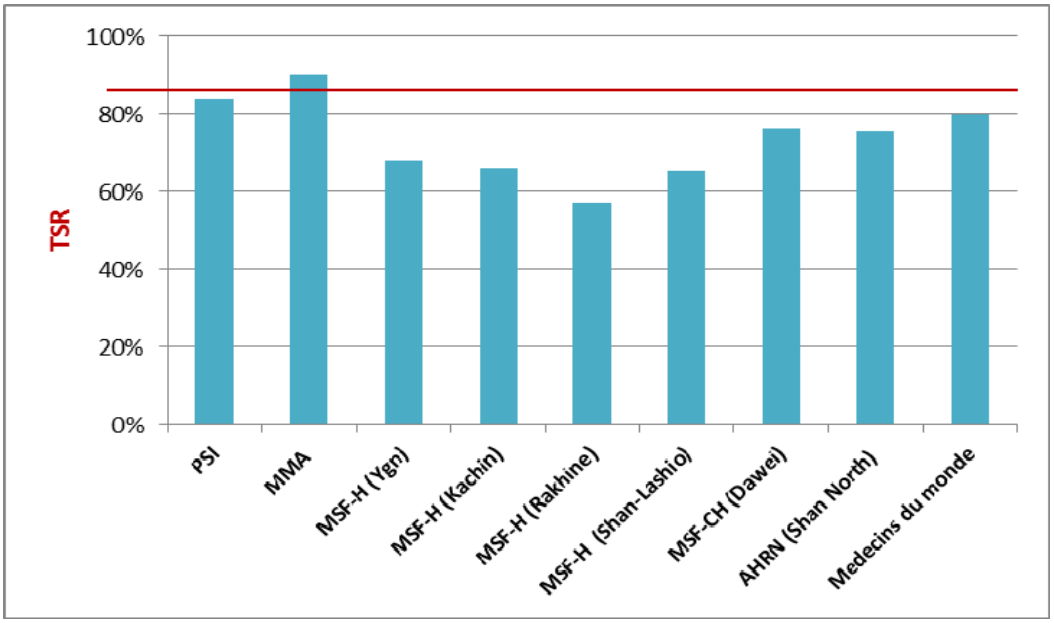
Figure 25. Treatment Success Rate of New Smear Positive Cases by PPM hospitals



Regarding treatment outcome of new smear positive patients in 2011 cohort, East YGH, Insein General Hospital and No.1 MBH (Mandalay Nantwin) could achieve **TSR** of ≥85%.

Mingalardon Special Disease Hospital still had the highest **case fatality rate** (36%), followed by Thingangyun (Sanpya) Hospital (18%) and Tharketa Hospital (16%), because of high TB/HIV co-infected case load at those hospitals. Like the previous year but less than that, **defaulter rate** was still the highest at AungSan TB Hospital (15%) followed by West YGH (14%). **Treatment failure rate** was 14%, the highest at West YGH followed by Aung San TB Hospital (13%).

Figure26. Treatment Success Rate of New Smear Positive Cases by partners



On the side of partners, MMA achieved TSR target by 90%, and PSI almost achieved with 84% and MDM 80%. AHRN & MSF (CH) got 76% TSR each. MSF-Holland got lower TSR because the patients treated were TB-HIV co-infected.

Like PPM Hospitals, the partner (MSF-H) treating TB-HIV patients had the highest Case Fatality Rate (12% at MSF-H-Lashio & 9% at MSF-H-Ygn), followed by MSF-CH (Dawei) with 8%. Failure rate was the highest at MSF-H (Rakhine) with 43% because of riots there. Defaulter rate was also the highest at MSF-Holland (Shan-Lashio) with 16% followed by AHRN (Shan-Lashio) with 14%.

Table 42. Treatment outcome of TB patients with known HIV status & unknown HIV Status (2011 cohort)

Type of TB patients		Total no. evaluated	Cured	Completed	Deaths	Failure	Defaulter	Transferred out	Total no. evaluated
New (+)	HIV (+)	1133	648	78	279	31	60	37	1133
	Unknown HIV status	41177	31735	3785	1890	1355	1808	604	41177
	Total	42310	32383	3863	2169	1386	1868	641	42310
Smear (-)	HIV (+)	2795		1925	549	24	232	65	2795
	Unknown HIV status	40246		34521	2271	220	2508	726	40246
	Total	43041		36446	2820	244	2740	791	43041
Relapse	HIV (+)	168	70	41	42	4	6	5	168
	Unknown HIV status	4471	2838	523	440	299	233	138	4471
	Total	4639	2908	564	482	303	239	143	4639
Other	HIV (+)	349	6	198	119	5	13	8	349
	Unknown HIV status	3950	251	2685	508	48	368	90	3950
	Total	4299	257	2883	627	53	381	98	4299
PC	HIV (+)	268		189	36		34	9	268
	Unknown HIV status	24657		23819	102		580	156	24657
	Total	24925		24008	138		614	165	24925
TBM	HIV (+)	32		14	11		1	6	32
	Unknown HIV status	403		317	44		37	5	403
	Total	435		331	55		38	11	435
TAD	HIV (+)	48	8	10	17	2	11	0	48
	Unknown HIV status	591	276	106	79	33	76	21	591
	Total	639	284	116	96	35	87	21	639
TAF	HIV (+)	123	45	13	64	13	20	8	123
	Unknown HIV status	1388	728	140	69	221	125	65	1388
	Total	1511	773	153	133	234	145	73	1511

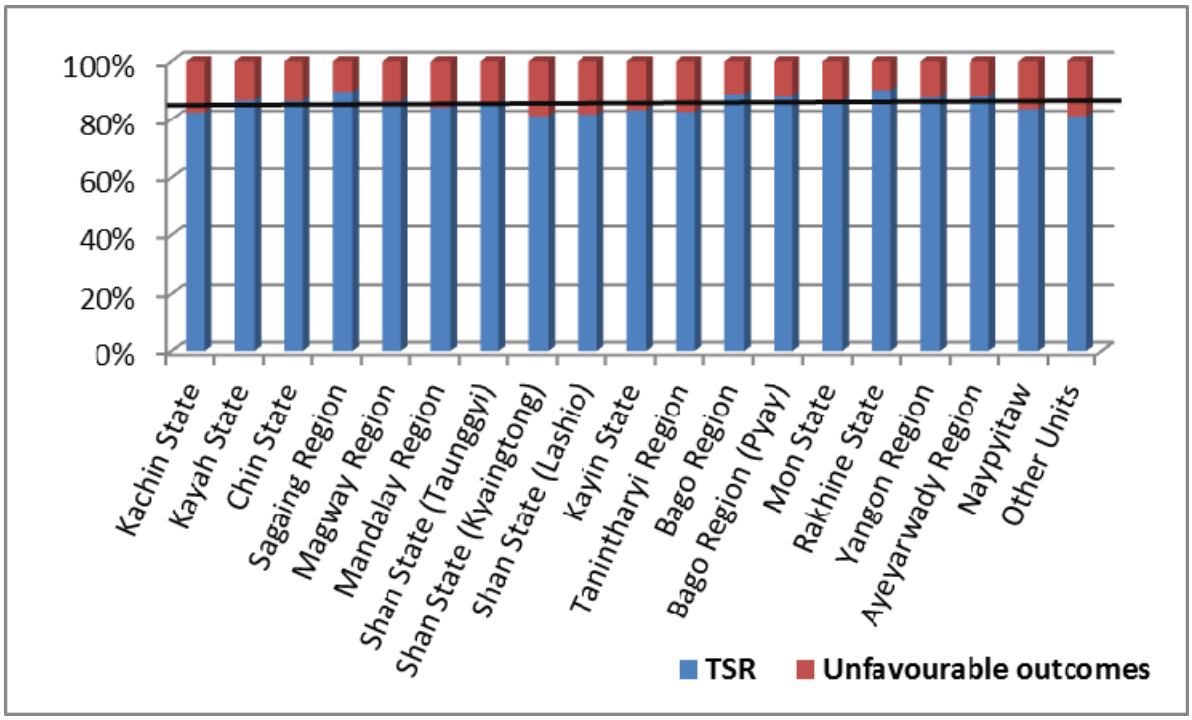
EP	HIV (+)	1380		990	243	16	95	36	1380
	Unknown HIV status	11480	0	10301	452	20	517	190	11480
	Total	12860		11291	695	36	612	226	12860
Hilar Lymph Node enlargement	HIV (+)	44		37	4	0	3	0	44
	Unknown HIV status	11673		11173	54	2	385	59	11673
	Total	11717		11210	58	2	388	59	11717
Total	**HIV (+)**	**6340**	**777**	**3495**	**1364**	**95**	**475**	**174**	**6340**
	Unknown HIV status	**140036**	**35828**	**87370**	**5909**	**2198**	**6637**	**2054**	**140036**
	Total	**146376**	**36605**	**90865**	**7273**	**2293**	**7112**	**2228**	**146376**

As mentioned in table, NTP could evaluate 146,376 TB patients (2011 cohort). Of these patients, 4.3% (6,340/146,376) knew their HIV positive status. Treatment success rate was only 67.4% (4,272/6,340) among those patients. Looking at the unfavourable treatment outcome of those TB patients, case fatality rate was 21.5% (1,364/6,340), failure rate 1.5% (95/6,340) and defaulter rate 7.5% (475/6,340).

Note: 2011 cohort: Number of all TB cases reported in 2011 TB-07, block 1 were checked with the same cohort reported on treatment outcomes in 2010 (TB-08). But there was inconsistency and it could be due to counting of transferred in patients while reporting for treatment outcomes.

If TB/HIV prevention and control activities are not adequate enough or timely intervention cannot be done, the unfavourable outcome will become increased much more.

Figure 27. Treatment Success Rate of New Smear Positive TB patients by Regions and States (2011 cohort)



10. Evaluation of Regional and State level TB control achievement

The evaluation of Regions and States is based on the Strengths, Weakness, Opportunities and Threats (SWOT) analysis.

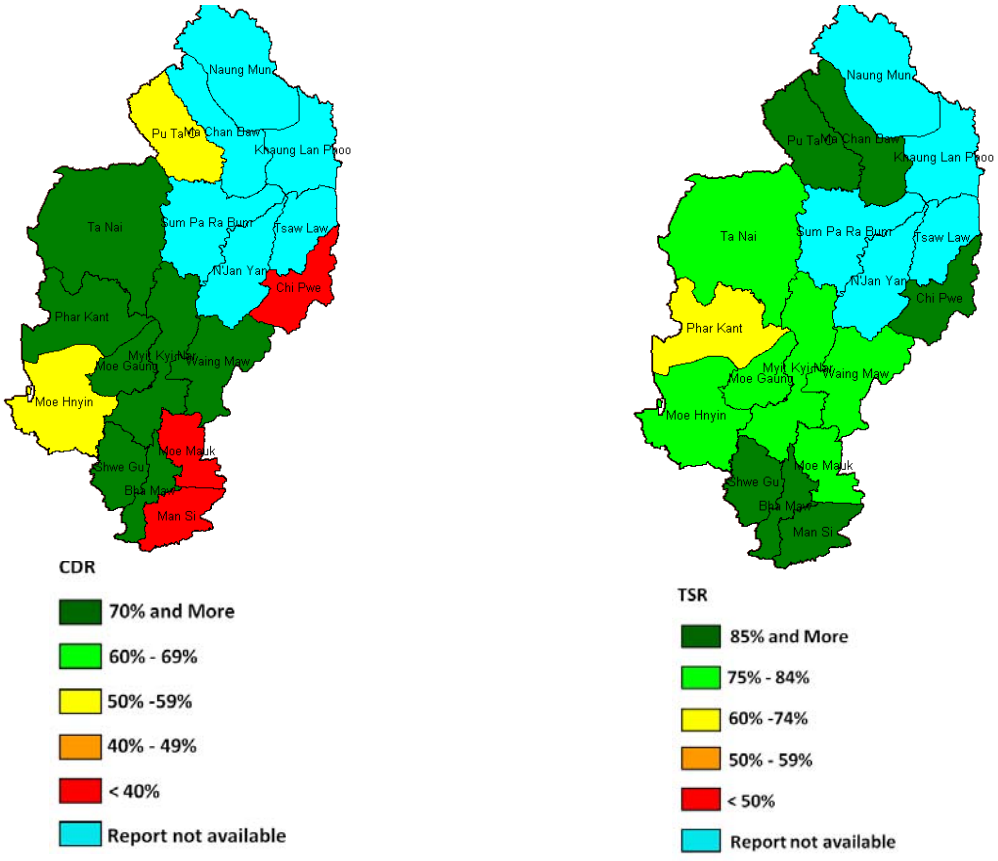
10.1 Kachin State

In Kachin state, there are 4 districts and 18 townships with the population of approximately 1.5 milloin in 2012. There are 5 TB teams in Myintkyina, Bahmaw, Shwegu, Moenyin and Putao townships. NTP did not receive reports from 4 townships (N'ginyan, Hsawlaw, Khaunglanbu and Naungmun). Therefore, the reporting efficiency was 78% (14/18). CDR for 2012 was 66% (NTP only) and when added other reporting units such as MSF-H, PSI and MDM, it became 89% (NTP and Partners). However, Moemauk, Mansi, Chipway, Machanbaw and Sumprabum townships had CDR ≤ 40%. In 2012, Sumprabum and Machanbaw sent zero report. But, Bahmo, Kamaing, Mogaung, Tanai, Myitkyina and Waingmaw had CDR ≥ 100%. CR for 2011 cohort in Kachin state (NTP and Implementing partners) was 70%. TSR by NTP and implementing partners got 80% for 2011 cohort which was higher than last years. The defaulter rate, case fatality rate and failure rate for the whole state were 5% respectively. Bahmaw and Shwegu townships achieved the target for

CDR (70%) and TSR (85%). In MDR-TB activity, totally 13 MDR-TB patients were in the waiting list and also second line drugs were not available in Kachin State. TB/HIV collaborative activities have been started in Myitkyina since 2005 in collaboration with NAP, WHO and MSF-H.

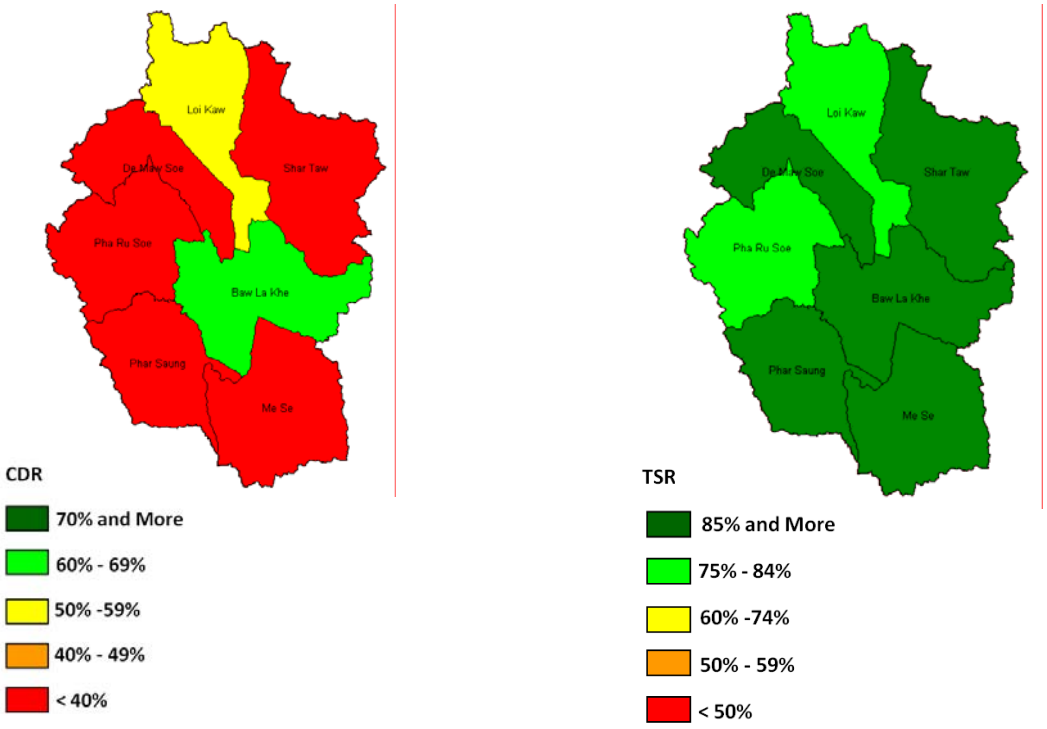
Table 43. Treatment outcome of TB/HIV patients in Myitkyina township (2011 cohort)

Type of Patients	Cured	Completed	Died	Failure	Defaulted	Transferred out	Total
Smear positive	11 (37%)	6 (20%)	8 (27%)	2 (7%)	2 (7%)	1 (3%)	30
Smear negative		69 (62%)	26 (23%)	0	15 (14%)	1 (1%)	111
EP		11 (79%)	1 (7%)	0	1 (7%)	1 (7%)	14
PC		0	0	0	0	0	0
Hilar enlargement		4 (80%)	1 (20%)	0	0	0	5
Relapse	0	0	0	0	1 (100%)	0	1
TAD	0	0	0	0	0	0	0
TAF	1 (50%)	0	1 (50%)	0	0	0	2
Other	1 (9%)	3 (27%)	3 (27%)	1 (9%)	2 (18%)	1 (9%)	11



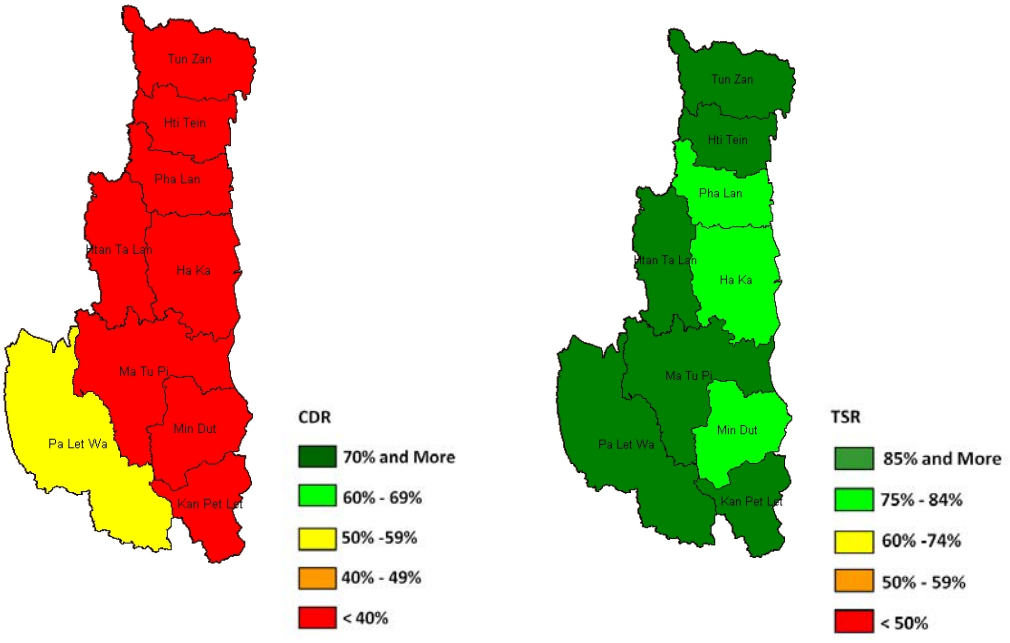
10.2. Kayah state

Kayah State has 2 districts, comprised of 7 townships with the population of 0.29 million in 2012. The reporting efficiency was 100%. CDR of the whole state was 31% with CR of 80% and TSR of 87% with or without contribution by the implementing partners. World Vision and MWAF are the implementing partners for TB control activity in Kayah State. By townships, no township achieved CDR of ≥70% and CR of ≥85%. Townships with CDR of ≤ 40% were Mansai, Phruso, Pasaung, Dimawhso and Shartaw. Defaulter rate was higher than 5% in two townships (Loikaw and Phruso). Failure rate more than 5% was found in Bawlake township. There is no collaborative TB/HIV activity and MDR TB activity. In scope of Human Resource (HR), State TB Officer and team leader were vacant. Moreover, Grade II lab. Technician was vacant in Demoso. Tansportation difficulties and security problems also play as main constraints of TB control in Kayah State.



10.3. <u>Chin state</u>

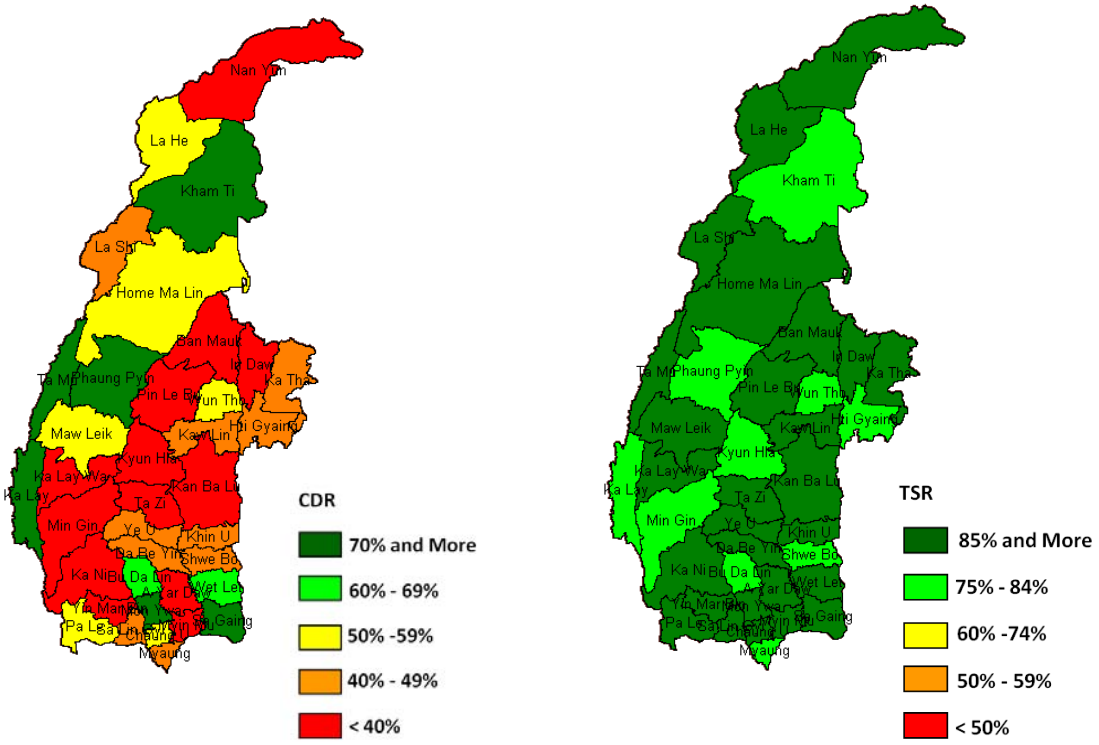
Chin State covers 3 districts with 9 townships having the population of approximately 0.5 million in 2012. For administration, five townships (Falam, Hakha, Htantalan, Tiddim and Tunzun) from Northern Chin State were monitored by Sagaing Region TB officer, Palatwa township under Rakhine State TB officer and Mindat, Kanpetlet and Matupi townships from Southern Chin State were administrated by Magway Region TB officer. Altogether the township in the State was shared for administrative management, reporting efficacy was 100%. CDR of the whole state was 29% with CR of 81% and TSR of 86% with the contribution by the implementing partner. PSI was the only one implementing partner working along with NTP for Chin State. Almost all townships except Paletwa had CDR ≤ 40%. There was no township which reached CDR and TSR targets (70/85). Defaulter rate of > 5% was found in two townships (Falam and Paletwa). Case fatality rate (CFR) higher than 5% was found in Hakha, Mindat and Matupi townships. There was no TB/HIV collaborative activity in State. MDR-TB case finding was not started yet. No State TB Officer was assigned. Team Leader post was vacant at Mindat and Falam townships. At Chin Hills, various kinds of hill tribes in separate dialects were main threats for health promotion & education. Furthermore, transportation difficulties affected clinical management and programme management. Unfortunately, implementing partners were not willing to work in Chin State.



10.4. Sagaing Region

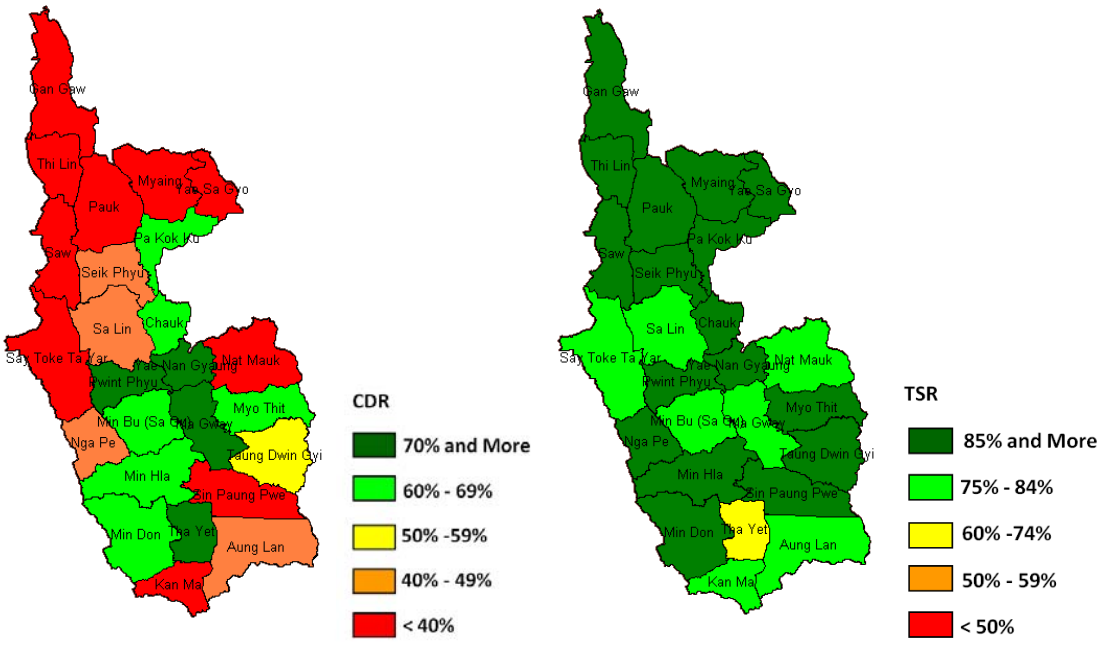
Sagaing Regional TB center covers 6 districts, comprised of 37 townships, plus 5 townships in Northern Chin State. However, Nanyun Township, located at Northern part of Sagaing Region is supervised by Kachin State TB officer. The population residing in Sagaing region in 2012 was about 5 million. The reporting efficacy is 100%. CDR of the whole region was 54%, CR of 78% and TSR of 88% respectively by the effort of NTP and its implementing partners. There were 5 implementing partners: MMCWA, MRCS, MMA, UNION, Merlin and PSI. Only two townships such as Sagaing and Tamu achieved both CDR and TSR targets (70/85). There were fourteen townships having CDR ≤ 40% in Sagaing region. Case fatality rate higher than 5% was found in sixteen townships and Failure rate more than 2% was found in eight townships. Defaulter rate (> 5%) was seen in two townhips. However, the case fatality rate for the whole region was 6%, defaulter rate 2% and failure rate 2%. TB/HIV activities were done in Monywa. For MDR-TB, 7 MDR-TB patients were on waiting list; moreover, second line drugs were not available in Sagaing region.

Limited Human Resource and over workload are the major challenges. Unreached areas still needed to be covered with TB control activities. The decentralization of administrative roles and organization structures were compulsory needs.



10.5. Magway Region

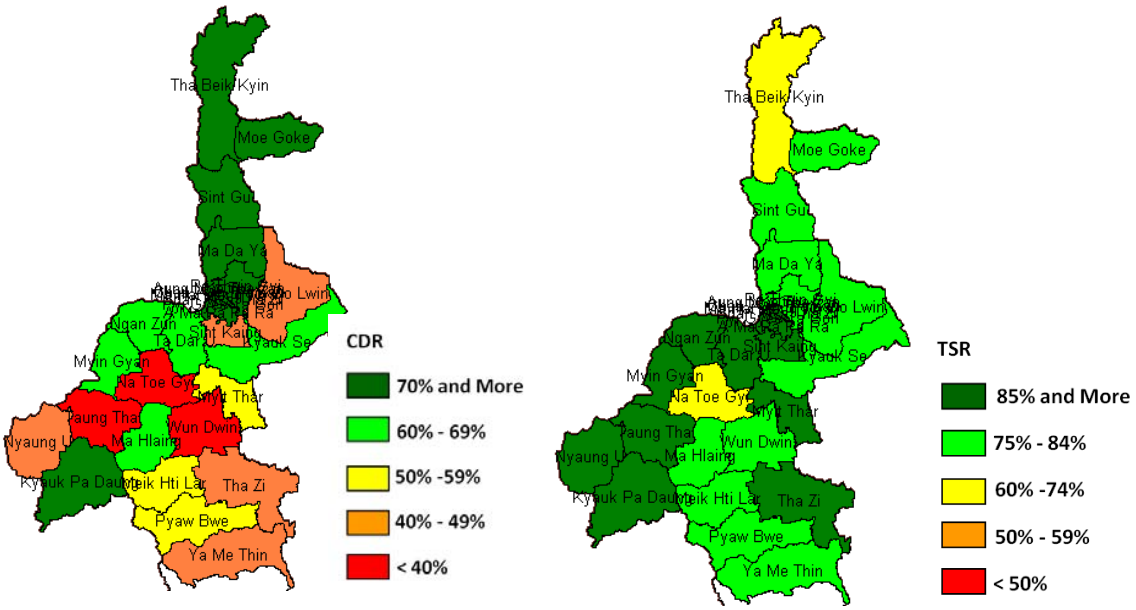
Magway Region TB center covers 5 districts with 25 townships with the population of approximately 4.1 million. Regional TB officer is responsible for Magway Region and 3 townships (Mindat, Kanpetlet, Matupi) of Southern Chin State. The reporting efficacy is 100%. CDR of the region was 54%, not achieved the target with CR of 77% and TSR of 87%, reaching the target. These were the efforts of both NTP and implementing partners. MMCWA, MRCS, MMA, MHAA, PSI, Pact Myanmar and UNION were implementing TB control activities in Magway region. Only one township (Pwintphyu) achieved both CDR (70%) and TSR target (85%). TB/HIV collaborative activity was functioning in Magway and Pakokku. There were 10 townships having CDR ≤ 40%. Case fatality rate for the whole region was 6%. Failure rate was 3% and defaulter rate was 3%. Defaulter rate was higher than 5% in 6 townships (Magway, Chauk, Yenanchaung, Saw, Thayet and Kanma). Failure rate above 2% was seen in 5 townships (Magway, Yenanchaung, Yesagyo, Minbu and Thayet). However, case fatality rate was higher than 5% in eleven townships. There were totally 10 MDR-TB patients on waiting list. Moreover, second line drugs were not available in Magway.



10.6. Mandalay Region

Mandalay Regional TB Centre covers 7 districts composed of 31 townships. However, since 2011, three townships (Pyinmana, Laeway and Tatkone) were taken out from the region. These three townships and five new Thiri townships were under Nay Pyi Taw Council and analysed separately. The population in Mandalay region in 2012 was about 6.4 million. The reporting efficiency was 100% in Mandalay Region. Mandalay Region achieved CDR of 70%, CR of 74% and TSR of 84% with the contribution by implementing partners. MMA, PSI, Union, MMCWA and MRCS are working together with NTP. Maharaungmyay and Pyigyitagon townships achieved both targets of CDR and TSR. Townships with CDR of ≤ 40% were Natogyi, Taungtha, Wundwin and Yamethin. Case fatality rate for the whole region was 7% and failure rate was 5%. Case fatality rate more than 5% was found in nineteen townships and failure rate higher than 2% was seen in twenty-one townships. However, only four townships (Natogyi, Sintgu, Thabeikkyin and Yamethin) had defaulter rate greater than 5%. Defaulter rate for the whole region was 3%.

Barriers for target achievement in Mandalay Region are TB/HIV problems, human resource shortage, frequent turn-over of trained staff and inconsistent population data to be used for target setting. Mandalay District (7 townships) is implementing the "Integrated HIV care" Project with the support of MoH (NTP and NAP together with Medical Care unit of Mandalay General Hospital), UNION and Yadana oil company.

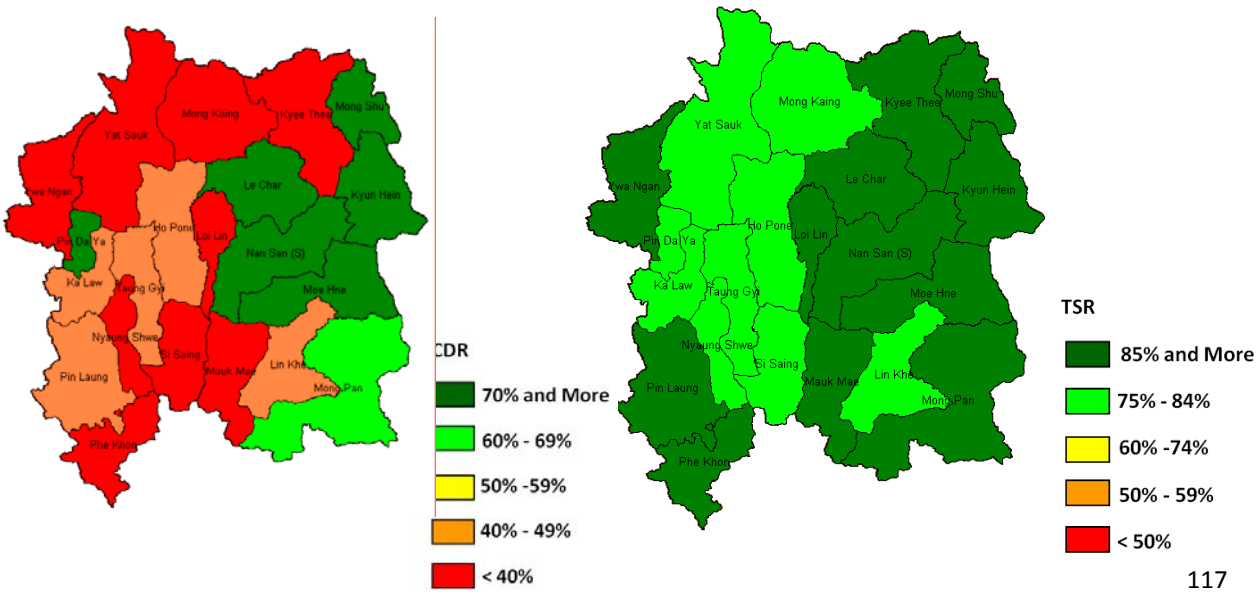


10.7. Shan State (Taunggyi)

State TB center located in Taunggyi covers 2 districts with 21 townships of Southern Shan State. Its population was approximately 2 million in 2012. Reporting efficiency was 100%. Shan State (Taunggyi) achieved CDR of 43%, CR of 78% and TSR of 85% with the contribution of partners. In Shan State (Taunggyi), the implementing partners including MMA, PSI and UNION supported TB control activities. CDR of ≤ 40% were found in 11 townships. Altogether six townships achieved CDR (70%) and TSR (85%) targets. Case fatality rate higher than 5% was found in nine townships. Failure rate greater than 2% was seen in eleven townships. Case fatality rate and failure rate for the whole state were 6% and 4% respectively. Defaulter rate for the whole state was 3% and only four tonwhsips had defautlter rate higher than 5%. TB/HIV collaborative activities were carried out in Taunggyi, but, MDR-TB has not been initiated yet. Eight MDR patients were listed in waiting list. Human resource shortage was a threatening issue.

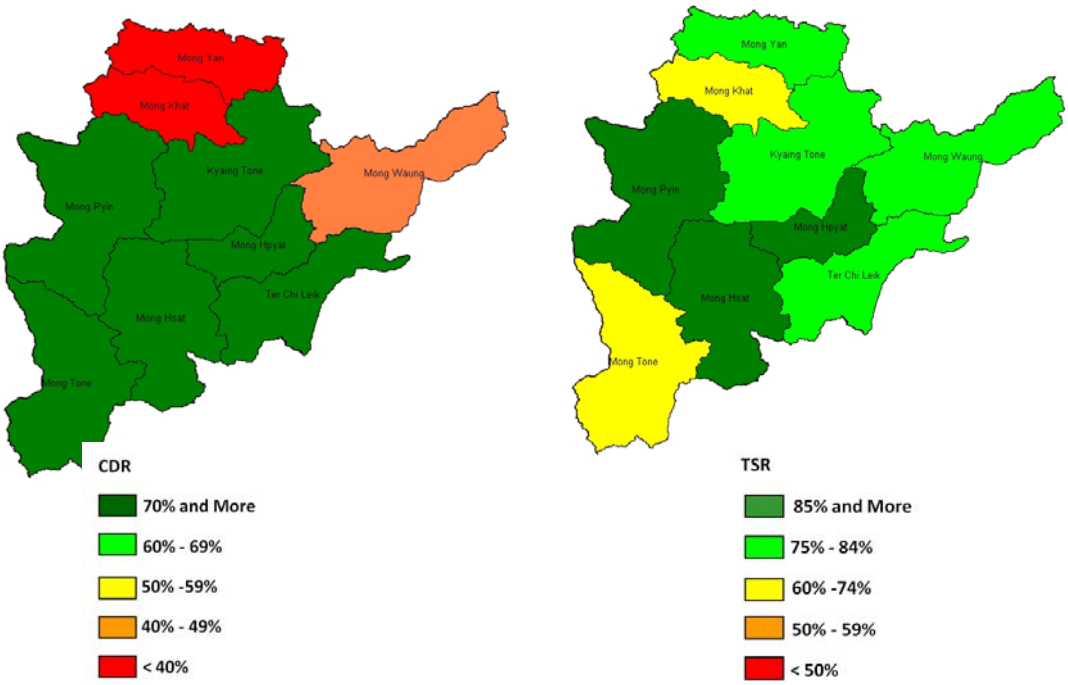
Table 44. Treatment outcome of TB/HIV patients (Taunggyi Township) (2011 cohort)

Type of Patients	Cured	Completed	Died	Failure	Defaulted	Transferred out	Total
Smear positive	9 (60%)	3 (20%)	1 (7%)	0	2 (13%)	0	15
Smear negative		26 (62%)	7 (17%)	0	7 (17%)	2 (5%)	42
EP		17 (81%)	1 (5%)	0	2 (10%)	1 (5%)	21
Relapse	0	0	0	0	0	0	0
TAD	0	0	0	0	0	0	0
TAF	1 (100%)	0	0	0	0	0	1
Other	0	2 (67%)	1 (33%)	0	0	0	3



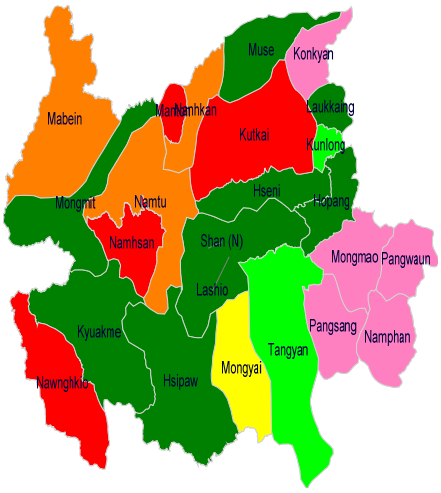
10.8. Shan State (Kyaingtong)

Shan State (Kengtong) TB center covers 4 districts with 10 townships and its population was about 0.69 million. Reporting efficiency was 90%. There was no report from Matman township. CDR target was achieved with 87% for the Shan (Kyaingtong) State in 2012 when partners' contribution was added. CR was 71% for the whole region and TSR was 80% by the effort of NTP and partners. The implementing partner is MWAF. Like other regions and states, the partners' contribution improved case detection but their contribution made reduction of CR and TSR. Three townships (Mongpyak, Monghsat and Mongpying) achieved both CDR and TSR targets (70/85). There were two townships (Mongkhat and Mongyan) having CDR ≤ 40%. Defaulter rate & failure rate for the whole state were 7% and 5% respectively. There were 6 townships which could not achieve both CDR and TSR targets. Defaulter rate was higher than 5% in five townships. Failure rate was higher than 2% in seven townships. Case fatality rate more than 5% was seen in five townships. Defaulter rate, failure rate and case fatality rate for the whole region were 7%, 5% and 6% respectively. Successfully, TB/HIV collaborative activities were implemented in Tachileik. MDR-TB management was not started yet.



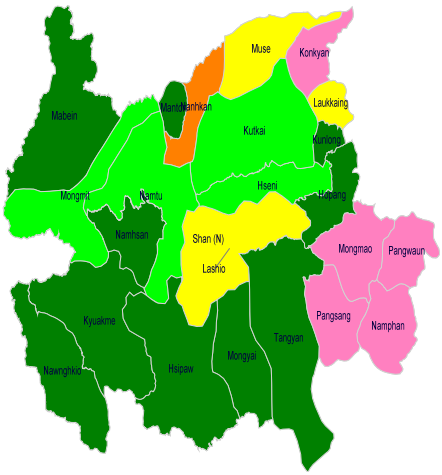
10.9. Shan State (Lashio)

Shan State TB centre located in Kengtong Township covers 5 districts and 24 townships including Wa special region. Its population was 2.18 million. Reporting efficiency was 75% (19/24). Shan state (Lashio) did not achieve both CDR and TSR targets. CDR of the whole state was 66% (NTP and partners) and CR and TSR were 71% and 80% respectively. MSF-H, MMA, PSI, MWAF and AHRN were implementing partners. Two townships (Hopan and Hsipaw) achieved both CDR & TSR targets (70/85). Four townships (Manton, Naungcho, Namsam and Kutkai) got CDR lower than 40%. Case fatatlity rate, failure rate and defaulter rate for the whole state were 5%, 3% and 9% respectively. There were eight townships having case fatality rate higher than 5%. Failure rate more than 2% was seen in six townships and defatulter rate higher than 5% was found in eight townships according to 2011 cohort. In 2012, TB/HIV collaborative activities were carried out in Lashio. MDR-TB treatment will be started in 2013. There were 27 MDR-TB patients in waiting list. Apart from limited human resources, difficult transportation and language barrier, TB control activities faced challenges in border unrest areas.



CDR

- 70% and More
- 60% - 69%
- 50% -59%
- 40% - 49%
- < 40%
- Report not available

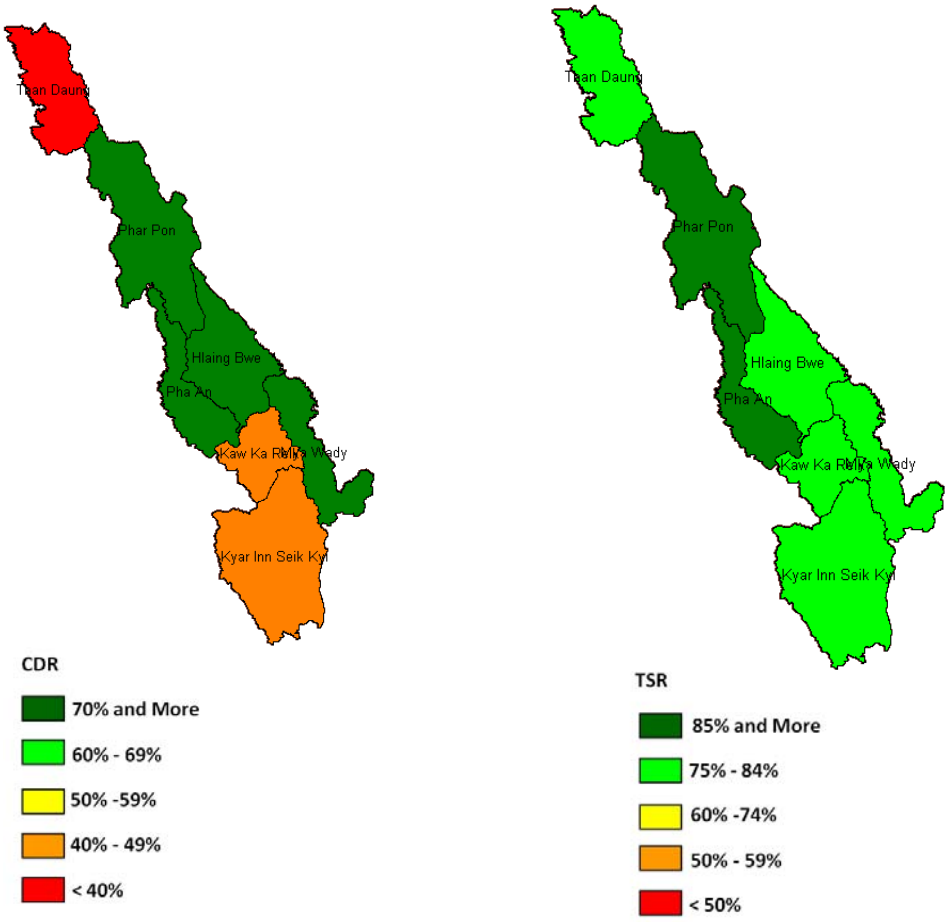


TSR

- 85% and More
- 75% - 84%
- 60% -74%
- 50% - 59%
- < 50%
- Report not available

10.10. Kayin State

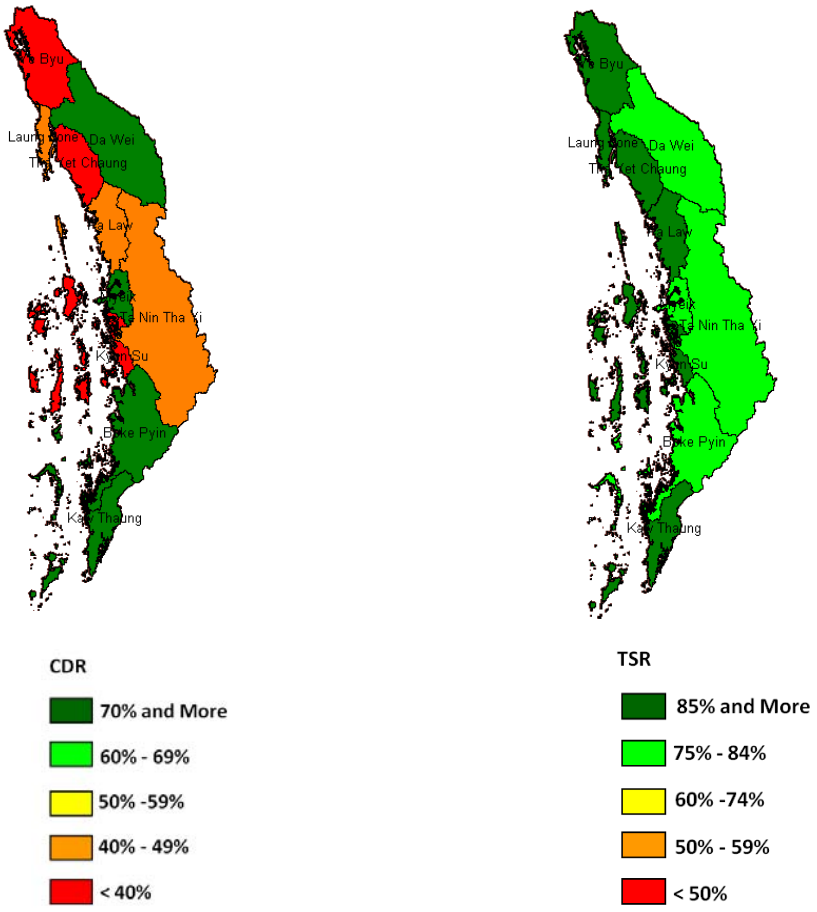
State TB center located in Mawlamyine Township covers both Mon State and Kayin State: 2 districts in Mon State with 10 townships and 3 districts in Kayin State with 7 townships. There were 2.12 million people residing in Mon state 1.44 million in Kayin state. Reporting efficiency was 100%. CDR was achieved with 84% for the whole Kayin State by NTP and partners. Implementing partners in Kayin State were MMCWA, PSI and MMA. Although Kayin state achieved CDR target but it got CR of 73% and TSR of 83%, not reaching the target. There were two townships having CDR ≤ 40% (Kyarinnseikkyi and Thandaung). Two townships (Hpa-an and Papun) got the targets of CDR (70%) and TSR (85%). Case fatality rate was 4%; failure rate was 2% and defaulter rate was 6% for the whole region. Kawkareik and Hlaingbwe townships had case fatality rate higher than 5%. Failure rate more than 2% was found in three townships including Kyarinnseikkyi, Myawady and Thandaung. Defaulter rate above 5% was seen in Kyarinnseikkyi, Thandaung, Kawkareik and Hlaingbwe townships. Unfortunately, there was no TB/HIV collaborative activity in State. Border Township (Myawaddy) had cross border activities, but yet it was weak in implementation due to lack of Team Leader. Human resource shortage was also a challenge.



10.11 Tanintharyi Region

Regional TB center located in Daewai township covers 3 districts with 10 townships. Its population was 1.34 million. Reporting efficiency was 100%. CDR of the region was 91% (NTP and implementing partners). The region got CR of 69% and TSR of 81% by the effort of NTP and partners. There were 4 implementing partners (MWAF, PSI, MSF-CH and World Vision) working along with NTP. Only one township (Kawthaung) achieved both CDR and TSR targets (70/85). There were three townships having CDR ≤ 40% (Thayetchaung, Yebyu and Kyunsu). Case fatality rate for the whole region was 4%. Failure rate was 3% and defaulter rate was 7%. Three townships (Dawei, Tanintharyi and Palaw) got case fatality rate higher than 5%. Failure rate above 2% was seen in six townships and defaulter rate higher tha 5% was found in 5 townships. TB/HIV collaborative activity was implemented in Dawei.

There were 41 MDR-TB patients on waiting list. However, MDR TB management had not initiated yet. Threats faced in 2012 were migration & border Area TB Control. TB team leader-Medical Officer was needed in Kawthaung.

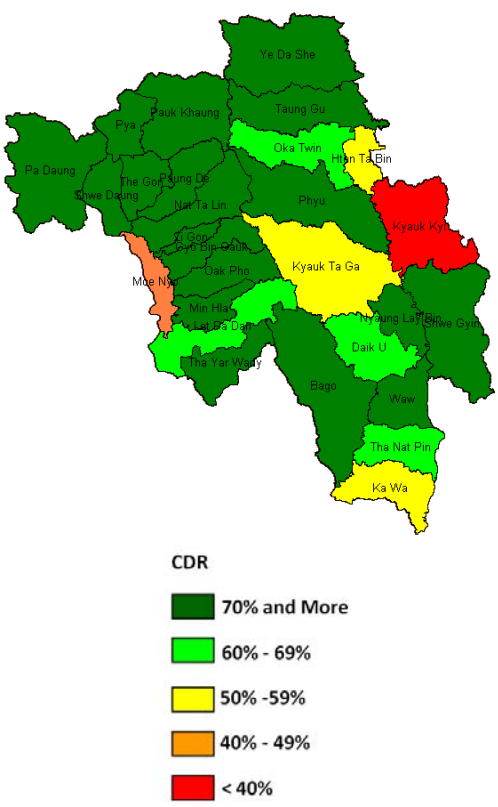


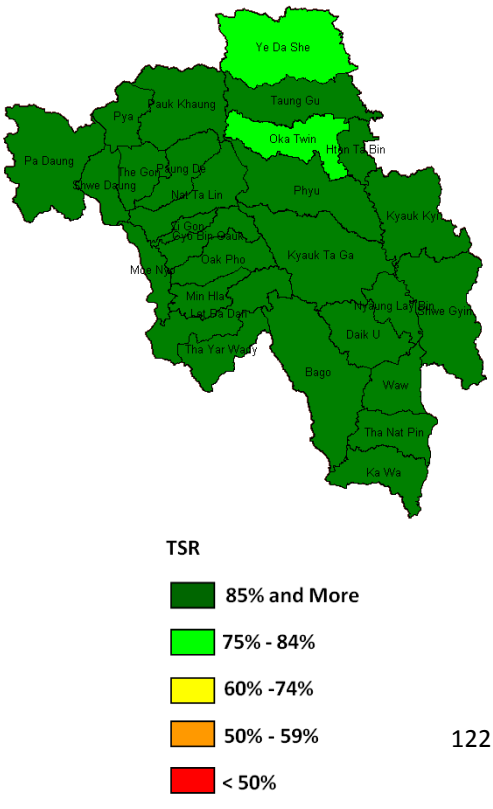
10.12. Bago Region

Bago Region TB centre located in Bago Region covers 14 townships in Bago Region (Bago) and another 14 townships in Bago Region (Pyay). Total population was about 2.86 million in Bago region (Bago) and 2.01 million in Bago region (Pyay). The reporting efficiency was 100% (28/28). The region achieved both targets for CDR and TSR. The regionwide CDR was 83% by NTP and partners. Although TSR was 89%, CR was 77% for the region. Implementing partners (MMCWA, PSI and MMA) were working along with NTP. By townships, 18 townships achieved both CDR and TSR targets. There were only two townships (Kyaukkyi and Moenyo) having CDR ≤ 40%.

In Bago region (Bago), there were case fatility rate of 5%, failure rate of 1% and defaulter rate of 4%. Six townships got case fatality rate higher than 5% and only one townhip got failure rate above 2%. However, three townships (Bago, Oaktwin and Yedashe) got defaulter rate higher than 5%.

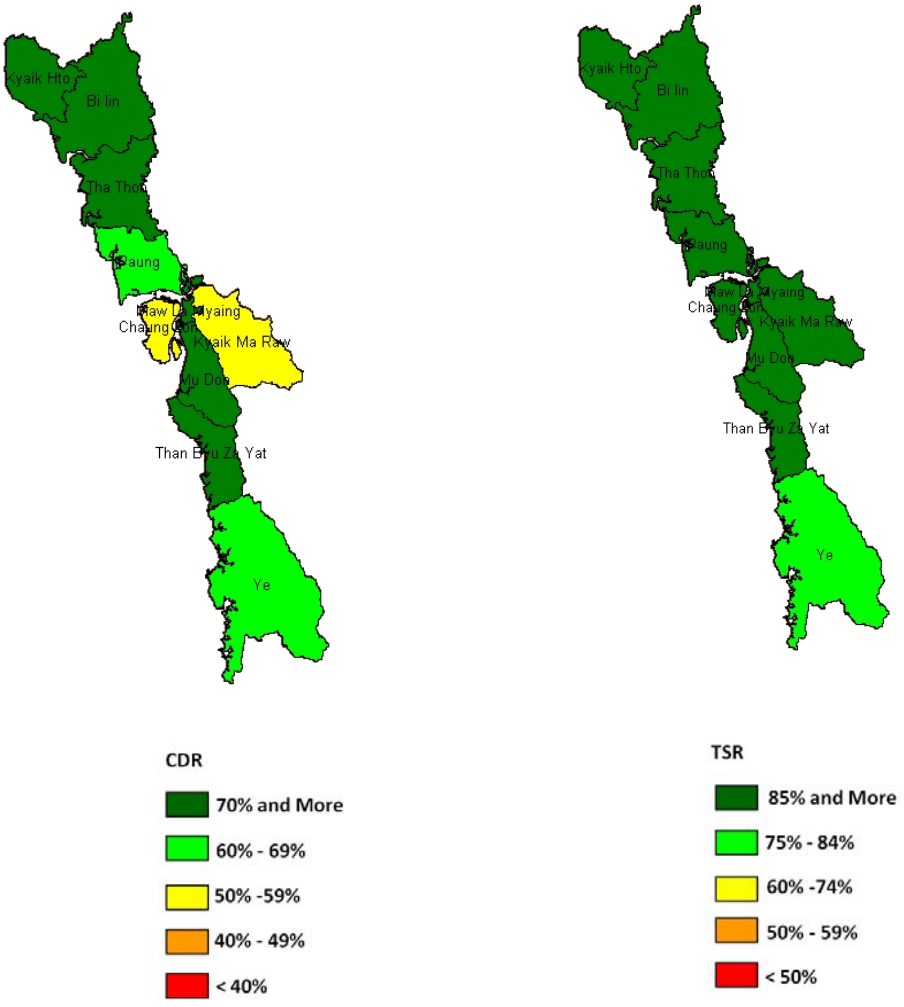
In Bago region (Pyay), regionwide case fatality rate, failure rate and defaulter rate were 6%, 2% and 3% respectively. Although seven townships got case fatality rate higher than 5%, only four townships (Paunde, Padaung, Shwetaung nad Thegone) got failure rate more than 2% and only two townships (Gyobinkauk and Nattalin) got defaulter rate above 5%. TB/HIV collaborative activity was functioning in Pyay. There was long waiting list of MRD-TB patients but MDR TB management had not started yet.





10.13. Mon State

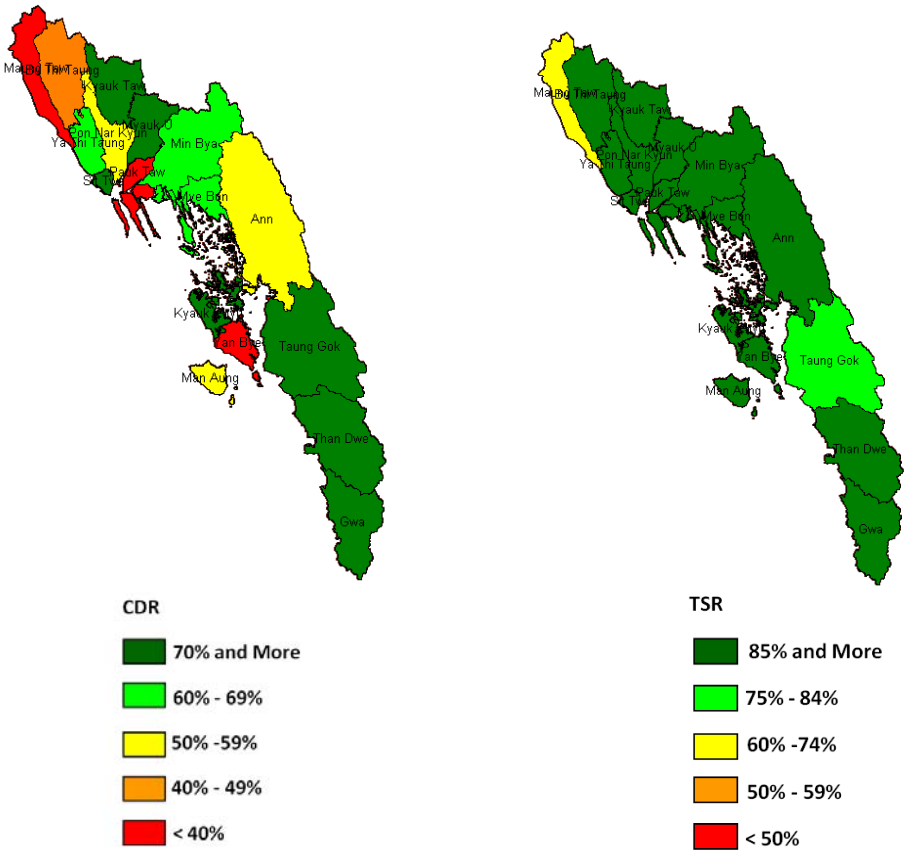
State TB center located in Mawlamyine Township covers both Mon State and Kayin State: 2 districts in Mon State with 10 townships and 3 districts in Kayin State with 7 townships. Mon state had 2.13 million population. Reporting efficiency was 100%. Statewide, CDR target was achieved with 81% and TSR was 88%. Cure rate was 78%. No township got CDR ≤ 40%. There were six townships achieved both targets of CDR and TSR (70/85). Case fatality rate for the whole region was 6%. Failure rate and defaulter rate were 3% each. There were five townships which got case fatality rate higher than 5%. However, failure rate more than 2% was found in five townships (Mudon, Thaton, Thanbyuzayat, Ye and Belin) and defaulter rate above 5% was seen only in two townhisp (Ye and Thaton). TB/HIV activities were implemented in Mawlamyaing, and MDR-TB treatment would be started in Mawlamyaing and Mudon in 2013. Totally 10 MDR-TB patients were listed as waiting.



10.14. Rakhine State

Rakhine State TB centre was situated in Sittwe township, capital city of State, covering 17 townships. Its population was approximately 3.23 million. Reporting efficiency was 100% although there was struggling with conflicts. As a successful outcome, TSR was 90%. But, only 3 townships achieved both CDR and TSR targets. CDR for the whole state was 58% (NTP and partners) but CR and TSR were not changed due to partners' contribution. CR for the whole state was 77%. Implementing partners (Malteser International, PSI, MMA and MSF-H) were working along with NTP in TB control activities. Three townships (Rambye, Maungdaw and Pauktaw) got CDR ≤ 40% in 2012. Case fatality rate, failure rate and defaulter rate for the whole state were 4%, 3% and 3% respectively. Death rate higher than 5% was found only in two townships (Maungdaw and Pauktaw). Failure rate more than 2% was seen in seven townships and defaulter rate higher than 5% was found in only one township (Ann). There was no TB/HIV collaborative activity. Eight MDR-TB patients were on waiting list. ACF, TB/HIV activities and MDR-TB management will be scaled up.

Diverse ethnics were facing with various social and economic snags for long lasting period. Sectarian clashes occurred sporadically in unrest border areas of Rakhine State, social riots occurred between ethnic minorities and also crowded unhygienic camps for Internally Displaced Persons affected TB control activities.

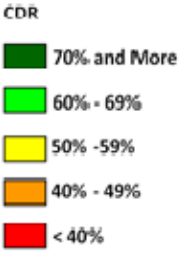


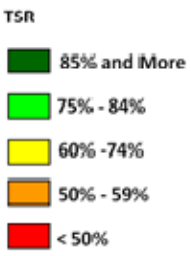
10.15. Yangon Region

Yangon Region TB center situated in Yangon city, economic capital of country, covers 4 districts with 45 townships. Its population was 5.97 million in 2012. Reporting efficiency was 100%. Regionwide CDR was 112% and TSR was 86% with the effort of NTP and partners. But CR was 81%. Eight partners (MWAF, MMCWA, MMA, MRCS, PSI, MSF-H, MSF-CH and JICA) did TB control activities. Twenty-three townships achieved CDR and TSR targets. Seikkan township got CDR lower than 40%, however, this townhip is very close to Botataung township and the patients drained to Botataung. Case fatality rate for the whole region was 4%. There were ten townships which got case fatatily rate higher than 5%. Failure rate and defaulter rate were 3% and 4% respectively. Failure rate higher than 2% was found in 21 townships. Defaulter rate more than 5% was seen in nine townships. Totally 376 patients were put on MDR-TB treatment. BSL3 Laboratory was established in year 2012. As an innovative way, Rifampicin Resistance detected by Gene-X Pert was 171 patients. Totally 240 MDR-TB patients were listed as waiting.

Although NTP tried for innovative approach with new diagnostic tools, limited human resource threatened TB control activities. Infection control became a crucial concern.

Yangon Region (Eastern District)





Yangon Region (Western District)

CDR

- 70% and More
- 60% - 69%
- 50% -59%
- 40% - 49%
- < 40%

TSR

- 85% and More
- 75% - 84%
- 60% -74%
- 50% - 59%
- < 50%

Yangon Region (Southern District)

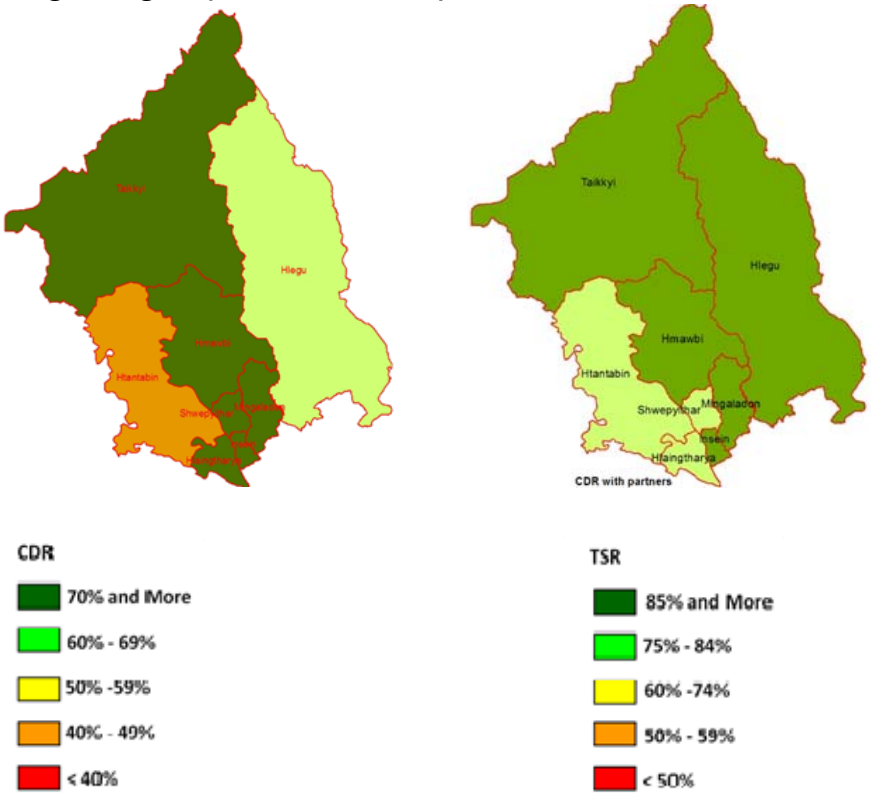
CDR

- 70% and More
- 60% - 69%
- 50% -59%
- 40% - 49%
- < 40%

TSR

- 85% and More
- 75% - 84%
- 60% -74%
- 50% - 59%
- < 50%

Yangon Region (Northern District)



Tuberculosis Diagnostic Centre (Yangon)

In Yangon, there are 2 diagnostic and referral centres (Latha and UTI Aungsan). The attendants to those centres were recorded and reported in following tables.

Table 45. Performance of TB Diagnostic Centres (Latha and Aungsan) in Yangon Region in 2012

Latha TB Diagnostic Centre

Latha centre	Category 1			Category 2				Category 3				Follow - up	Others	Total
								Adult		Child				
	Pos	Neg		R	D	F	O	P	EP	P	EP			
		P	EP											
January	50	85	38	26	1	2	24	12	11	4	2	321	617	1193
February	73	93	33	26	1	3	23	15	12	7	0	386	683	1355
March	80	117	45	21	1	2	25	12	9	7	0	420	639	1378
April	70	85	23	20	3	2	5	1	3	5	4	396	275	892
May	88	149	29	24	1	0	12	7	10	8	0	485	519	1332
June	87	113	23	22	3	3	20	12	7	7	2	433	471	1203
July	64	99	34	18	2	9	15	10	7	3	0	403	467	1131
August	73	125	32	30	2	5	27	10	3	8	7	350	504	1176
September	84	149	45	24	6	3	27	12	9	19	0	432	577	1387
October	79	105	34	21	3	5	14	4	4	16	2	472	607	1366
November	69	107	54	28	2	5	19	4	5	7	1	351	642	1294
December	93	108	40	19	0	2	24	11	9	4	2	627	541	1480
Total	**910**	**1335**	**430**	**279**	**25**	**41**	**235**	**110**	**89**	**95**	**20**	**5076**	**6542**	**15187**

AungSan TB Diagnostic Centre

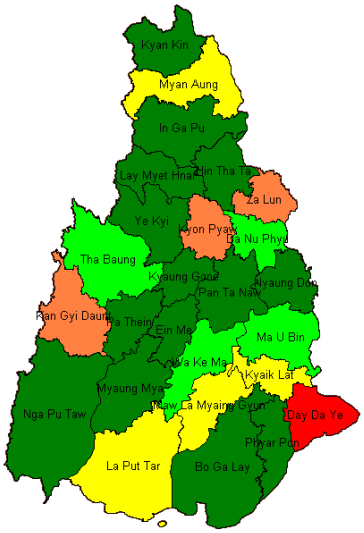
Aung San	Category 1			Category 2	Category 3				Follow - up	Others	Total
					Adult		Child				
	Pos	Neg			P	EP	P	EP			
		P	EP								
January	114	101	2	61	10	2	14	11	504	669	1488
February	87	119	10	62	16	5	18	6	342	804	1469
March	113	114	7	52	16	7	23	12	306	674	1324
April	99	73	5	26	6	3	12	7	277	514	1022
May	122	130	6	72	16	6	15	7	252	846	1472
June	140	128	3	58	8	9	15	16	304	641	1322
July	123	104	0	59	0	0	26	10	361	679	1362
August	115	91	10	55	1	0	18	7	358	778	1433
September	121	91	4	48	15	9	19	5	297	699	1308
October	102	90	2	56	17	12	20	3	323	707	1332
November	107	83	9	33	6	7	8	2	283	604	1142
December	89	75	7	43	3	1	7	3	261	562	1051
Total	**1332**	**1199**	**65**	**625**	**114**	**61**	**195**	**89**	**3868**	**8177**	**15725**

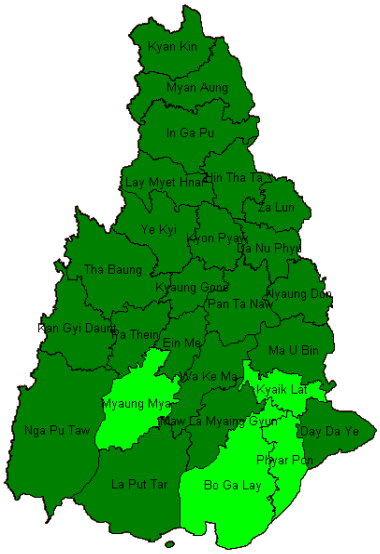
10.16. Ayeyarwaddy Region

Ayeyarwaddy Regional TB centre located in Pathein covers 5 districts with 26 townships. Total population of the Region was approximately 6.4 millions. It achieved CDR of 74%, CR of 76% and TSR of 88% when partners' data were added up. Reporting efficacy was 100%. The implementing partners in the region were PSI, MMA and MWAF.

Eleven townships achieved both of the TB control targets. However, Dedaye got CDR lower than 40%.

Case fatality rate for the whole region was 5%. Twelve townships got case fatality rate more than 5% in 2011 cohort. Failure rate was 1% for the whole region, and it was noted as 11% in Kyaiklatt. There were four townships having failure rate higher than 2%. Regionwide defaulter rate was 4%, but five townships had defaulter rate higher than 5%.





CDR

- 70% and More
- 60% - 69%
- 50% -59%
- 40% - 49%
- < 40%

TSR

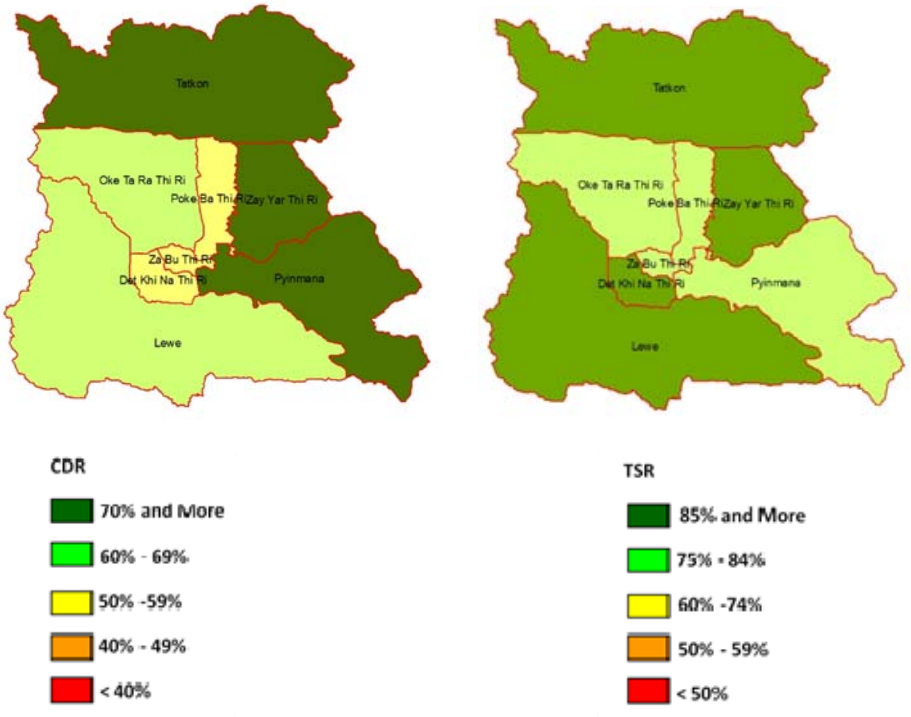
- 85% and More
- 75% - 84%
- 60% -74%
- 50% - 59%
- < 50%

10.17. Nay Pyi Taw Council

Nay Pyi Taw Council was composed of eight townships: five thiri townships and three townships from Mandalay region. Its population was approximately 0.9 million. Reporting efficiency was 100%. It achieved CDR of 75%, however, it was increased up to 90% when partners' contribution was added. According to 2011 cohort, CR was 73% and TSR of 81% when partners' data were added up. The implementing partners were PSI, MMA, JICA, MRCS.

Two townships achieved both targets of CDR and TSR. But two townships achieved CDR more than 100% and one township (Dekhinatheri) got CR of 100%.

Case fatality rate for the whole region was 6%. Among eight townships, five townships got case fatality rate higher than 5%. Failure rate was 4% and defaulter rate was 6% for the whole region, and failure rate was very high (25%) in Oaktaratheri township. High defaulter rate (19%) was noted in Zabutheri township. Five townships got failure rate higher than 2% and three townships got defaulter rate more than 5%.



11. Possible actions to be taken for solving the problems

A. Case detection rate less than 70%

- to promote community awareness by widespread health education concerning TB with the support of IEC materials
- to identify TB suspected patients in community and refer for proper investigations
- to educate family members of TB patients and promote contact tracing
- to advocate general practitioners and local NGOs to involve in TB control
- to advocate community and registered TB patients to involve in TB control
- to promote early case referral for diagnosis and treatment from GPs
- to assess the laboratory performance, to ensure 3 sputum smear examinations are being done for all chest symptomatic
- to ensure that all smear positive TB patients in the laboratory register are registered and treated
- to ensure that sputum microscopy is done by trained laboratory technician is accessible to patients
- to improve laboratory quality assurance system by close supervision of TMO
- to establish sputum collection points in hard to reach areas
- to improve the skills of health staff who diagnose the TB patients
- to promote TB suspect identification and referral by BHS
- to identify TB suspected patients as early as possible
- to decentralize the sputum microscopy according to the geographical variation
- to initiate active case finding using mobile teams equipped with diagnostic facilities
- to add partners' contribution when case detection is evaluated

B. CDR more than 100% and Cure rate less than 50%

- to assess any migrant population in the area
- to assess laboratory quality assessment system which is implementing or not
- to ensure that TB patients reside in the respective township are being treated
- to treat TB patients till cured with DOT
- to do regular sputum follow-up examination during the treatment
- to check the township actual population

- To consider HIV co-infection
- to conduct epidemiological surveillance
- to strengthen health education session for TB patients at the time of registration for treatment and during follow-up visits

C. Cure rate of new smear posivite TB cases less than 85%

- to ensure that every dose of medication is directly observed i.e. to assign DOT provider for every TB patient put on treatment
- to provide TB counseling to TB patients especially for treatment adherence
- to take accurate history taking for the most effective treatment
- to intensify the follow-up sputum examination during and at the end of treatment
- to give refresher training for BHS
- to consider HIV co- infection and strengthen TB/HIV collaboration
- to use quarterly cohort review meeting for early identification of missed dose patients
- to closely monitor the performance of partners at all level and take timely action especially for partners treating TB/HIV

D. Cure rate >85% with Case detection rate less than 40%

- to maintain CR and raise the CDR as suggestion A.
- to check data quality
- to check laboratory quality
- to identify more TB suspected cases

E. Sputum positivity rate less than 10%

- to check quality of laboratory performance whether lab. technician strictly follows the SOP on sputum microscopy
- to ensure that 3 sputum specimens are examined for all TB suspects
- to check whether the TB suspect is correct or not
- to check quality of stains and microscopes using in that microscopy centre
- to improve the accessibility of TB suspects to sputum microscopy centres

F. Sputum Positivity Rate more than 10%

- to evaluate the prevalence of TB in that particular township
- to improve the accessibility of TB suspects to sputum microscopy centres
- to check whether PPs under PPM are using Chest X Ray before sputum examination

G. Sputum conversion rate less than 80-85% in new smear positive TB cases

- to check whether categorization of TB patients based on proper history taking is correct or not
- to check whether that every dose of medication is directly observed
- to ensure sputum microscopy accuracy with quality assurance system
- to monitor the drug resistant TB situation
- to check correctness of TB-07, Block 5
- to explain all the staff involving in TB control about the importance of follow-up sputum examination in TB control
- to provide qualified DOT to every patient

H. Case fatality rate more than 5% in new smear positive TB cases

- to identify and refer TB suspect as early as possible
- to ensure that every dose of medication is directly observed
- to consider HIV prevalence among TB patients
- to advocate and encourage local PPs to refer promptly
- to find out other causes of death other than TB

I. Treatment failure rate more than 5% in new smear positive TB cases

- to check whether categorization of TB patients based on proper history taking is correct or not
- to ensure the quality of anti-TB drugs, stored in appropriate condition and being used before their expiry date
- to ensure that every correct dose of medication is directly observed, especially in initial phase
- to consider the level of primary drug resistance in the community
- to check laboratory quality

J. Defaulter rate more than 10% in new smear positive TB cases

- to consider for migrant population
- to strengthen DOT by supervision and close monitoring
- to educate TB patients concerning TB disease, its treatment and follow-up
- to provide adherence counseling as necessary
- to instruct the DOT supervisors and providers how to take action for patient with missed dose
- to find the patients with missed dose within 1 week (not to miss more than 1-2 doses) and put under DOT again.

K. Transferred out rate more than 5% in new smear positive TB cases

- to ensure that defaulted TB patients are not counted as transferred out cases
- to strengthen the system of proper referral
- to ask for the treatment outcome of transferred out patients from the transferred townships

L. Cure rate less than 85% but Treatment Success Rate more than 85% in new smear positive cases

- to intensify follow-up sputum examination as 2^{nd} , 5^{th} and 6^{th} month of treatment in new smear positive TB patients
- to explain all the staff involving in TB control the crucial importance of follow-up sputum examination in TB control
- to make sure defaulted TB patients are not counted as completed TB patients and misuse of anti-TB drugs

12. Recommendations

1. To strengthen township health system: e.g. To decentralize DOTS services to appropriate SHU/RHCs, capacity building of BHS
2. To establish standard organization set up at all levels
3. To fill up the vacant posts especially laboratory technicians
4. To ensure adequacy of resources for TB control
5. To strengthen lab. facilities from central to township levels
6. To review and revise the national guidelines according to new strategy

7. To strictly follow SOPs of NTP
8. To evaluate and scale up the prevention and control activities for TB/HIV co-infection and MDR-TB
9. To evaluate the activities which promote TB case finding especially in hard to reach area and plan for scale up
10. To scale up on Public-Private Mix and strengthen the public-public Mix
11. To cover private laboratories including which are using by PPM-DOTS under the external quality assurance system of NTP
12. To strengthen coordination mechanism related to TB control at all levels
13. To strengthen monitoring, supervision and evaluation on TB control activities
14. To promote OR
15. To strengthen district health information system and data verificationat all levels

13. Conclusion

NTP, Myanmar has covered all the townships since November, 2003. NTP achieved case detection rate 77% and treatment success rate 85.4% in 2011 and has reached the global TB control targets since 2006. The achievement should be sustained by implementing innovative approaches in line with Stop TB Strategies and Millennium Development Goals according to the accessibility status of different location in the country. The National TB Prevalence Survey was conducted in 2009-2010, aiming to measure the magnitude of TB in our country. The survey showed that the prevalence of TB was higher than the estimates used by the NTP (and according to the WHO Global Tuberculosis Control Report of 2008). From the outcome of the survey, WHO estimated that the prevalence of TB in Myanmar was 595 cases per 100,000 population. The survey findings coincided with the annual notified data and urged for change in diagnostic algorithms. The survey also confirmed that the vast majority of TB cases remained undetected.

The results of the survey are of major importance for gaining a better understanding of TB burden and the impact of TB control in the past decade. Furthermore, NTP will revise the strategies of NTP and seek for funding to reach the Millennium Development Goals by 2015. Case finding activities will also be improved by innovative approaches. Townships not reaching the targets, should scale-up their effort with appropriate and innovative strategies. In conclusion, strong political commitment, health system strengthening and partnership are important to maintain the achievement and reaching the MDGs.

Balance of First Line Anti-TB Drugs at NTP Central Drug Store (2011) **Annex-1**

Drugs		4FDC	2FDC	ETB-400	PZA-400	S 1 G	S/N	D/W	INH-300	Cat I Kit	Paed. HRZ	Paed: HR
Opening Balance		0	1,231,776	480,000	0	54,800	295,000	193,900	699,552	13,556	2,851,560	6,558,660
Received		2,327,136	3,878,112	3,366,720	805,056	588,500	560,000	320,000	1,078,560	141,620	0	0
Issued		2,327,136	5,109,888	3,199,584	792,960	618,350	632,200	498,900	628,992	141,687	2,851,560	6,558,660
Closing Balance		0	0	647,136	12,096	24,950	222,800	15,000	1,149,120	13,489	0	0
Expired Date	1/2014						222,800					
	6/2014								672,000			
	7/2014				12,096				406,560	13,489		
	8/2014					24,950		15,000				
	11/2014			647,136								
	9/2015								70,560			

Balance of First Line Anti-TB Drugs at Lower Myanmar Drug Store (2011) **Annex-1**

Drugs		4FDC	2FDC	ETB-400	PZA-400	Inj. S 1 G	S/N	D/W	INH-300	Cat I Kit	Cat II Kit	Paed. HRZ	Paed. HR
Opening Balance		3,756	159,264	72,400	0	9,600	9,600	9,800	126,336	13,322	29	65,880	178,290
Received		1,395,744	3,558,240	2,056,512	385,056	444,500	437,600	337,500	24,192	91,658	0	2,005,920	4,391,640
Issued		825,612	3,014,592	1,511,344	284,928	305,450	328,000	293,600	62,496	63,138	29	2,071,800	4,310,100
Closing Balance		573,888	702,912	617,568	100,128	148,650	119,200	53,700	88,032	41,842	0	0	259,830
Expired Date	7/2012												259,830
	1/2013								53,700				
	7/2013												
	10/2013						113,500						
	2/2014	108,192		76,608			5,700			25,626			
	3/2014	465,696	702,912	516,768	27,552					16,216			
	7/2014				72,576								
	8/2014					148,650		88,032					
	11/2014			24,192									

Balance of First Line Anti-TB Drugs at Upper Myanmar Drug Store (2011) **Annex-1**

Drugs		4FDC	2FDC	ETB-400	PZA-400	Inj.S 1 G	S/N	D/W	INH-300	Cat I Kit	Cat II Kit	Paed. HRZ	Paed. HR
Opening Balance		148344	1161888	243400	0	45500	40300	49100	166656	14502	327	1036620	2053260
Received		2445576	4405968	1050008	217728	175324	180322	170123	0	54248	81	845820	1969560
Issued		1924608	5212368	787392	12096	164424	165422	163323	45696	29114	408	1882440	3535920
Closing Balance		669312	355488	506016	205632	56400	55200	55900	120960	39636	0	0	486900
Expired Date	6/2012												270000
	7/2012												216900
	2/2013							10600					
	3/2013							37500					
	9/2013	48384						2400		5468			
	10/2013					1400	18000						
	11/2013				10752								
	2/2014	310464		161280			37200			17084			
	3/2014	310464	355488	344736	194880					17084			
	8/2014					55000		5400	120960				

Laboratory supplies and equipments (2012) **Annex-2**

No.	Items	Opening balance (31-12-2010)	Received 2011	Issued 2011	Closing balance (31-12-2011)
1.	Fuchsin Basic (25 gm)	830	700	805	725
2.	Phenol Crystals (500 gm)	557	0	424	133
3.	Methylated Spirit (Cans)	35	0	34	1
4.	Microscopes (C×21 Olympus)	10	0	7	3
5.	Binocular Microscope Nikkon E100	11	0	9	2
6.	Microscope Glass Slides 3600/unit	497	0	259	238
7.	Dry Cell	10	0	7	3
8.	Inverter with dry cell battery	10	0	7	3
9.	Xylene (1 Litre)	4	42	14	32
10.	Objective lens (100µ)	94	0	12	82
11.	Methylene Blue (25 gm)	111	700	141	670
12.	Sulphuric Acid (2.5 Litre)	0	120	120	0
13.	Sulphuric Acid (1 Litre)	75	2000	830	1245
14.	Sulphuric Acid (500 ml)	0	0	0	0
15.	Sputum Containers (bags of 1000)	390	552	822	120
16.	Immersion Oil (1 Litre)	24	0	16	8
17.	Methanol (1 Litre)	18	4	22	0
18.	Methanol (2.5 Litre)	0	400	170	230
19.	Glycerol (1 Litre)	2	0	2	0
20.	Glycerol (500 ml)	14	0	0	14
21.	Sodium hydroxide (500 gm)	34	7	18	23
22.	Auromine O	310	100	93	317
23.	B.P Phenyl	144	7499	3200	4443

Manpower Situation of National Tuberculosis Programme Annex-3

No.	Designation	Sanction	Posted	Vacant
1.	Deputy Director (TB)	1	1	0
2.	Medical Superintendent	1	1	0
3.	Lecture/TB specialist	1	1	0
4.	Assistant Director (TB)	1	1+3*	0
5.	Microbiologist	2	2*	2
6.	Regional/State TB Officer	6	6+7*	0
7.	Medical Officer	56	37+3*	19
8.	Administrative Officer	1	1	0
9.	Superintendent	1	1	0
10.	District Community Health Nurse	2	2	0
11.	Assistant Statistical Officer	2	2	0
12.	Health Assistant	80	66	14
13.	Sister	1	1	0
14.	Public Health Sister	1	1	0
15.	Medical technician	1	1+2*	0
16.	Radiology technician	9	8	1
17.	Radiographer	2	1+1*	1
18.	BC (Budget/Admin)	4	3+2*	1
19.	BCG supervisor	14	11	3
20.	Blue staff	4	4	0
21.	LHV	12	12	0
22.	Trained nurse	122	101	21
23.	Grade 1 lab: technician	11	11+6*	0
24.	Grade 1 X-ray technician	8	7+1*	1
25.	Assistant statistician	5	5	0
26.	BCG technician	60	16	44
27.	UD (Budget/Admin)	11	9+2*	2
28.	Grade 2 lab technician +Microscopist	200	158	42
29.	LD (Budget/Admin)	35	27	8
30.	Compounder	4	3	1
31.	Grade 2 X-ray technician	3	1	2
32.	Steward	1	0	1
33.	Typist	7	5	2
34.	Jr. TB worker	123	71	52
35.	Statistical clerk	100	84	16
36.	Driver	48	7	41
37.	Clinic assistant	2	2	0
38.	Lab. boy and Lab: assistant	7	2	5
39.	Peon	15	6	9
40	X-ray van assistant	2	0	2
41.	X-ray department assistant	3	1	2
42.	Gardener and Plumber	2	1	1
43.	Night Watch	14	7	7
44.	Sweeper and Manual worker	43	25	18
Total		**1028**	**702+25***	**326**

*** Attached from other posts**

1. Assistant Director 3 (central)
2. Region/State TB Officer 7 (Taunggyi, Lashio, Kengtong, Sagaing, Magway, Tanintharyi, Myitkyina)
3. Medical Officer 3 (Maubin) (Pyinmana)

4. Medical Technician	2 (central) 2 (Mandalay)
5. Radiographer	1 (Mandalay)
6. BC	2 (central)
7. Grade 1 Lab: Technician	1 (central) 2 (Mandalay) 2 (Yangon)
8. UD	2 (central)
9. Microbiologist	2 (NTRL)
10.Grade 1 X-ray technician	1 (Mandalay)

NATIONAL TUBERCULOSIS PROGRAMME

Country

CASE FINDING ACTIVITIES (2012)

Annex-4

Block 1

Annual 2012

Sr.No	S/R & Other unit	Population	Estimated cases	PULMONARY TUBERCULOSIS																		Extra Pulmonary TB		Total	Other		Total		
				SMEAR POSITIVE										Total	Smear Negative		Total	Primary complex											
				New Cases			NCDR	Old Cases																					
								Relapses		T'after Def		Trt after failure																	
				M	F	T		M	F	M	F	M	F		M	F		M	F	M	F		M	F	M	F	TOTAL	
1	Kachin State	1464154	1537	680	331	1011	66%	80	26	14	6	38	18	1193	857	443	1300	660	520	736	556	1292	192	78	3257	1978	5235		
2	Kayah State	299679	315	68	30	98	31%	2	2	4	1	0	1	108	193	117	310	104	82	35	23	58	39	20	445	276	721		
3	Chin State	493684	518	79	40	119	23%	3	3	0	0	4	1	130	160	98	258	157	92	189	112	301	23	10	615	356	971		
4	Sagaing Region	5212668	5473	1693	800	2493	46%	146	51	19	2	49	21	2781	1071	622	1693	1546	1226	483	395	878	122	53	5129	3170	8299		
5	Magway Region	4148020	4355	1272	677	1949	45%	90	51	13	7	58	12	2180	1115	734	1849	590	454	867	671	1538	129	72	4134	2678	6812		
6	Mandalay Region	5745556	6033	2122	970	3092	51%	227	90	23	6	112	47	3597	1550	859	2409	566	432	1611	1232	2843	266	141	6477	3777	10254		
7	Shan State (Taunggyi)	2066678	2170	609	297	906	42%	44	17	16	4	33	6	1026	493	280	773	296	217	385	273	658	61	20	1937	1114	3051		
8	Shan State (Kyaingtong)	693542	728	397	187	584	80%	45	16	12	2	29	4	692	272	197	469	317	225	58	47	105	40	14	1170	692	1862		
9	Shan State (Lashio)	2181745	2291	807	426	1233	54%	74	41	19	7	43	12	1429	699	409	1108	400	261	515	371	886	94	42	2651	1569	4220		
10	Kayin State	1435686	1507	755	413	1168	77%	58	26	7	2	13	6	1280	795	599	1394	569	461	67	81	148	12	12	2276	1600	3876		
11	Tanintharyi Region	1340978	1408	580	315	895	64%	54	25	17	6	24	16	1037	998	761	1759	912	716	508	419	927	84	43	3177	2301	5478		
12	Bago Region	2856857	3000	1235	650	1885	63%	153	68	22	8	24	14	2174	1187	807	1994	1217	973	274	290	564	138	89	4250	2899	7149		
13	Bago Region (Pyay)	2010935	2111	1004	588	1592	75%	75	44	4	5	44	15	1779	913	603	1516	979	733	127	179	306	85	34	3231	2201	5432		
14	Mon State	2127556	2234	1030	513	1543	69%	102	48	5	2	37	34	1771	1162	955	2117	1233	940	264	200	464	20	18	3853	2710	6563		
15	Rakhine State	3225070	3386	1147	734	1881	56%	71	47	9	7	53	21	2089	956	731	1687	147	169	318	283	601	73	46	2774	2038	4812		
16	Yangon Region	5969277	10148	4782	2467	7249	71%	898	337	97	23	200	113	8917	4556	2673	7229	1467	1166	994	999	1993	732	359	13726	8137	21863		
17	Ayeyarwady Region	6316979	6633	2787	1549	4336	65%	197	114	22	13	56	26	4764	2421	1845	4266	1473	1125	995	821	1816	199	99	8150	5592	13742		
18	Naypyitaw	942414	990	519	224	743	75%	37	18	10	0	32	14	854	306	140	446	94	57	226	179	405	45	30	1269	662	1931		
19	Other Unit	0	0	6618	3514	10132		842	336	88	19	291	150	11858	6732	4493	11225	3715	2949	2732	2146	4878	874	379	21892	13986	35878		
	Total	48531478	54837	28184	14725	42909	**78.2%**	3198	1360	401	120	1140	531	49659	26436	17366	43802	16442	12798	11384	9277	20661	3228	1559	90413	57736	148149		

Reporting Efficiency Rate = **97%** (319/330) tsps **CDR = 78.2%** **CR = 77 %** **TSR = 86%**

TAD = Treatment after default

TAF = Treatment after failure

Report had not been received from (11)Townships

Kachin State (4) Tsp 1. N'ganyan 2. Hsawlaw 3.Khaunglanbu 4.Naungmon

Shan (Lashio) State 1. Kongyan 2. Panwine 3.Mongmaw 4. Manphant 5. Narphant 6.Pangyan

Shan (Kyaingtong) S 1. Matman

NATIONAL TUBERCULOSIS PROGRAMME
CASE FINDING ACTIVITIES (2012)

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																									
				SMEAR POSITIVE													Smear Negative		Total	Primary complex		Extra Pulmonary Tuberculosis		Total	other		TOTAL		
				New Cases			CDR	Previously treated cases						Total															
								Relapses		T'after Default		T'after failure																	
				M	F	T		M	F	M	F	M	F		M	F		M	F	M	F		M	F	M	F	TOTAL		
	Kachin State																												
1	Bahmo	110170	116	53	22	75	**65%**	5	1	1	0	3	0	85	114	55	169	141	112	151	108	259	4	4	472	302	774		
2	Mansi	74033	78	17	12	29	**37%**	2	0	0	0	0	1	32	17	10	27	34	28	25	8	33	0	1	95	60	155		
3	Momauk	92824	97	13	8	21	**22%**	1	2	0	0	1	0	25	10	6	16	0	0	39	42	81	2	1	66	59	125		
4	Shwegu	86038	90	47	15	62	**69%**	1	1	0	0	0	0	64	15	9	24	0	0	17	12	29	0	1	80	38	118		
5	Mohynin	209721	220	53	36	89	**40%**	6	3	3	3	3	0	107	59	20	79	0	0	23	24	47	0	2	147	88	235		
6	Kamaing	172376	181	103	37	140	**77%**	11	3	0	0	7	2	163	47	26	73	66	39	44	30	74	2	3	280	140	420		
7	Mogaung	146499	154	77	41	118	**77%**	12	1	2	0	2	2	137	47	26	73	33	25	41	38	79	8	3	222	136	358		
8	Tanai	33983	36	35	26	61	**171%**	4	2	2	1	2	0	72	40	21	61	3	3	15	13	28	4	1	105	67	172		
9	Myitkyina	227374	239	221	99	320	**134%**	28	9	6	1	15	10	389	334	199	533	284	239	275	197	472	134	45	1297	799	2096		
10	Chipway	19124	20	0	0	0	**0%**	0	0	0	0	0	0	0	1	0	1	1	0	0	1	1	0	0	2	1	3		
11	Hsawlaw	6941	7	0	0	0	**0%**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12	N Jan Yan	9160	10	0	0	0	**0%**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
13	Waingmaw	121335	127	34	15	49	**38%**	2	1	0	0	2	1	55	147	64	211	90	69	95	70	165	34	15	404	235	639		
14	**PutaO**	91463	96	27	20	47	**49%**	8	3	0	1	3	2	64	26	7	33	8	5	11	13	24	4	2	87	53	140		
15	Khaunglanbu	15287	16	0	0	0	**0%**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
16	Machanbaw	21104	22	0	0	0	**0%**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
17	Nogmun	11951	13	0	0	0	**0%**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
18	Sumprabum	14771	16	0	0	0	**0%**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	**Total**	**1464154**	**1537**	**680**	**331**	**1011**	**66%**	**80**	**26**	**14**	**6**	**38**	**18**	**1193**	**857**	**443**	**1300**	**660**	**520**	**736**	**556**	**1292**	**192**	**78**	**3257**	**1978**	**5235**		

* Note* (Nr.) Report had not been received from (6) townships

Nr. 6 Tsp; 1.N'ganyan. 2. Hsawlaw, 3 Khaunglanbu 4.Nogmun, 5. Machanbaw, 6. Sumprabum

Annex-4(townships list)

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																									
				SMEAR POSITIVE											Smear Negative		Total	Primary complex		Extra Pulmonary Tuberculosis		Total	other		TOTAL		
				New Cases			CDR	Previously treated cases						Total													
								Relapses		T'after Default		T'after failure															
				M	F	T		M	F	M	F	M	F		M	F		M	F	M	F		M	F	M	F	TOTAL
	Kayah State																												
1	Bawlake	10200	11	6	1	7	**65%**	0	0	0	0	0	0	7	6	4	10	1	2	1	1	2	0	1	14	9	23
2	Masai	6033	6	0	0	0	**0%**	0	0	0	0	0	0	0	1	1	2	0	0	0	1	1	0	0	1	2	3
3	Pasaung	35455	37	5	4	9	**24%**	0	0	0	1	0	0	10	3	3	6	13	3	2	1	3	0	0	23	12	35
4	Loikaw	109144	115	43	16	59	**51%**	2	1	4	0	0	1	67	143	79	222	78	64	21	13	34	34	17	325	191	516
5	Dimawhso	97170	102	10	8	18	**18%**	0	1	0	0	0	0	19	25	16	41	9	11	7	4	11	3	2	54	42	96
6	Phruhso	28490	30	4	1	5	**17%**	0	0	0	0	0	0	5	14	14	28	2	1	3	3	6	2	0	25	19	44
7	Shataw	13187	14	0	0	0	**0%**	0	0	0	0	0	0	0	1	0	1	1	1	1	0	1	0	0	3	1	4
	Total	**299679**	**315**	**68**	**30**	**98**	31%	**2**	**2**	**4**	**1**	**0**	**1**	**108**	**193**	**117**	**310**	**104**	**82**	**35**	**23**	**58**	**39**	**20**	**445**	**276**	**721**
	Chin State																												
1	Falam	49112	52	4	1	5	**10%**	0	0	0	0	1	0	6	20	9	29	10	7	10	5	15	2	0	47	22	69
2	Hakha	44757	47	6	7	13	**28%**	2	0	0	0	3	0	18	20	13	33	36	18	29	13	42	6	2	102	53	155
3	Htantalan	71274	75	2	0	2	**3%**	0	0	0	0	0	0	2	13	4	17	33	23	79	47	126	0	0	127	74	201
4	Tiddim	93255	98	6	3	9	**9%**	0	0	0	0	0	0	9	16	12	28	27	12	16	4	20	3	2	68	33	101
5	Tunzan	31094	33	3	2	5	**15%**	0	2	0	0	0	0	7	12	16	28	17	6	21	12	33	0	0	53	38	91
6	Mindat	42361	44	10	2	12	**27%**	0	0	0	0	0	1	13	25	13	38	8	2	10	9	19	3	1	56	28	84
7	Kanpetlet	20270	21	3	0	3	**14%**	0	0	0	0	0	0	3	4	1	5	1	0	2	3	5	0	0	10	4	14
8	Matupi	51324	54	9	6	15	**28%**	1	1	0	0	0	0	17	23	10	33	19	12	14	16	30	9	5	75	50	125
9	Paletwa	90237	95	36	19	55	**58%**	0	0	0	0	0	0	55	27	20	47	6	12	8	3	11	0	0	77	54	131
	Total	**493684**	**518**	**79**	**40**	**119**	23%	**3**	**3**	**0**	**0**	**4**	**1**	**130**	**160**	**98**	**258**	**157**	**92**	**189**	**112**	**301**	**23**	**10**	**615**	**356**	**971**

Annex-4(townships list)

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																							
				SMEAR POSITIVE											Smear Negative		Total	Primary complex		Extra Pulmonary Tuberculosis		Total	other		TOTAL		
				New Cases			CDR	Previously treated cases						Total													
								Relapses		T'after Default		T'after failure															
				M	F	T		M	F	M	F	M	F		M	F		M	F	M	F		M	F	M	F	TOTAL
	Sagaing Region																										
1	**Sagaing**	295617	310	104	38	142	**46%**	7	2	0	0	0	0	151	63	29	92	66	52	33	37	70	12	1	285	159	444
2	Myaung	111778	117	34	18	52	**44%**	3	0	0	0	1	0	56	21	17	38	9	6	5	7	12	3	1	76	49	125
3	Myinmu	113862	120	31	12	43	**36%**	7	1	0	0	4	0	55	32	14	46	10	9	12	14	26	0	0	96	50	146
4	Shwebo	257836	271	60	24	84	**31%**	6	2	3	0	2	2	99	77	44	121	22	16	62	46	108	8	14	240	148	388
5	Kanbalu	265402	279	54	21	75	**27%**	3	0	0	0	3	2	83	46	21	67	199	179	35	42	77	5	1	345	266	611
6	Khin-U	151729	159	42	17	59	**37%**	1	0	0	0	0	0	60	11	6	17	7	11	32	20	52	2	0	95	54	149
7	Kyunhla	90170	95	23	4	27	**29%**	3	0	0	0	1	2	33	13	14	27	38	25	6	5	11	0	0	84	50	134
8	Tabayin	153317	161	58	15	73	**45%**	0	0	0	0	1	0	74	9	4	13	17	24	7	12	19	2	1	94	56	150
9	Taze	179908	189	35	12	47	**25%**	5	0	1	0	5	0	58	37	17	54	17	14	9	7	16	5	0	114	50	164
10	Wetlet	205169	215	61	39	100	**46%**	11	6	0	0	0	0	117	25	21	46	135	113	9	6	15	0	0	241	185	426
11	Ye-U	128672	135	41	14	55	**41%**	0	0	0	0	0	0	55	21	8	29	23	17	11	9	20	0	0	96	48	144
12	Monywa	323961	340	141	53	194	**57%**	14	7	5	0	8	4	232	64	27	91	34	26	33	22	55	11	6	310	145	455
13	Ayadaw	183695	193	28	17	45	**23%**	2	0	0	0	0	0	47	21	16	37	12	15	18	7	25	7	3	88	58	146
14	Budalin	141021	148	70	30	100	**68%**	4	1	0	0	7	1	113	19	13	32	55	39	21	6	27	1	0	177	90	267
15	ChaungU	108693	114	34	23	57	**50%**	2	0	0	0	1	0	60	13	6	19	48	28	11	8	19	2	0	111	65	176
16	Kani	141117	148	39	10	49	**33%**	3	4	0	0	0	0	56	25	12	37	33	18	15	5	20	3	3	118	52	170
17	Pale	147942	155	51	27	78	**50%**	1	0	1	1	1	0	82	16	10	26	16	17	7	8	15	1	1	94	64	158
18	Salingyi	137196	144	44	15	59	**41%**	3	0	0	0	1	0	63	34	18	52	30	22	15	7	22	4	1	131	63	194
19	Yinmabin	146291	154	32	20	52	**34%**	3	3	0	0	0	2	60	15	7	22	22	19	11	7	18	3	1	86	59	145
20	Katha	159752	168	45	28	73	**44%**	5	1	0	0	0	0	79	38	22	60	5	7	4	0	4	5	3	102	61	163
21	Banmauk	96510	101	8	8	16	**16%**	0	0	0	0	0	0	16	7	6	13	3	2	0	1	1	0	0	18	17	35
22	Htigyaing	114686	120	38	20	58	**48%**	0	1	0	0	2	0	61	21	11	32	5	8	10	11	21	2	1	78	52	130
23	Indaw	124778	131	36	8	44	**34%**	3	2	0	0	0	0	49	26	14	40	23	14	28	12	40	2	0	118	50	168
24	Kawlin	142120	149	35	22	57	**38%**	2	1	0	0	0	0	60	12	6	18	17	6	11	3	14	2	0	79	38	117
25	Pinlebu	111418	117	31	11	42	**36%**	0	0	0	0	2	0	44	7	6	13	6	3	2	4	6	0	1	48	25	73
26	Wuntho	71957	76	25	11	36	**48%**	1	0	0	0	3	0	40	12	1	13	6	2	2	2	4	0	0	49	16	65
27	Kalay	322781	339	153	100	253	**75%**	20	5	1	0	5	3	287	145	81	226	412	353	29	23	52	3	2	768	567	1335
28	Kalewa	56227	59	14	7	21	**36%**	1	1	0	0	0	0	23	19	9	28	14	8	11	7	18	2	0	61	32	93
29	Minkin	108425	114	20	5	25	**22%**	2	0	1	0	1	0	29	14	11	25	33	13	1	3	4	0	0	72	32	104
30	Tamu	105100	110	74	46	120	**109%**	20	4	2	0	1	1	148	103	85	188	84	52	6	12	18	25	8	315	208	523
31	Mawlaik	53435	56	19	9	28	**50%**	0	1	0	0	0	0	29	8	2	10	14	3	3	1	4	1	0	45	16	61
32	Phaungbyin	115926	122	60	26	86	**71%**	1	1	2	1	0	0	91	16	4	20	3	3	11	19	30	0	0	93	54	147
33	Khamti	33874	36	51	39	90	**253%**	7	4	2	0	0	4	107	34	29	63	39	34	3	4	7	8	1	144	115	259
34	Homalin	184753	194	73	35	108	**56%**	5	1	0	0	0	0	114	38	26	64	81	63	7	10	17	1	4	205	139	344
35	Layshi	16864	18	5	2	7	**40%**	0	0	0	0	0	0	7	1	1	2	6	4	0	1	1	0	0	12	8	20
36	Lahel	51824	54	16	13	29	**53%**	1	2	0	0	0	0	32	5	1	6	1	1	1	6	7	2	0	26	23	49
37	Nanyun	58862	62	8	1	9	**15%**	0	1	1	0	0	0	11	3	3	6	1	0	2	1	3	0	0	15	6	21
	Total	**5212668**	**5473**	**1693**	**800**	**2493**	**46%**	**146**	**51**	**19**	**2**	**49**	**21**	**2781**	**1071**	**622**	**1693**	**1546**	**1226**	**483**	**395**	**878**	**122**	**53**	**5129**	**3170**	**8299**

Annex-4(townships list)

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																								
				SMEAR POSITIVE											Smear Negative		Total	Primary complex		Extra Pulmonary Tuberculosis		Total	other		TOTAL		
				New Cases			CDR	Previously treated cases						Total													
								Relapses		T'after Default		T'after failure															
				M	F	T		M	F	M	F	M	F		M	F		M	F	M	F		M	F	M	F	TOTAL
	Magwe Region																											
1	MAGWE	292344	307	162	128	290	**94%**	16	21	3	2	11	3	346	161	103	264	39	32	104	90	194	33	19	529	398	927
2	CHAUK	214320	225	62	40	102	**45%**	9	5	2	1	1	0	120	92	84	176	59	53	37	22	59	8	5	270	210	480
3	TAUNGDWINGYI	263599	277	92	46	138	**50%**	8	5	0	0	3	0	154	57	33	90	22	14	35	20	55	12	4	229	122	351
4	MYOTHIT	179015	188	66	48	114	**61%**	5	1	0	0	0	0	120	17	14	31	11	9	16	10	26	8	3	123	85	208
5	NATMAUK	234276	246	64	28	92	**37%**	2	1	0	0	2	0	97	43	29	72	13	7	12	17	29	13	4	149	86	235
6	YENANCHAUNG	186270	196	89	42	131	**67%**	5	2	0	0	9	3	150	45	32	77	15	15	34	29	63	1	7	198	130	328
7	PAKOKKU	298676	314	84	40	124	**40%**	11	5	2	2	10	0	154	128	107	235	35	33	89	64	153	15	12	374	263	637
8	YESAGYO	252614	265	35	18	53	**20%**	2	0	0	0	4	1	60	33	19	52	13	13	43	27	70	5	1	135	79	214
9	PAUK	174240	183	44	20	64	**35%**	2	0	0	0	0	0	66	10	9	19	0	0	31	23	54	1	0	88	52	140
10	MYAING	253956	267	39	16	55	**21%**	1	0	0	0	1	0	57	37	19	56	5	3	65	45	110	2	2	150	85	235
11	SEIKPHYU	104050	109	27	16	43	**39%**	0	0	0	0	1	0	44	27	16	43	6	4	11	7	18	1	0	73	43	116
12	GANTGAW	131108	138	38	11	49	**36%**	1	0	0	0	0	0	50	67	46	113	36	30	43	24	67	8	0	193	111	304
13	SAW	68949	72	11	2	13	**18%**	0	0	0	0	0	0	13	9	2	11	7	3	3	2	5	0	1	30	10	40
14	HTINLIN	51079	54	13	2	15	**28%**	1	0	0	0	0	0	16	15	7	22	7	1	7	4	11	0	0	43	14	57
15	MINBU	169623	178	59	35	94	**53%**	4	1	0	1	5	0	105	48	22	70	44	36	89	76	165	3	5	252	176	428
16	NGAPE	48572	51	15	7	22	**43%**	0	0	0	0	0	0	22	9	5	14	10	5	9	13	22	2	0	45	30	75
17	PWINTPHYU	166531	175	53	41	94	**54%**	2	0	0	0	1	0	97	9	8	17	6	7	28	19	47	2	1	101	76	177
18	Saytoketaya	43196	45	9	1	10	**22%**	1	0	2	0	0	1	14	6	4	10	6	1	3	6	9	3	1	30	14	44
19	SALIN	262352	275	73	25	98	**36%**	4	1	0	0	0	0	103	24	12	36	0	5	28	16	44	0	0	129	59	188
20	THAYET	103742	109	68	14	82	**75%**	4	1	3	0	7	3	100	35	18	53	21	13	14	12	26	0	0	152	61	213
21	MINHLA	111065	117	45	21	66	**57%**	1	0	0	0	0	0	67	19	10	29	17	13	41	23	64	8	1	131	68	199
22	KANMA	71717	75	17	10	27	**36%**	1	4	0	0	2	0	34	37	18	55	52	39	7	4	11	0	0	116	75	191
23	SINPAUNGWAE	174771	184	41	14	55	**30%**	2	1	1	1	0	1	61	23	10	33	15	14	4	3	7	1	2	87	46	133
24	MINDON	61256	64	24	19	43	**67%**	7	1	0	0	0	0	51	81	52	133	118	82	47	29	76	1	0	278	183	461
25	AUNGLAN	230699	242	42	33	75	**31%**	1	2	0	0	1	0	79	83	55	138	33	22	67	86	153	2	4	229	202	431
	Total	**4148020**	**4355**	**1272**	**677**	**1949**	**45%**	**90**	**51**	**13**	**7**	**58**	**12**	**2180**	**1115**	**734**	**1849**	**590**	**454**	**867**	**671**	**1538**	**129**	**72**	**4134**	**2678**	**6812**

Annex-4(townships list)

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																							
				SMEAR POSITIVE											Smear Negative		Total	Primary complex		Extra Pulmonary Tuberculosis		Total	other		TOTAL		
				New Cases			CDR	Previously treated cases						Total													
								Relapses		T'after Default		T'after failure															
				M	F	T		M	F	M	F	M	F		M	F		M	F	M	F		M	F	M	F	TOTAL
	Mandalay Region																										
1	Amarapura	185927	195	58	20	78	**40%**	5	1	0	0	1	1	86	51	24	75	35	24	45	29	74	10	6	205	105	310
2	Aungmyaytharzan	191165	201	139	68	207	**103%**	19	8	1	0	12	5	252	112	53	165	30	13	97	71	168	31	17	441	235	676
3	Chanayetharzan	138316	145	86	39	125	**86%**	17	2	1	0	3	3	151	81	36	117	17	15	76	50	126	26	15	307	160	467
4	Chanmyatharzi	196065	206	114	64	178	**86%**	18	8	1	0	5	3	213	89	46	135	40	20	76	69	145	25	5	368	215	583
5	Maharaungmyae	225951	237	113	42	155	**65%**	12	7	2	0	2	0	178	96	62	158	26	24	88	76	164	26	17	365	228	593
6	Pyigyitagonn	150815	158	92	35	127	**80%**	6	0	3	0	2	0	138	76	37	113	17	12	78	48	126	10	8	284	140	424
7	Patheingyi	183125	192	94	46	140	**73%**	7	3	0	1	1	3	155	63	37	100	39	26	82	42	124	11	1	297	159	456
8	Meiktilar	385345	405	116	55	171	**42%**	14	5	4	1	12	5	212	103	78	181	2	1	223	180	403	13	5	487	330	817
9	Mahlaing	154860	163	58	38	96	**59%**	5	7	0	0	0	0	108	29	19	48	11	12	17	10	27	9	1	129	87	216
10	Tharzi	209576	220	61	40	101	**46%**	4	5	0	0	0	0	110	14	9	23	0	1	44	42	86	2	0	125	97	222
11	Wundwin	224822	236	34	20	54	**23%**	3	1	0	0	3	1	62	23	15	38	28	26	18	17	35	0	2	109	82	191
12	Myingan	273003	287	103	42	145	**51%**	14	8	0	0	3	0	170	131	95	226	71	65	97	74	171	17	12	436	296	732
13	Kyaukpadaung	306783	322	62	55	117	**36%**	19	5	0	0	0	0	141	33	13	46	10	9	45	31	76	9	6	178	119	297
14	Natogyi	185148	194	33	13	46	**24%**	0	1	0	0	1	1	49	43	18	61	11	7	19	21	40	0	1	107	62	169
15	Ngazun	135184	142	61	33	94	**66%**	2	0	0	1	3	2	102	23	10	33	1	1	24	18	42	2	5	116	70	186
16	Taungtha	243987	256	40	27	67	**26%**	3	0	0	0	1	3	74	53	38	91	40	17	19	11	30	0	1	156	97	253
17	NyaungU	274594	288	75	46	121	**42%**	2	9	0	0	8	4	144	88	49	137	34	26	53	36	89	9	3	269	173	442
18	Pyin oo Lwin	171698	180	52	23	75	**42%**	3	2	1	0	2	1	84	49	18	67	42	33	30	22	52	7	4	186	103	289
19	Madayar	241688	254	93	43	136	**54%**	11	2	1	0	9	1	160	31	17	48	3	5	74	47	121	6	1	228	116	344
20	Mogok	193107	203	52	14	66	**33%**	7	1	0	0	5	2	81	43	24	67	32	20	40	31	71	11	1	190	93	283
21	Sintgu	143961	151	97	27	124	**82%**	20	2	2	0	6	2	156	27	8	35	3	1	30	22	52	6	3	191	65	256
22	Thabeikkyin	119856	126	77	25	102	**81%**	5	1	3	1	19	0	131	13	8	21	8	8	25	22	47	2	1	152	66	218
23	Yamethin	232595	244	76	19	95	**39%**	8	4	1	0	1	0	109	65	39	104	1	3	65	41	106	14	4	231	110	341
24	Pyawbwei	268000	281	110	47	157	**56%**	4	2	1	2	4	4	174	27	15	42	15	13	47	50	97	3	3	211	136	347
25	Kyaukse	238721	251	84	29	113	**45%**	3	1	2	0	6	5	130	47	25	72	33	32	37	29	66	1	2	213	123	336
26	Myittha	188441	198	50	21	71	**36%**	5	2	0	0	1	0	79	53	30	83	3	3	68	56	124	4	12	184	124	308
27	Sintgine	128725	135	38	14	52	**38%**	6	0	0	0	1	0	59	62	25	87	4	10	48	52	100	8	3	167	104	271
28	TadaOo	154098	162	54	25	79	**49%**	5	3	0	0	1	1	89	25	11	36	10	5	46	35	81	4	2	145	82	227
	Total	**5745556**	**6033**	**2122**	**970**	**3092**	**51%**	**227**	**90**	**23**	**6**	**112**	**47**	**3597**	**1550**	**859**	**2409**	**566**	**432**	**1611**	**1232**	**2843**	**266**	**141**	**6477**	**3777**	**10254**

Annex-4(townships list)

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																								
				SMEAR POSITIVE											Smear Negative		Total	Primary complex		Extra Pulmonary Tuberculosis		Total	other		TOTAL		
				New Cases			CDR	Previously treated cases						Total													
								Relapses		T'after Default		T'after failure															
				M	F	T		M	F	M	F	M	F		M	F		M	F	M	F		M	F	M	F	TOTAL
	Shan State (Taunggyi)																											
1	Linhkay	37657	40	13	4	17	**43%**	0	2	0	0	0	0	19	17	9	26	2	0	2	0	2	0	1	34	16	50	
2	Maukme	24736	26	7	3	10	**39%**	2	0	0	0	0	0	12	1	0	1	1	0	0	0	0	0	0	11	3	14	
3	Monai	25019	26	10	9	19	**72%**	2	0	0	0	0	0	21	1	3	4	11	14	4	2	6	1	1	29	29	58	
4	Mangpang	16563	17	6	5	11	**63%**	2	0	0	0	0	0	13	4	1	5	0	0	1	2	3	0	0	13	8	21	
5	Loilem	114063	120	23	9	32	**27%**	0	0	0	0	1	1	34	25	18	43	50	36	21	18	39	12	5	132	87	219	
6	Kunhein	57272	60	23	22	45	**75%**	2	0	2	0	2	0	51	32	24	56	19	10	1	3	4	1	0	82	59	141	
7	Kyeethi	33523	35	4	4	8	**23%**	1	1	0	0	0	0	10	19	18	37	1	6	34	31	65	0	0	59	60	119	
8	Laikha	44474	47	29	9	38	**81%**	1	0	1	0	0	0	40	14	7	21	41	24	10	4	14	2	0	98	44	142	
9	Mongaking	86942	91	6	7	13	**14%**	1	0	0	0	1	0	15	7	3	10	6	1	2	1	3	0	2	23	14	37	
10	Mongshu	59954	63	31	26	57	**91%**	0	1	0	0	1	0	59	32	21	53	10	7	26	20	46	0	0	100	75	175	
11	Namsan	83570	88	54	26	80	**91%**	8	5	1	0	0	0	94	32	23	55	44	38	13	11	24	6	0	158	103	261	
12	Taunggyi	353130	371	105	41	146	**39%**	9	2	2	0	8	3	170	130	72	202	34	25	139	93	232	14	4	441	240	681	
13	Hopone	99212	104	30	12	42	**40%**	2	1	3	0	4	2	54	17	12	29	3	5	16	8	24	3	0	78	40	118	
14	Hpekon	94226	99	14	15	29	**29%**	0	1	1	0	0	0	31	10	11	21	14	10	8	3	11	6	1	53	41	94	
15	Hsiseng	143069	150	25	17	42	**28%**	0	1	2	1	1	0	47	17	6	23	8	7	19	11	30	2	1	74	44	118	
16	Kalaw	153503	161	61	16	77	**48%**	4	0	2	1	9	0	93	29	14	43	13	5	25	14	39	8	1	151	51	202	
17	Lauksauk	143793	151	36	17	53	**35%**	4	0	2	1	3	0	63	30	19	49	13	7	13	14	27	4	1	105	59	164	
18	Pindaya	77769	82	39	19	58	**71%**	2	1	0	1	0	0	62	20	5	25	4	1	0	0	0	0	2	65	29	94	
19	Pinlaung	165307	174	54	21	75	**43%**	2	1	0	0	1	0	79	19	5	24	8	8	33	30	63	0	0	117	65	182	
20	Nyaungshwe	174780	184	28	12	40	**22%**	2	1	0	0	2	0	45	20	7	27	10	6	16	7	23	1	1	79	34	113	
21	Ywangan	78116	82	11	3	14	**17%**	0	0	0	0	0	0	14	17	2	19	4	7	2	1	3	1	0	35	13	48	
	Total	**2066678**	**2170**	**609**	**297**	**906**	**42%**	**44**	**17**	**16**	**4**	**33**	**6**	**1026**	**493**	**280**	**773**	**296**	**217**	**385**	**273**	**658**	**61**	**20**	**1937**	**1114**	**3051**	
	Shan State (Kengtong)																											
1	Kengtong	193988	204	79	24	103	**51%**	9	4	7	2	6	0	131	47	24	71	50	43	12	9	21	13	4	223	110	333	
2	Mongkhat	27667	29	2	5	7	**24%**	0	0	0	0	0	0	7	1	1	2	2	6	0	1	1	0	0	5	13	18	
3	Mongyan	56002	59	10	11	21	**36%**	3	2	1	0	0	0	27	7	5	12	13	9	10	5	15	0	0	44	32	76	
4	Monghsat	81522	86	83	37	120	**140%**	13	1	2	0	8	1	145	90	79	169	85	42	2	3	5	17	5	300	168	468	
5	Mongping	56279	59	36	24	60	**102%**	4	3	0	0	0	0	67	11	8	19	2	2	14	11	25	2	0	69	48	117	
6	Mongton	51903	54	46	22	68	**125%**	4	3	1	0	6	2	84	23	17	40	32	30	0	3	3	4	2	116	79	195	
7	Monpyak	28342	30	27	11	38	**128%**	1	1	0	0	2	0	42	17	7	24	24	10	5	2	7	2	0	78	31	109	
8	Mongyaung	72629	76	22	11	33	**43%**	2	0	0	0	2	0	37	16	15	31	6	1	1	2	3	2	2	51	31	82	
9	Tachileik	125210	131	92	42	134	**102%**	9	2	1	0	5	1	152	60	41	101	103	82	14	11	25	0	1	284	180	464	
10	Matman																											
	Total	**693542**	**728**	**397**	**187**	**584**	**80%**	**45**	**16**	**12**	**2**	**29**	**4**	**692**	**272**	**197**	**469**	**317**	**225**	**58**	**47**	**105**	**40**	**14**	**1170**	**692**	**1862**	

Nr. 1Tsp; 1.Matman

Annex-4(townships list)

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																								
				SMEAR POSITIVE											Smear Negative		Total	Primary complex		Extra Pulmonary Tuberculosis		Total	other		TOTAL		
				New Cases			CDR	Previously treated cases						Total													
								Relapses		T'after Default		T'after failure															
				M	F	T		M	F	M	F	M	F		M	F		M	F	M	F		M	F	M	F	TOTAL
	Shan State (Lashio)																											
1	Kunlon	62083	65	33	14	47	**72%**	3	2	0	0	2	0	54	22	23	45	24	11	4	2	6	3	0	91	52	143
2	Hopan	24992	26	57	29	86	**328%**	11	5	0	1	1	0	104	3	1	4	47	20	7	2	9	0	0	126	58	184
3	Kyaukme	172874	182	83	56	139	**77%**	13	6	0	0	0	0	158	53	41	94	7	4	66	44	110	6	0	228	151	379
4	Hsipaw	161705	170	102	66	168	**99%**	5	3	0	0	0	0	176	22	13	35	23	19	67	88	155	0	0	219	189	408
5	Mabein	35184	37	12	4	16	**43%**	1	0	0	0	0	0	17	9	0	9	3	2	7	4	11	1	0	33	10	43
6	Manton	42703	45	0	0	0	**0%**	0	0	0	0	0	0	0	10	4	14	0	0	0	0	0	0	0	10	4	14
7	Mongmeik	61702	65	44	19	63	**97%**	1	0	0	0	6	1	71	15	5	20	1	3	6	4	10	2	1	75	33	108
8	Namtu	57602	60	20	8	28	**46%**	7	3	3	0	0	0	41	62	27	89	21	14	12	11	23	1	1	126	64	190
9	Nyaungcho	128357	135	25	10	35	**26%**	1	1	2	1	1	0	41	19	12	31	40	24	12	4	16	1	1	101	53	154
10	Lashio	279400	293	171	65	236	**80%**	13	7	6	3	24	6	295	141	77	218	104	65	74	58	132	52	27	585	308	893
11	Namsam	77757	82	12	7	19	**23%**	1	1	0	0	0	0	21	12	6	18	2	1	4	8	12	0	0	31	23	54
12	Mongmaw	50997	54	Nr.																							
13	Theinni	52647	55	28	18	46	**83%**	2	1	1	0	1	0	51	28	23	51	7	1	26	16	42	12	2	105	61	166
14	Mongreh	49084	52	13	13	26	**50%**	1	0	1	0	0	0	28	15	7	22	9	2	29	15	44	0	0	68	37	105
15	Manphant	70650	74	Nr.																							
16	Pangyan	91638	96	Nr.																							
17	Narphant	67682	71	Nr.																							
18	Panwaing	25375	27	Nr.																							
19	Tanyan	121279	127	55	27	82	**64%**	6	3	3	0	1	0	95	90	71	161	42	28	33	28	61	0	2	230	159	389
20	Laukkai	74496	78	25	25	50	**64%**	0	0	1	1	0	1	53	55	20	75	2	3	12	5	17	2	4	97	59	156
21	Kongyan	50048	53	Nr.																							
22	Muse	135439	142	63	30	93	**65%**	5	5	2	1	0	1	107	43	20	63	37	48	40	21	61	2	2	192	128	320
23	Kuitai	182021	191	34	14	48	**25%**	4	3	0	0	6	3	64	68	36	104	2	1	109	59	168	6	0	229	116	345
24	Namkham	106030	111	30	21	51	**46%**	0	1	0	0	1	0	53	32	23	55	29	15	7	2	9	6	2	105	64	169
	Total	**2181745**	**2291**	**807**	**426**	**1233**	**54%**	**74**	**41**	**19**	**7**	**43**	**12**	**1429**	**699**	**409**	**1108**	**400**	**261**	**515**	**371**	**886**	**94**	**42**	**2651**	**1569**	**4220**

* Note* (Nr.) Report had not been received from (6) townships

Nr. (6) tsp: 1.Manphant, 2.Panwaing, 3.Mongmaw, 4.Kongyan, 5.Narphant, 6.Pangyan

Annex-4(townships list)

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																							
				SMEAR POSITIVE											Smear Negative		Total	Primary complex		Extra Pulmonary Tuberculosis		Total	other		TOTAL		
				New Cases			CDR	Previously treated cases						Total													
								Relapses		T'after Default		T'after failure															
				M	F	T		M	F	M	F	M	F		M	F		M	F	M	F		M	F	M	F	TOTAL
	Kayin State																										
1	Kawkareik	306675	322	88	38	126	**39%**	16	4	1	1	0	1	149	53	47	100	70	51	12	18	30	2	1	242	161	403
2	Kyainseikkyi	178575	188	49	25	74	**39%**	2	0	0	0	0	0	76	26	18	44	28	9	7	6	13	0	0	112	58	170
3	Myawady	94023	99	135	66	201	**204%**	15	9	5	1	10	5	246	67	44	111	22	24	20	21	41	7	5	281	175	456
4	Hpa-an	413029	434	336	193	529	**122%**	15	6	1	0	1	0	552	486	314	800	265	235	24	29	53	0	4	1128	781	1909
5	Hlaingbwe	304894	320	121	77	198	**62%**	9	6	0	0	1	0	214	107	132	239	127	106	1	3	4	1	1	367	325	692
6	Papun(Kamamaun	48465	51	16	10	26	**51%**	1	0	0	0	0	0	27	23	26	49	43	23	1	2	3	0	0	84	61	145
7	Thandaung	90025	95	10	4	14	**15%**	0	1	0	0	1	0	16	33	18	51	14	13	2	2	4	2	1	62	39	101
	Total	**1435686**	**1507**	**755**	**413**	**1168**	**77%**	**58**	**26**	**7**	**2**	**13**	**6**	**1280**	**795**	**599**	**1394**	**569**	**461**	**67**	**81**	**148**	**12**	**12**	**2276**	**1600**	**3876**
	Tanintharyi Division																										
1	Dawei	139113	146	107	50	157	**107%**	5	5	4	0	4	4	179	212	160	372	227	207	88	75	163	22	13	669	514	1181
2	Launglon	136599	143	26	29	55	**38%**	1	1	0	0	1	0	58	9	12	21	16	12	23	17	40	1	1	77	72	148
3	Thayetchaung	118525	124	21	15	36	**29%**	0	0	0	0	0	1	37	24	11	35	9	9	21	21	42	2	0	77	57	134
4	Yebyu	123285	129	30	10	40	**31%**	1	0	0	0	2	0	43	50	21	71	24	19	4	4	8	0	1	111	55	166
5	Kawthaung	98282	103	102	55	157	**152%**	8	3	1	0	5	3	177	163	108	271	156	112	16	19	35	6	3	457	303	760
6	Bokpyin	47656	50	35	14	49	**98%**	1	2	0	0	0	0	52	50	36	86	40	28	36	30	66	2	0	164	110	274
7	Myeik	271791	285	176	86	262	**92%**	26	9	10	4	6	7	324	355	268	623	239	179	191	182	373	41	21	1044	756	1798
8	Kyunsu	164511	173	21	9	30	**17%**	4	1	1	1	3	0	40	14	12	26	10	8	2	0	2	2	1	57	32	89
9	Tanintharyi	101632	107	33	17	50	**47%**	6	1	1	1	1	1	61	21	15	36	10	6	7	6	13	4	0	83	47	130
10	Palaw	139584	147	29	30	59	**40%**	2	3	0	0	2	0	66	100	118	218	181	136	120	65	185	4	3	438	355	792
	Total	**1340978**	**1408**	**580**	**315**	**895**	**64%**	**54**	**25**	**17**	**6**	**24**	**16**	**1037**	**998**	**761**	**1759**	**912**	**716**	**508**	**419**	**927**	**84**	**43**	**3177**	**2301**	**5472**

Annex-4(townships list)

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																							
				SMEAR POSITIVE											Smear Negative		Total	Primary complex		Extra Pulmonary Tuberculosis		Total	other		TOTAL		
				New Cases			CDR	Previously treated cases						Total													
								Relapses		T'after Default		T'after failure															
				M	F	T		M	F	M	F	M	F		M	F		M	F	M	F		M	F	M	F	TOTAL
	Bago Region																										
1	**Bago**	420385	441	263	144	407	**92%**	39	23	10	3	9	6	497	283	172	455	171	150	129	117	246	37	34	941	649	1590
2	Daik-U	212791	223	74	48	122	**55%**	13	2	2	1	0	0	140	128	108	236	63	59	2	10	12	13	10	295	238	533
3	Kawa	221487	233	58	47	105	**45%**	5	2	1	0	1	3	117	51	30	81	28	22	12	5	17	3	1	159	110	269
4	Kyauktaga	257567	270	86	52	138	**51%**	7	5	0	1	0	0	151	91	61	152	62	45	15	25	40	1	0	262	189	451
5	Nyaunglaybin	203675	214	91	44	135	**63%**	7	4	0	0	0	1	147	81	69	150	40	40	12	9	21	13	9	244	176	420
6	Shwekyin	86610	91	36	29	65	**71%**	6	0	1	0	0	0	72	37	25	62	25	33	16	15	31	9	3	130	105	235
7	Thanatpin	159274	167	62	35	97	**58%**	6	1	1	1	0	0	106	76	61	137	29	25	10	12	22	11	6	195	141	336
8	Waw	202057	212	100	49	149	**70%**	8	4	1	0	3	0	165	46	33	79	31	26	19	21	40	4	2	212	135	347
9	Taunggoo	229426	241	105	42	147	**61%**	17	6	5	1	5	2	183	69	28	97	96	78	14	19	33	24	9	335	185	520
10	Kyaukkyi	107547	113	32	10	42	**37%**	3	0	0	0	0	0	45	60	40	100	28	18	3	2	5	7	1	133	71	204
11	Oktwin	160529	169	64	24	88	**52%**	7	4	1	0	2	0	102	33	13	46	76	57	5	2	7	4	5	192	105	297
12	Phyu	278684	293	140	69	209	**71%**	18	5	0	1	1	2	236	148	106	254	507	378	29	35	64	10	8	853	604	1457
13	Htantabin	120540	127	41	14	55	**43%**	5	6	0	0	0	0	66	36	21	57	43	25	5	10	15	1	0	131	76	207
14	Yedashe	196285	206	83	43	126	**61%**	12	6	0	0	3	0	147	48	40	88	18	17	3	8	11	1	1	168	115	283
	Total	**2856857**	**3000**	**1235**	**650**	**1885**	**63%**	**153**	**68**	**22**	**8**	**24**	**14**	**2174**	**1187**	**807**	**1994**	**1217**	**973**	**274**	**290**	**564**	**138**	**89**	**4250**	**2899**	**7149**
	Bago Region (Pyay)																										
1	Pyay	239003	251	146	82	228	**91%**	8	4	0	0	15	6	261	172	112	284	247	179	28	40	68	7	6	623	429	1052
2	Paukkhaung	117164	123	78	52	130	**106%**	5	9	2	0	3	2	151	44	36	80	66	68	6	6	12	1	3	205	176	381
3	Paungde	141457	149	60	52	112	**75%**	5	1	0	1	2	1	122	26	19	45	64	38	4	12	16	2	1	163	125	288
4	Padaung	136322	143	62	30	92	**64%**	10	5	0	1	4	3	115	79	35	114	59	39	4	6	10	5	0	223	119	342
5	Shwedaung	130223	137	66	33	99	**72%**	11	4	1	1	7	0	123	37	27	64	39	30	6	9	15	2	1	169	105	274
6	Thegon	134186	141	71	48	119	**84%**	6	6	0	0	4	0	135	129	101	230	143	110	5	4	9	8	0	366	269	635
7	Tharyarwady	156474	164	94	59	153	**93%**	8	1	1	0	2	0	165	54	30	84	37	38	11	12	23	12	3	219	143	362
8	Zigon	75019	79	43	24	67	**85%**	1	1	0	0	1	0	70	22	25	47	29	16	2	9	11	4	0	102	75	177
9	Minhla	125929	132	70	38	108	**82%**	3	2	0	0	4	1	118	33	18	51	18	16	6	10	16	6	1	140	86	226
10	Moenyo	127762	134	32	22	54	**40%**	0	0	0	0	0	1	55	43	18	61	32	29	10	8	18	7	0	124	78	202
11	Okpo	123709	130	58	31	89	**69%**	7	1	0	1	2	0	100	62	37	99	44	27	5	5	10	12	9	190	111	301
12	Gyobingauk	116645	122	62	28	90	**73%**	7	2	0	0	0	0	99	85	53	138	86	55	16	30	46	9	1	265	169	434
13	Nattalin	165457	174	86	50	136	**78%**	1	6	0	0	0	0	143	73	41	114	77	65	9	18	27	1	4	247	184	431
14	Latpadan	221585	233	76	39	115	**49%**	3	2	0	1	0	1	122	54	51	105	38	23	15	10	25	9	5	195	132	327
	Total	**2010935**	**2111**	**1004**	**588**	**1592**	**75%**	**75**	**44**	**4**	**5**	**44**	**15**	**1779**	**913**	**603**	**1516**	**979**	**733**	**127**	**179**	**306**	**85**	**34**	**3231**	**2201**	**5432**

Annex-4(townships list)

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																							
				SMEAR POSITIVE											Smear Negative		Total	Primary complex		Extra Pulmonary Tuberculosis		Total	other		TOTAL		
				New Cases			CDR	Previously treated cases						Total													
								Relapses		T'after Default		T'after failure															
				M	F	T		M	F	M	F	M	F		M	F		M	F	M	F		M	F	M	F	TOTAL
	Mon State																										
1	Mawlamyaing	279744	294	189	68	257	**87%**	27	11	3	1	4	5	308	302	193	495	145	106	87	51	138	7	9	764	444	1208
2	Chanungzon	158658	167	47	43	90	**54%**	4	3	0	0	1	2	100	38	45	83	72	48	6	6	12	0	1	168	148	316
3	Kyaikmaraw	213397	224	78	51	129	**58%**	7	3	0	0	3	1	143	83	69	152	165	134	11	8	19	2	0	349	266	615
4	Mudon	213471	224	98	47	145	**65%**	13	6	0	0	3	3	170	87	62	149	106	92	90	72	162	2	1	399	283	682
5	Thanbyuzayat	172159	181	78	39	117	**65%**	1	5	0	0	2	1	126	56	47	103	118	90	17	9	26	0	0	272	191	463
6	Ye	257095	270	111	68	179	**66%**	19	5	0	0	15	11	229	116	103	219	181	114	5	5	10	2	3	449	309	758
7	Thaton	252068	265	130	72	202	**76%**	10	10	2	1	4	8	237	99	73	172	50	33	13	13	26	2	2	310	212	522
8	Belin	166857	175	114	42	156	**89%**	13	4	0	0	2	1	176	131	122	253	164	139	11	13	24	1	1	436	322	758
9	Kyaikto	166060	174	77	31	108	**62%**	3	0	0	0	1	2	114	30	28	58	23	22	11	6	17	3	0	148	89	237
10	Paung	248047	260	108	52	160	**61%**	5	1	0	0	2	0	168	220	213	433	209	162	13	17	30	1	1	558	446	1004
	Total	**2127556**	**2234**	**1030**	**513**	**1543**	**69%**	**102**	**48**	**5**	**2**	**37**	**34**	**1771**	**1162**	**955**	**2117**	**1233**	**940**	**264**	**200**	**464**	**20**	**18**	**3853**	**2710**	**6563**
	Rakhine State																										
1	Kyaukphyu	173681	182	71	65	136	**75%**	0	1	1	2	3	5	148	50	47	97	28	29	23	36	59	2	2	178	187	365
2	Ann	114744	120	36	27	63	**52%**	4	1	0	0	4	1	73	80	48	128	24	21	30	33	63	5	1	183	132	315
3	Manaung	73193	77	24	19	43	**56%**	0	2	0	0	0	0	45	6	3	9	2	2	10	9	19	0	1	42	36	78
4	Rambye	114326	120	22	19	41	**34%**	0	1	0	0	2	0	44	25	20	45	2	1	9	7	16	2	2	62	50	112
5	Maungdaw	552993	581	77	37	114	**20%**	10	1	0	2	8	2	137	40	29	69	3	1	4	8	12	0	1	142	81	223
6	Buthidaung	316750	333	81	56	137	**41%**	8	8	1	0	2	0	156	102	83	185	3	4	7	3	10	15	6	219	160	379
7	Rathedaung	169352	178	71	46	117	**66%**	3	0	1	1	2	2	126	39	23	62	8	10	1	1	2	5	1	130	84	214
8	Sittwe	259437	272	140	60	200	**73%**	14	10	2	0	5	4	235	132	90	222	24	28	47	38	85	7	2	371	232	603
9	Kyauktaw	217512	228	113	59	172	**75%**	7	2	1	0	0	0	182	91	60	151	6	4	10	6	16	3	4	231	135	366
10	Minbya	201781	212	87	60	147	**69%**	3	4	2	0	9	4	169	45	35	80	7	14	11	9	20	8	1	172	127	299
11	Myaukoo	223500	235	126	96	222	**95%**	10	5	0	1	1	0	239	74	55	129	11	16	26	12	38	4	1	252	186	438
12	Myebon	139620	147	46	44	90	**61%**	1	2	1	0	0	0	94	20	7	27	2	5	9	6	15	5	4	84	68	152
13	Pauktaw	183993	193	30	15	45	**23%**	1	2	0	0	0	1	49	29	24	53	5	3	7	3	10	3	2	75	50	125
14	Ponnagyun	147448	155	51	29	80	**52%**	3	2	0	0	1	0	86	84	83	167	10	7	1	1	2	7	10	157	132	289
15	Thandwe	124844	131	61	36	97	**74%**	3	2	0	1	2	1	106	44	25	69	1	3	60	57	117	2	3	173	128	301
16	Gwa	63632	67	32	17	49	**73%**	2	0	0	0	3	0	54	30	30	60	2	9	34	27	61	1	1	104	84	188
17	Taungup	148264	156	79	49	128	**82%**	2	4	0	0	11	1	146	65	69	134	9	12	29	27	56	4	4	199	166	365
	Total	**3225070**	**3386**	**1147**	**734**	**1881**	**56%**	**71**	**47**	**9**	**7**	**53**	**21**	**2089**	**956**	**731**	**1687**	**147**	**169**	**318**	**283**	**601**	**73**	**46**	**2774**	**2038**	**4812**

Annex-4(townships list)

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS														Extra Pulmonary Tuberculosis		Total	other		TOTAL		
				SMEAR POSITIVE											Smear Negative		Total	Primary complex							
				New Cases			CDR	Previously treated cases						Total											
								Relapses		T'after Default		T'after failure													
				M	F	T		M	F	M	F	M	F		M	F		M	F	M	F		M	F	M	F	TOTAL
	Yangon Region																										
	East District																										
1	Botataung	39935	68	37	20	57	**84%**	9	5	0	0	1	0	72	29	15	44	3	3	12	13	25	3	5	94	61	155
2	Dawbon	77642	132	84	41	125	**95%**	18	7	0	2	1	0	153	40	24	64	7	8	20	17	37	8	8	178	107	285
3	Dagon(N)	178029	303	132	61	193	**64%**	23	4	1	1	7	2	231	105	68	173	33	13	22	20	42	24	12	347	181	528
4	Dagon(S)	269460	458	332	186	518	**113%**	45	23	5	0	18	14	623	269	156	425	87	62	30	40	70	45	19	831	500	1331
5	MingalarTN	128626	219	98	38	136	**62%**	21	16	0	0	6	2	181	164	88	252	47	33	28	28	56	18	7	382	212	594
6	Okkala(N)	271291	461	192	96	288	**62%**	32	14	5	4	8	4	355	167	114	281	60	35	30	29	59	38	6	532	302	834
7	Okkala(S)	155574	264	95	42	137	**52%**	19	8	0	0	1	2	167	103	51	154	37	36	17	28	45	17	15	289	182	471
8	Thaketa	219852	374	204	92	296	**79%**	41	12	8	2	15	9	383	161	88	249	75	60	31	43	74	25	9	560	315	875
9	Thingangyun	188091	320	112	54	166	**52%**	52	13	2	1	3	3	240	182	124	306	13	24	42	52	94	25	13	431	284	715
10	Yankin	97626	166	90	50	140	**84%**	18	6	0	0	0	0	164	49	29	78	43	22	8	5	13	11	4	219	116	335
11	Tarmwe	155571	264	103	49	152	**57%**	20	7	2	0	3	1	185	91	46	137	23	23	22	37	59	17	15	281	178	459
12	Pazundaung	47185	80	36	18	54	**67%**	3	3	0	0	2	3	65	51	33	84	10	10	9	11	20	8	5	119	83	202
13	Dagon(E)	114283	194	144	77	221	**114%**	34	9	4	0	7	2	277	99	81	180	37	27	17	9	26	24	7	366	212	578
14	Dagon Seikkan	97785	166	75	47	122	**73%**	9	8	0	0	0	0	139	69	43	112	29	27	11	9	20	20	16	213	150	363
	Total	**2040950**	**3470**	**1734**	**871**	**2605**	**75%**	**344**	**135**	**27**	**10**	**72**	**42**	**3235**	**1579**	**960**	**2539**	**504**	**383**	**299**	**341**	**640**	**283**	**141**	**4842**	**2883**	**7725**
	West District																										
1	KAMAYUT	62548	106	47	31	78	**73%**	11	7	1	0	7	2	106	53	33	86	6	12	15	17	32	10	4	150	106	256
2	KYAUKTADA	36978	63	17	11	28	**45%**	6	2	0	0	4	0	40	19	18	37	1	2	6	6	12	4	1	57	40	97
3	KYINMYINDINE	100248	170	106	57	163	**96%**	28	8	5	0	7	5	216	79	41	120	35	23	24	29	53	13	9	297	172	469
4	SANCHUNG	78915	134	69	30	99	**74%**	13	4	0	0	2	2	120	88	36	124	12	14	12	12	24	8	12	204	110	314
5	SEIKKAN	1591	3	1	0	1	**37%**	1	0	0	0	0	0	2	1	1	2	0	0	0	0	0	0	0	3	1	4
6	DAGON	21688	37	19	4	23	**62%**	1	2	1	0	4	0	31	15	8	23	5	2	5	2	7	0	4	50	22	72
7	PABADAN	29900	51	23	12	35	**69%**	4	2	0	0	5	1	47	28	15	43	6	9	5	10	15	1	5	72	54	126
8	BAHAN	78062	133	62	36	98	**74%**	10	3	2	0	0	3	116	64	27	91	22	8	14	18	32	12	6	186	101	287
9	MAYANGON	162178	276	127	63	190	**69%**	31	9	3	0	10	7	250	137	96	233	43	31	23	34	57	14	6	388	246	634
10	LATHA	27643	47	9	11	20	**43%**	3	0	1	0	4	0	28	25	4	29	3	1	2	2	4	0	2	47	20	67
11	LANMADAW	34530	59	18	16	34	**58%**	7	2	1	0	0	3	47	22	20	42	0	1	21	8	29	2	0	71	50	121
12	HLAING	118547	202	132	80	212	**105%**	30	10	5	1	0	2	260	138	73	211	31	34	42	44	86	28	11	406	255	661
13	AHLONE	51593	88	48	19	67	**76%**	6	6	0	0	2	1	82	39	33	72	4	8	11	14	25	6	3	116	84	200
	Total	**804421**	**1367.516**	**678**	**370**	**1048**	**77%**	**151**	**55**	**19**	**1**	**45**	**26**	**1345**	**708**	**405**	**1113**	**168**	**145**	**180**	**196**	**376**	**98**	**63**	**2047**	**1261**	**3308**

Annex-4(townships list)

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																		Extra Pulmonary Tuberculosis		Total	other		TOTAL		
				SMEAR POSITIVE										Total	Smear Negative		Total	Primary complex											
				New Cases			CDR	Previously treated cases																					
								Relapses		T'after Default		T'after failure																	
				M	F	T		M	F	M	F	M	F		M	F		M	F	M	F		M	F	M	F	TOTAL
	South District																												
1	SEIKKYIKANAUNG' T	31644	54	40	19	59	**110%**	7	2	2	0	1	1	72	27	15	42	11	2	7	6	13	2	1	97	46	143		
2	DALLAH	150084	255	98	57	155	**61%**	19	9	5	2	1	2	193	131	77	208	46	50	33	40	73	21	9	354	246	600		
3	CoCo Gyun	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4	KAWHMU	127730	217	31	22	53	**24%**	4	1	0	0	0	1	59	21	18	39	18	22	4	4	8	6	3	84	71	155		
5	KYAUKTAN	162931	277	98	46	144	**52%**	4	6	0	0	0	0	154	56	34	90	30	20	18	14	32	4	2	210	122	332		
6	KUNGGANGONE	114150	194	73	37	110	**57%**	10	4	0	0	0	0	124	30	17	47	22	22	6	12	18	0	1	141	93	234		
7	KAYAN	169456	288	109	62	171	**59%**	13	9	0	0	2	0	195	27	15	42	21	19	22	17	39	1	5	195	127	322		
8	TWANTAY	215513	366	112	78	190	**52%**	18	5	0	0	2	2	217	73	46	119	39	17	19	23	42	5	11	268	182	450		
9	THONGWA	160782	273	89	41	130	**48%**	12	6	1	0	6	0	155	39	16	55	19	13	5	7	12	18	7	189	90	279		
10	THANLYIN	187944	320	187	72	259	**81%**	32	13	4	0	5	4	317	165	87	252	14	27	55	45	100	16	10	478	258	736		
	Total	**1320234**	**2244**	**837**	**434**	**1271**	**57%**	**119**	**55**	**12**	**2**	**17**	**10**	**1486**	**569**	**325**	**894**	**220**	**192**	**169**	**168**	**337**	**73**	**49**	**2016**	**1235**	**3251**		
	North District																												
1	MINGALADON	179465	305	272	117	389	**128%**	66	6	14	4	20	13	512	286	127	413	64	45	59	40	99	46	7	827	359	1186		
2	SHWEPYITHA	231106	393	202	112	314	**80%**	39	15	3	0	8	5	384	187	121	308	53	38	38	30	68	29	5	559	326	885		
3	HLAINGTHAYA	377632	642	387	206	593	**92%**	69	32	6	0	6	1	707	518	301	819	77	51	115	115	230	105	56	1283	762	2045		
4	INSEIN	249490	424	249	134	383	**90%**	55	19	11	1	12	8	489	248	141	389	53	41	61	47	108	40	21	729	412	1141		
5	TAIKKYI	240697	409	155	82	237	**58%**	16	6	1	2	13	6	281	141	100	241	78	35	18	13	31	18	5	440	249	689		
6	HTANTABIN	136359	232	61	32	93	**40%**	8	6	0	0	1	0	108	39	20	59	9	14	5	6	11	4	2	127	80	207		
7	HMAWBI	189203	322	107	67	174	**54%**	11	6	1	3	6	2	203	118	66	184	75	59	24	20	44	13	2	355	225	580		
8	HLEGU	199720	340	76	33	109	**32%**	15	2	3	0	0	0	129	134	90	224	81	88	19	13	32	23	8	351	234	585		
	U.T.I	0	0	17	6	23		1	0	0	0	0	0	24	19	9	28	0	1	1	2	3	0	0	38	18	56		
	NTP(Diagnostic C	0	0	7	3	10		4	0	0	0	0	0	14	10	8	18	85	74	6	8	14	0	0	112	93	205		
	Total	1803672	3066	1533	792	2325	**76%**	284	92	39	10	66	35	2851	1700	983	2683	575	446	346	294	640	278	106	4821	2758	7579		
	Grand Total	**5969277**	**10148**	**4782**	**2467**	**7249**	**71%**	**898**	**337**	**97**	**23**	**200**	**113**	**8917**	**4556**	**2673**	**7229**	**1467**	**1166**	**994**	**999**	**1993**	**732**	**359**	**13726**	**8137**	**21863**		

Annex-4(townships list)

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																							
				SMEAR POSITIVE											Smear Negative		Total	Primary complex		Extra Pulmonary Tuberculosis		Total	other		TOTAL		
				New Cases			CDR	Previously treated cases						Total													
								Relapses		T'after Default		T'after failure															
				M	F	T		M	F	M	F	M	F		M	F		M	F	M	F		M	F	M	F	TOTAL
	Ayeyarwaddy Region																										
1	Pathein	305105	320	231	121	352	**110%**	32	18	4	2	3	3	414	296	226	522	233	175	72	47	119	30	19	901	611	1512
2	Kanyidaung	165706	174	38	32	70	**40%**	3	5	0	0	0	1	79	33	30	63	21	19	8	7	15	3	3	106	97	203
3	Yekyi	194920	205	112	42	154	**75%**	18	1	0	0	0	0	173	120	93	213	114	98	63	62	125	10	2	437	298	735
4	Kyaunggon	170644	179	115	61	176	**98%**	6	5	0	0	1	0	188	46	44	90	30	26	25	21	46	5	2	228	159	387
5	Kyonpyaw	256488	269	80	48	128	**48%**	8	5	1	0	2	0	144	65	39	104	19	14	73	45	118	10	2	258	153	411
6	Ngaputaw	153219	161	87	69	156	**97%**	2	1	1	0	0	2	162	43	38	81	89	53	22	19	41	3	3	247	185	432
7	Thabaung	152940	161	63	34	97	**60%**	2	1	0	0	0	0	100	50	42	92	80	51	6	13	19	15	9	216	150	366
8	Hinhada	368174	387	262	133	395	**102%**	13	7	0	0	0	1	416	233	180	413	27	34	125	113	238	3	1	663	469	1132
9	Kyankin	98587	104	60	28	88	**85%**	2	0	0	0	2	0	92	58	41	99	40	26	39	29	68	5	0	206	124	330
10	Myanaung	221524	233	72	36	108	**46%**	11	5	0	0	0	0	124	105	96	201	85	62	105	75	180	4	4	382	278	660
11	Ingapu	213064	224	118	60	178	**80%**	9	5	0	1	3	0	196	100	88	188	39	29	18	14	32	7	7	294	204	498
12	Zalun	179381	188	48	35	83	**44%**	2	2	0	1	0	0	88	76	80	156	74	42	36	42	78	9	4	245	206	451
13	Laymtethna	107588	113	58	32	90	**80%**	1	0	0	0	3	1	95	28	25	53	15	8	3	6	9	3	1	111	73	184
14	Myaungmya	282402	297	148	94	242	**82%**	7	6	1	3	9	4	272	192	143	335	98	78	71	73	144	12	5	538	406	944
15	Laputta	502707	528	180	113	293	**56%**	7	7	2	1	5	2	317	121	78	199	113	100	49	31	80	31	18	508	350	858
16	Mawgyun	339083	356	88	65	153	**43%**	9	4	1	0	1	0	168	44	29	73	32	16	12	10	22	1	2	188	126	314
17	Wakema	301747	317	83	47	130	**41%**	2	2	5	0	7	4	150	53	28	81	20	14	26	23	49	8	5	204	123	327
18	Einme	198772	209	97	59	156	**75%**	4	7	0	0	1	0	168	49	43	92	26	22	10	13	23	5	4	192	148	340
19	Pyapon	311999	328	127	71	198	**60%**	5	2	1	1	2	2	211	145	87	232	61	46	34	25	59	5	0	380	234	614
20	Bogalay	350792	368	157	90	247	**67%**	10	7	3	1	4	0	272	140	108	248	27	29	31	20	51	9	2	381	257	638
21	Dedaye	218828	230	40	16	56	**24%**	0	2	0	0	1	1	60	73	45	118	23	31	3	1	4	1	0	141	96	237
22	Kyaiklatt	204399	215	62	44	106	**49%**	11	1	1	1	6	4	130	132	125	257	147	102	13	10	23	0	1	372	288	660
23	Maubin	343472	361	173	68	241	**67%**	13	9	0	1	5	1	270	123	73	196	9	4	113	90	203	8	4	444	250	694
24	Nyaungdon	220681	232	104	55	159	**69%**	1	2	0	0	1	0	163	23	19	42	16	17	18	19	37	10	1	173	113	286
25	Pantanaw	265002	278	100	61	161	**58%**	13	4	0	0	0	0	178	50	24	74	16	10	10	3	13	0	0	189	102	291
26	Danuphyu	189755	199	84	35	119	**60%**	6	6	2	1	0	0	134	23	21	44	19	19	10	10	20	2	0	146	92	238
	Total	**6316979**	**6633**	**2787**	**1549**	**4336**	**65%**	**197**	**114**	**22**	**13**	**56**	**26**	**4764**	**2421**	**1845**	**4266**	**1473**	**1125**	**995**	**821**	**1816**	**199**	**99**	**8150**	**5592**	**13742**

Annex-4(townships list)

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																		Extra Pulmonary Tuberculosis		Total	other		TOTAL		
				SMEAR POSITIVE										Total	Smear Negative		Total	Primary complex											
				New Cases			CDR	Previously treated cases																					
								Relapses		T'after Default		T'after failure																	
				M	F	T		M	F	M	F	M	F		M	F		M	F	M	F		M	F	M	F	TOTAL	
	Nay Pyi Taw Council Area																												
1	Oaktaratheri	57716	61	21	13	34	**56%**	2	0	1	0	1	2	40	12	8	20	1	2	8	9	17	0	1	46	35	81		
2	Dekhinatheri	27071	28	11	5	16	**56%**	0	2	0	0	0	0	18	8	1	9	3	4	12	8	20	0	1	34	21	55		
3	Poatpatheri	90466	95	35	19	54	**57%**	2	1	0	0	1	1	59	25	13	38	7	7	19	8	27	1	1	90	50	140		
4	Zamutheri	72317	76	30	12	42	**55%**	5	4	0	0	0	0	51	19	6	25	2	2	10	4	14	2	0	68	28	96		
5	Zayyartheri	70277	74	99	25	124	**168%**	6	2	0	0	10	3	145	82	21	103	7	8	47	35	82	16	7	267	101	368		
6	Pyinmana	154150	162	121	55	176	**109%**	5	2	9	0	13	8	213	69	44	113	5	1	61	56	117	9	12	292	178	470		
7	Tatkone	199773	210	91	38	129	**61%**	7	2	0	0	6	0	144	45	17	62	22	8	42	33	75	7	3	220	101	321		
8	Lewei	270644	284	111	57	168	**59%**	10	5	0	0	1	0	184	46	30	76	47	25	27	26	53	10	5	252	148	400		
	Total	**942414**	**990**	**519**	**224**	**743**	**75%**	**37**	**18**	**10**	**0**	**32**	**14**	**854**	**306**	**140**	**446**	**94**	**57**	**226**	**179**	**405**	**45**	**30**	**1269**	**662**	**1931**		

AGE AND SEX DISTRIBUTION OF NEW SMEAR POSITIVE TB PATIENTS

Block 2 **Annual 2012**

Sr.No	Region/State	AGE GROUP (YEAR)														TOTAL		
		0-14		15-24		25 - 34		35 - 44		45 - 54		55 - 64		65 or more				
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	T
1	Kachin State	10	13	90	73	176	77	181	65	114	44	72	34	37	25	680	331	1011
2	Kayah State	1	0	5	7	24	6	17	3	14	8	4	4	3	2	68	30	98
3	Chin State	0	0	2	10	7	3	18	11	18	6	16	5	18	5	79	40	119
4	Sagaing Region	15	9	155	117	311	159	382	151	358	134	261	118	211	112	1693	800	2493
5	Magway Region	6	8	108	70	258	148	273	95	251	125	202	132	174	99	1272	677	1949
6	Mandalay Region	9	20	255	159	525	243	486	176	373	152	289	122	188	96	2125	968	3093
7	Shan State (Taunggyi)	6	6	64	62	131	68	129	52	122	52	102	38	56	18	610	296	906
8	Shan State (Kyaingtong	3	1	46	36	103	44	116	44	81	34	34	17	14	11	397	187	584
9	Shan State (Lashio)	6	7	104	84	184	94	201	84	160	78	96	46	56	33	807	426	1233
10	Kayin State	0	6	62	45	147	71	153	91	173	86	131	61	89	53	755	413	1168
11	Tanintharyi Region	1	7	42	41	112	85	148	63	136	47	88	39	53	33	580	315	895
12	Bago Region	8	3	120	103	259	147	294	132	256	123	174	74	124	68	1235	650	1885
13	Bago Region (Pyay)	8	10	72	69	194	136	219	104	220	116	166	97	125	56	1004	588	1592
14	Mon State	2	5	78	70	212	108	261	70	227	95	136	98	114	67	1030	513	1543
15	Rakhine State	3	3	100	93	179	154	234	146	287	130	203	119	141	89	1147	734	1881
16	Yangon Region	28	25	600	507	1162	616	1082	425	945	402	601	304	364	188	4782	2467	7249
17	Ayeyarwady Region	10	15	213	189	522	312	544	287	675	310	500	259	323	177	2787	1549	4336
18	Naypyitaw council area	0	2	49	46	145	63	120	48	116	28	54	19	34	19	518	225	743
19	Other Unit	30	52	733	576	1614	832	1611	674	1312	630	816	437	502	313	6618	3514	10132
Country		**146**	**192**	**2898**	**2357**	**6263**	**3368**	**6469**	**2721**	**5837**	**2600**	**3945**	**2023**	**2626**	**1464**	**28184**	**14725**	**42909**

Annex-6

NATIONAL TUBERCULOSIS PROGRAMME
AGE DISTRIBUTION OF PRIMARY COMPLEX, HILAR LYMPHADENOPATHY AND TB MENINGITIS PATIENTS

Annual 2012

Sr.No	S/R & Other unit	PC and TBM, Hilar cases															
		PC				All EP (including TBM & Hilar)				TBM				Hilar Lymphadenopathy			
		0-4	5-14	≥15	Total	0-4	5-14	≥15	Total	0-4	5-14	≥15	Total	0-4	5-14	≥15	Total
1	Kachin State	572	605	3	1180	576	512	208	1296	6	7	7	20	564	492	32	1088
2	Kayah State	121	113	44	278	2	6	2	10	0	0	0	0	2	5	2	9
3	Chin State	224	137	4	365	57	55	23	135	2	2	0	4	39	34	1	74
4	Sagaing Region	1417	1341	24	2782	117	195	234	546	9	14	14	37	114	155	20	289
5	Magway Region	395	609	10	1014	418	489	402	1309	20	9	11	40	376	449	35	860
6	Mandalay Region	432	645	4	1081	856	1192	983	3031	33	17	31	81	550	834	43	1427
7	Shan State (Taunggyi)	248	378	2	628	138	251	193	582	5	8	11	24	106	199	11	316
8	Shan State (Kyaingtong)	233	306	2	541	16	40	42	98	4	4	2	10	6	26	10	42
9	Shan State (Lashio)	277	348	4	629	223	351	187	761	7	7	4	18	109	187	22	318
10	Kayin State	401	658	1	1060	19	48	53	120	4	6	3	13	15	37	1	53
11	Tanintharyi Region	914	1061	15	1990	259	349	113	721	4	4	6	14	219	276	77	572
12	Bago Region	1000	1192	0	2192	70	80	31	181	12	10	13	35	59	70	18	147
13	Bago Region (Pyay)	788	923	3	1714	28	31	42	101	12	5	3	20	9	25	21	55
14	Mon State	668	1499	4	2171	85	185	126	396	3	3	10	16	80	173	1	254
15	Rakhine State	332	415	9	756	116	167	148	431	2	4	5	11	104	134	6	244
16	Yangon Region	1107	1341	26	2474	203	307	1328	1838	26	15	79	120	89	131	38	258
17	Ayeyarwady Region	987	1680	8	2675	371	580	553	1504	7	7	8	22	413	583	19	1015
18	Naypyitaw council area	17	25	1	43	40	62	30	132	0	1	0	1	40	60	3	103
19	Other Unit	3234	4706	56	7996	1320	933	1874	4127	7	5	75	87	1517	1009	96	2622
	Total	**13367**	**17982**	**220**	**31569**	**4914**	**5833**	**6572**	**17319**	**163**	**128**	**282**	**573**	**4411**	**4879**	**456**	**9746**

Annex-7

NOTIFIED TB PATIENTS ACCORDING TO CATEGORY OF REGIMENS

Block-3 **Annual 2012**

Sr.No	Region/State	CAT - 1				CAT - 2					CAT - 3			TOTAL
		Sputum Smear Positive	Sputum Smear Negative	EP Seriously ill	Total	Relapses	Treat-ment after Default	Treat-ment after Failure	Others	Total	P	EP	Total	
1	Kachin State	1048	1152	165	2365	112	21	57	278	468	1371	1158	2529	5362
2	Kayah State	104	123	34	261	9	5	1	58	73	401	29	430	764
3	Chin State	118	211	37	366	9	1	6	15	31	348	218	566	963
4	Sagaing Region	2548	1604	500	4652	200	22	72	181	475	2650	713	3363	8490
5	Magway Region	1975	1502	408	3885	144	20	70	210	444	1363	1196	2559	6888
6	Mandalay Region	3169	2406	870	6445	334	31	160	475	1000	1093	2040	3133	10578
7	Shan State (Taunggyi)	918	430	131	1479	67	20	39	86	212	883	536	1419	3110
8	Shan State (Kyaingtong)	596	459	47	1102	62	15	33	56	166	570	63	633	1901
9	Shan State (Lashio)	1271	1113	260	2644	115	26	55	148	344	394	969	1363	4351
10	Kayin State	1194	1107	96	2397	88	11	20	34	153	1425	77	1502	4052
11	Tanintharyi Region	921	1435	218	2574	87	23	41	130	281	2013	726	2739	5594
12	Bago Region	1938	974	245	3157	239	31	38	235	543	3291	380	3671	7371
13	Bago Region (Pyay)	1618	982	163	2763	123	10	59	128	320	2305	158	2463	5546
14	Mon State	1576	1380	113	3069	157	8	72	50	287	2973	375	3348	6704
15	Rakhine State	1911	1193	182	3286	117	18	73	126	334	876	448	1324	4944
16	Yangon Region	7329	6606	1316	15251	1252	121	324	1107	2804	3244	722	3966	22021
17	Ayeyarwady Region	4417	3813	682	8912	329	36	84	315	764	3190	1218	4408	14084
18	Naypyitaw council area	757	319	103	1179	56	11	46	29	142	247	361	608	1929
19	Other Unit	10242	8027	2045	20314	1203	110	447	1269	3029	10193	2924	13117	36460
	Country	**43650**	**34836**	**7615**	**86101**	**4703**	**540**	**1697**	**4930**	**11870**	**38830**	**14311**	**53141**	**151112**

LABORATORY PERFORMANCE (2012)

Block-4 **Annual 2012**

Sr.No	Region/State	A Number of suspects(Dx) examined by microscopy for case finding		B Number of smear positive pts detected out of suspcts (Dx)			C Number of patients examined by microscopy for follow-up		D Number of smear positive out of follow-up patients		TB suspects per 100,000
		No. of Pts	slides	No. of Pts	**Positivity Rate**	slides	No. of Pts	slides	No. of Pts	slides	
1	Kachin State	9031	26095	1147	**13%**	2930	6090	12095	333	611	**617**
2	Kayah State	1829	5363	107	**6%**	283	694	1374	11	19	**610**
3	Chin State	1707	4744	156	**9%**	312	788	1443	50	103	**346**
4	Sagaing Region	29834	86199	2570	**9%**	6763	13235	26986	590	1086	**572**
5	Magway Region	16895	48412	2212	**13%**	6034	10535	21070	689	1319	**407**
6	MandalayRegion	33358	94948	3450	**10%**	9399	18804	37406	1148	2024	**581**
7	Shan State (Taunggyi)	9067	29236	958	**11%**	2570	3518	6773	250	454	**439**
8	Shan State (Kyaingtong)	3006	8012	581	**19%**	1517	2453	4503	265	444	**433**
9	Shan State (Lashio)	8857	25046	1441	**16%**	3914	5961	11805	393	670	**406**
10	Kayin State	6763	18746	1335	**20%**	4289	6093	12063	270	536	**471**
11	Tanintharyi Region	7945	22777	1019	**13%**	2951	5231	10509	401	770	**592**
12	Bago Region	11199	32493	2140	**19%**	5958	10143	20117	250	491	**392**
13	Bago Region (Pyay)	10777	30061	1799	**17%**	4943	8643	16991	571	1079	**536**
14	Mon State	16435	48113	1839	**11%**	4197	10841	19973	401	658	**772**
15	Rakhine State	11744	33578	2014	**17%**	5204	8343	16110	725	1287	**364**
16	Yangon Region	47508	144219	8609	**18%**	22918	49651	99248	2795	5335	**796**
17	Ayeyarwady Region	25063	69242	4547	**18%**	12422	21791	43295	1292	2698	**397**
18	Naypyitaw council area	2374	6984	609	**26%**	1693	3615	7247	275	494	**252**
19	Other Unit	63050	167174	9680	**15%**	25056	36630	73154	3736	6971	
Country		**316530**	**901706**	**46223**	**15%**	**123385**	**223230**	**442506**	**14446**	**27154**	**652**

Annex-9

NATIONAL TUBERCULOSIS PROGRAMME
SPUTUM CONVERSION OF NEW POSITIVE PULMONARY TB PATIENTS

Block-5 **Annual 2012**

Sr.no	Region/State	New smear(+) cases Register in previous Q:	Smear not done at eighter 2or 3 months	Sputum conversion at				Remaining positive at 3 month	Remaining positive at 3 month (%)	TOTAL 2+3+4+5	**Sputum Conversion Rate**
				2 month		3 month					
				No	%	No	%				
1	Kachin State	1011	90	773	76%	113	11%	35	3%	1011	**88%**
2	Kayah State	98	10	81	83%	5	5%	2	2%	98	**88%**
3	Chin State	119	1	106	89%	10	8%	2	2%	119	**97%**
4	Sagaing Region	2497	142	2030	81%	248	10%	77	3%	2497	**91%**
5	Magway Region	1950	128	1524	78%	187	10%	111	**6%**	1950	**88%**
6	Mandalay Region	3566	325	2596	73%	435	12%	210	**6%**	3566	**85%**
7	Shan State (Taunggyi)	906	80	712	79%	73	8%	41	**5%**	906	**87%**
8	Shan State (Kyaingtong)	584	93	386	66%	63	11%	42	**7%**	584	**77%**
9	Shan State (Lashio)	1237	155	922	75%	93	8%	67	**5%**	1237	**82%**
10	Kayin State	1164	113	920	79%	100	9%	31	3%	1164	**88%**
11	Tanintharyi Region	895	77	621	69%	131	15%	66	**7%**	895	**84%**
12	Bago Region	1885	178	1644	87%	57	3%	6	0%	1885	**90%**
13	Bago Region (Pyay)	1592	113	1224	77%	167	10%	88	**6%**	1592	**87%**
14	Mon State	1543	105	1265	82%	124	8%	49	3%	1543	**90%**
15	Rakhine State	1881	285	1194	63%	290	15%	112	**6%**	1881	**79%**
16	Yangon Region	7239	384	5961	82%	633	9%	261	4%	7239	**91%**
17	Ayeyarwady Region	4332	356	3493	81%	360	8%	123	3%	4332	**89%**
18	Naypyitaw	270	28	189	70%	40	15%	13	**5%**	270	**85%**
19	Other Units	10131	1810	7112	70%	790	8%	419	4%	10131	**78%**
	Country	**42900**	**4473**	**32753**	**76%**	**3919**	**9%**	**1755**	**4%**	**42900**	**85%**

NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOMES OF NEW SMEAR POSITIVE TB PATIENTS (2011 COHORT)

Kachin State

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transfered out		Total eva. Pts.
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
1	Bahmo	88	83	**94%**	0	0%	**94%**	2	2%	1	1%	1	1%	1	1%	88
2	Mansi	50	39	**78%**	7	14%	**92%**	1	2%	1	2%	1	2%	1	2%	50
3	Momauk	26	20	**77%**	0	0%	**77%**	2	8%	1	4%	3	12%	0	0%	26
4	Shwegu	45	37	**82%**	4	9%	**91%**	3	7%	1	2%	0	0%	0	0%	45
5	Mohynin	100	68	**68%**	12	12%	**80%**	9	9%	5	5%	6	6%	0	0%	100
6	Kamaing	180	108	**60%**	25	14%	**74%**	9	5%	11	6%	11	6%	16	9%	180
7	Mogaung	86	60	**70%**	8	9%	**79%**	6	7%	6	7%	4	5%	2	2%	86
8	Tanai	59	39	**66%**	8	14%	**80%**	4	7%	1	2%	7	12%	0	0%	59
9	Myitkyina	278	194	**70%**	26	9%	**79%**	13	5%	23	8%	17	6%	5	2%	278
10	Chipway	1	1	**100%**	0	0%	**100%**	0	0%	0	0%	0	0%	0	0%	1
11	Hsawlaw															
12	N Jan Yan															
13	Waingmaw	97	74	**76%**	15	15%	**92%**	3	3%	3	3%	1	1%	1	1%	97
14	PutaO	52	39	**75%**	8	15%	**90%**	1	2%	3	6%	0	0%	1	2%	52
15	Khaunglanbu															
16	Machanbaw	2	2	**100%**	0	0%	**100%**	0	0%	0	0%	0	0%	0	0%	2
17	Nogmun															
18	Sumprabum															
	Total	1064	764	**72%**	113	11%	**82%**	53	5%	56	5%	51	5%	27	3%	1064

Kayah State

1	Bawlake	16	13	**81%**	2	13%	**94%**	0	0%	1	6%	0	0%	0	0%	16
2	Masai	2	1	**50%**	1	50%	**100%**									2
3	Pasaung	7	6	**86%**	0	0%	**86%**	0	0%	0	0%	0	0%	1	14%	7
4	Loikaw	54	43	**80%**	1	2%	**81%**	2	4%	0	0%	3	6%	5	9%	54
5	Dimawhso	27	20	**74%**	5	19%	**93%**	1	4%	0	0%	1	4%	0	0%	27
6	Phruhso	6	5	**83%**	0	0%	**83%**	0	0%	0	0%	1	17%	0	0%	6
7	Shataw	4	4	**100%**	0	0%	**100%**	0	0%	0	0%	0	0%	0	0%	4
	Total	116	92	**80%**	9	7%	**87%**	3	3%	1	1%	5	4%	6	5%	116

Chin State

1	Falam	4	3	**75%**	0	0%	**75%**	0	0%	0	0%	1	25%	0	0%	4
2	Hakha	21	17	**81%**	0	0%	**81%**	2	10%	1	5%	0	0%	1	5%	21
3	Htantalan	7	4	**57%**	3	43%	**100%**	0	0%	0	0%	0	0%	0	0%	7
4	Tiddim	4	4	**100%**	0	0%	**100%**	0	0%	0	0%	0	0%	0	0%	4
5	Tunzan	4	4	**100%**	0	0%	**100%**	0	0%	0	0%	0	0%	0	0%	4
6	Mindat	19	15	**79%**	0	0%	**79%**	4	21%	0	0%	0	0%	0	0%	19
7	Kanpetlet	6	6	**100%**	0	0%	**100%**	0	0%	0	0%	0	0%	0	0%	6
8	Matupi	10	9	**90%**	0	0%	**90%**	1	10%	0	0%	0	0%	0	0%	10
9	Paletwa	38	33	**87%**	0	0%	**87%**	2	5%	0	0%	3	8%	0	0%	38
	Total	113	95	**84%**	3	3%	**87%**	9	8%	1	1%	4	4%	1	1%	113

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transfered out		Total eva. Pts.
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
	Sagaing Region															
1	Sagaing	132	122	**92%**	0	0%	**92%**	10	8%	0	0%	0	0%	0	0%	132
2	Myaung	62	46	**74%**	6	10%	**84%**	7	11%	1	2%	1	2%	1	2%	62
3	Myinmu	70	54	**77%**	6	9%	**86%**	2	3%	1	1%	0	0%	7	10%	70
4	Shwebo	114	90	**79%**	8	7%	**86%**	12	11%	1	1%	1	1%	2	2%	114
5	Kanbalu	78	66	**85%**	9	12%	**96%**	1	1%	1	1%	0	0%	1	1%	78
6	Khin-U	67	62	**93%**	1	1%	**94%**	4	6%	0	0%	0	0%	0	0%	67
7	Kyunhla	57	31	**54%**	16	28%	**82%**	3	5%	1	2%	3	5%	3	5%	57
8	Tabayin	79	64	**81%**	9	11%	**92%**	5	6%	0	0%	0	0%	1	1%	79
9	Taze	53	38	**72%**	10	19%	**91%**	2	4%	2	4%	1	2%	0	0%	53
10	Wetlet	148	129	**87%**	10	7%	**94%**	7	5%	2	1%	0	0%	0	0%	148
11	Ye-U	65	60	**92%**	1	2%	**94%**	3	5%	0	0%	1	2%	0	0%	65
12	Monywa	194	144	**74%**	20	10%	**85%**	12	6%	9	5%	6	3%	3	2%	194
13	Ayadaw	93	38	**41%**	44	47%	**88%**	4	4%	0	0%	7	8%	0	0%	93
14	Budalin	106	86	**81%**	0	0%	**81%**	8	8%	12	11%	0	0%	0	0%	106
15	ChaungU	49	49	**100%**	0	0%	**100%**	0	0%	0	0%	0	0%	0	0%	49
16	Kani	59	55	**93%**	3	5%	**98%**	1	2%	0	0%	0	0%	0	0%	59
17	Pale	94	84	**89%**	6	6%	**96%**	3	3%	1	1%	0	0%	0	0%	94
18	Salingyi	49	46	**94%**	1	2%	**96%**	0	0%	2	4%	0	0%	0	0%	49
19	Yinmabin	57	46	**81%**	7	12%	**93%**	3	5%	1	2%	0	0%	0	0%	57
20	Katha	81	68	**84%**	0	0%	**84%**	4	5%	2	2%	6	7%	1	1%	81
21	Banmauk	17	15	**88%**	2	12%	**100%**	0	0%	0	0%	0	0%	0	0%	17
22	Htigyaing	62	44	**71%**	8	13%	**84%**	3	5%	4	6%	2	3%	1	2%	62
23	Indaw	54	48	**89%**	0	0%	**89%**	3	6%	1	2%	1	2%	1	2%	54
24	Kawlin	74	66	**89%**	0	0%	**89%**	4	5%	0	0%	0	0%	4	5%	74
25	Pinlebu	42	36	**86%**	0	0%	**86%**	4	10%	2	5%	0	0%	0	0%	42
26	Wuntho	20	14	**70%**	1	5%	**75%**	4	20%	0	0%	0	0%	1	5%	20
27	Kalay	229	213	**93%**	0	0%	**93%**	12	5%	3	1%	1	0%	0	0%	229
28	Kalewa	25	25	**100%**	0	0%	**100%**	0	0%	0	0%	0	0%	0	0%	25
29	Minkin	38	31	**82%**	0	0%	**82%**	4	11%	2	5%	1	3%	0	0%	38
30	Tamu	126	110	**87%**	6	5%	**92%**	7	6%	1	1%	2	2%	0	0%	126
31	Mawlaik	38	27	**71%**	7	18%	**89%**	3	8%	0	0%	1	3%	0	0%	38
32	Phaungbyin	76	41	**54%**	20	26%	**80%**	10	13%	0	0%	3	4%	2	3%	76
33	Khamti	68	52	**76%**	3	4%	**81%**	6	9%	4	6%	3	4%	0	0%	68
34	Homalin	137	102	**74%**	15	11%	**85%**	8	6%	2	1%	5	4%	5	4%	137
35	Layshi	8	4	**50%**	4	50%	**100%**	0	0%	0	0%	0	0%	0	0%	8
36	Lahel	39	30	**77%**	9	23%	**100%**	0	0%	0	0%	0	0%	0	0%	39
37	Nanyun	11	8	**73%**	3	27%	**100%**	0	0%	0	0%	0	0%	0	0%	11
	Total	2771	2244	**81%**	235	8%	**89%**	159	6%	55	2%	45	2%	33	1%	2771

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transfered out		Total eva. Pts.
			No	**CR**	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
	Magwe Region															
1	Magwe	301	208	**69%**	31	10%	**79%**	16	5%	17	6%	18	6%	11	4%	301
2	Chauk	114	73	**64%**	27	24%	**88%**	5	4%	1	1%	8	7%	0	0%	114
3	Taundwingyi	107	92	**86%**	0	0%	**86%**	10	9%	2	2%	0	0%	3	3%	107
4	Myothit	91	75	**82%**	10	11%	**93%**	5	5%	1	1%	0	0%	0	0%	91
5	Natmauk	87	69	**79%**	4	5%	**84%**	5	6%	1	1%	6	7%	2	2%	87
6	Yenanchaung	128	102	**80%**	8	6%	**86%**	6	5%	9	7%	3	2%	0	0%	128
7	Pakokku	86	77	**90%**	0	0%	**90%**	7	8%	0	0%	2	2%	0	0%	86
8	Yesagyo	65	60	**92%**	0	0%	**92%**	2	3%	2	3%	0	0%	1	2%	65
9	Pauk	82	76	**93%**	2	2%	**95%**	4	5%	0	0%	0	0%	0	0%	82
10	Myaing	42	33	**79%**	5	12%	**90%**	2	5%	1	2%	1	2%	0	0%	42
11	Seikphyu	36	21	**58%**	15	42%	**100%**	0	0%	0	0%	0	0%	0	0%	36
12	Gantgaw	40	16	**40%**	18	45%	**85%**	6	15%	0	0%	0	0%	0	0%	40
13	Saw	15	13	**87%**	0	0%	**87%**	0	0%	0	0%	2	13%	0	0%	15
14	Htilin	29	25	**86%**	0	0%	**86%**	3	10%	0	0%	0	0%	1	3%	29
15	Minbu	76	57	**75%**	4	5%	**80%**	4	5%	8	11%	3	4%	0	0%	76
16	Ngape	16	10	**63%**	4	25%	**88%**	2	13%	0	0%	0	0%	0	0%	16
17	Pwintphyu	122	114	**93%**	5	4%	**98%**	3	2%	0	0%	0	0%	0	0%	122
18	Saytoketaya	21	10	**48%**	7	33%	**81%**	1	5%	0	0%	1	5%	2	10%	21
19	Salin	77	55	**71%**	11	14%	**86%**	10	13%	0	0%	0	0%	1	1%	77
20	Thayet	98	55	**56%**	12	12%	**68%**	9	9%	8	8%	6	6%	8	8%	98
21	Minhla	72	65	**90%**	0	0%	**90%**	4	6%	1	1%	0	0%	2	3%	72
22	Kanma	36	25	**69%**	3	8%	**78%**	4	11%	0	0%	4	11%	0	0%	36
23	Sinpaukwae	49	47	**96%**	2	4%	**100%**	0	0%	0	0%	0	0%	0	0%	49
24	Mindon	48	47	**98%**	0	0%	**98%**	1	2%	0	0%	0	0%	0	0%	48
25	Aunglan	79	57	**72%**	7	9%	**81%**	10	13%	1	1%	3	4%	1	1%	79
	Total	1917	1482	**77%**	175	9%	**86%**	119	6%	52	3%	57	3%	32	2%	1917

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transfered out		Total eva. Pts.
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
	Mandalay Region															
1	Amarapura	77	65	**84%**	8	10%	**95%**	3	4%	1	1%	0	0%	0	0%	77
2	Aungmyaytharzan	153	117	**76%**	5	3%	**80%**	17	11%	9	6%	0	0%	5	3%	153
3	Chanayetharzan	99	79	**80%**	5	5%	**85%**	6	6%	4	4%	0	0%	5	5%	99
4	Chanmyatharzi	164	129	**79%**	10	6%	**85%**	11	7%	7	4%	5	3%	2	1%	164
5	Maharaungmyae	150	139	**93%**	0	0%	**93%**	8	5%	1	1%	1	1%	1	1%	150
6	Pyigyitagonn	112	95	**85%**	4	4%	**88%**	10	9%	3	3%	0	0%	0	0%	112
7	Patheingyi	114	95	**83%**	2	2%	**85%**	7	6%	5	4%	2	2%	3	3%	114
8	Meiktilar	137	93	**68%**	20	15%	**82%**	9	7%	10	7%	2	1%	3	2%	137
9	Mahlaing	109	78	**72%**	11	10%	**82%**	11	10%	4	4%	2	2%	3	3%	109
10	Tharzi	97	86	**89%**	2	2%	**91%**	5	5%	0	0%	2	2%	2	2%	97
11	Wundwin	80	48	**60%**	14	18%	**78%**	9	11%	7	9%	2	3%	0	0%	80
12	Myingan	205	175	**85%**	5	2%	**88%**	17	8%	5	2%	1	0%	2	1%	205
13	Kyaukpadaung	136	101	**74%**	19	14%	**88%**	5	4%	5	4%	1	1%	5	4%	136
14	Natogyi	50	33	**66%**	1	2%	**68%**	5	10%	2	4%	9	18%	0	0%	50
15	Ngazun	103	96	**93%**	1	1%	**94%**	1	1%	5	5%	0	0%	0	0%	103
16	Taungtha	136	102	**75%**	22	16%	**91%**	8	6%	3	2%	0	0%	1	1%	136
17	NyaungU	115	91	**79%**	8	7%	**86%**	5	4%	6	5%	2	2%	3	3%	115
18	Pyin oo Lwin	102	83	**81%**	0	0%	**81%**	13	13%	5	5%	1	1%	0	0%	102
19	Madayar	149	101	**68%**	25	17%	**85%**	11	7%	9	6%	2	1%	1	1%	149
20	Mogok	71	54	**76%**	1	1%	**77%**	8	11%	2	3%	0	0%	6	8%	71
21	Sintgu	105	62	**59%**	16	15%	**74%**	3	3%	6	6%	17	16%	1	1%	105
22	Thabeikkyin	118	58	**49%**	19	16%	**65%**	7	6%	21	18%	12	10%	1	1%	118
23	Yamethin	106	55	**52%**	28	26%	**78%**	6	6%	4	4%	10	9%	3	3%	106
24	Pyawbwei	135	105	**78%**	8	6%	**84%**	11	8%	6	4%	3	2%	2	1%	135
25	Kyaukse	127	101	**80%**	0	0%	**80%**	9	7%	11	9%	1	1%	5	4%	127
26	Myittha	59	40	**68%**	15	25%	**93%**	1	2%	1	2%	2	3%	0	0%	59
27	Sintgine	63	50	**79%**	9	14%	**94%**	2	3%	0	0%	1	2%	1	2%	63
28	TadaOo	67	54	**81%**	5	7%	**88%**	5	7%	2	3%	1	1%	0	0%	67
	Total	3139	2385	**76%**	263	8%	**84%**	213	7%	144	5%	79	3%	55	2%	3139

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transfered out		Total eva. Pts.
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
	Shan State (Taunggyi)															
1	Linhkay	24	20	**83%**	0	0%	**83%**	3	13%	1	4%	0	0%	0	0%	24
2	Maukme	4	3	**75%**	1	25%	**100%**	0	0%	0	0%	0	0%	0	0%	4
3	Monai	18	17	**94%**	0	0%	**94%**	1	6%	0	0%	0	0%	0	0%	18
4	Mangpang	10	9	**90%**	0	0%	**90%**	0	0%	1	10%	0	0%	0	0%	10
5	Loilem	44	37	**84%**	4	9%	**93%**	1	2%	2	5%	0	0%	0	0%	44
6	Kunhein	44	33	**75%**	5	11%	**86%**	2	5%	3	7%	1	2%	0	0%	44
7	Kyeethi	12	9	**75%**	2	17%	**92%**	1	8%	0	0%	0	0%	0	0%	12
8	Laikha	23	23	**100%**	0	0%	**100%**	0	0%	0	0%	0	0%	0	0%	23
9	Mongkaing	17	9	**53%**	5	29%	**82%**	2	12%	0	0%	1	6%	0	0%	17
10	Mongshu	46	46	**100%**	0	0%	**100%**	0	0%	0	0%	0	0%	0	0%	46
11	Namsan	48	40	**83%**	7	15%	**98%**	1	2%	0	0%	0	0%	0	0%	48
12	Taunggyi	171	115	**67%**	14	8%	**75%**	9	5%	14	8%	16	9%	3	2%	171
13	Hopone	34	25	**74%**	2	6%	**79%**	6	18%	1	3%	0	0%	0	0%	34
14	Hpekon	43	40	**93%**	0	0%	**93%**	1	2%	2	5%	0	0%	0	0%	43
15	Hsiseng	54	41	**76%**	4	7%	**83%**	3	6%	0	0%	6	11%	0	0%	54
16	Kalaw	75	59	**79%**	0	0%	**79%**	8	11%	6	8%	1	1%	1	1%	75
17	Lauksauk	60	42	**70%**	8	13%	**83%**	3	5%	2	3%	4	7%	1	2%	60
18	Pindaya	57	47	**82%**	0	0%	**82%**	9	16%	0	0%	0	0%	1	2%	57
19	Pinlaung	75	64	**85%**	6	8%	**93%**	3	4%	1	1%	0	0%	1	1%	75
20	Nyaungshwe	53	43	**81%**	2	4%	**85%**	2	4%	4	8%	2	4%	0	0%	53
21	Ywangan	16	14	**88%**	0	0%	**88%**	1	6%	1	6%	0	0%	0	0%	16
	Total	928	736	**79%**	60	6%	**86%**	56	6%	38	4%	31	3%	7	1%	928
	Shan State (Kengtong)															
1	Kengtong	58	42	**72%**	4	7%	**79%**	8	14%	2	3%	2	3%	0	0%	58
2	Mongkhat	14	9	**64%**	0	0%	**64%**	1	7%	2	14%	2	14%	0	0%	14
3	Mongyan	25	18	**72%**	3	12%	**84%**	0	0%	1	4%	2	8%	1	4%	25
4	Monghsat	68	45	**66%**	14	21%	**87%**	2	3%	5	7%	2	3%	0	0%	68
5	Mongping	39	32	**82%**	3	8%	**90%**	3	8%	0	0%	1	3%	0	0%	39
6	Mongton	40	25	**63%**	3	8%	**70%**	1	3%	5	13%	5	13%	1	3%	40
7	Monpyak	27	24	**89%**	0	0%	**89%**	2	7%	1	4%	0	0%	0	0%	27
8	Mongyaung	30	23	**77%**	0	0%	**77%**	1	3%	2	7%	4	13%	0	0%	30
9	Tachileik	161	117	**73%**	13	8%	**81%**	9	6%	4	2%	16	10%	2	1%	161
10	Matman															
	Total	462	335	**73%**	40	9%	**81%**	27	6%	22	5%	34	7%	4	1%	462

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transfered out		Total eva. Pts.
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
	Shan State (Lashio)															
1	Kunlon	35	30	**86%**	0	0%	**86%**	2	6%	0	0%	3	9%	0	0%	35
2	Hopan	87	75	**86%**	10	11%	**98%**	2	2%	0	0%	0	0%	0	0%	87
3	Kyaukme	140	119	**85%**	0	0%	**85%**	11	8%	0	0%	9	6%	1	1%	140
4	Hsipaw	164	159	**97%**	0	0%	**97%**	3	2%	1	1%	1	1%	0	0%	164
5	Mabein	24	17	**71%**	4	17%	**88%**	2	8%	0	0%	0	0%	1	4%	24
6	Manton	7	5	**71%**	1	14%	**86%**	1	14%	0	0%	0	0%	0	0%	7
7	Mongmeik	75	55	**73%**	6	8%	**81%**	6	8%	5	7%	3	4%	0	0%	75
8	Namtu	22	14	**64%**	3	14%	**77%**	0	0%	2	9%	1	5%	2	9%	22
9	Nyaungcho	47	45	**96%**	0	0%	**96%**	1	2%	1	2%	0	0%	0	0%	47
10	Lashio	184	123	**67%**	5	3%	**70%**	7	4%	11	6%	31	17%	7	4%	184
11	Namsam	19	17	**89%**	0	0%	**89%**	2	11%	0	0%	0	0%	0	0%	19
12	Mongmaw	Nr.														
13	Theinni	54	43	**80%**	0	0%	**80%**	2	4%	0	0%	7	13%	2	4%	54
14	Mongreh	32	20	**63%**	9	28%	**91%**	1	3%	2	6%	0	0%	0	0%	32
15	Manphant	Nr.														
16	Pangyan	Nr.														
17	Narphant	Nr.														
18	Panwaing	Nr.														
19	Tanyan	50	18	**36%**	28	56%	**92%**	0	0%	0	0%	3	6%	1	2%	50
20	Laukkai	51	7	**14%**	25	49%	**63%**	1	2%	0	0%	16	31%	2	4%	51
21	Kongyan	Nr.														
22	Muse	95	58	**61%**	6	6%	**67%**	5	5%	5	5%	18	19%	3	3%	95
23	Kutkai	61	40	**66%**	10	16%	**82%**	5	8%	5	8%	1	2%	0	0%	61
24	Namkham	45	16	**36%**	7	16%	**51%**	9	20%	1	2%	12	27%	0	0%	45
	Total	1192	861	**72%**	114	10%	**82%**	60	5%	33	3%	105	9%	19	2%	1192

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transfered out		Total eva. Pts.
			No	**CR**	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
	Kayin State															
1	Kawkareik	112	68	**61%**	22	20%	**80%**	8	7%	1	1%	12	11%	1	1%	112
2	Kyainseikkyi	59	46	**78%**	2	3%	**81%**	1	2%	4	7%	6	10%	0	0%	59
3	Myawady	148	104	**70%**	12	8%	**78%**	8	5%	4	3%	8	5%	12	8%	148
4	Hpa-an	279	226	**81%**	14	5%	**86%**	5	2%	0	0%	12	4%	22	8%	279
5	Hlaingbwe	180	137	**76%**	15	8%	**84%**	11	6%	3	2%	12	7%	2	1%	180
6	Papun(Kamamaung)	37	30	**81%**	3	8%	**89%**	1	3%	0	0%	2	5%	1	3%	37
7	Thandaung	16	13	**81%**	0	0%	**81%**	0	0%	1	6%	2	13%	0	0%	16
	Total	831	624	**75%**	68	8%	**83%**	34	4%	13	2%	54	6%	38	5%	831
	Tanintharyi Region															
1	Dawei	126	94	**75%**	9	7%	**82%**	7	6%	6	5%	5	4%	5	4%	126
2	Launglon	45	41	**91%**	0	0%	**91%**	2	4%	0	0%	2	4%	0	0%	45
3	Thayetchaung	30	21	**70%**	5	17%	**87%**	1	3%	0	0%	3	10%	0	0%	30
4	Yebyu	55	47	**85%**	2	4%	**89%**	0	0%	5	9%	1	2%	0	0%	55
5	Kawthaung	203	116	**57%**	60	30%	**87%**	7	3%	2	1%	14	7%	4	2%	203
6	Bokpyin	39	17	**44%**	12	31%	**74%**	1	3%	1	3%	7	18%	1	3%	39
7	Myeik	279	191	**68%**	25	9%	**77%**	9	3%	13	5%	29	10%	12	4%	279
8	Kyunsu	9	8	**89%**	0	0%	**89%**	0	0%	0	0%	1	11%	0	0%	9
9	Tanintharyi	44	34	**77%**	1	2%	**80%**	5	11%	2	5%	1	2%	1	2%	44
10	Palaw	65	45	**69%**	12	18%	**88%**	4	6%	2	3%	1	2%	1	2%	65
	Total	895	614	**69%**	126	14%	**83%**	36	4%	31	3%	64	7%	24	3%	895

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transfered out		Total eva. Pts.
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
	Bago Region															
1	Bago	389	277	**71%**	49	13%	**84%**	22	6%	12	3%	23	6%	6	2%	389
2	Daik-U	132	81	**61%**	43	33%	**94%**	4	3%	1	1%	2	2%	1	1%	132
3	Kawa	96	79	**82%**	9	9%	**92%**	6	6%	0	0%	1	1%	1	1%	96
4	Kyauktaga	128	115	**90%**	4	3%	**93%**	3	2%	1	1%	2	2%	3	2%	128
5	Nyaunglaybin	99	73	**74%**	15	15%	**89%**	4	4%	1	1%	3	3%	3	3%	99
6	Shwekyin	40	23	**58%**	14	35%	**93%**	1	3%	0	0%	2	5%	0	0%	40
7	Thanatpin	102	65	**64%**	31	30%	**94%**	4	4%	0	0%	2	2%	0	0%	102
8	Waw	151	131	**87%**	7	5%	**91%**	8	5%	3	2%	2	1%	0	0%	151
9	Taunggoo	116	100	**86%**	3	3%	**89%**	7	6%	1	1%	5	4%	0	0%	116
10	Kyaukkyi	39	30	**77%**	7	18%	**95%**	1	3%	0	0%	1	3%	0	0%	39
11	Oktwin	86	55	**64%**	10	12%	**76%**	9	10%	0	0%	12	14%	0	0%	86
12	Phyu	171	140	**82%**	14	8%	**90%**	11	6%	3	2%	3	2%	0	0%	171
13	Htantabin	71	62	**87%**	7	10%	**97%**	1	1%	0	0%	1	1%	0	0%	71
14	Yedashe	120	76	**63%**	23	19%	**83%**	11	9%	0	0%	8	7%	2	2%	120
	Total	1740	1307	**75%**	236	14%	**89%**	92	5%	22	1%	67	4%	16	1%	1740
	Bago region (Pyay)															
1	Pyay	173	148	**86%**	1	1%	**86%**	15	9%	1	1%	3	2%	5	3%	173
2	Paukkhaung	169	133	**79%**	14	8%	**87%**	15	9%	2	1%	4	2%	1	1%	169
3	Paungde	103	89	**86%**	3	3%	**89%**	3	3%	4	4%	3	3%	1	1%	103
4	Padaung	110	67	**61%**	28	25%	**86%**	3	3%	7	6%	0	0%	5	5%	110
5	Shwedaung	98	75	**77%**	10	10%	**87%**	4	4%	4	4%	5	5%	0	0%	98
6	Thegon	84	67	**80%**	4	5%	**85%**	6	7%	3	4%	3	4%	1	1%	84
7	Tharyarwady	138	124	**90%**	0	0%	**90%**	10	7%	4	3%	0	0%	0	0%	138
8	Zigon	56	45	**80%**	10	18%	**98%**	0	0%	1	2%	0	0%	0	0%	56
9	Minhla	128	102	**80%**	11	9%	**88%**	10	8%	3	2%	1	1%	1	1%	128
10	Moenyo	56	49	**88%**	1	2%	**89%**	5	9%	1	2%	0	0%	0	0%	56
11	Okpo	101	84	**83%**	11	11%	**94%**	3	3%	2	2%	0	0%	1	1%	101
12	Gyobingauk	84	60	**71%**	16	19%	**90%**	3	4%	0	0%	5	6%	0	0%	84
13	Nattalin	150	105	**70%**	23	15%	**85%**	7	5%	0	0%	15	10%	0	0%	150
14	Latpadan	60	47	**78%**	4	7%	**85%**	7	12%	1	2%	1	2%	0	0%	60
	Total	1510	1195	**79%**	136	9%	**88%**	91	6%	33	2%	40	3%	15	1%	1510

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transfered out		Total eva. Pts.
			No	**CR**	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
	Mon State															
1	Mawlamyaing	246	197	**80%**	22	9%	**89%**	12	5%	4	2%	7	3%	4	2%	246
2	Chanungzon	76	61	**80%**	7	9%	**89%**	5	7%	1	1%	1	1%	1	1%	76
3	Kyaikmaraw	113	83	**73%**	21	19%	**92%**	6	5%	2	2%	1	1%	0	0%	113
4	Mudon	147	124	**84%**	9	6%	**90%**	4	3%	7	5%	2	1%	1	1%	147
5	Thanbyuzayat	114	102	**89%**	2	2%	**91%**	5	4%	4	4%	1	1%	0	0%	114
6	Ye	196	143	**73%**	9	5%	**78%**	11	6%	13	7%	15	8%	5	3%	196
7	Thaton	255	144	**56%**	56	22%	**78%**	20	8%	11	4%	17	7%	7	3%	255
8	Belin	150	132	**88%**	3	2%	**90%**	9	6%	4	3%	1	1%	1	1%	150
9	Kyaikto	85	78	**92%**	0	0%	**92%**	4	5%	0	0%	2	2%	1	1%	85
10	Paung	158	137	**87%**	6	4%	**91%**	11	7%	1	1%	1	1%	2	1%	158
	Total	1540	1201	**78%**	135	9%	**87%**	87	6%	47	3%	48	3%	22	1%	1540
	Rakhine State															
1	Kyaukphyu	93	75	**81%**	8	9%	**89%**	2	2%	2	2%	5	5%	1	1%	93
2	Ann	78	52	**67%**	16	21%	**87%**	2	3%	2	3%	6	8%	0	0%	78
3	Manaung	55	53	**96%**	0	0%	**96%**	1	2%	1	2%	0	0%	0	0%	55
4	Rambye	80	77	**96%**	0	0%	**96%**	2	3%	0	0%	0	0%	1	1%	80
5	Maungdaw	184	133	**72%**	2	1%	**73%**	15	8%	28	15%	6	3%	0	0%	184
6	Buthidaung	211	186	**88%**	18	9%	**97%**	7	3%	0	0%	0	0%	0	0%	211
7	Rathedaung	102	86	**84%**	8	8%	**92%**	2	2%	3	3%	2	2%	1	1%	102
8	Sittwe	235	127	**54%**	77	33%	**87%**	8	3%	9	4%	9	4%	5	2%	235
9	Kyauktaw	193	179	**93%**	7	4%	**96%**	2	1%	1	1%	3	2%	1	1%	193
10	Minbya	206	152	**74%**	28	14%	**87%**	11	5%	8	4%	6	3%	1	0%	206
11	Myaukoo	181	123	**68%**	44	24%	**92%**	8	4%	1	1%	4	2%	1	1%	181
12	Myebon	81	58	**72%**	17	21%	**93%**	3	4%	0	0%	3	4%	0	0%	81
13	Pauktaw	43	21	**49%**	17	40%	**88%**	4	9%	1	2%	0	0%	0	0%	43
14	Ponnagyun	86	80	**93%**	2	2%	**95%**	0	0%	0	0%	3	3%	1	1%	86
15	Thandwe	93	82	**88%**	8	9%	**97%**	3	3%	0	0%	0	0%	0	0%	93
16	Gwa	56	50	**89%**	0	0%	**89%**	2	4%	3	5%	1	2%	0	0%	56
17	Taungup	93	57	**61%**	20	22%	**83%**	3	3%	7	8%	5	5%	1	1%	93
	Total	2070	1591	**77%**	272	13%	**90%**	75	4%	66	3%	53	3%	13	1%	2070

Sr. No.	Townships	Reg. Pts.	Cured		Completed			Died		Failure		Defaulted		Transfered out		Total eva. Pts.
			No	**CR**	No	Rate	**TSR**	No	Rate	No	Rate	No	Rate	No	Rate	
	Yangon Region															
	East District															
1	Botataung	68	58	**85%**	0	0%	**85%**	2	3%	1	1%	5	7%	2	3%	68
2	Dawbon	142	135	**95%**	0	0%	**95%**	3	2%	3	2%	0	0%	1	1%	142
3	Dagon(N)	175	139	**79%**	12	7%	**86%**	11	6%	3	2%	8	5%	2	1%	175
4	Dagon(S)	490	404	**82%**	1	0%	**83%**	24	5%	27	6%	31	6%	3	1%	490
5	MingalarTN	124	110	**89%**	0	0%	**89%**	1	1%	10	8%	1	1%	2	2%	124
6	Okkala(N)	296	253	**85%**	2	1%	**86%**	12	4%	13	4%	9	3%	7	2%	296
7	Okkala(S)	119	94	**79%**	4	3%	**82%**	5	4%	5	4%	9	8%	2	2%	119
8	Tharkata	465	381	**82%**	10	2%	**84%**	24	5%	8	2%	41	9%	1	0%	465
9	Thingangyun	223	194	**87%**	4	2%	**89%**	10	4%	3	1%	12	5%	0	0%	223
10	Yankin	150	131	**87%**	0	0%	**87%**	7	5%	2	1%	0	0%	10	7%	150
11	Tarmwe	170	159	**94%**	0	0%	**94%**	4	2%	3	2%	2	1%	2	1%	170
12	Pazundaung	63	55	**87%**	0	0%	**87%**	1	2%	6	10%	0	0%	1	2%	63
13	Dagon(E)	172	144	**84%**	2	1%	**85%**	13	8%	4	2%	8	5%	1	1%	172
14	Dagon Seikkan	124	95	**77%**	7	6%	**82%**	5	4%	2	2%	13	10%	2	2%	124
	Total	2781	2352	**85%**	42	2%	**86%**	122	4%	90	3%	139	5%	36	1%	2781
	West District															
1	Kamayut	98	87	**89%**	0	0%	**89%**	1	1%	5	5%	2	2%	3	3%	98
2	Kyauktada	29	23	**79%**	1	3%	**83%**	2	7%	3	10%	0	0%	0	0%	29
3	Kyeemyintdaing	157	116	**74%**	14	9%	**83%**	7	4%	9	6%	10	6%	1	1%	157
4	Sanchaung	105	90	**86%**	2	2%	**88%**	1	1%	9	9%	1	1%	2	2%	105
5	Seikkan	5	5	**100%**	0	0%	**100%**	0	0%	0	0%	0	0%	0	0%	5
6	Dagon	26	23	**88%**	0	0%	**88%**	0	0%	3	12%	0	0%	0	0%	26
7	Pabadan	36	33	**92%**	0	0%	**92%**	1	3%	2	6%	0	0%	0	0%	36
8	Bahan	57	52	**91%**	1	2%	**93%**	0	0%	1	2%	1	2%	2	4%	57
9	Mayangon	223	199	**89%**	1	0%	**90%**	6	3%	12	5%	2	1%	3	1%	223
10	Latha	32	25	**78%**	0	0%	**78%**	2	6%	3	9%	1	3%	1	3%	32
11	Lanmadaw	44	40	**91%**	0	0%	**91%**	1	2%	3	7%	0	0%	0	0%	44
12	Hlaing	176	171	**97%**	2	1%	**98%**	0	0%	1	1%	0	0%	2	1%	176
13	Ahlone	65	57	**88%**	2	3%	**91%**	3	5%	3	5%	0	0%	0	0%	65
	Total	1053	921	**87%**	23	2%	**90%**	24	2%	54	5%	17	2%	14	1%	1053

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transfered out		Total eva. Pts.
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
	South District															
1	Seikkyikhanaungto	58	51	**88%**	4	7%	**95%**	3	5%	0	0%	0	0%	0	0%	58
2	Dallah	157	117	**75%**	11	7%	**82%**	11	7%	2	1%	14	9%	2	1%	157
3	Cocogyun	0	0													0
4	Kawhmu	43	43	**100%**	0	0%	**100%**	0	0%	0	0%	0	0%	0	0%	43
5	Kyauktan	150	120	**80%**	11	7%	**87%**	10	7%	1	1%	7	5%	1	1%	150
6	Kungyangone	108	90	**83%**	2	2%	**85%**	10	9%	2	2%	3	3%	1	1%	108
7	Kayan	157	139	**89%**	11	7%	**96%**	5	3%	1	1%	1	1%	0	0%	157
8	Twantay	208	169	**81%**	21	10%	**91%**	8	4%	4	2%	5	2%	1	0%	208
9	Thonegwa	174	146	**84%**	4	2%	**86%**	10	6%	11	6%	3	2%	0	0%	174
10	Thanlyin	283	245	**87%**	7	2%	**89%**	15	5%	11	4%	2	1%	3	1%	283
	Total	1338	1120	**84%**	71	5%	**89%**	72	5%	32	2%	35	3%	8	1%	1338
	North District															
1	Mingalardon	403	350	**87%**	2	0%	**87%**	19	5%	27	7%	4	1%	1	0%	403
2	Shwepyithar	350	269	**77%**	38	11%	**88%**	9	3%	7	2%	27	8%	0	0%	350
3	Hlaingtharyar	622	572	**92%**	0	0%	**92%**	19	3%	5	1%	20	3%	6	1%	622
4	Insein	385	331	**86%**	12	3%	**89%**	12	3%	13	3%	14	4%	3	1%	385
5	Taikkyi	243	192	**79%**	21	9%	**88%**	15	6%	10	4%	5	2%	0	0%	243
6	Htantabin	80	57	**71%**	5	6%	**78%**	7	9%	1	1%	10	13%	0	0%	80
7	Hmawbi	217	191	**88%**	2	1%	**89%**	11	5%	6	3%	6	3%	1	0%	217
8	Hlegu	129	123	**95%**	0	0%	**95%**	4	3%	1	1%	1	1%	0	0%	129
	U.T.I	65	40	**62%**	4	6%	**68%**	4	6%	2	3%	9	14%	6	9%	65
	NTP (Diagnostic)	6	5	**83%**	1	17%	**100%**	0	0%	0	0%	0	0%	0	0%	6
	Total	2500	2130	**85%**	85	3%	**89%**	100	4%	72	3%	96	4%	17	1%	2500
Yangon Region		**7672**	**6523**	**85%**	**221**	**3%**	**88%**	**318**	**4%**	**248**	**3%**	**287**	**4%**	**75**	**1%**	**7672**

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transfered out		Total eva. Pts.
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
	Ayeyarwaddy Region															
1	Pathein	454	338	**74%**	67	15%	**89%**	22	5%	2	0%	18	4%	7	2%	454
2	Kanyidaung	81	71	**88%**	2	2%	**90%**	7	9%	0	0%	1	1%	0	0%	81
3	Yekyi	171	99	**58%**	58	34%	**92%**	7	4%	0	0%	7	4%	0	0%	171
4	Kyaunggon	131	118	**90%**	7	5%	**95%**	5	4%	0	0%	0	0%	1	1%	131
5	Kyonpyaw	151	120	**79%**	17	11%	**91%**	10	7%	0	0%	3	2%	1	1%	151
6	Ngaputaw	149	121	**81%**	15	10%	**91%**	6	4%	1	1%	4	3%	2	1%	149
7	Thabaung	97	69	**71%**	21	22%	**93%**	3	3%	0	0%	3	3%	1	1%	97
8	Hinhada	372	322	**87%**	22	6%	**92%**	9	2%	0	0%	11	3%	8	2%	372
9	Kyankin	92	85	**92%**	4	4%	**97%**	2	2%	0	0%	1	1%	0	0%	92
10	Myanaung	177	144	**81%**	14	8%	**89%**	10	6%	0	0%	9	5%	0	0%	177
11	Ingapu	215	163	**76%**	20	9%	**85%**	19	9%	3	1%	10	5%	0	0%	215
12	Zalun	73	51	**70%**	14	19%	**89%**	5	7%	1	1%	2	3%	0	0%	73
13	Laymtethna	98	87	**89%**	6	6%	**95%**	3	3%	2	2%	0	0%	0	0%	98
14	Myaungmya	252	191	**76%**	21	8%	**84%**	10	4%	7	3%	20	8%	3	1%	252
15	Laputta	327	262	**80%**	20	6%	**86%**	17	5%	5	2%	21	6%	2	1%	327
16	Mawgyun	163	141	**87%**	4	2%	**89%**	11	7%	0	0%	6	4%	1	1%	163
17	Wakema	159	87	**55%**	48	30%	**85%**	4	3%	10	6%	8	5%	2	1%	159
18	Einme	180	130	**72%**	25	14%	**86%**	12	7%	2	1%	9	5%	2	1%	180
19	Pyapon	251	201	**80%**	4	2%	**82%**	17	7%	2	1%	20	8%	7	3%	251
20	Bogalay	244	191	**78%**	6	2%	**81%**	24	10%	3	1%	20	8%	0	0%	244
21	Dedaye	68	40	**59%**	17	25%	**84%**	4	6%	2	3%	3	4%	2	3%	68
22	Kyaiklatt	133	92	**69%**	14	11%	**80%**	3	2%	14	11%	8	6%	2	2%	133
23	Maubin	222	159	**72%**	31	14%	**86%**	15	7%	5	2%	12	5%	0	0%	222
24	Nyaungdon	155	148	**95%**	0	0%	**95%**	6	4%	0	0%	1	1%	0	0%	155
25	Pantanaw	189	122	**65%**	44	23%	**88%**	14	7%	3	2%	6	3%	0	0%	189
26	Danuphyu	112	100	**89%**	6	5%	**95%**	4	4%	1	1%	1	1%	0	0%	112
	Total	4716	3652	**77%**	507	11%	**88%**	249	5%	63	1%	204	4%	41	1%	4716
	Naypyitaw council															
1	Oaktaratheri	4	1	**25%**	2	50%	**75%**	0	0%	1	25%	0	0%	0	0%	4
2	Dekhinatheri	7	7	**100%**	0	0%	**100%**	0	0%	0	0%	0	0%	0	0%	7
3	Poatpatheri	25	17	**68%**	4	16%	**84%**	2	8%	1	4%	1	4%	0	0%	25
4	Zamutheri	16	4	**25%**	8	50%	**75%**	1	6%	0	0%	3	19%	0	0%	16
5	Zayyartheri	52	38	**73%**	6	12%	**85%**	3	6%	3	6%	2	4%	0	0%	52
6	Pyinmana	234	166	**71%**	16	7%	**78%**	14	6%	12	5%	18	8%	8	3%	234
7	Tatkone	99	88	**89%**	3	3%	**92%**	3	3%	5	5%	0	0%	0	0%	99
8	Lewei	137	104	**76%**	13	9%	**85%**	10	7%	0	0%	9	7%	1	1%	137
	Total	574	425	**74%**	52	9%	**83%**	33	6%	22	4%	33	6%	9	2%	574

NATIONAL TUBERCULOSIS PROGRAMME

TREATMENT OUTCOMES OF NEW SMEAR POSITIVE TB PATIENTS (2011 COHORT)

Sr.No	Region/State	TOTAL	NEW SMEAR POSITIVE TB PATIENTS													Total
			Cured		Completed		TSR	Died		Failure		Defaulted		Transfer		
			No.	CR	No.	Rate		No.	Rate	No.	Rate	No.	Rate	No.	Rate	
1	Kachin State	1064	764	**72%**	113	11%	**82%**	53	5%	56	5%	51	5%	27	3%	1064
2	Kayah State	114	91	**80%**	8	7%	**87%**	3	3%	1	1%	5	4%	6	5%	114
3	Chin State	113	95	**84%**	3	3%	**87%**	9	8%	1	1%	4	4%	1	1%	113
4	Sagaing Region	2771	2244	**81%**	235	8%	**89%**	159	6%	55	2%	45	2%	33	1%	2771
5	Magway Region	1917	1482	**77%**	175	9%	**86%**	119	6%	52	3%	57	3%	32	2%	1917
6	Mandalay Region	3139	2385	**76%**	263	8%	**84%**	213	7%	144	5%	79	3%	55	2%	3139
7	Shan State (Taunggyi)	928	736	**79%**	60	6%	**86%**	56	6%	38	4%	31	3%	7	1%	928
8	Shan State (Kyaingtong)	462	335	**73%**	40	9%	**81%**	27	6%	22	5%	34	7%	4	1%	462
9	Shan State (Lashio)	1192	861	**72%**	114	10%	**82%**	60	5%	33	3%	105	9%	19	2%	1192
10	Kayin State	831	624	**75%**	68	8%	**83%**	34	4%	13	2%	54	6%	38	5%	831
11	Tanintharyi Region	895	614	**69%**	126	14%	**83%**	36	4%	31	3%	64	7%	24	3%	895
12	Bago Region	1740	1307	**75%**	236	14%	**89%**	92	5%	22	1%	67	4%	16	1%	1740
13	Bago Region (Pyay)	1510	1195	**79%**	136	9%	**88%**	91	6%	33	2%	40	3%	15	1%	1510
14	Mon State	1540	1201	**78%**	135	9%	**87%**	87	6%	47	3%	48	3%	22	1%	1540
15	Rakhine State	2070	1591	**77%**	272	13%	**90%**	75	4%	66	3%	53	3%	13	1%	2070
16	Yangon Region	7672	6523	**85%**	221	3%	**88%**	318	4%	248	3%	287	4%	75	1%	7672
17	Ayeyarwaddy Region	4716	3652	**77%**	507	11%	**88%**	249	5%	63	1%	204	4%	41	1%	4716
18	Naypyitaw council area	574	425	**74%**	52	9%	**83%**	33	6%	22	4%	33	6%	9	2%	574
19	Other Unit	9062	6258	**69%**	1099	12%	**81%**	455	5%	439	5%	607	7%	204	2%	9062
20	Country	42310	32383	**76.5%**	3863	9.1%	**85.7%**	2169	5.1%	1386	3.3%	1868	4.4%	641	1.5%	42310

NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOME OF SMEAR NEGATIVE TB PATIENTS (2011 COHORT)

Sr.No.	Region/State	SMEAR NEGATIVE TB PATIENTS											
		Total No.	Completed		Died		Failure		Defaulted		Transfer		Total
		Reg. pts.	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	
1	Kachin State	1496	1272	85%	88	6%	12	1%	99	7%	25	2%	1496
2	Kayah State	224	190	85%	21	9%	0	0%	8	4%	5	2%	224
3	Chin State	280	244	87%	11	4%	1	0%	20	7%	4	1%	280
4	Sagaing Region	1748	1509	86%	140	8%	7	0%	80	5%	12	1%	1748
5	Magway Region	2150	1890	88%	158	7%	4	0%	83	4%	15	1%	2150
6	Mandalay Region	3121	2618	84%	256	8%	18	1%	151	5%	78	2%	3121
7	Shan State (Taunggyi)	677	547	81%	58	9%	1	0%	64	9%	7	1%	677
8	Shan State (Kyaingtong)	488	428	88%	29	6%	1	0%	30	6%	0	0%	488
9	Shan State (Lashio)	1239	940	76%	62	5%	11	1%	202	16%	24	2%	1239
10	Kayin State	1800	1476	82%	88	5%	1	0%	153	9%	82	5%	1800
11	Tanintharyi Region	1355	1099	81%	80	6%	3	0%	142	10%	31	2%	1355
12	Bago Region	2042	1728	85%	126	6%	9	0%	152	7%	27	1%	2042
13	Bago Region (Pyay)	1773	1473	83%	159	9%	1	0%	129	7%	11	1%	1773
14	Mon State	2035	1814	89%	114	6%	7	0%	83	4%	17	1%	2035
15	Rakhine State	1892	1718	91%	86	5%	19	1%	53	3%	16	1%	1892
16	Yangon Region	6994	6270	90%	278	4%	51	1%	307	4%	88	1%	6994
17	Ayeyarwaddy Region	4085	3480	85%	271	7%	8	0%	259	6%	67	2%	4085
18	Naypyitaw council area	530	438	83%	43	8%	4	1%	34	6%	11	2%	530
19	Other Units	9112	7312	80%	752	8%	86	1%	691	8%	271	3%	9112
	Country	43041	36446	85%	2820	7%	244	1%	2740	6%	791	2%	43041

Annex-12

NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOME OF RELAPSES (2011 COHORT)

Sr.No.	Region/State	RELAPSE CASES													
		Total	Cured		Completed		Died		Failure		Defaulted		Transferred out		Total
			No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	
1	Kachin State	105	73	70%	10	10%	8	8%	6	6%	6	6%	2	2%	105
2	Kayah State	10	5	50%	2	20%	0	0%	0	0%	0	0%	3	30%	10
3	Chin State	14	11	79%	3	21%	0	0%	0	0%	0	0%	0	0%	14
4	Sagaing Region	226	150	66%	32	14%	20	9%	10	4%	5	2%	9	4%	226
5	Magway Region	189	143	76%	16	8%	13	7%	10	5%	4	2%	3	2%	189
6	Mandalay Region	303	197	0%	37	0%	31	0%	16	0%	14	0%	8	0%	303
7	Shan State (Taunggyi)	67	43	64%	11	16%	5	7%	6	9%	1	1%	1	1%	67
8	Shan State (Kyaingtong)	85	43	51%	24	28%	9	11%	3	4%	4	5%	2	2%	85
9	Shan State (Lashio)	127	79	62%	14	11%	10	8%	6	5%	16	13%	2	2%	127
10	Kayin State	57	34	60%	9	16%	2	4%	3	5%	4	7%	5	9%	57
11	Tanintharyi Region	83	31	37%	17	20%	6	7%	7	8%	12	14%	10	12%	83
12	Bago Region	192	120	63%	36	19%	16	8%	7	4%	8	4%	5	3%	192
13	Bago Region (Pyay)	137	98	72%	17	12%	8	6%	8	6%	4	3%	2	1%	137
14	Mon State	143	98	69%	20	14%	9	6%	8	6%	4	3%	4	3%	143
15	Rakhine State	113	76	67%	17	15%	10	9%	7	6%	2	2%	1	1%	113
16	Yangon Region	1259	865	69%	75	6%	130	10%	99	8%	62	5%	28	2%	1259
17	Ayeyarwaddy Region	394	260	66%	63	16%	38	10%	9	2%	20	5%	4	1%	394
18	Naypyitaw council area	48	30	63%	2	4%	6	13%	3	6%	6	13%	1	2%	48
19	Other Units	1087	552	51%	159	15%	161	15%	95	9%	67	6%	53	5%	1087
	Country	4639	2908	63%	564	12%	482	10%	303	7%	239	5%	143	3%	4639

NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOME OF TREATMENT AFTER DEFAULT (2011 COHORT)

Sr.No.	Region/State	TOTAL	TREATMINT AFTER DEFAULT												Total
			Cured		Completed		Died		Failure		Defaulted		Transfer		
			No.	CR	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	
1	Kachin State	20	9	45%	5	25%	2	10%	3	15%	1	5%	0	0%	20
2	Kayah State	2	0	0%	2	100%	0	0%	0	0%	0	0%	0	0%	2
3	Chin State	1	1	100%	0	0%	0	0%	0	0%	0	0%	0	0%	1
4	Sagaing Region	12	9	75%	3	25%	0	0%	0	0%	0	0%	0	0%	12
5	Magway Region	18	11	61%	5	28%	0	0%	0	0%	2	11%	0	0%	18
6	Mandalay Region	45	29	64%	5	11%	5	11%	1	2%	4	9%	1	2%	45
7	Shan State (Taunggyi)	18	8	44%	6	33%	3	17%	0	0%	1	6%	0	0%	18
8	Shan State (Kyaingtong)	8	3	38%	1	13%	2	25%	0	0%	2	25%	0	0%	8
9	Shan State (Lashio)	32	19	59%	5	16%	3	9%	0	0%	4	13%	1	3%	32
10	Kayin State	6	2	33%	2	33%	0	0%	0	0%	1	17%	1	17%	6
11	Tanintharyi Region	11	6	55%	2	18%	1	9%	0	0%	2	18%	0	0%	11
12	Bago Region	20	14	70%	3	15%	1	5%	2	10%	0	0%	0	0%	20
13	Bago Region (Pyay)	10	4	40%	5	50%	1	10%	0	0%	0	0%	0	0%	10
14	Mon State	12	6	50%	0	0%	3	25%	1	8%	2	17%	0	0%	12
15	Rakhine State	27	13	48%	10	37%	1	4%	2	7%	1	4%	0	0%	27
16	Yangon Region	134	59	44%	20	15%	20	15%	12	9%	21	16%	2	1%	134
17	Ayeyarwaddy Region	27	14	52%	3	11%	6	22%	0	0%	4	15%	0	0%	27
18	Naypyitaw council area	12	8	67%	1	8%	1	8%	0	0%	2	17%	0	0%	12
19	Other Unit	224	69	31%	38	17%	47	21%	14	6%	40	18%	16	7%	224
	country	639	284	44%	116	18%	96	15%	35	5%	87	14%	21	3%	639

NATIONAL TUBERDULOSIS PROGRAMME
TREATMENT OUTCOME OF TREATMENT AFTER FAILURE (2011 COHORT)

Sr.No.	Region/State	TOTAL	TREATMENT AFTER FAILURE												Total
			Cured		Completed		Died		Failure		Defaulted		Transfer		
			No.	CR	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	
1	Kachin State	75	46	61%	9	12%	3	4%	5	7%	10	13%	2	3%	75
2	Kayah State	1	1	100%	0	0%	0	0%	0	0%	0	0%	0	0%	1
3	Chin State	0	0												0
4	Sagaing Region	58	43	74%	4	7%	6	10%	4	7%	1	2%	0	0%	58
5	Magway Region	64	39	61%	9	14%	5	8%	5	8%	3	5%	3	5%	64
6	Mandalay Region	153	93	61%	13	8%	12	8%	16	10%	19	12%	0	0%	153
7	Shan State (Taunggyi)	42	25	60%	7	17%	3	7%	4	10%	3	7%	0	0%	42
8	Shan State (Kyaingtong)	13	8	62%	0	0%	1	8%	2	15%	2	15%	0	0%	13
9	Shan State (Lashio)	26	13	50%	4	15%	1	4%	1	4%	5	19%	2	8%	26
10	Kayin State	9	4	44%	0	0%	3	33%	2	22%	0	0%	0	0%	9
11	Tanintharyi Region	31	13	42%	8	26%	0	0%	5	16%	3	10%	2	6%	31
12	Bago Region	24	14	58%	5	21%	1	4%	3	13%	0	0%	1	4%	24
13	Bago Region (Pyay)	33	23	70%	6	18%	2	6%	1	3%	1	3%	0	0%	33
14	Mon State	58	32	55%	3	5%	3	5%	14	24%	6	10%	0	0%	58
15	Rakhine State	60	36	60%	7	12%	1	2%	5	8%	10	17%	1	2%	60
16	Yangon Region	318	150	47%	16	5%	37	12%	73	23%	27	8%	15	5%	318
17	Ayeyarwaddy Region	59	25	42%	9	15%	2	3%	8	14%	9	15%	6	10%	59
18	Naypyitaw council area	25	17	68%	1	4%	1	4%	4	16%	1	4%	1	4%	25
19	Other Units	462	191	41%	52	11%	52	11%	82	18%	45	10%	40	9%	462
	Country	1511	773	51%	153	10%	133	9%	234	15%	145	10%	73	5%	1511

NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOME OF OTHER CASES (2011 COHORT)

Sr.No.	Region/State	OTHER CASES													
		Total	Cured		Completed		Died		Failure		Defaulted		Transfer out		Total
			No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	
1	Kachin State	219	1	0%	164	75%	22	10%	2	1%	22	10%	8	4%	219
2	Kayah State	24	0	0%	17	71%	4	17%	0	0%	3	13%	0	0%	24
3	Chin State	24	1	4%	19	79%	3	13%	0	0%	1	4%	0	0%	24
4	Sagaing Region	152	11	7%	106	70%	24	16%	1	1%	7	5%	3	2%	152
5	Magway Region	261	9	3%	191	73%	32	12%	1	0%	27	10%	1	0%	261
6	Mandalay Region	321	5	2%	241	75%	55	17%	1	0%	11	3%	8	2%	321
7	Shan State (Taunggyi)	39	5	13%	22	56%	6	15%	2	5%	2	5%	2	5%	39
8	Shan State (Kyaingtong)	44	12	27%	24	55%	7	16%	0	0%	1	2%	0	0%	44
9	Shan State (Lashio)	102	10	10%	62	61%	9	9%	0	0%	17	17%	4	4%	102
10	Kayin State	14	0	0%	11	79%	0	0%	0	0%	3	21%	0	0%	14
11	Tanintharyi Region	125	0	0%	91	73%	8	6%	0	0%	20	16%	6	5%	125
12	Bago Region	162	47	29%	79	49%	17	10%	0	0%	13	8%	6	4%	162
13	Bago Region (Pyay)	101	22	22%	63	62%	12	12%	0	0%	4	4%	0	0%	101
14	Mon State	28	0	0%	23	82%	4	14%	0	0%	1	4%	0	0%	28
15	Rakhine State	205	17	8%	166	81%	11	5%	1	0%	9	4%	1	0%	205
16	Yangon Region	1080	86	8%	779	72%	99	9%	6	1%	92	9%	18	2%	1080
17	Ayeyarwaddy Region	251	8	3%	192	76%	27	11%	2	1%	22	9%	0	0%	251
18	Naypyitaw council area	85	4	5%	68	80%	5	6%	0	0%	5	6%	3	4%	85
19	Other	1062	19	2%	565	53%	282	27%	37	3%	121	11%	38	4%	1062
	Country	4299	257	6%	2883	67%	627	15%	53	1%	381	9%	98	2%	4299

NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOME OF PRIMARY COMPLEX AND TB MENINGITIS (2011 COHORT)

Sr.No.	Region/State	PRIMARY COMPLEX								TB MENINGITIS					
		Total No. Reg. pts.	Completed No	Completed Rate	Died	Defaulted No	Defaulted Rate	Transfer out	Total	Total No. Reg. pts.	Comple-ted	Died	Defaulted	Transfer	Total
1	Kachin State	224	222	99%	0	0	0%	2	224	8	5	2	1	0	8
2	Kayah State	168	159	95%	1	3	2%	5	168	0	0	0	0	0	0
3	Chin State	342	321	94%	3	6	2%	12	342	5	3	2	0	0	5
4	Sagaing Region	2034	1999	98%	11	19	1%	5	2034	40	35	4	1	0	40
5	Magway Region	890	856	96%	15	17	2%	2	890	35	32	2	0	1	35
6	Mandalay Region	731	704	96%	3	15	2%	9	731	30	21	6	1	2	30
7	Shan State (Taunggyi)	560	537	96%	4	14	3%	5	560	7	7	0	0	0	7
8	Shan State (Kyaingtong)	818	757	93%	3	50	6%	8	818	5	3	1	1	0	5
9	Shan State (Lashio)	505	469	93%	6	24	5%	6	505	26	18	1	6	1	26
10	Kayin State	1226	1109	90%	3	71	6%	43	1226	27	14	5	6	2	27
11	Tanintharyi Region	1116	1070	96%	2	40	4%	4	1116	26	18	2	6	0	26
12	Bago Region	1611	1539	96%	9	58	4%	5	1611	28	25	0	3	0	28
13	Bago Region (Pyay)	808	778	96%	10	17	2%	3	808	21	16	4	1	0	21
14	Mon State	1825	1786	98%	7	29	2%	3	1825	15	12	1	2	0	15
15	Rakhine State	1248	1210	97%	9	27	2%	2	1248	24	16	7	1	0	24
16	Yangon Region	2813	2762	98%	4	34	1%	13	2813	77	67	5	4	1	77
17	Ayeyarwaddy Region	1750	1696	97%	7	44	3%	3	1750	20	18	0	2	0	20
18	Naypyitaw council area	49	48	98%	0	1	2%	0	49	4	3	1	0	0	4
19	Other Units	6207	5986	96%	41	145	2%	35	6207	37	18	12	3	4	37
	Country	24925	24008	96%	138	614	2%	165	24925	435	331	55	38	11	435

NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOME OF HILAR LYMPHADENOPATHY TB PATIENTS (2011 COHORT)

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Sr.No.	Region/State	HILAR LYMPHADENOPATHY TB PATIENTS											
		Total No.	Completed		Died		Failure		Defaulted		Transfer		Total
		Reg. pts.	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	
1	Kachin State	1973	1894	96%	13	1%	0	0%	56	3%	10	1%	1973
2	Kayah State	0											0
3	Chin State	27	27	100%	0	0%	0	0%	0	0%	0	0%	27
4	Sagaing Region	491	489	100%	0	0%	0	0%	2	0%	0	0%	491
5	Magway Region	829	820	99%	1	0%	0	0%	7	1%	1	0%	829
6	Mandalay Retion	1599	1556	97%	9	1%	1	0%	18	1%	15	1%	1599
7	Shan State (Taunggyi)	269	260	97%	0	0%	0	0%	7	3%	2	1%	269
8	Shan State (Kyaingtong)	69	66	96%	1	1%	0	0%	2	3%	0	0%	69
9	Shan State (Lashio)	375	344	92%	6	2%	0	0%	24	6%	1	0%	375
10	Kayin State	71	63	89%	1	1%	0	0%	5	7%	2	3%	71
11	Tanintharyi Region	680	595	88%	1	0%	0	0%	81	12%	3	0%	680
12	Bago Region	120	114	95%	0	0%	0	0%	5	4%	1	1%	120
13	Bago Region (Pyay)	78	76	97%	0	0%	0	0%	1	1%	1	1%	78
14	Mon State	218	211	97%	2	1%	1	0%	3	1%	1	0%	218
15	Rakhine State	208	204	98%	1	0%	0	0%	3	1%	0	0%	208
16	Yangon Region	622	611	98%	3	0%	0	0%	7	1%	1	0%	622
17	Ayeyarwaddy Region	1303	1255	96%	1	0%	0	0%	42	3%	5	0%	1303
18	Naypyitaw council area	260	253	97%	1	0%	0	0%	2	1%	4	2%	260
19	Other Units	2525	2372	94%	18	1%	0	0%	123	5%	12	0%	2525
	Country	11717	11210	96%	58	0%	2	0%	388	3%	59	1%	11717

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NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOME OF EP<15 TB PATIENTS (2011 COHORT)

Sr.No.	Region/State	EP < 15											
		Total No.	Completed		Died		Failure		Defaulted		Transfer		Total
		Reg. pts.	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	
1	Kachin State												
2	Kayah State	49	35	71%	5	10%	0	0%	3	6%	6	12%	49
3	Chin State	243	229	94%	5	2%	0	0%	8	3%	1	0%	243
4	Sagaing Region	410	383	93%	7	2%	0	0%	20	5%	0	0%	410
5	Magway Region	500	493	99%	3	1%	0	0%	3	1%	1	0%	500
6	Mandalay Region	1615	1561	97%	18	1%	1	0%	19	1%	16	1%	1615
7	Shan State (Taunggyi)	132	119	90%	6	5%	0	0%	7	5%	0	0%	132
8	Shan State (Kyaingtong)	91	72	79%	6	7%	0	0%	12	13%	1	1%	91
9	Shan State (Lashio)	434	389	90%	9	2%	0	0%	32	7%	4	1%	434
10	Kayin State	8	7	88%	0	0%	0	0%	0	0%	1	13%	8
11	Tanintharyi Region	718	597	83%	5	1%	0	0%	106	15%	10	1%	718
12	Bago Region	57	53	93%	3	5%	0	0%	0	0%	1	2%	57
13	Bago Region (Pyay)	39	38	97%	1	3%	0	0%	0	0%	0	0%	39
14	Mon State	7	6	86%	1	14%	0	0%	0	0%	0	0%	7
15	Rakhine State	223	199	89%	11	5%	0	0%	8	4%	5	2%	223
16	Yangon Region	478	446	93%	6	1%	0	0%	17	4%	9	2%	478
17	Ayeyarwaddy Region	126	118	94%	2	2%	0	0%	5	4%	1	1%	126
18	Naypyitaw council area	206	205	100%	1	0%	0	0%	0	0%	0	0%	206
19	Other Units	991	732	74%	157	16%	8	1%	51	5%	43	4%	991
	Country	6327	5682	90%	246	4%	9	0%	291	5%	99	2%	6327

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NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOME OF EP>15 TB PATIENTS (2011 COHORT)

Sr.No.	Region/State	EP > 15											
		Total No.	Completed		Died		Failure		Defaulted		Transfer		Total
		Reg. pts.	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	
1	Kachin State	226	182	81%	15	7%	0	0%	19	8%	10	4%	226
2	Kayah State	0											0
3	Chin State	27	25	93%	0	0%	0	0%	1	4%	1	4%	27
4	Sagaing Region	392	360	92%	20	5%	0	0%	10	3%	2	1%	392
5	Magway Region	600	538	90%	35	6%	0	0%	19	3%	8	1%	600
6	Mandalay Region	978	842	86%	92	9%	4	0%	28	3%	12	1%	978
7	Shan State (Taunggyi)	192	162	84%	9	5%	0	0%	19	10%	2	1%	192
8	Shan State (Kyaingtong)	0											0
9	Shan State (Lashio)	0											0
10	Kayin State	55	42	76%	2	4%	2	4%	2	4%	7	13%	55
11	Tanintharyi Region	0											0
12	Bago Region	302	262	87%	20	7%	0	0%	17	6%	3	1%	302
13	Bago Region (Pyay)	146	130	89%	9	6%	0	0%	4	3%	3	2%	146
14	Mon State	149	124	83%	13	9%	0	0%	11	7%	1	1%	149
15	Rakhine State	96	80	83%	8	8%	1	1%	6	6%	1	1%	96
16	Yangon Region	1085	1010	93%	27	2%	3	0%	24	2%	21	2%	1085
17	Ayeyarwaddy Region	799	697	87%	49	6%	4	1%	45	6%	4	1%	799
18	Naypyitaw council area	171	143	84%	12	7%	1	1%	9	5%	6	4%	171
19	Other Units	1315	1012	77%	138	10%	12	1%	107	8%	46	3%	1315
	Country	6533	5609	86%	449	7%	27	0%	321	5%	127	2%	6533

CASE FINDING ACTIVITIES OF OTHER REPORTING UNITS (2012)

Block 1 Annual 2012 **Annex-20**

Sr.No	Other Units	PULMONARY TUBERCULOSIS																						
		SMEAR POSITIVE									Total	Smear Negative		Total	Primary complex		Extra Pulmonary TB		Total	Other		Total		
		New Cases			Old Cases																			
					Relapses		TAD		TAF															
		M	F	T	M	F	M	F	M	F		M	F		M	F	M	F		M	F	M	F	TOTAL
1	Aung San Hos:	40	12	52	25	14	8	1	24	10	134	18	9	27	6	0	1	0	1	65	37	187	83	270
2	Patheingyi Hos:	17	7	24	6	1	0	0	0	0	31	16	4	20	2	0	6	7	13	2	0	49	19	68
3	East YGH	10	2	12	1	0	0	0	0	0	13	6	1	7	36	21	11	12	23	1	1	65	37	102
4	Mingalardon Hos:	81	46	127	26	15	6	2	4	2	182	207	120	327	60	72	312	169	481	211	80	907	506	1413
5	No.1MBH (PyinOoLwin)	44	1	45	14	2	0	0	0	0	61	110	13	123	23	10	31	14	45	14	1	236	41	277
6	1000 bedded hospital (Naypyitaw)	51	24	75	4	1	3	0	1	3	87	34	17	51	46	41	13	22	35	3	2	155	110	265
7	MSF-H (Ygn)	414	230	644	69	27	6	2	38	21	807	461	250	711	13	11	223	142	365	141	59	1365	742	2107
8	MSF-H (Kachin)	196	70	266	18	11	14	2	22	5	338	285	213	498	9	6	91	67	158	83	43	718	417	1135
9	PSI	4674	2531	7205	520	201	26	6	142	74	8174	4245	3105	7350	3042	2421	1388	1278	2666	95	45	14132	9661	23793
10	MSF-H (Shan-north)Muse	55	17	72	8	2	1	0	5	4	92	147	79	226	0	0	11	5	16	38	10	265	117	382
11	MSF-H (Rakhine)	12	3	15	1	1	1	0	3	1	22	5	4	9	0	0	1	2	3	12	8	35	19	54
12	MSF-CH (Dawei)	160	113	273	29	16	3	0	12	10	343	45	29	74	1	3	21	13	34	7	2	278	186	464
13	MMA	544	319	863	50	17	3	1	18	11	963	673	405	1078	392	282	179	150	329	25	17	1884	1202	3086
14	AHRN (Shan North) Laukkai	111	26	137	7	5	6	2	17	6	180	51	23	74	2	2	75	14	89	14	5	283	83	366
15	Thingangyun Sanpya Hos:	8	5	13	8	1	0	0	1	0	23	21	13	34	5	7	11	14	25	4	2	58	42	100
16	Central Jail Mandalay	28	5	33	3	0	0	0	0	0	36	19	4	23	0	0	14	0	14	5	0	69	9	78
17	Medecins du monde	9	2	11	2	0	0	0	0	1	14	32	4	36	0	0	40	5	45	16	1	99	13	112
18	New YGH	22	17	39	5	3	0	0	0	1	48	24	21	45	0	0	23	24	47	9	6	83	72	155
19	West YGH	10	7	17	7	0	0	0	0	1	25	8	8	16	12	11	0	4	4	0	0	37	31	68
20	Tharketa HIV hospital	25	15	40	11	3	7	1	1	0	63	106	73	179	11	12	167	105	272	95	42	423	251	674
21	Insein general hospital	4	1	5	0	0	0	0	0	0	5	4	3	7	3	1	3	1	4	0	0	14	6	20
22	Htantabin TB hospital	10	14	24	6	3	0	0	0	0	33	18	17	35	0	0	2	10	12	1	4	37	48	85
23	Pathein General Hospital	25	21	46	4	2	3	1	1	0	57	37	20	57	19	27	68	53	121	14	7	171	131	302
24	No(1) MBH (Mandalay Nantwin)	11	2	13	1	0	0	1	2	0	17	19	7	26	9	2	1	1	2	4	1	47	14	61
25	300 bedded teaching hospital (Mdy	23	7	30	2	2	0	0	0	0	34	20	8	28	21	15	26	17	43	2	2	94	51	145
26	North Okkalapa General Hospital	22	13	35	13	8	1	0	0	0	57	64	31	95	2	2	10	17	27	8	4	120	75	195
27	MSF-CH (Insein Prision)	12	4	16	2	1	0	0	0	0	19	57	12	69	1	3	4	0	4	5	0	81	20	101
	Total	6618	3514	10132	842	336	88	19	291	150	11858	6732	4493	11225	3715	2949	2732	2146	4878	874	379	21892	13986	35878

AGE DISTRIBUTION OF NEW SMEAR POSITIVE CASES

Block 2 Annual 2012

Sr.No	Other Unit	AGE GROUP (YEAR)														TOTAL		
		0-14		15-24		25 - 34		35 - 44		45 - 54		55 - 64		65 or more				
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	T
1	Aung San Hos:	0	0	2	1	9	5	10	2	11	1	5	2	3	1	40	12	52
2	Patheingyi Hos:	0	0	2	3	2	0	6	2	3	2	1	0	3	0	17	7	24
3	East YGH	0	0	2	1	1	0	2	0	3	0	2	0	0	1	10	2	12
4	Mingalardon Hos:	0	0	3	8	29	22	31	10	12	4	6	2	0	0	81	46	127
5	No.1MBH (PyinOoLwin)	0	0	6	0	19	0	9	0	7	0	3	0	0	1	44	1	45
6	1000 bedded hospital (Naypyitaw)	0	1	6	3	18	11	7	5	14	2	3	0	3	2	51	24	75
7	MSF-H (Ygn)	0	1	31	34	149	97	132	58	73	24	21	15	8	1	414	230	644
8	MSF-H (Kachin)	0	1	15	5	55	18	75	22	31	19	18	4	2	1	196	70	266
9	PSI	26	39	554	418	1042	548	1048	447	967	477	635	349	402	253	4674	2531	7205
10	MSF-H (Shan-north)Muse	0	0	1	3	27	9	22	5	5	0	0	0	0	0	55	17	72
11	MSF-H (Rakhine)	0	0	3	2	1	0	1	0	3	1	2	0	2	0	12	3	15
12	MSF-CH (Dawei)	2	3	6	7	43	22	61	33	29	24	12	12	7	12	160	113	273
13	MMA	2	5	68	61	123	63	116	67	105	52	80	39	50	32	544	319	863
14	AHRN (Shan North) Laukkai	0	0	12	11	35	7	32	2	20	4	9	1	3	1	111	26	137
15	Thingangyun Sanpya Hos:	0	0	1	0	2	1	2	2	0	1	1	1	2	0	8	5	13
16	Central Jail Mandalay	0	0	4	0	12	1	5	4	6	0	1	0	0	0	28	5	33
17	Medecins du monde	0	0	1	0	6	1	2	1	0	0	0	0	0	0	9	2	11
18	New YGH	0	0	4	3	3	5	4	2	5	3	3	4	3	0	22	17	39
19	West YGH	0	0	0	2	4	1	1	2	0	2	4	0	1	0	10	7	17
20	Tharketa HIV hospital	0	1	2	1	10	6	10	3	3	4	0	0	0	0	25	15	40
21	Insein general hospital	0	0	1	0	1	0	0	0	2	0	0	1	0	0	4	1	5
22	Htantabin TB hospital	0	0	1	5	3	7	3	0	1	0	2	2	0	0	10	14	24
23	Pathein General Hospital	0	0	1	3	7	3	11	4	1	5	1	2	4	4	25	21	46
24	No(1) MBH (Mandalay Nantwin)	0	0	2	1	3	0	4	0	2	1	0	0	0	0	11	2	13
25	300 bedded teaching hospital (Md	0	0	2	1	2	2	10	1	4	1	2	1	3	1	23	7	30
26	North Okkalapa General Hospital	0	0	2	2	4	3	4	2	2	1	5	2	5	3	22	13	35
27	MSF-CH (Insein Prision)	0	1	1	1	4	0	3	0	3	2	0	0	1	0	12	4	16
	Total	30	52	733	576	1614	832	1611	674	1312	630	816	437	502	313	6618	3514	10132

Primary complex cases, Hilar and TB meningitis cases by age group

Annual 2012

Sr.No	Other Units	PC and TBM & Hilar cases															
		PC				All EP (including TBM & Hilar				TBM				Hilar Lymphadenopathy			
		0-4	5-14	≥15	Total	0-4	5-14	≥15	Total	0-4	5-14	≥15	Total	0-4	5-14	≥15	Total
1	Aung San Hos:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Patheingyi Hos:	2	0	0	2	0	0	0	0	0	0	0	0	0	1	4	5
3	East YGH	31	26	0	57	11	11	1	23	0	0	0	0	0	0	0	0
4	Mingalardon Hos:	45	77	0	122	0	0	477	477	0	0	30	30	0	0	0	0
5	No.1MBH (PyinOoLwin)	22	11	0	33	4	17	24	45	0	0	2	2	3	12	0	15
6	1000 bedded hospital (Naypyita	51	36	0	87	1	3	0	4	1	1	0	2	0	0	0	0
7	MSF-H (Ygn)	4	18	2	24	9	12	258	279	0	0	7	7	1	0	8	9
8	MSF-H (Kachin)	11	4	0	15	9	3	146	158	0	0	6	6	8	4	3	15
9	PSI	2628	3918	9	6555	1155	743	310	2208	1	0	1	2	1372	849	1	2222
10	MSF-H (Shan-north)Muse	0	0	0	0	0	0	10	10	0	0	1	1	0	0	22	22
11	MSF-H (Rakhine)	0	0	0	0	2	0	0	2	0	0	0	0	2	0	0	2
12	MSF-CH (Dawei)	6	8	20	34	0	2	23	25	0	0	0	0	0	0	4	4
13	MMA	341	522	2	865	76	96	84	256	0	1	2	3	85	113	4	202
14	AHRN (Shan North) Laukkai	3	2	0	5	0	1	43	44	0	0	0	0	2	1	0	3
15	Thingangyun Sanpya Hos:	5	5	0	10	0	2	30	32	0	0	3	3	0	0	3	3
16	Central Jail Mandalay	0	0	0	0	0	0	7	7	0	0	0	0	0	0	0	0
17	Medecins du monde	0	0	0	0	1	0	44	45	0	0	2	2	0	0	1	1
18	New YGH	0	0	22	22	0	0	14	14	0	0	0	0	0	0	3	3
19	West YGH	13	9	0	22	0	0	2	2	1	0	0	1	0	0	0	0
20	Tharketa HIV hospital	11	12	0	23	3	9	260	272	0	0	8	8	1	8	40	49
21	Insein general hospital	3	1	0	4	0	0	3	3	0	0	1	1	0	0	0	0
22	Htantabin TB hospital	0	0	0	0	0	0	12	12	0	0	0	0	0	0	0	0
23	Pathein General Hospital	24	10	0	34	33	24	76	133	4	1	4	9	30	18	0	48
24	No(1) MBH (Mandalay Nantwin	6	6	0	12	1	0	1	2	0	0	0	0	1	0	0	1
25	300 bedded teaching hospital (	24	37	0	61	15	7	30	52	0	1	3	4	12	3	0	15
26	North Okkalapa General Hospit	0	4	1	5	0	3	18	21	0	1	5	6	0	0	3	3
27	MSF-CH (Insein Prision)	4	0	0	4	0	0	1	1	0	0	0	0	0	0	0	0
	Total	3234	4706	56	7996	1320	933	1874	4127	7	5	75	87	1517	1009	96	2622

BLOCK - 3 Other Unit

Annual 2012

Sr.No	Other Units	CAT - 1				CAT - 2					CAT - 3			TOTAL
		Sputum Smear Positive	Sputum Smear Negative	EP Seriously ill	Total	Relapses	Treat-ment after Default	Treat-ment after Failure	Others (Failure)	Total	P	EP	Total	
1	Aung San Hos:	52	27	7	86	39	9	34	102	184	0	0	0	270
2	Patheingyi Hos:	24	20	12	56	7	0	0	2	9	2	2	4	69
3	East YGH	12	7	1	20	1	0	0	2	3	57	22	79	102
4	Mingalardon Hos:	127	415	481	1023	41	8	6	291	346	44	0	44	1413
5	No.1MBH (PyinOoLwin)	45	126	26	197	16	0	0	15	31	33	19	52	280
6	1000 bedded hospital (Naypyitaw)	77	47	16	140	6	3	4	6	19	93	21	114	273
7	MSF-H (Ygn)	644	730	354	1728	96	8	59	200	363	14	11	25	2116
8	MSF-H (Kachin)	269	529	162	960	29	16	27	128	200	5	4	9	1169
9	PSI	7276	4203	218	11697	732	33	221	149	1135	8830	2478	11308	24140
10	MSF-H (Shan-north)Muse	75	234	16	325	10	1	9	48	68	0	0	0	393
11	MSF-H (Rakhine)	15	12	3	30	2	0	4	19	25	0	0	0	55
12	MSF-CH (Dawei)	273	72	32	377	53	5	22	9	89	0	0	0	466
13	MMA	872	839	65	1776	66	4	29	42	141	922	267	1189	3106
14	AHRN (Shan North) Laukkai	139	86	93	318	12	8	23	19	62	0	0	0	380
15	Thingangyun Sanpya Hos:	13	35	25	73	9	0	1	6	16	11	0	11	100
16	Central Jail Mandalay	40	32	16	88	6	0	1	6	13	0	0	0	101
17	Medecins du monde	12	36	46	94	2	0	1	18	21	0	0	0	115
18	New YGH	39	45	47	131	8	0	1	15	24	0	0	0	155
19	West YGH	17	16	8	41	7	0	1	0	8	22	1	23	72
20	Tharketa HIV hospital	49	200	266	515	15	8	1	138	162	39	12	51	728
21	Insein general hospital	5	7	5	17	0	0	0	0	0	4	0	4	21
22	Htantabin TB hospital	24	35	11	70	9	0	0	5	14	1	1	2	86
23	Pathein General Hospital	46	53	69	168	6	4	1	21	32	38	64	102	302
24	No(1) MBH (Mandalay Nantwin)	13	24	1	38	1	1	2	5	9	12	2	14	61
25	300 bedded teaching hospital (Mdy)	31	41	32	104	4	0	0	6	10	49	20	69	183
26	North Okkalapa General Hospital	36	97	30	163	21	1	0	12	34	3	0	3	200
27	MSF-CH (Insein Prision)	17	59	3	79	5	1	0	5	11	14	0	14	104
	Total	10242	8027	2045	20314	1203	110	447	1269	3029	10193	2924	13117	36460

Other Unit

Block _ 4

Annual 2012

Sr.No	Other Unit	A Number of suspects(Dx) examined by microscopy for case finding		B Number of smear positive pts detected out of suspcts (Dx)		C Number of patients examined by microscopy for follow-up		D Number of smear positive out of follow-up patients	
		No. of Pts	No. of slides	No. of Pts	No. of slides	No. of Pts	No. of slides	No. of Pts	No. of slides
1	Aung San Hos:	695	1637	460	984	3584	6241	637	1148
2	Patheingyi Hos:	1315	3936	314	901	490	986	103	200
3	East YGH	682	1978	99	253	119	237	12	22
4	Mingalardon Hos:	781	1619	130	209	459	855	16	25
5	No.1MBH (PyinOoLwin)	941	2823	116	343	167	334	40	80
6	1000 bedded hospital (Naypyitaw)	2172	6153	341	965	720	1440	18	35
7	MSF-H (Ygn)	10165	19774	1535	2748	5625	11933	561	919
8	MSF-H (Kachin)	2610	5312	273	495	1928	4009	134	227
9	PSI	28494	84258	4235	12476	15906	31720	1739	3370
10	MSF-H (Shan-north)Muse	1535	3070	201	402	871	1742	64	128
11	MSF-H (Rakhine)	230	473	8	20	26	53	1	3
12	MSF-CH (Dawei)	1670	3817	298	987	878	1760	125	261
13	MMA	4204	11804	802	2256	3721	7408	186	358
14	AHRN (Shan North) Laukkai	0	0	0	0	0	0	0	0
15	Thingangyun Sanpya Hos:	138	368	27	71	77	154	7	11
16	Central Jail Mandalay	281	843	34	84	151	302	3	4
17	Medecins du monde	398	1056	37	88	166	348	12	20
18	New YGH	1051	3153	101	297	357	714	16	28
19	West YGH	666	1772	124	280	131	260	17	32
20	Tharketa HIV hospital	943	2829	28	72	387	774	6	14
21	Insein general hospital	1306	3410	189	450	20	38	2	5
22	Htantabin TB hospital	7	21	0	0	18	40	0	0
23	Pathein General Hospital	852	2528	92	277	307	631	11	22
24	No(1) MBH (Mandalay Nantwin)	58	158	13	39	27	81	5	15
25	300 bedded teaching hospital (Md	565	1456	84	85	127	249	5	10
26	North Okkalapa General Hospital	946	1899	113	199	246	470	11	19
27	MSF-CH (Insein Prision)	345	1027	26	75	122	375	5	15
	Total	63050	167174	9680	25056	36630	73154	3736	6971

Other Unit

Block _ 5

Annual 2012

Sr.no	Township	New smear(+) cases Register in previous Q:	Smear not done at eighter 2or 3 months	Sputum conversion at				Remaining positive at 3 month	TOTAL 2+3+4+5
				2 month		3 month			
				No	%	No	%		
1	Aung San Hos:	52	21	20	38%	2	4%	9	52
2	Patheingyi Hos:	24	6	14	58%	2	8%	2	24
3	East YGH	12	0	8	67%	1	8%	3	12
4	Mingalardon Hos:	127	46	79	62%	2	2%	0	127
5	No.1MBH (PyinOoLwin)	45	6	21	47%	12	27%	6	45
6	1000 bedded hospital (Naypyitaw)	77	4	67	87%	5	6%	1	77
7	AZG (Ygn)	644	94	423	66%	63	10%	64	644
8	AZG (Kachin)	266	70	147	55%	22	8%	27	266
9	PSI	7207	1419	5058	70%	517	7%	213	7207
10	AZG (Shan-north) Muse	72	16	37	51%	11	15%	8	72
11	MSF-H (AZG) Rakhine	10	10	0	0%	0	0%	0	10
12	MSF-CH (Dawei)	273	25	215	79%	25	9%	8	273
13	MMA	863	48	680	79%	90	10%	45	863
14	AHRN (Shan North) Laukkai	137	10	87	64%	15	11%	25	137
15	Thingangyun Sanpya Hos:	13	0	11	85%	2	15%	0	13
16	Central Jail Mandalay	33	2	28	85%	2	6%	1	33
17	Medecins du monde	11	2	6	55%	2	18%	1	11
18	New YGH	39	5	29	74%	2	5%	3	39
19	West YGH	17	3	11	65%	2	12%	1	17
20	Tharketa HIV hospital	40	8	32	80%	0	0%	0	40
21	Insein general hospital	5	0	5	100%	0	0%	0	5
22	Htantabin TB hospital	24	3	21	88%	0	0%	0	24
23	Pathein General Hospital	46	4	36	78%	5	11%	1	46
24	No(1) MBH (Mandalay Nantwin)	10	0	10	100%	0	0%	0	10
25	300 bedded teaching hospital (Mdy)	30	4	19	63%	7	23%	0	30
26	North Okkalapa General Hospital	38	1	36	95%	0	0%	1	38
27	MSF-CH (Insein Prision)	16	3	12	75%	1	6%	0	16
	Total	10131	1810	7112	70%	790	8%	419	10131

NATIONAL TUBERCULOSIS PROGRAMME

TREATMENT OUTCOME OF NEW SMEAR POSITIVE in (2011 cohort)

Other Unit

Annual 2012

SN	Other Unit	TOTAL	Cured		Completed		TSR %	Died		Failure		Defaulted		Transfer		Total
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
1	Aung San Hos:	48	28	58%	1	2%	60%	5	10%	6	13%	7	15%	1	2%	48
2	Patheingyi Hos:	31	18	58%	1	3%	61%	4	13%	1	3%	3	10%	4	13%	31
3	East YGH	5	5	100%	0	0%	100%	0	0%	0	0%	0	0%	0	0%	5
4	Mingalardon Hos:	149	63	42%	12	8%	50%	53	36%	5	3%	11	7%	5	3%	149
5	No.1MBH (PyinOoLwin)	26	13	50%	5	19%	69%	1	4%	2	8%	2	8%	3	12%	26
6	1000 bedded hospital (Naypyitav	112	74	66%	14	13%	79%	7	6%	1	1%	9	8%	7	6%	112
7	MSF-H (Ygn)	525	299	57%	59	11%	68%	48	9%	54	10%	52	10%	13	2%	525
8	MSF-H (Kachin)	296	184	62%	11	4%	66%	22	7%	23	8%	46	16%	10	3%	296
9	PSI	6382	4427	69%	923	14%	84%	232	4%	273	4%	396	6%	131	2%	6382
10	MSF-H (Shan-north)Muse	95	61	64%	1	1%	65%	11	12%	6	6%	15	16%	1	1%	95
11	MSF-H (Rakhine)	7	3	43%	1	14%	57%	0	0%	3	43%	0	0%	0	0%	7
12	MSF-CH (Dawei)	212	156	74%	6	3%	76%	17	8%	20	9%	13	6%	0	0%	212
13	MMA	798	677	85%	43	5%	90%	30	4%	26	3%	19	2%	3	0%	798
14	AHRN (Shan North) Laukkai	152	104	68%	11	7%	76%	3	2%	10	7%	21	14%	3	2%	152
15	Thingangyun Sanpya Hos:	11	8	73%	0	0%	73%	2	18%	1	9%	0	0%	0	0%	11
16	Central Jail Mandalay	37	24	65%	0	0%	65%	5	14%	0	0%	0	0%	8	22%	37
17	Medecins du monde	15	11	73%	1	7%	80%	1	7%	1	7%	1	7%	0	0%	15
18	New YGH	38	29	76%	0	0%	76%	2	5%	3	8%	0	0%	4	11%	38
19	West YGH	22	12	55%	3	14%	68%	1	5%	3	14%	3	14%	0	0%	22
20	Tharketa HIV hospital	51	28	55%	4	8%	63%	8	16%	0	0%	4	8%	7	14%	51
21	Insein general hospital	7	7	100%	0	0%	100%	0	0%	0	0%	0	0%	0	0%	7
22	Htantabin TB hospital	18	13	72%	0	0%	72%	2	11%	0	0%	1	6%	2	11%	18
23	Pathein General Hospital	6	1	17%	1	17%	33%	0	0%	0	0%	4	67%	0	0%	6
24	No(1) MBH (Mandalay Nantwin)	12	11	92%	0	0%	92%	0	0%	1	8%	0	0%	0	0%	12
25	300 bedded teaching hospital (M	7	2	29%	2	29%	57%	1	14%	0	0%	0	0%	2	29%	7
26	North Okkalapa General Hospital															
27	MSF-CH (Insein Prision)															
	Total	9062	6258	69%	1099	12%	81%	455	5%	439	5%	607	7%	204	2%	9062

TREATMENT OUTCOME OF SMEAR NEGATIVE in 2011 (2011 cohort)

Other Unit

Annual 2012

Sr.	Other Unit	SMEAR NEGATIVE											
		Total No.	Completed		Died		Failure		Defaulted		Transfer out		Total
		Reg: pts:	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	
1	Aung San Hos:	30	22	73%	2	7%	0	0%	5	17%	1	3%	30
2	Patheingyi Hos:	19	12	63%	3	16%	0	0%	3	16%	1	5%	19
3	East YGH	14	12	86%	1	7%	0	0%	1	7%	0	0%	14
4	Mingalardon Hos:	411	203	49%	143	35%	0	0%	50	12%	15	4%	411
5	No.1MBH (PyinOoLwin)	144	92	64%	8	6%	6	4%	6	4%	32	22%	144
6	1000 bedded hospital (Naypyitaw)	118	101	86%	5	4%	0	0%	6	5%	6	5%	118
7	MSF-H (Ygn)	487	375	77%	64	13%	10	2%	30	6%	8	2%	487
8	MSF-H (Kachin)	524	392	75%	54	10%	5	1%	61	12%	12	2%	524
9	PSI	5653	4734	84%	303	5%	54	1%	415	7%	147	3%	5653
10	MSF-H (Shan-north)Muse	229	162	71%	40	17%	3	1%	23	10%	1	0%	229
11	MSF-H (Rakhine)	19	13	68%	5	26%	0	0%	1	5%	0	0%	19
12	MSF-CH (Dawei)	55	48	87%	4	7%	1	2%	2	4%	0	0%	55
13	MMA	873	764	88%	56	6%	5	1%	40	5%	8	1%	873
14	AHRN (Shan North) Laukkai	54	35	65%	9	17%	1	2%	6	11%	3	6%	54
15	Thingangyun Sanpya Hos:	29	27	93%	2	7%	0	0%	0	0%	0	0%	29
16	Central Jail Mandalay	25	16	64%	4	16%	0	0%	1	4%	4	16%	25
17	Medecins du monde	43	37	86%	4	9%	0	0%	2	5%	0	0%	43
18	New YGH	34	30	88%	1	3%	0	0%	2	6%	1	3%	34
19	West YGH	24	18	75%	1	4%	0	0%	1	4%	4	17%	24
20	Tharketa HIV hospital	189	108	57%	38	20%	1	1%	19	10%	23	12%	189
21	Insein general hospital	32	26	81%	1	3%	0	0%	5	16%	0	0%	32
22	Htantabin TB hospital	40	35	88%	0	0%	0	0%	3	8%	2	5%	40
23	Pathein General Hospital	27	18	67%	3	11%	0	0%	6	22%	0	0%	27
24	No(1) MBH (Mandalay Nantwin)	27	27	100%	0	0%	0	0%	0	0%	0	0%	27
25	300 bedded teaching hospital (Mdy)	12	5	42%	1	8%	0	0%	3	25%	3	25%	12
26	North Okkalapa General Hospital												
27	MSF-CH (Insein Prision)												
	Total	9112	7312	80%	752	8%	86	1%	691	8%	271	3%	9112

NATIONAL TUBERCULOSIS PROGRAMME

TREATMENT OUTCOME OF PC and TBM in 2011 (2011 cohort)

Other Unit

Annual 2012

Sr.	Other Unit	PRIMARY COMPLEX								Other Unit	TB MENINGITIS					
		Total No Reg pts	Completed No	Completed Rate	Died	Defaulted No	Defaulted Rate	Transfer out	Total		Total No Reg pts	Completed	Died	Defaulted	Transfer out	Total
1	Aung San Hos:	2	2	100%	0	0	0%	0	2	Aung San Hos:	0					0
2	Patheingyi Hos:	0							0	Patheingyi Hos:	0					0
3	East YGH	41	37	90%	0	4	10%	0	41	East YGH	0					0
4	Mingalardon Hos:	159	95	60%	28	29	18%	7	159	Mingalardon Hos:	13	4	7	0	2	13
5	No.1MBH (PyinOoLwin)	19	19	100%	0	0	0%	0	19	No.1MBH (PyinOoLwin)	0					0
6	1000 bedded hospital (Naypyitaw)	88	83	94%	2	3	3%	0	88	1000 bedded hospital (Naypyitaw)	0					0
7	MSF-H (Ygn)	9	8	89%	1	0	0%	0	9	MSF-H (Ygn)	6	3	2	1	0	6
8	MSF-H (Kachin)	41	38	93%	1	2	5%	0	41	MSF-H (Kachin)	4	2	2	0	0	4
9	PSI	4941	4824	98%	4	87	2%	26	4941	PSI	3	3	0	0	0	3
10	MSF-H (Shan-north)Muse	0						0	0	MSF-H (Shan-north)Muse	2	0	0	0	2	2
11	MSF-H (Rakhine)	0						0	0	MSF-H (Rakhine)	0					0
12	MSF-CH (Dawei)	20	18	90%	0	2	10%	0	20	MSF-CH (Dawei)	0					0
13	MMA	776	766	99%	3	7	1%	0	776	MMA	2	2	0	0	0	2
14	AHRN (Shan North) Laukkai	1	1	100%	0	0	0%	0	1	AHRN (Shan North) Laukkai	0					0
15	Thingangyun Sanpya Hos:	14	14	100%	0	0	0%	0	14	Thingangyun Sanpya Hos:	0					0
16	Central Jail Mandalay	0						0	0	Central Jail Mandalay	0					0
17	Medecins du monde	0						0	0	Medecins du monde	1	1	0	0	0	1
18	New YGH	6	4	67%	1	0	0%	1	6	New YGH	0					0
19	West YGH	31	27	87%	0	3	10%	1	31	West YGH	1	0	1	0	0	1
20	Tharketa HIV hospital	8	7	88%	0	1	13%	0	8	Tharketa HIV hospital	0					0
21	Insein general hospital	18	13	72%	1	4	22%	0	18	Insein general hospital	1	1	0	0	0	1
22	Htantabin TB hospital	10	5	50%	1	4	40%	0	10	Htantabin TB hospital	0					0
23	Pathein General Hospital	5	5	100%	0	0	0%	0	5	Pathein General Hospital	4	2	0	2	0	4
24	No(1) MBH (Mandalay Nantwin)	5	5	100%	0	0	0%	0	5	No(1) MBH (Mandalay Nantwin)	0					0
25	300 bedded teaching hospital (Md	25	22	88%	0	3	12%	0	25	300 bedded teaching hospital (Mdy	0					0
26	North Okkalapa General Hospital									North Okkalapa General Hospital						
27	MSF-CH (Insein Prision)									MSF-CH (Insein Prision)						
	Total	6219	5993	96%	42	149	2%	35	6219	Total	37	18	12	3	4	37

TREATMENT OUTCOME OF HILAR LYMPHADENOPATHY in 2011 (2011 cohort)

Other Unit

Annual 2011

Sr.	Other Unit	Hilar Lymphadenopathy											
		Total N	Completed		Died		Failure		Defaulted		Transfer out		Total
		Reg: pts	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	
1	Aung San Hos:	0											0
2	Patheingyi Hos:	0											0
3	East YGH	8	8	100%	0	0%	0	0%	0	0%	0	0%	8
4	Mingalardon Hos:	9	5	56%	2	22%	0	0%	2	22%	0	0%	9
5	No.1MBH (PyinOoLwin)	27	26	96%	1	4%	0	0%	0	0%	0	0%	27
6	1000 bedded hospital (Naypyitaw)	5	5	100%	0	0%	0	0%	0	0%	0	0%	5
7	MSF-H (Ygn)	9	9	100%	0	0%	0	0%	0	0%	0	0%	9
8	MSF-H (Kachin)	14	12	86%	1	7%	0	0%	1	7%	0	0%	14
9	PSI	2128	1999	94%	7	0%	0	0%	116	5%	6	0%	2128
10	MSF-H (Shan-north)Muse	1	1	100%	0	0%	0	0%	0	0%	0	0%	1
11	MSF-H (Rakhine)	0											0
12	MSF-CH (Dawei)	19	16	84%	1	5%	0	0%	2	11%	0	0%	19
13	MMA	253	253	100%	0	0%	0	0%	0	0%	0	0%	253
14	AHRN (Shan North) Laukkai	27	18	67%	4	15%	0	0%	2	7%	3	11%	27
15	Thingangyun Sanpya Hos:	2	2	100%	0	0%	0	0%	0	0%	0	0%	2
16	Central Jail Mandalay	0											0
17	Medecins du monde	0											0
18	New YGH	0											0
19	West YGH	4	3	75%	0	0%	0	0%	0	0%	1	25%	4
20	Tharketa HIV hospital	4	2	50%	1	25%	0	0%	0	0%	1	25%	4
21	Insein general hospital	5	5	100%	0	0%	0	0%	0	0%	0	0%	5
22	Htantabin TB hospital	0											0
23	Pathein General Hospital	6	5	83%	1	17%	0	0%	0	0%	0	0%	6
24	No(1) MBH (Mandalay Nantwin)	2	2	100%	0	0%	0	0%	0	0%	0	0%	2
25	300 bedded teaching hospital (Mdy	2	1	50%	0	0%	0	0%	0	0%	1	50%	2
26	North Okkalapa General Hospital												
27	MSF-CH (Insein Prision)												
	Total	2525	2372	94%	18	1%	0	0%	123	5%	12	0%	2525

TREATMENT OUTCOME OF EXTRA-PULMONARY TB in 2011 (2011 cohort)

Other Unit

Annual 2011

Sr.	Other Unit	EP<15											
		Total No.	Completed		Died		Failure		Defaulted		Transfer out		Total
		Reg: pts:	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	
1	Aung San Hos:	1	1	100%	0	0%	0	0%	0	0%	0	0%	1
2	Patheingyi Hos:	8	6	75%	1	13%	0	0%	1	13%	0	0%	8
3	East YGH	21	18	86%	0	0%	0	0%	2	10%	1	5%	21
4	Mingalardon Hos:	326	185	57%	106	33%	1	0%	19	6%	15	5%	326
5	No.1MBH (PyinOoLwin)	12	11	92%	1	8%	0	0%	0	0%	0	0%	12
6	1000 bedded hospital (Naypyitaw)	13	12	92%	0	0%	0	0%	1	8%	0	0%	13
7	MSF-H (Ygn)	85	64	75%	10	12%	2	2%	7	8%	2	2%	85
8	MSF-H (Kachin)	21	18	86%	2	10%	0	0%	1	5%	0	0%	21
9	PSI	167	153	92%	3	2%	0	0%	4	2%	7	4%	167
10	MSF-H (Shan-north)Muse	38	27	71%	5	13%	1	3%	4	11%	1	3%	38
11	MSF-H (Rakhine)	4	4	100%	0	0%	0	0%	0	0%	0	0%	4
12	MSF-CH (Dawei)	59	45	76%	9	15%	2	3%	3	5%	0	0%	59
13	MMA	71	67	94%	2	3%	2	3%	0	0%	0	0%	71
14	AHRN (Shan North) Laukkai	46	38	83%	3	7%	0	0%	2	4%	3	7%	46
15	Thingangyun Sanpya Hos:	4	4	100%	0	0%	0	0%	0	0%	0	0%	4
16	Central Jail Mandalay	3	0	0%	3	100%	0	0%	0	0%	0	0%	3
17	Medecins du monde	19	15	79%	2	11%	0	0%	2	11%	0	0%	19
18	New YGH	8	6	75%	0	0%	0	0%	1	13%	1	13%	8
19	West YGH	4	4	100%	0	0%	0	0%	0	0%	0	0%	4
20	Tharketa HIV hospital	53	27	51%	10	19%	0	0%	3	6%	13	25%	53
21	Insein general hospital	2	2	100%	0	0%	0	0%	0	0%	0	0%	2
22	Htantabin TB hospital	3	3	100%	0	0%	0	0%	0	0%	0	0%	3
23	Pathein General Hospital	21	21	100%	0	0%	0	0%	0	0%	0	0%	21
24	No(1) MBH (Mandalay Nantwin)												
25	300 bedded teaching hospital (Mdy)												
26	North Okkalapa General Hospital												
27	MSF-CH (Insein Prision)												
	Total	989	731	74%	157	16%	8	0%	50	5%	43	4%	989

TREATMENT OUTCOME OF EXTRA-PULMONARY TB in 2011 (2011 cohort)

Other Unit

Annual 2011

Sr.	Other Unit	EP>15											
		Total No.	Completed		Died		Failure		Defaulted		Transfer out		Total
		Reg: pts:	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	
1	Aung San Hos:	0											0
2	Patheingyi Hos:	7	5	71%	0	0%	0	0%	2	29%	0	0%	7
3	East YGH	3	3	100%	0	0%	0	0%	0	0%	0	0%	3
4	Mingalardon Hos:	0											0
5	No.1MBH (PyinOoLwin)	35	30	86%	2	6%	1	3%	0	0%	2	6%	35
6	1000 bedded hospital (Naypyitaw)	50	38	76%	1	2%	0	0%	7	14%	4	8%	50
7	MSF-H (Ygn)	347	266	77%	31	9%	8	2%	35	10%	7	2%	347
8	MSF-H (Kachin)	163	109	67%	32	20%	2	1%	18	11%	2	1%	163
9	PSI	373	317	85%	21	6%	0	0%	23	6%	12	3%	373
10	MSF-H (Shan-north)Muse	0											0
11	MSF-H (Rakhine)	0											0
12	MSF-CH (Dawei)	0											0
13	MMA	70	64	91%	3	4%	0	0%	2	3%	1	1%	70
14	AHRN (Shan North) Laukkai	0											0
15	Thingangyun Sanpya Hos:	4	4	100%	0	0%	0	0%	0	0%	0	0%	4
16	Central Jail Mandalay	6	4	67%	0	0%	0	0%	0	0%	2	33%	6
17	Medecins du monde	19	15	79%	1	5%	0	0%	2	11%	1	5%	19
18	New YGH	10	8	80%	2	20%	0	0%	0	0%	0	0%	10
19	West YGH	3	2	67%	1	33%	0	0%	0	0%	0	0%	3
20	Tharketa HIV hospital	212	135	64%	44	21%	1	0%	17	8%	15	7%	212
21	Insein general hospital	3	3	100%	0	0%	0	0%	0	0%	0	0%	3
22	Htantabin TB hospital	10	9	90%	0	0%	0	0%	1	10%	0	0%	10
23	Pathein General Hospital												
24	No(1) MBH (Mandalay Nantwin)												
25	300 bedded teaching hospital (Mdy)												
26	North Okkalapa General Hospital												
27	MSF-CH (Insein Prision)												
	Total	1315	1012	77%	138	10%	12	1%	107	8%	46	3%	1315

TREATMENT OUTCOME OF RELAPSES in 2011 (2011 cohort)

Other Unit

Annual 2012

Sr. No	Other Unit	Relapses													
		Total	Cured		Completed		Died		Failure		Defaulted		Transfer out		Total
			No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	
1	Aung San Hos:	44	15	34%	4	9%	10	23%	6	14%	7	16%	2	5%	44
2	Patheingyi Hos:	48	7	15%	7	15%	13	27%	11	23%	3	6%	7	15%	48
3	East YGH	1	1	100%	0	0%	0	0%	0	0%	0	0%	0	0%	1
4	Mingalardon Hos:	45	10	22%	1	2%	25	56%	3	7%	4	9%	2	4%	45
5	No.1MBH (PyinOoLwin)	12	3	25%	0	0%	4	33%	4	33%	0	0%	1	8%	12
6	1000 bedded hospital (Naypyitaw)	10	7	70%	1	10%	1	10%	0	0%	0	0%	1	10%	10
7	MSF-H (Ygn)	81	30	37%	17	21%	23	28%	4	5%	7	9%	0	0%	81
8	MSF-H (Kachin)	55	11	20%	23	42%	11	20%	5	9%	5	9%	0	0%	55
9	PSI	594	369	62%	74	12%	41	7%	50	8%	34	6%	26	4%	594
10	MSF-H (Shan-north)Muse	25	10	40%	4	16%	6	24%	4	16%	1	4%	0	0%	25
11	MSF-H (Rakhine)	0													0
12	MSF-CH (Dawei)	36	9	25%	20	56%	3	8%	2	6%	1	3%	1	3%	36
13	MMA	71	53	75%	3	4%	8	11%	5	7%	1	1%	1	1%	71
14	AHRN (Shan North) Laukkai	14	9	64%	2	14%	1	7%	0	0%	1	7%	1	7%	14
15	Thingangyun Sanpya Hos:	4	4	100%	0	0%	0	0%	0	0%	0	0%	0	0%	4
16	Central Jail Mandalay	14	5	36%	0	0%	3	21%	1	7%	0	0%	5	36%	14
17	Medecins du monde	7	1	14%	3	43%	2	29%	0	0%	1	14%	0	0%	7
18	New YGH	4	2	50%	0	0%	0	0%	0	0%	0	0%	2	50%	4
19	West YGH	4	1	25%	0	0%	3	75%	0	0%	0	0%	0	0%	4
20	Tharketa HIV hospital	12	2	17%	0	0%	6	50%	0	0%	2	17%	2	17%	12
21	Insein general hospital	2	1	50%	0	0%	0	0%	0	0%	0	0%	1	50%	2
22	Htantabin TB hospital	4	1	25%	0	0%	1	25%	0	0%	0	0%	2	50%	4
23	Pathein General Hospital	0													0
24	No(1) MBH (Mandalay Nantwin)	1	1	100%	0	0%	0	0%	0	0%	0	0%	0	0%	1
25	300 bedded teaching hospital (Mdy)														
26	North Okkalapa General Hospital														
27	MSF-CH (Insein Prision)														
	Total	1088	552	51%	159	15%	161	15%	95	6%	67	6%	54	5%	1088

NATIONAL TUBERCULOSIS PROGRAMME

TREATMENT OUTCOME OF TREATMENT AFTER DEFAULT in (2011 cohort)

Other Unit

Annual 2012

SN	Other Unit	TOTAL	Cured		Completed		Died		Failure		Defaulted		Transfer		Total
			No	CR	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	
1	Aung San Hos:	21	2	10%	1	5%	3	14%	5	24%	8	38%	2	10%	21
2	Patheingyi Hos:	5	0	0%	1	20%	1	20%	0	0%	1	20%	2	40%	5
3	East YGH	0													0
4	Mingalardon Hos:	15	1	7%	0	0%	12	80%	0	0%	2	13%	0	0%	15
5	No.1MBH (PyinOoLwin)	0													0
6	1000 bedded hospital (Naypyitaw)	2	0	0%	1	50%	0	0%	0	0%	0	0%	1	50%	2
7	MSF-H (Ygn)	5	2	40%	0	0%	1	20%	0	0%	2	40%	0	0%	5
8	MSF-H (Kachin)	15	3	20%	4	27%	1	7%	2	13%	5	33%	0	0%	15
9	PSI	32	19	59%	5	16%	3	9%	1	3%	0	0%	4	13%	32
10	MSF-H (Shan-north)Muse	7	2	29%	3	43%	1	14%	0	0%	1	14%	0	0%	7
11	MSF-H (Rakhine)	0													0
12	MSF-CH (Dawei)	3	1	33%	1	33%	0	0%	0	0%	1	33%	0	0%	3
13	MMA	6	4	67%	2	33%	0	0%	0	0%	0	0%	0	0%	6
14	AHRN (Shan North) Laukkai	6	5	83%	0	0%	0	0%	0	0%	1	17%	0	0%	6
15	Thingangyun Sanpya Hos:	0													0
16	Central Jail Mandalay	0													0
17	Medecins du monde	2	0	0%	1	50%	0	0%	0	0%	1	50%	0	0%	2
18	New YGH	3	2	67%	0	0%	1	33%	0	0%	0	0%	0	0%	3
19	West YGH	1	0	0%	0	0%	0	0%	0	0%	1	100%	0	0%	1
20	Tharketa HIV hospital	6	0	0%	1	17%	3	50%	0	0%	1	17%	1	17%	6
21	Insein general hospital														
22	Htantabin TB hospital														
23	Pathein General Hospital														
24	No(1) MBH (Mandalay Nantwin)														
25	300 bedded teaching hospital (Mdy)														
26	North Okkalapa General Hospital														
27	MSF-CH (Insein Prision)														
	Total	129	41	32%	20	16%	26	20%	8	6%	24	19%	10	8%	129

TREATMENT OUTCOME OFTREATMENT AFTER FAILURE in 2011 (Cohort)

Other Unit

Annual 2012

SN	Other Unit	TOTAL	Cured		Completed		Died		Failure		Defaulted		Transfer		Total
			No	CR	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	
1	Aung San Hos:	35	4	11%	0	0%	10	29%	12	34%	6	17%	3	9%	35
2	Patheingyi Hos:	10	1	10%	0	0%	1	10%	3	30%	0	0%	5	50%	10
3	East YGH	0	0												0
4	Mingalardon Hos:	14	1	7%	0	0%	8	57%	2	14%	3	21%	0	0%	14
5	No.1MBH (PyinOoLwin)	0													0
6	1000 bedded hospital (Naypyitaw)	3	1	33%	0	0%	0	0%	0	0%	1	33%	1	33%	3
7	MSF-H (Ygn)	47	18	38%	9	19%	8	17%	4	9%	5	11%	3	6%	47
8	MSF-H (Kachin)	34	10	29%	3	9%	5	15%	5	15%	8	24%	3	9%	34
9	PSI	233	110	47%	33	14%	12	5%	44	19%	13	6%	21	9%	233
10	MSF-H (Shan-north)Muse	10	4	40%	0	0%	0	0%	2	20%	2	20%	2	20%	10
11	MSF-H (Rakhine)	3	2	67%	0	0%	0	0%	0	0%	1	33%	0	0%	3
12	MSF-CH (Dawei)	24	14	58%	3	13%	2	8%	5	21%	0	0%	0	0%	24
13	MMA	22	11	50%	1	5%	4	18%	4	18%	2	9%	0	0%	22
14	AHRN (Shan North) Laukkai	13	10	77%	0	0%	0	0%	0	0%	2	15%	1	8%	13
15	Thingangyun Sanpya Hos:	0													0
16	Central Jail Mandalay	0													0
17	Medecins du monde	2	2	100%	0	0%	0	0%	0	0%	0	0%	0	0%	2
18	New YGH	4	2	50%	0	0%	0	0%	0	0%	1	25%	1	25%	4
19	West YGH	2	0	0%	1	50%	1	50%	0	0%	0	0%	0	0%	2
20	Tharketa HIV hospital	2	0	0%	1	50%	1	50%	0	0%	0	0%	0	0%	2
21	Insein general hospital	1	0	0%	1	100%	0	0%	0	0%	0	0%	0	0%	1
22	Htantabin TB hospital	1	0	0%	0	0%	0	0%	0	0%	1	100%	0	0%	1
23	Pathein General Hospital	0													0
24	No(1) MBH (Mandalay Nantwin)	2	1	50%	0	0%	0	0%	1	50%	0	0%	0	0%	2
25	300 bedded teaching hospital (Mdy)														
26	North Okkalapa General Hospital														
27	MSF-CH (Insein Prision)														
	Total	462	191	41%	52	11%	52	11%	82	18%	45	10%	40	6%	462

TREATMENT OUTCOME OF OTHER CASES in 2011 (2011 cohort)

Other Unit

Annual 2012

Sr. No	Other Unit	OTHER CASES													
		Total	Cured		Completed		Died		Failure		Defaulted		Transfer out		Total
			No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	
1	Aung San Hos:	124	18	15%	19	15%	25	20%	30	24%	24	19%	8	6%	124
2	Patheingyi Hos:	3	0	0%	3	100%	0	0%	0	0%	0	0%	0	0%	3
3	East YGH	2	0	0%	1	50%	0	0%	1	50%	0	0%	0	0%	2
4	Mingalardon Hos:	233	0	0%	86	37%	96	41%	1	0%	40	17%	10	4%	233
5	No.1MBH (PyinOoLwin)	33	0	0%	23	70%	6	18%	0	0%	2	6%	2	6%	33
6	1000 bedded hospital (Naypyitaw)	12	1	8%	8	67%	1	8%	0	0%	2	17%	0	0%	12
7	MSF-H (Ygn)	184	0	0%	122	66%	45	24%	0	0%	16	9%	1	1%	184
8	MSF-H (Kachin)	94	0	0%	64	68%	17	18%	0	0%	13	14%	0	0%	94
9	PSI	114	0	0%	81	71%	17	15%	2	2%	9	8%	5	4%	114
10	MSF-H (Shan-north)Muse	29	0	0%	21	72%	4	14%	0	0%	3	10%	1	3%	29
11	MSF-H (Rakhine)	10	0	0%	8	80%	2	20%	0	0%	0	0%	0	0%	10
12	MSF-CH (Dawei)	2	0	0%	1	50%	1	50%	0	0%	0	0%	0	0%	2
13	MMA	46	0	0%	36	78%	5	11%	0	0%	2	4%	3	7%	46
14	AHRN (Shan North) Laukkai	18	0	0%	16	89%	1	6%	0	0%	1	6%	0	0%	18
15	Thingangyun Sanpya Hos:	8	0	0%	6	75%	1	13%	0	0%	0	0%	1	13%	8
16	Central Jail Mandalay	1	0	0%	1	100%	0	0%	0	0%	0	0%	0	0%	1
17	Medecins du monde	4	0	0%	4	100%	0	0%	0	0%	0	0%	0	0%	4
18	New YGH	9	0	0%	8	89%	1	11%	0	0%	0	0%	0	0%	9
19	West YGH	3	0	0%	2	67%	0	0%	0	0%	1	33%	0	0%	3
20	Tharketa HIV hospital	123	0	0%	47	38%	60	49%	3	2%	6	5%	7	6%	123
21	Insein general hospital	4	0	0%	3	75%	0	0%	0	0%	1	25%	0	0%	4
22	Htantabin TB hospital	5	0	0%	4	80%	0	0%	0	0%	1	20%	0	0%	5
23	Pathein General Hospital	1	0	0%	1	100%	0	0%	0	0%	0	0%	0	0%	1
24	No(1) MBH (Mandalay Nantwin)														
25	300 bedded teaching hospital (Mdy)														
26	North Okkalapa General Hospital														
27	MSF-CH (Insein Prision)														
	Total	1062	19	2%	565	53%	282	27%	37	3%	121	11%	38	4%	1062

NATIONAL TUBERCULOSIS PROGRAMME

Reporting Status from Regions & States (2012)

Annex-21

Regions & States	Townships	1st Quarter 2012			2nd Quarter 2012			3rd Quarter 2012			4th Quarter 2012			**Annual 2012**		
		Received	%	not received	Received	%	not received	Received	%	not received	Received	%	not received	Received	%	not received
Kachin State	**18**	14	78%	4	14	78%	4	14	78%	4	12	67%	6	14	78%	4
Kayah State	**7**	7	100%	0	7	100%	0	7	100%	0	7	100%	0	7	100%	0
Chin State	**9**	9	100%	0	9	100%	0	9	100%	0	9	100%	0	9	100%	0
Sagaing Region	**37**	37	100%	0	37	100%	0	37	100%	0	37	100%	0	37	100%	0
Magway Region	**25**	25	100%	0	25	100%	0	25	100%	0	25	100%	0	25	100%	0
Mandalay Region	**28**	28	100%	0	28	100%	0	28	100%	0	28	100%	0	28	100%	0
Shan State (Taunggyi)	**21**	21	100%	0	21	100%	0	21	100%	0	21	100%	0	21	100%	0
Shan State (Kyaingtong)	**10**	9	90%	1	9	90%	1	9	90%	1	9	90%	1	9	90%	1
Shan State (Lashio)	**24**	18	75%	6	18	75%	6	18	75%	6	18	75%	6	18	75%	6
Kayin State	**7**	7	100%	0	7	100%	0	7	100%	0	7	100%	0	7	100%	0
Tanintharyi Region	**10**	10	100%	0	10	100%	0	10	100%	0	10	100%	0	10	100%	0
Bago Region	**28**	28	100%	0	28	100%	0	28	100%	0	28	100%	0	28	100%	0
Mon State	**10**	10	100%	0	10	100%	0	10	100%	0	10	100%	0	10	100%	0
Rakhine State	**17**	17	100%	0	17	100%	0	17	100%	0	17	100%	0	17	100%	0
Yangon Region	**45**	45	100%	0	45	100%	0	45	100%	0	45	100%	0	45	100%	0
Ayeyarwaddy Region	**26**	26	100%	0	26	100%	0	26	100%	0	26	100%	0	26	100%	0
Naypyitaw	**8**	8	100%	0	8	100%	0	8	100%	0	8	100%	0	8	100%	0
Total townships	**330**	319	97%	11	319	97%	11	319	97%	11	317	96%	13	**319**	**97%**	**11**
				3%			**3%**			**3%**			**4%**			**3%**

Annual report had not been received from (11)Townships

Kachin State (4) Tsps 1. N'ganyan, 2.Hsawlaw, 3.Khaunglanbu, 4. Naungmon

Shan (Lashio) State (6)Tsps 1. Kongyan 2. Nanphant 3.Panwine 4.Mongmaw 5. Manphant 6. Pangyan

Shan (Kengtong) State (1)Tsps 1. Matman

NATIONAL TUBERCULOSIS PROGRAMME (Myanmar)

EVALUATION OF TB CONTROL ACTIVITIES IN REGIONS & STATES (2011-2012)

Annex-22

No.of Reported Tsp. & other unit	No.of total Tsp. & other unit	Regions/States	Population	estimated New S(+) cases	Total New S(+)	Total notified TB cases	CDR (NTP only)	CDR (NTP + Other)	Prop: of SS(+) pul: TB cases out of All Pul:	Ratio of NSS+ to NSS(-) cases and EP cases	Ratio of NSS+ to NSS(-) cases	Sputum positivity rate	sputum conversion rate	CR (NTP only)	CR (NTP+ Other)	TSR (NTP only)	TSR (NTP+ Other)
14	18	Kachin State	1464154	1537	1011	5235	**66%**	**89%**	32%	0.39:1	0.8:1	13%	88%	**72%**	**70%**	**82%**	**80%**
7	7	Kayah State	299679	315	98	721	**31%**	**31%**	18%	0.27:1	0.3:1	6%	88%	**80%**	**80%**	**87%**	**87%**
9	9	Chin State	493684	518	119	971	**23%**	**29%**	20%	0.21:1	0.5:1	9%	97%	**84%**	**81%**	**87%**	**86%**
37	37	Sagaing Region	5212668	5473	2493	8299	**46%**	**54%**	38%	0.97:1	1.5:1	9%	91%	**81%**	**78%**	**89%**	**88%**
25	25	Magway Region	4148020	4355	1949	6812	**45%**	**54%**	43%	0.58:1	1:1	13%	88%	**77%**	**77%**	**86%**	**87%**
28	28	Mandalay Region	5745556	6033	3092	10254	**51%**	**70%**	52%	0.62:1	1.3:1	11%	85%	**76%**	**74%**	**84%**	**84%**
21	21	Shan State (Taunggyi)	2066678	2170	906	3051	**42%**	**43%**	44%	0.63:1	1.2:1	11%	87%	**79%**	**78%**	**86%**	**85%**
9	10	Shan State (Kyaingtong)	693542	728	584	1862	**80%**	**87%**	41%	1.02:1	1.2:1	19%	77%	**73%**	**71%**	**81%**	**80%**
18	24	Shan State (Lashio)	2181745	2291	1233	4220	**54%**	**66%**	45%	0.62:1	1.1:1	16%	82%	**72%**	**71%**	**82%**	**80%**
7	7	Kayin State	1435686	1507	1168	3876	**77%**	**84%**	35%	0.76:1	0.8:1	20%	88%	**75%**	**73%**	**83%**	**83%**
10	10	Tanintharyi Region	1340978	1408	895	5472	**64%**	**91%**	23%	0.33:1	0.5:1	13%	84%	**69%**	**69%**	**83%**	**81%**
28	28	Bago Region	4867792	5111	3477	12581	**68%**	**83%**	36%	0.87:1	1.1:1	17%	89%	**77%**	**77%**	**88%**	**89%**
10	10	Mon State	2127556	2234	1543	6563	**69%**	**81%**	29%	0.6:1	0.7:1	11%	90%	**78%**	**78%**	**87%**	**88%**
17	17	Rakhine State	3225070	3386	1881	4812	**56%**	**58%**	51%	0.82:1	1.1:1	17%	79%	**77%**	**77%**	**90%**	**90%**
45	45	Yangon Region	5969277	10148	7249	21863	**71%**	**112%**	47%	0.79:1	1:1	18%	91%	**85%**	**81%**	**88%**	**86%**
26	26	Ayeyarwaddy Region	6316979	6633	4336	13742	**65%**	**74%**	41%	0.71:1	1:1	18%	89%	**77%**	**76%**	**88%**	**88%**
8	8	Naypyitaw	942414	990	743	1931	**75%**	**90%**	57%	0.76:1	1.4:1	21%	85%	**74%**	**73%**	**83%**	**81%**
319	**330**	**Regions and States**	48531478	54838	32777	112265	**60%**	**78.2%**	41%	0.68:1	1:1	14%	88%	**79%**	**77%**	**87%**	**86%**
27	**27**	**Other Units**	not available	not available	10132	35878	not available	not available	40%	0.63:1	0.9:1	15%	78%	69%(other units only)		81%(other units only)	
346	**357**	**Country**	**48531478**	**54838**	**42909**	**148143**			**40%**	**0.67:1**	**1:1**	**15%**	**85%**				

NATIONAL TUBERCULOSIS PROGRAMME (Myanmar)
EVALUATION OF TB CONTROL ACTIVITIES IN TOWNSHIPS (2011-2012)

Sr. No	Township	Population	estimated New S(+) cases	Total New S(+)	Total notified TB cases	**CDR (NTP only)**	**CDR (NTP + Other)**	Prop: of SS(+) pul: TB cases out of All Pul:	Ratio of NSS(+) to NSS(-) cases and EP cases	Ratio of NSS(+) to NSS(-) cases	Sputum positivity rate	sputum conversion rate	**CR (NTP only)**	**CR (NTP+ Other)**	**TSR (NTP only)**	**TSR (NTP+ Other)**
	Kachin State															
1	**Bahmo**	110170	116	75	774	65%	106%	17%	0.18:1	0.4:1	11%	93%	94%	87%	94%	92%
2	Mansi	74033	78	29	155	37%	37%	26%	0.48:1	1.1:1	23%	90%	78%	76%	92%	92%
3	Momauk	92824	97	21	125	22%	24%	61%	0.22:1	1.3:1	20%	81%	77%	76%	77%	79%
4	Shwegu	86038	90	62	118	69%	76%	73%	1.17:1	2.6:1	12%	95%	82%	81%	91%	89%
5	Mohynin	209721	220	89	235	40%	53%	58%	0.71:1	1.1:1	15%	85%	68%	67%	80%	81%
6	Kamaing	172376	181	140	420	77%	108%	48%	0.95:1	1.9:1	21%	81%	60%	59%	74%	69%
7	Mogaung	146499	154	118	358	77%	103%	51%	0.78:1	1.6:1	9%	88%	70%	70%	79%	79%
8	Tanai	33983	36	61	172	171%	171%	52%	0.69:1	1:1	20%	85%	66%	66%	80%	80%
9	Myitkyina	227374	239	320	2096	134%	167%	27%	0.32:1	0.6:1	13%	88%	70%	69%	79%	78%
10	**Chipway**	19124	20	0	3	0%	0%	0%	0:1	0:1			100%	100%	100%	100%
11	Hsawlaw	6941	7	Nr.												
12	N Jan Yan	9160	10	Nr.												
13	Waingmaw	121335	127	49	639	38%	124%	13%	0.13:1	0.2:1	4%	96%	76%	69%	92%	77%
14	**PutaO**	91463	96	47	140	49%	53%	58%	0.82:1	1.4:1	17%	87%	75%	72%	90%	93%
15	Khaunglanbu	15287	16	Nr.												
16	Machanbaw	21104	22	0	0								100%	67%	100%	100%
17	Nogmun	11951	13	Nr.												
18	Sumprabum	14771	16	0	0	0%										
	Total	1464154	1537	1011	5235	66%	89%	32%	0.39:1	0.8:1	13%	88%	72%	70%	82%	80%

* Note* (Nr.) Report had not been received from townships

Sr. No	Township	Population	estimated New S(+) cases	Total New S(+)	Total notified TB cases	**CDR (NTP only)**	**CDR (NTP + Other)**	Prop: of SS(+) pul: TB cases out of All Pul:	Ratio of NSS(+) to NSS(-) cases and EP cases	Ratio of NSS(+) to NSS(-) cases	Sputum positivity rate	sputum conversion rate	**CR (NTP only)**	**CR (NTP+ Other)**	**TSR (NTP only)**	**TSR (NTP+ Other)**
	Kayah State															
1	**Bawlake**	10200	11	7	23	65%	65%	35%	0.58:1	0.7:1	8%	100%	81%	81%	94%	94%
2	Masai	6033	6	0	3	0%	16%	0%	0:1	0:1	0%					
3	Pasaung	35455	37	9	35	24%	24%	31%	1:1	1.5:1	13%	78%	86%	86%	86%	86%
4	Loikaw	109144	115	59	516	51%	51%	16%	0.23:1	0.3:1	6%	88%	80%	80%	81%	81%
5	**Dimawhso**	97170	102	18	96	18%	18%	24%	0.35:1	0.4:1	5%	94%	74%	74%	93%	93%
6	Phruhso	28490	30	5	44	17%	17%	14%	0.15:1	0.2:1	2%	60%	83%	83%	83%	83%
7	Shataw	13187	14	0	4	0%	0%	0%	0:1	Nil	0%		100%	100%	100%	100%
	Total	299679	315	98	721	31%	31%	18%	0.27:1	0.3:1	6%	88%	80%	80%	87%	87%
	CHIN STATE															
1	Falam	49112	52	5	69	10%	14%	12%	0.11:1	0.2:1	9%	100%	75%	75%	75%	75%
2	Hakha	44757	47	13	155	28%	28%	17%	0.17:1	0.4:1	6%	85%	81%	81%	81%	81%
3	Htantalan	71274	75	2	201	3%	3%	3%	0.01:1	0.1:1	3%	100%	57%	57%	100%	100%
4	Tiddim	93255	98	9	101	9%	38%	12%	0.19:1	0.3:1	3%	89%	100%	65%	100%	85%
5	Tunzan	31094	33	5	91	15%	15%	12%	0.08:1	0.2:1	5%	100%	100%	100%	100%	100%
6	Mindat	42361	44	12	84	27%	27%	21%	0.21:1	0.3:1	3%	100%	79%	79%	79%	79%
7	Kanpetlet	20270	21	3	14	14%	14%	33%	0.3:1	0.6:1	6%	100%	100%	100%	100%	100%
8	Matupi	51324	54	15	125	28%	28%	21%	0.24:1	0.5:1	7%	100%	90%	90%	90%	90%
9	Paletwa	90237	95	55	131	58%	58%	46%	0.95:1	1.2:1	39%	100%	87%	87%	87%	87%
	Total	493684	518	119	971	23%	29%	20%	0.21:1	0.5:1	9%	97%	84%	81%	87%	86%

Sr. No	Township	Population	estimated New S(+) cases	Total New S(+)	Total notified TB cases	**CDR (NTP only)**	**CDR (NTP + Other)**	Prop: of SS(+) pul: TB cases out of All Pul:	Ratio of NSS(+) to NSS(-) cases and EP cases	Ratio of NSS(+) to NSS(-) cases	Sputum positivity rate	sputum conversio n rate	**CR (NTP only)**	**CR (NTP+ Other)**	**TSR (NTP only)**	**TSR (NTP+ Other)**
	Sagaing Region															
1	**Sagaing**	295617	310	142	444	46%	74%	42%	0.88:1	1.5:1	12%	97%	92%	90%	92%	93%
2	Myaung	111778	117	52	125	44%	44%	51%	1.04:1	1.4:1	5%	81%	74%	74%	84%	84%
3	Myinmu	113862	120	43	146	36%	38%	46%	0.6:1	0.9:1	8%	100%	77%	75%	86%	85%
4	**Shwebo**	257836	271	84	388	31%	45%	38%	0.37:1	0.7:1	7%	98%	79%	75%	86%	84%
5	Kanbalu	265402	279	75	611	27%	36%	16%	0.52:1	1.1:1	4%	96%	85%	80%	96%	95%
6	Khin-U	151729	159	59	149	37%	47%	63%	0.86:1	3.5:1	5%	98%	93%	89%	94%	93%
7	Kyunhla	90170	95	27	134	29%	32%	27%	0.71:1	1:1	3%	73%	54%	54%	82%	82%
8	Tabayin	153317	161	73	150	45%	47%	58%	2.28:1	5.6:1	7%	95%	81%	81%	92%	93%
9	Taze	179908	189	47	164	25%	26%	41%	0.67:1	0.9:1	9%	98%	72%	69%	91%	87%
10	Wetlet	205169	215	100	426	46%	69%	28%	1.64:1	2.2:1	11%	100%	87%	87%	94%	93%
11	Ye-U	128672	135	55	144	41%	43%	44%	1.12:1	1.9:1	7%	89%	92%	90%	94%	94%
12	**Monywa**	323961	340	194	455	57%	81%	61%	1.33:1	2.1:1	15%	87%	74%	69%	85%	85%
13	Ayadaw	183695	193	45	146	23%	27%	42%	0.73:1	1.2:1	5%	93%	41%	47%	88%	88%
14	Budalin	141021	148	100	267	68%	68%	47%	1.69:1	3.1:1	15%	73%	81%	81%	81%	81%
15	ChaungU	108693	114	57	176	50%	56%	39%	1.5:1	3:1	5%	96%	100%	98%	100%	98%
16	Kani	141117	148	49	170	33%	34%	39%	0.86:1	1.3:1	9%	92%	93%	92%	98%	98%
17	Pale	147942	155	78	158	50%	50%	58%	1.9:1	3:1	8%	96%	89%	87%	96%	94%
18	Salingyi	137196	144	59	194	41%	42%	38%	0.8:1	1.1:1	6%	83%	94%	90%	96%	94%
19	Yinmabin	146291	154	52	145	34%	34%	49%	1.3:1	2.4:1	6%	88%	81%	77%	93%	92%
20	**Katha**	159752	168	73	163	44%	45%	52%	1.14:1	1.2:1	13%	93%	84%	84%	84%	85%
21	Banmauk	96510	101	16	35	16%	17%	47%	1.14:1	1.2:1	10%	100%	88%	88%	100%	100%
22	Htigyaing	114686	120	58	130	48%	48%	58%	1.09:1	1.8:1	9%	81%	71%	71%	84%	84%
23	Indaw	124778	131	44	168	34%	37%	39%	0.55:1	1.1:1	9%	98%	89%	86%	89%	90%
24	Kawlin	142120	149	57	117	38%	42%	59%	1.78:1	3.2:1	6%	95%	89%	87%	89%	88%
25	Pinlebu	111418	117	42	73	36%	38%	67%	2.21:1	3.2:1	9%	88%	86%	84%	86%	86%
26	Wuntho	71957	76	36	65	48%	56%	66%	2.12:1	2.8:1	4%	86%	70%	62%	75%	77%
27	**Kalay**	322781	339	253	1335	75%	107%	22%	0.91:1	1.1:1	8%	96%	93%	78%	93%	84%
28	Kalewa	56227	59	21	93	36%	36%	32%	0.46:1	0.8:1	3%	95%	100%	100%	100%	100%
29	Minkin	108425	114	25	104	22%	22%	29%	0.86:1	1:1	11%	83%	82%	82%	82%	82%
30	Tamu	105100	110	120	523	109%	111%	31%	0.58:1	0.6:1	10%	96%	87%	87%	92%	92%
31	Mawlaik	53435	56	28	61	50%	50%	52%	2:1	2.8:1	11%	86%	71%	71%	89%	89%
32	Phaungbyin	115926	122	86	147	71%	71%	78%	1.72:1	4.3:1	25%	80%	54%	54%	80%	80%
33	**Khamti**	33874	36	90	259	253%	253%	44%	1.29:1	1.4:1	24%	92%	76%	76%	81%	81%
34	Homalin	184753	194	108	344	56%	56%	35%	1.33:1	1.7:1	11%	95%	74%	74%	85%	85%
35	Layshi	16864	18	7	20	40%	40%	37%	2.33:1	3.5:1	12%	43%	50%	50%	100%	100%
36	Lahel	51824	54	29	49	53%	53%	80%	2.23:1	4.8:1	13%	59%	77%	77%	100%	100%
37	Nanyun	58862	62	9	21	15%	15%	61%	1:1	1.5:1	18%	89%	73%	73%	100%	100%
	Total	5212668	5473	2493	8299	46%	54%	38%	0.97:1	1.5:1	9%	91%	81%	78%	89%	88%

Sr. No	Township	Population	estimated New S(+) cases	Total New S(+)	Total notified TB cases	**CDR (NTP only)**	**CDR (NTP + Other)**	Prop: of SS(+) pul: TB cases out of All Pul:	Ratio of NSS(+) to NSS(-) cases and EP cases	Ratio of NSS(+) to NSS(-) cases	Sputum positivity rate	sputum conversion rate	**CR (NTP only)**	**CR (NTP+ Other)**	**TSR (NTP only)**	**TSR (NTP+ Other)**
	Magway Region															
1	**MAGWE**	292344	307	290	927	94%	116%	51%	0.63:1	1.1:1	22%	82%	69%	70%	79%	81%
2	CHAUK	214320	225	102	480	45%	66%	29%	0.43:1	0.6:1	15%	92%	64%	68%	88%	88%
3	TAUNGDWINGY	263599	277	138	351	50%	52%	55%	0.95:1	1.5:1	11%	96%	86%	83%	86%	86%
4	MYOTHIT	179015	188	114	208	61%	61%	70%	2:1	3.7:1	36%	97%	82%	82%	93%	93%
5	NATMAUK	234276	246	92	235	37%	39%	51%	0.91:1	1.3:1	18%	90%	79%	79%	84%	83%
6	YENANCHAUN	186270	196	131	328	67%	81%	58%	0.94:1	1.7:1	15%	81%	80%	75%	86%	87%
7	**PAKOKKU**	298676	314	124	637	40%	63%	34%	0.32:1	0.5:1	9%	77%	90%	85%	90%	88%
8	YESAGYO	252614	265	53	214	20%	23%	43%	0.43:1	1:1	5%	89%	92%	90%	92%	90%
9	PAUK	174240	183	64	140	35%	35%	78%	0.88:1	3.4:1	14%	100%	93%	93%	95%	95%
10	MYAING	253956	267	55	235	21%	21%	47%	0.33:1	1:1	7%	85%	79%	79%	90%	90%
11	SEIKPHYU	104050	109	43	116	39%	48%	45%	0.7:1	1:1	5%	98%	58%	58%	100%	95%
12	**GANTGAW**	131108	138	49	304	36%	36%	22%	0.27:1	0.4:1	12%	78%	40%	41%	85%	85%
13	SAW	68949	72	13	40	18%	18%	38%	0.81:1	1.2:1	11%	100%	87%	81%	87%	88%
14	HTINLIN	51079	54	15	57	28%	28%	35%	0.45:1	0.7:1	4%	93%	86%	86%	86%	86%
15	**MINBU**	169623	178	94	428	53%	68%	41%	0.4:1	1.3:1	10%	83%	75%	72%	80%	81%
16	NGAPE	48572	51	22	75	43%	43%	43%	0.61:1	1.6:1	6%	95%	63%	65%	88%	94%
17	PWINTPHYU	166531	175	94	177	54%	101%	76%	1.47:1	5.5:1	14%	96%	93%	94%	98%	99%
18	Saytoketaya	43196	45	10	44	22%	37%	45%	0.53:1	1:1	11%	100%	48%	54%	81%	83%
19	SALIN	262352	275	98	188	36%	44%	72%	1.23:1	2.7:1	9%	81%	71%	68%	86%	84%
20	**THAYET**	103742	109	82	213	75%	76%	53%	1.04:1	1.5:1	17%	68%	56%	57%	68%	69%
21	MINHLA	111065	117	66	199	57%	60%	53%	0.71:1	2.3:1	12%	94%	90%	89%	90%	89%
22	KANMA	71717	75	27	191	36%	36%	19%	0.41:1	0.5:1	18%	81%	69%	68%	78%	76%
23	SINPAUNGWAE	174771	184	55	133	30%	31%	50%	1.38:1	1.7:1	29%	100%	96%	94%	100%	98%
24	MINDON	61256	64	43	461	67%	67%	13%	0.21:1	0.3:1	28%	100%	98%	98%	98%	98%
25	AUNGLAN	230699	242	75	431	31%	45%	29%	0.26:1	0.5:1	14%	92%	72%	74%	81%	82%
	Total	4148020	4355	1949	6812	45%	54%	43%	0.58:1	1:1	13%	88%	77%	77%	86%	87%

Sr. No	Township	Population	estimated New S(+) cases	Total New S(+)	Total notified TB cases	**CDR (NTP only)**	**CDR (NTP + Other)**	Prop: of SS(+) pul: TB cases out of All Pul:	Ratio of NSS(+) to NSS(-) cases and EP cases	Ratio of NSS(+) to NSS(-) cases	Sputum positivity rate	sputum conversion rate	**CR (NTP only)**	**CR (NTP+ Other)**	**TSR (NTP only)**	**TSR (NTP+ Other)**
	Mandalay Region															
1	Amarapura	185927	195	78	310	40%	83%	39%	0.52:1	1:1	8%	79%	84%	68%	95%	89%
2	Aungmyaytharz	191165	201	207	676	103%	136%	55%	0.62:1	1.3:1	14%	88%	76%	73%	80%	83%
3	Chanayetharzan	138316	145	125	467	86%	120%	50%	0.51:1	1.1:1	12%	91%	80%	75%	85%	84%
4	Chanmyatharzi	196065	206	178	583	86%	138%	52%	0.64:1	1.3:1	14%	84%	79%	79%	85%	85%
5	Maharaungmyae	225951	237	155	593	65%	87%	46%	0.48:1	1:1	7%	92%	93%	86%	93%	88%
6	Pyigyitagonn	150815	158	127	424	80%	114%	49%	0.53:1	1.1:1	9%	93%	85%	73%	88%	86%
7	Patheingyi	183125	192	140	456	73%	83%	48%	0.63:1	1.4:1	5%	86%	83%	77%	85%	82%
8	**Meiktilar**	385345	405	171	817	42%	52%	54%	0.29:1	0.9:1	15%	77%	68%	65%	82%	82%
9	Mahlaing	154860	163	96	216	59%	60%	60%	1.28:1	2:1	11%	92%	72%	71%	82%	81%
10	Tharzi	209576	220	101	222	46%	48%	82%	0.93:1	4.4:1	10%	94%	89%	86%	91%	89%
11	Wundwin	224822	236	54	191	23%	37%	40%	0.74:1	1.4:1	7%	93%	60%	49%	78%	79%
12	Myingan	273003	287	145	732	51%	67%	32%	0.37:1	0.6:1	10%	82%	85%	86%	88%	89%
13	**Kyaukpadaung**	306783	322	117	297	36%	80%	68%	0.96:1	2.5:1	19%	87%	74%	74%	88%	86%
14	Natogyi	185148	194	46	169	24%	26%	38%	0.46:1	0.8:1	4%	83%	66%	64%	68%	70%
15	Ngazun	135184	142	94	186	66%	67%	74%	1.25:1	2.8:1	7%	96%	93%	92%	94%	93%
16	Taungtha	243987	256	67	253	26%	30%	33%	0.55:1	0.7:1	6%	87%	75%	73%	91%	90%
17	**NyaungU**	274594	288	121	442	42%	45%	42%	0.54:1	0.9:1	12%	83%	79%	78%	86%	86%
18	Pyin oo Lwin	171698	180	75	289	42%	43%	37%	0.63:1	1.1:1	4%	91%	81%	79%	81%	79%
19	Madayar	241688	254	136	344	54%	72%	74%	0.8:1	2.8:1	19%	86%	68%	67%	85%	84%
20	Mogok	193107	203	66	283	33%	87%	41%	0.48:1	1:1	13%	79%	76%	73%	77%	80%
21	Sintgu	143961	151	124	256	82%	130%	80%	1.43:1	3.5:1	17%	73%	59%	67%	74%	79%
22	**Thabeikkyin**	119856	126	102	218	81%	131%	78%	1.5:1	4.9:1	18%	57%	49%	58%	65%	72%
23	Yamethin	232595	244	95	341	39%	40%	50%	0.45:1	0.9:1	19%	86%	52%	52%	78%	78%
24	Pyawbwei	268000	281	157	347	56%	57%	71%	1.13:1	3.7:1	19%	80%	78%	78%	84%	84%
25	Kyaukse	238721	251	113	336	45%	63%	49%	0.82:1	1.6:1	13%	77%	80%	83%	80%	83%
26	Myittha	188441	198	71	308	36%	52%	47%	0.34:1	0.9:1	14%	90%	68%	64%	93%	90%
27	Sintgine	128725	135	52	271	38%	41%	37%	0.28:1	0.6:1	16%	85%	79%	78%	94%	93%
28	**TadaOo**	154098	162	79	227	49%	61%	64%	0.68:1	2.2:1	4%	86%	81%	75%	88%	85%
	Total	5745556	6033	3092	10254	51%	70%	52%	0.62:1	1.3:1	11%	85%	76%	74%	84%	84%

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	Shan State (Taunggyi)															
1	Linhkay	37657	40	17	50	43%	43%	40%	0.61:1	0.7:1	13%	88%	83%	83%	83%	83%
2	Maukme	24736	26	10	14	39%	39%	86%	10:1	10:1	47%	100%	75%	75%	100%	100%
3	Monai	25019	26	19	58	72%	72%	42%	1.9:1	4.8:1	8%	89%	94%	94%	94%	94%
4	Mangpang	16563	17	11	21	63%	63%	72%	1.38:1	2.2:1	8%	100%	90%	90%	90%	90%
5	Loilem	114063	120	32	219	27%	38%	21%	0.39:1	0.7:1	11%	97%	84%	74%	93%	87%
6	Kunhein	57272	60	45	141	75%	75%	38%	0.75:1	0.8:1	24%	98%	75%	75%	86%	86%
7	**Kyeethi**	33523	35	8	119	23%	23%	19%	0.08:1	0.2:1	24%	25%	75%	75%	92%	92%
8	Laikha	44474	47	38	142	81%	81%	32%	1.09:1	1.8:1	9%	100%	100%	100%	100%	100%
9	Mongaking	86942	91	13	37	14%	14%	47%	1:1	1.3:1	23%	92%	53%	53%	82%	82%
10	Mongshu	59954	63	57	175	91%	91%	46%	0.58:1	1.1:1	32%	100%	100%	100%	100%	100%
11	Namsan	83570	88	80	261	91%	92%	41%	1.01:1	1.5:1	24%	91%	83%	83%	98%	98%
12	Taunggyi	353130	371	146	681	39%	40%	39%	0.34:1	0.7:1	9%	73%	67%	66%	75%	76%
13	**Hopone**	99212	104	42	118	40%	40%	59%	0.79:1	1.4:1	12%	64%	74%	74%	79%	79%
14	Hpekon	94226	99	29	94	29%	29%	41%	0.91:1	1.4:1	5%	97%	93%	93%	93%	93%
15	Hsiseng	143069	150	42	118	28%	28%	55%	0.79:1	1.8:1	9%	100%	76%	76%	83%	83%
16	Kalaw	153503	161	77	202	48%	48%	60%	0.94:1	1.8:1	8%	81%	79%	78%	79%	78%
17	**Lauksauk**	143793	151	53	164	35%	35%	48%	0.7:1	1.1:1	14%	77%	70%	70%	83%	83%
18	Pindaya	77769	82	58	94	71%	71%	67%	2.32:1	2.3:1	12%	90%	82%	82%	82%	82%
19	Pinlaung	165307	174	75	182	43%	43%	66%	0.86:1	3.1:1	12%	91%	85%	85%	93%	93%
20	Nyaungshwe	174780	184	40	113	22%	25%	51%	0.8:1	1.5:1	6%	93%	81%	78%	85%	84%
21	Ywangan	78116	82	14	48	17%	17%	32%	0.64:1	0.7:1	9%	86%	88%	88%	88%	88%
	Total	2066678	2170	906	3051	42%	43%	44%	0.63:1	1.2:1	11%	87%	79%	78%	86%	85%
	Shan State (Kengtong)															
1	Kengtong	193988	204	103	333	51%	73%	44%	1.12:1	1.5:1	18%	73%	72%	68%	79%	78%
2	Mongkhat	27667	29	7	18	24%	24%	41%	2.33:1	3.5:1	8%	71%	64%	67%	64%	67%
3	Mongyan	56002	59	21	76	36%	36%	44%	0.78:1	1.8:1	24%	81%	72%	72%	84%	84%
4	Monghsat	81522	86	120	468	140%	140%	33%	0.69:1	0.7:1	22%	63%	66%	66%	87%	87%
5	Mongping	56279	59	60	117	102%	103%	74%	1.36:1	3.2:1	19%	85%	82%	76%	90%	86%
6	Mongton	51903	54	68	195	125%	125%	45%	1.58:1	1.7:1	16%	76%	63%	61%	70%	68%
7	Monpyak	28342	30	38	109	128%	128%	42%	1.23:1	1.6:1	28%	87%	89%	89%	89%	89%
8	Mongyaung	72629	76	33	82	43%	43%	49%	0.97:1	1.1:1	18%	82%	77%	77%	77%	77%
9	Tachileik	125210	131	134	464	102%	103%	35%	1.06:1	1.3:1	20%	85%	73%	72%	81%	80%
10	Matman															
	Total	693542	728	584	1862	80%	87%	41%	1.02:1	1.2:1	19%	77%	73%	71%	81%	80%

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	Shan State (Lashio)															
1	Kunlon	62083	65	47	143	72%	72%	40%	0.92:1	1:1	27%	85%	86%	83%	86%	83%
2	Hopan	24992	26	86	184	328%	328%	59%	6.62:1	21.5:1	23%	94%	86%	86%	98%	98%
3	Kyaukme	172874	182	139	379	77%	88%	60%	0.68:1	1.5:1	19%	94%	85%	82%	85%	84%
4	Hsipaw	161705	170	168	408	99%	121%	70%	0.88:1	4.8:1	11%	95%	97%	94%	97%	95%
5	Mabein	35184	37	16	43	43%	43%	55%	0.8:1	1.8:1	28%	94%	71%	65%	88%	85%
6	Manton	42703	45	0	14	0%	0%	0%	0:1	0:1			71%	71%	86%	86%
7	Mongmeik	61702	65	63	108	97%	108%	75%	2.1:1	3.2:1	13%	81%	73%	72%	81%	81%
8	Namtu	57602	60	28	190	46%	48%	25%	0.25:1	0.3:1	20%	86%	64%	64%	77%	76%
9	Nyaungcho	128357	135	35	154	26%	30%	30%	0.74:1	1.1:1	9%	89%	96%	90%	96%	92%
10	Lashio	279400	293	236	893	80%	112%	43%	0.67:1	1.1:1	20%	66%	67%	67%	70%	72%
11	Namsam	77757	82	19	54	23%	23%	50%	0.63:1	1.1:1	9%	84%	89%	89%	89%	89%
12	Mongmaw	50997	54	Nr.												
13	Theinni	52647	55	46	166	83%	85%	46%	0.49:1	0.9:1	14%	96%	80%	79%	80%	79%
14	Mongreh	49084	52	26	105	50%	50%	46%	0.39:1	1.2:1	23%	88%	63%	63%	91%	91%
15	Manphant	70650	74	Nr.												
16	Pangyan	91638	96	Nr.												
17	Narphant	67682	71	Nr.												
18	Panwaing	25375	27	Nr.												
19	Tanyan	121279	127	82	389	64%	68%	29%	0.37:1	0.5:1	15%	74%	36%	37%	92%	90%
20	Laukkai	74496	78	50	156	64%	239%	40%	0.54:1	0.7:1	17%	69%	14%	55%	63%	72%
21	Kongyan	50048	53	Nr.												
22	Muse	135439	142	93	320	65%	139%	42%	0.75:1	1.5:1	15%	77%	61%	67%	67%	71%
23	Kuitai	182021	191	48	345	25%	27%	37%	0.18:1	0.5:1	12%	73%	66%	61%	82%	80%
24	Namkham	106030	111	51	169	46%	46%	35%	0.8:1	0.9:1	18%	75%	36%		51%	51%
	Total	2181745	2291	1233	4220	54%	66%	45%	0.62:1	1.1:1	16%	82%	72%	71%	82%	80%

* Note* (Nr.) Report had not been received from townships

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	Kayin State															
1	**Kawkareik**	306675	322	126	403	39%	47%	40%	0.97:1	1.3:1	23%	91%	61%	61%	80%	81%
2	Kyainseikkyi	178575	188	74	170	39%	40%	48%	1.03:1	1.7:1	21%	85%	78%	79%	81%	82%
3	Myawady	94023	99	201	456	204%	224%	61%	1.32:1	1.8:1	23%	71%	70%	68%	78%	77%
4	Hpa-an	413029	434	529	1909	122%	122%	30%	0.62:1	0.7:1	21%	91%	81%	80%	86%	85%
5	**Hlaingbwe**	304894	320	198	692	62%	71%	31%	0.81:1	0.8:1	14%	95%	76%	74%	84%	84%
6	Papun(Kamamau	48465	51	26	145	51%	77%	19%	0.5:1	0.5:1	20%	81%	81%	81%	89%	89%
7	**Thandaung**	90025	95	14	101	15%	23%	17%	0.25:1	0.3:1	15%	70%	81%	73%	81%	81%
	Total	1435686	1507	1168	3876	77%	84%	35%	0.76:1	0.8:1	20%	88%	75%	73%	83%	83%
	Tanintharyi Region															
1	**Dawei**	139113	146	157	1181	107%	307%	18%	0.29:1	0.4:1	15%	79%	75%	73%	82%	78%
2	Launglon	136599	143	55	148	38%	42%	54%	0.9:1	2.6:1	6%	82%	91%	91%	91%	91%
3	Thayetchaung	118525	124	36	134	29%	32%	41%	0.47:1	1:1	7%	78%	70%	73%	87%	88%
4	Yebyu	123285	129	40	166	31%	31%	27%	0.51:1	0.6:1	7%	88%	85%	86%	89%	89%
5	**Kawthaung**	98282	103	157	760	152%	188%	25%	0.51:1	0.6:1	23%	88%	57%	57%	87%	85%
6	Bokpyin	47656	50	49	274	98%	104%	25%	0.32:1	0.6:1	26%	80%	44%	51%	74%	77%
7	Myeik	271791	285	262	1798	92%	107%	24%	0.26:1	0.4:1	13%	88%	68%	71%	77%	79%
8	Kyunsu	164511	173	30	89	17%	19%	48%	1.07:1	1.2:1	18%	100%	89%	60%	89%	87%
9	Tanintharyi	101632	107	50	130	47%	47%	54%	1.02:1	1.4:1	10%	68%	77%	77%	80%	80%
10	Palaw	139584	147	59	792	40%	42%	11%	0.15:1	0.3:1	10%	83%	69%	70%	88%	88%
	Total	1340978	1408	895	5472	64%	91%	23%	0.33:1	0.5:1	13%	84%	69%	69%	83%	81%

Sr. No	Township	Population	estimated New S(+) cases	Total New S(+)	Total notified TB cases	**CDR (NTP only)**	**CDR (NTP + Other)**	Prop: of SS(+) pul: TB cases out of All Pul:	Ratio of NSS(+) to NSS(-) cases and EP cases	Ratio of NSS(+) to NSS(-) cases	Sputum positivity rate	sputum conversion rate	**CR (NTP only)**	**CR (NTP+ Other)**	**TSR (NTP only)**	**TSR (NTP+ Other)**
	Bago (East)															
1	**Bago**	420385	441	407	1590	92%	138%	39%	0.58:1	0.9:1	18%	92%	71%	72%	84%	87%
2	Daik-U	212791	223	122	533	55%	60%	28%	0.49:1	0.5:1	17%	81%	61%	61%	94%	94%
3	Kawa	221487	233	105	269	45%	55%	47%	1.07:1	1.3:1	17%	92%	82%	84%	92%	93%
4	Kyauktaga	257567	270	138	451	51%	58%	37%	0.72:1	0.9:1	19%	88%	90%	85%	93%	93%
5	Nyaunglaybin	203675	214	135	420	63%	71%	39%	0.79:1	0.9:1	20%	97%	74%	75%	89%	90%
6	Shwekyin	86610	91	65	235	71%	71%	38%	0.7:1	1:1	16%	83%	58%	58%	93%	93%
7	Thanatpin	159274	167	97	336	58%	66%	36%	0.61:1	0.7:1	27%	81%	64%	64%	94%	94%
8	Waw	202057	212	149	347	70%	75%	55%	1.25:1	1.9:1	15%	96%	87%	86%	91%	92%
9	Taunggoo	229426	241	147	520	61%	110%	40%	1.13:1	1.5:1	25%	94%	86%	79%	89%	88%
10	Kyaukkyi	107547	113	42	204	37%	37%	24%	0.4:1	0.4:1	18%	93%	77%	77%	95%	95%
11	Oktwin	160529	169	88	297	52%	61%	36%	1.66:1	1.9:1	28%	88%	64%	66%	76%	79%
12	Phyu	278684	293	209	1457	71%	75%	17%	0.66:1	0.8:1	18%	88%	82%	82%	90%	90%
13	Htantabin	120540	127	55	207	43%	58%	35%	0.76:1	1:1	18%	95%	87%	84%	97%	96%
14	Yedashe	196285	206	126	283	61%	82%	54%	1.27:1	1.4:1	22%	90%	63%	66%	83%	84%
15	**Pyay**	239003	251	228	1052	91%	129%	27%	0.65:1	0.8:1	19%	79%	86%	85%	86%	87%
16	Paukkhaung	117164	123	130	381	106%	106%	41%	1.41:1	1.6:1	18%	99%	79%	79%	87%	87%
17	Paungde	141457	149	112	288	75%	85%	45%	1.84:1	2.5:1	23%	80%	86%	83%	89%	88%
18	Padaung	136322	143	92	342	64%	87%	35%	0.74:1	0.8:1	19%	74%	61%	64%	86%	86%
19	Shwedaung	130223	137	99	274	72%	85%	48%	1.25:1	1.5:1	26%	95%	77%	80%	87%	88%
20	Thegon	134186	141	119	635	84%	88%	22%	0.5:1	0.5:1	13%	78%	80%	81%	85%	85%
21	Tharyarwady	156474	164	153	362	93%	100%	51%	1.43:1	1.8:1	19%	90%	90%	89%	90%	90%
22	Zigon	75019	79	67	177	85%	85%	43%	1.16:1	1.4:1	20%	100%	80%	80%	98%	98%
23	Minhla	125929	132	108	226	82%	82%	58%	1.61:1	2.1:1	18%	82%	80%	80%	88%	88%
24	Moenyo	127762	134	54	202	40%	40%	31%	0.68:1	0.9:1	9%	93%	88%	88%	89%	89%
25	Okpo	123709	130	89	301	69%	78%	37%	0.82:1	0.9:1	16%	85%	83%	79%	94%	95%
26	Gyobingauk	116645	122	90	434	73%	91%	26%	0.49:1	0.7:1	15%	92%	71%	71%	90%	91%
27	Nattalin	165457	174	136	431	78%	79%	36%	0.96:1	1.2:1	16%	96%	70%	70%	85%	85%
28	Latpadan	221585	233	115	327	49%	67%	42%	0.88:1	1.1:1	11%	90%	78%	76%	85%	85%
	Total	4867792	5111	3477	12581	68%	83%	36%	0.87:1	1.1:1	17%	89%	77%	77%	88%	89%

Sr. No	Township	Population	estimated New S(+) cases	Total New S(+)	Total notified TB cases	**CDR (NTP only)**	**CDR (NTP + Other)**	Prop: of SS(+) pul: TB cases out of All Pul:	Ratio of NSS(+) to NSS(-) cases and EP cases	Ratio of NSS(+) to NSS(-) cases	Sputum positivity rate	sputum conversion rate	**CR (NTP only)**	**CR (NTP+ Other)**	**TSR (NTP only)**	**TSR (NTP+ Other)**
	Mon State															
1	**Mawlamyaing**	279744	294	257	1208	87%	96%	29%	0.41:1	0.5:1	11%	91%	80%	80%	89%	89%
2	Chanungzon	158658	167	90	316	54%	56%	33%	0.95:1	1.1:1	6%	93%	80%	82%	89%	90%
3	Kyaikmaraw	213397	224	129	615	58%	58%	24%	0.75:1	0.8:1	8%	91%	73%	74%	92%	92%
4	Mudon	213471	224	145	682	65%	86%	33%	0.47:1	1:1	12%	86%	84%	82%	90%	89%
5	Thanbyuzayat	172159	181	117	463	65%	71%	29%	0.91:1	1.1:1	11%	89%	89%	88%	91%	90%
6	Ye	257095	270	179	758	66%	66%	31%	0.78:1	0.8:1	16%	83%	73%	73%	78%	78%
7	**Thaton**	252068	265	202	522	76%	115%	48%	1.02:1	1.2:1	14%	88%	56%	64%	78%	86%
8	Belin	166857	175	156	758	89%	97%	24%	0.56:1	0.6:1	8%	97%	88%	88%	90%	89%
9	Kyaikto	166060	174	108	237	62%	92%	53%	1.44:1	1.9:1	19%	95%	92%	85%	92%	91%
10	Paung	248047	260	160	1004	61%	64%	17%	0.35:1	0.4:1	11%	89%	87%	87%	91%	91%
	Total	2127556	2234	1543	6563	69%	81%	29%	0.6:1	0.7:1	11%	90%	78%	78%	87%	88%
	Rakhine State															
1	**Kyaukphyu**	173681	182	136	365	75%	75%	42%	0.87:1	1.4:1	13%	89%	81%	81%	89%	89%
2	Ann	114744	120	63	315	52%	52%	30%	0.33:1	0.5:1	20%	81%	67%	67%	87%	87%
3	**Manaung**	73193	77	43	78	56%	56%	78%	1.54:1	4.8:1	16%	98%	96%	96%	96%	96%
4	**Rambye**	114326	120	41	112	34%	34%	48%	0.67:1	0.9:1	12%	90%	96%	96%	96%	96%
5	Maungdaw	552993	581	114	223	20%	22%	65%	1.41:1	1.7:1	44%	55%	72%	71%	73%	73%
6	Buthidaung	316750	333	137	379	41%	41%	45%	0.7:1	0.7:1	22%	95%	88%	88%	97%	97%
7	Rathedaung	169352	178	117	214	66%	66%	61%	1.83:1	1.9:1	26%	79%	84%	84%	92%	92%
8	**Sittwe**	259437	272	200	603	73%	100%	46%	0.65:1	0.9:1	17%	62%	54%	61%	87%	87%
9	Kyauktaw	217512	228	172	366	75%	75%	53%	1.03:1	1.1:1	11%	92%	93%	93%	96%	96%
10	Minbya	201781	212	147	299	69%	69%	63%	1.47:1	1.8:1	21%	75%	74%	74%	87%	87%
11	Myaukoo	223500	235	222	438	95%	95%	61%	1.33:1	1.7:1	30%	74%	68%	68%	92%	92%
12	Myebon	139620	147	90	152	61%	61%	73%	2.14:1	3.3:1	26%	93%	72%	72%	93%	93%
13	Pauktaw	183993	193	45	125	23%	23%	45%	0.71:1	0.8:1		67%	49%	49%	88%	88%
14	Ponnagyun	147448	155	80	289	52%	52%	32%	0.47:1	0.5:1	6%	88%	93%	93%	95%	95%
15	**Thandwe**	124844	131	97	301	74%	76%	59%	0.52:1	1.4:1	12%	85%	88%	89%	97%	97%
16	Gwa	63632	67	49	188	73%	73%	43%	0.4:1	0.8:1	13%	82%	89%	86%	89%	86%
17	Taungup	148264	156	128	365	82%	82%	49%	0.67:1	1:1	13%	66%	61%	61%	83%	83%
	Total	3225070	3386	1881	4812	56%	58%	51%	0.82:1	1.1:1	17%	79%	77%	77%	90%	90%

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	Yangon Region															
	East District															
1	Botataung	39935	68	57	155	84%	90%	59%	0.83:1	1.3:1	29%	95%	85%	86%	85%	86%
2	Dawbon	77642	132	125	285	95%	185%	66%	1.24:1	2:1	30%	99%	95%	93%	95%	93%
3	Dagon(N)	178029	303	193	528	64%	141%	51%	0.9:1	1.1:1	19%	89%	79%	77%	86%	89%
4	Dagon(S)	269460	458	518	1331	113%	166%	52%	1.05:1	1.2:1	22%	83%	82%	76%	83%	83%
5	MingalarTN	128626	219	136	594	62%	66%	35%	0.44:1	0.5:1	20%	96%	89%	88%	89%	89%
6	Okkala(N)	271291	461	288	834	62%	135%	49%	0.85:1	1:1	24%	89%	85%	80%	86%	83%
7	Okkala(S)	155574	264	137	471	52%	118%	42%	0.69:1	0.9:1	15%	80%	79%	82%	82%	87%
8	Thaketa	219852	374	296	875	79%	172%	50%	0.92:1	1.2:1		95%	82%	75%	84%	80%
9	Thingangyun	188091	320	166	715	52%	105%	41%	0.42:1	0.5:1	20%	97%	87%	81%	89%	86%
10	Yankin	97626	166	140	335	84%	92%	53%	1.54:1	1.8:1	28%	96%	87%	87%	87%	87%
11	Tarmwe	155571	264	152	459	57%	78%	50%	0.78:1	1.1:1	18%	99%	94%	90%	94%	92%
12	Pazundaung	47185	80	54	202	67%	71%	38%	0.52:1	0.6:1		93%	87%	86%	87%	86%
13	Dagon(E)	114283	194	221	578	114%	190%	53%	1.07:1	1.2:1	22%	92%	84%	85%	85%	88%
14	Dagon Seikkan	97785	166	122	363	73%	112%	45%	0.92:1	1.1:1	7%	95%	77%	71%	82%	82%
	Total	2040950	3470	2605	7725	75%	130%	49%	0.82:1	1:1	21%	91%				
	West District															
1	KAMAYUT	62548	106	78	256	73%	91%	50%	0.66:1	0.9:1		96%	89%	88%	89%	89%
2	KYAUKTADA	36978	63	28	97	45%	45%	50%	0.57:1	0.8:1		93%	79%	81%	83%	84%
3	KYINMYINDINE	100248	170	163	469	96%	134%	55%	0.94:1	1.4:1	22%	79%	74%	74%	83%	82%
4	SANCHUNG	78915	134	99	314	74%	89%	44%	0.67:1	0.8:1		92%	86%	85%	88%	87%
5	SEIKKAN	1591	3	1	4	37%	37%	50%	0.5:1	0.5:1		100%	100%	100%	100%	100%
6	DAGON	21688	37	23	72	62%	63%	51%	0.77:1	1:1		100%	88%	88%	88%	88%
7	PABADAN	29900	51	35	126	69%	69%	45%	0.6:1	0.8:1		94%	92%	92%	92%	92%
8	BAHAN	78062	133	98	287	74%	106%	49%	0.8:1	1.1:1	17%	89%	91%	86%	93%	91%
9	MAYANGON	162178	276	190	634	69%	112%	45%	0.66:1	0.8:1	26%	95%	89%	87%	90%	89%
10	LATHA	27643	47	20	67	43%	45%	46%	0.61:1	0.7:1		95%	78%	79%	78%	79%
11	LANMADAW	34530	59	34	121	58%	65%	52%	0.48:1	0.8:1		88%	91%	91%	91%	91%
12	HLAING	118547	202	212	661	105%	126%	49%	0.71:1	1:1	36%	99%	97%	93%	98%	96%
13	AHLONE	51593	88	67	200	76%	94%	49%	0.69:1	0.9:1		99%	88%	87%	91%	91%
	Total	804421	1368	1048	3308	77%	100%	49%	0.7:1	0.9:1	26%	93%				

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	South District															
1	SEIKKYIKANAU	31644	54	59	143	110%	110%	57%	1.07:1	1.4:1		86%	88%	87%	95%	95%
2	DALLAH	150084	255	155	600	61%	104%	39%	0.55:1	0.7:1	23%	88%	75%	73%	82%	82%
3	CoCo Gyun	0	0	0	0											
4	KAWHMU	127730	217	53	155	24%	59%	43%	1.13:1	1.4:1	7%	98%	100%	85%	100%	98%
5	KYAUKTAN	162931	277	144	332	52%	60%	52%	1.18:1	1.6:1	10%	93%	80%	80%	87%	88%
6	KUNGGANGON	114150	194	110	234	57%	66%	58%	1.69:1	2.3:1	9%	93%	83%	79%	85%	84%
7	KAYAN	169456	288	171	322	59%	70%	70%	2.11:1	4.1:1	14%	95%	89%	85%	96%	95%
8	TWANTAY	215513	366	190	450	52%	83%	55%	1.18:1	1.6:1	13%	91%	81%	78%	91%	89%
9	THONGWA	160782	273	130	279	48%	54%	64%	1.94:1	2.4:1	26%	93%	84%	84%	86%	86%
10	THANLYIN	187944	320	259	736	81%	111%	52%	0.74:1	1:1	18%	93%	87%	86%	89%	89%
	Total	1320234	2244	1271	3251	57%	78%	53%	1.03:1	1.4:1	14%	92%				
	North District															
1	MINGALADON	179465	305	389	1186	128%	157%	50%	0.76:1	0.9:1	15%	84%	87%	83%	87%	86%
2	SHWEPYITHA	231106	393	314	885	80%	146%	49%	0.84:1	1:1	23%	85%	77%	73%	88%	84%
3	HLAINGTHAYA	377632	642	593	2045	92%	178%	43%	0.57:1	0.7:1	18%	93%	92%	80%	92%	83%
4	INSEIN	249490	424	383	1141	90%	136%	50%	0.77:1	1:1	21%	94%	86%	79%	89%	85%
5	TAIKKYI	240697	409	237	689	58%	85%	44%	0.87:1	1:1	21%	92%	79%	76%	88%	88%
6	HTANTABIN	136359	232	93	207	40%	42%	57%	1.33:1	1.6:1	39%	99%	71%	71%	78%	78%
7	HMAWBI	189203	322	174	580	54%	83%	39%	0.76:1	0.9:1	15%	82%	88%	81%	89%	88%
8	HLEGU	199720	340	109	585	32%	62%	25%	0.43:1	0.5:1	7%	96%	95%	84%	95%	92%
	U.T.I	0	0	23	56			45%	0.74:1	0.8:1	24%	100%				
	NTP(Diagnostic	0	0	10	205			7%	0.31:1	0.6:1	14%	80%				
	Total	1803672	3066	2325	7579	76%	120%	43%	0.7:1	0.9:1	17%	90%				
	Yangon Region	5969277	10148	7249	21863	71%	112%	47%	0.79:1	1:1	18%	91%	**85%**	**81%**	**88%**	**86%**

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	Ayeyarwaddy Region															
1	**Pathein**	305105	320	352	1512	110%	130%	31%	0.55:1	0.7:1	17%	88%	74%	74%	89%	88%
2	Kangyidaung	165706	174	70	203	40%	45%	43%	0.9:1	1.1:1	35%	94%	88%	88%	90%	91%
3	Yekyi	194920	205	154	735	75%	76%	29%	0.46:1	0.7:1	24%	90%	58%	57%	92%	92%
4	Kyaunggon	170644	179	176	387	98%	100%	56%	1.29:1	2:1	20%	93%	90%	88%	95%	93%
5	Kyonpyaw	256488	269	128	411	48%	49%	51%	0.58:1	1.2:1	17%	98%	79%	80%	91%	91%
6	Ngaputaw	153219	161	156	432	97%	101%	42%	1.28:1	1.9:1	14%	98%	81%	79%	91%	90%
7	Thabaung	152940	161	97	366	60%	62%	31%	0.87:1	1.1:1	14%	88%	71%	70%	93%	92%
8	**Hinhada**	368174	387	395	1132	102%	116%	47%	0.61:1	1:1	28%	94%	87%	83%	92%	91%
9	Kyankin	98587	104	88	330	85%	85%	36%	0.53:1	0.9:1	12%	92%	92%	92%	97%	97%
10	Myanaung	221524	233	108	660	46%	50%	26%	0.28:1	0.5:1	17%	95%	81%	80%	89%	89%
11	Ingapu	213064	224	178	498	80%	89%	43%	0.81:1	0.9:1	15%	91%	76%	73%	85%	86%
12	Zalun	179381	188	83	451	44%	45%	24%	0.35:1	0.5:1	15%	74%	70%	68%	89%	88%
13	Laymtethna	107588	113	90	184	80%	80%	56%	1.45:1	1.7:1	22%	83%	89%	89%	95%	95%
14	**Myaungmya**	282402	297	242	944	82%	100%	35%	0.51:1	0.7:1	18%	84%	76%	76%	84%	84%
15	Laputta	502707	528	293	858	56%	57%	43%	1.05:1	1.5:1	15%	90%	80%	79%	86%	86%
16	Mawgyun	339083	356	153	314	43%	53%	58%	1.61:1	2.1:1	20%	77%	87%	81%	89%	88%
17	Wakema	301747	317	130	327	41%	64%	57%	1:1	1.6:1	13%	89%	55%	62%	85%	85%
18	Einme	198772	209	156	340	75%	78%	55%	1.36:1	1.7:1	15%	83%	72%	73%	86%	86%
19	**Pyapon**	311999	328	198	614	60%	71%	38%	0.68:1	0.9:1	18%	87%	80%	81%	82%	84%
20	Bogalay	350792	368	247	638	67%	80%	47%	0.83:1	1:1	25%	89%	78%	73%	81%	78%
21	Dedaye	218828	230	56	237	24%	34%	26%	0.46:1	0.5:1	8%	77%	59%	63%	84%	86%
22	Kyaiklatt	204399	215	106	660	49%	57%	20%	0.38:1	0.4:1	12%	80%	69%	66%	80%	78%
23	**Maubin**	343472	361	241	694	67%	68%	56%	0.6:1	1.2:1	26%	86%	72%	72%	86%	86%
24	Nyaungdon	220681	232	159	286	69%	83%	68%	2.01:1	3.8:1	27%	96%	95%	89%	95%	94%
25	Pantanaw	265002	278	161	291	58%	75%	64%	1.85:1	2.2:1	22%	83%	65%	64%	88%	88%
26	Danuphyu	189755	199	119	238	60%	65%	62%	1.86:1	2.7:1	28%	97%	89%	86%	95%	94%
	Total	6316979	6633	4336	13742	65%	74%	41%	0.71:1	1:1	18%	89%	77%	76%	88%	88%

Sr. No	Township	Population	estimated New S(+) cases	Total New S(+)	Total notified TB cases	**CDR (NTP only)**	**CDR (NTP + Other)**	Prop: of SS(+) pul: TB cases out of All Pul:	Ratio of NSS(+) to NSS(-) cases and EP cases	Ratio of NSS(+) to NSS(-) cases	Sputum positivity rate	sputum conversion rate	**CR (NTP only)**	**CR (NTP+ Other)**	**TSR (NTP only)**	**TSR (NTP+ Other)**
	Naypyitaw															
1	Oaktaratheri	57716	61	34	81	56%	59%	63%	0.92:1	1.7:1	nil	82%	25%	25%	75%	75%
2	Dekhinatheri	27071	28	16	55	56%	56%	53%	0.55:1	1.8:1	nil	81%	100%	100%	100%	100%
3	Poatpatheri	90466	95	54	140	57%	57%	53%	0.83:1	1.4:1	21%	89%	68%	68%	84%	84%
4	Zamutheri	72317	76	42	96	55%	57%	64%	1.08:1	1.7:1	nil	86%	25%	25%	75%	75%
5	Zayyartheri	70277	74	124	368	168%	175%	55%	0.67:1	1.2:1	nil	84%	73%	73%	85%	85%
6	Pyinmana	154150	162	176	470	109%	160%	64%	0.77:1	1.6:1	23%	84%	71%	69%	78%	76%
7	Tatkone	199773	210	129	321	61%	77%	61%	0.94:1	2.1:1	27%	85%	89%	82%	92%	87%
8	Lewei	270644	284	168	400	59%	68%	55%	1.3:1	2.2:1	31%	93%	76%	78%	85%	88%
	Total	942414	990	743	1931	75%	90%	57%	0.76:1	1.4:1	21%	85%	74%	73%	83%	81%
	Other units	not available	not available	10132	35878	not available	not available	40%	0.63:1	0.9:1	15%	78%	69%(other units only)		81%(other units only)	

EVALUATION OF TB CONTROL ACTIVITIES AT TOWNSHIPS LEVEL according to CDR & CR of NS(+) cases (2011-2012)

Annex-23

Name	Low CDR≤40% Low CR ≤50%	Low CR ≤50%	LowCDR≤40%	CDR≥ 100% LowCR	CR=100% LowCDR	CDR≥100%	CR=100%	CDR≥70% CR ≥85%	Average
Kachin State **14**	0	0	Mansi Momauk Machanbaw Sumprabum 4	0	0	Kamaing Mogaung Tanai Myitkyina Waingmaw 5	Chipway 1	Bahmo 1	Shwegu Mohynin PutaO 3
Kayah State **7**	0	0	Masai Pasaung Dimawhso Phruhso 4	0	0	0	Shataw 1	0	Bawlake Loikaw 2
Chin State **9**	0	0	Falam, Matupi Hakha, Mindat Htantalan, Tiddim 6	0	Tunzan Kanpetlet 2	0	0	0	Paletwa 1
Sagaing Region **37**	Ayadaw Layshi 2	0	Myinmu Kanbalu Kyunhla Taze, Kani Yinmabin Banmauk Indaw, Minkin Pinlebu, Nanyun 11	0	0	Kalay Khamti 2	Kalewa 1	Sagaing Tamu 2	Myaung, Wuntho Shwebo, Khin-U Tabayin, Budalin Wetlet, Ye- U Monywa, ChaungU Pale, Lahel Salingyi, Htigyaing Katha, Kawlin Mawlaik, Homalin Phaungbyin 19

Name	Low CDR≤40% Low CR ≤50%	Low CR ≤50%	LowCDR≤40%	CDR≥ 100% LowCR	CR=100% LowCDR	CDR≥100%	CR=100%	CDR≥70% CR ≥85%	Average
Magway Region **25**	Gantgaw 1	 0	Natmauk Yesagyo Pauk, Kanma Myaing Saw, Htilin Saytoketaya Sinpaungwae 9	 0	 0	Magwe 1	 0	Pwintphyu 1	Chauk, Salin, Mingdon Taungtwingyi Myothit, Aunglan Yenanchaung Pakokku, Seikphyu Minbu, Thayet Ngape, Minhla 13
Mandalay Region **28**	Wundwin 1	 0	Natogyi Taungtha 2	 0	 0	Aungmyaytharzan Chanayetharzan Chanmyatharzi Pyigyitagonn Sintgu Thabeikkyin 6	 0	Maharaungmyae 1	Amarapura Patheingyi Meiktilar, Mahlaing Tharzi, Mogoke Myingan, Pyawbwei Kyaukpadaung Ngazun, Madayar NyaungU, Yamethin Pyin oo Lwin Kyaukse, Sintgine Myittha, TadaOo 18
Shan State (Taunggyi) **21**	 0	 0	Maukme, Hsiseng Loilem, Ywangan Kyeethi, Ywangan Mongkaing Hpekon, Lauksauk Nyaungshwe 10	 0	 0	 0	 0	Monai Laikha Mongshu 3	Linhkay, Hopone Mangpang Kunhein Namsan Taunggyi Kalaw, Pindaya 8
Shan State (Kengtong) **9**	 0	 0	Mongkhat Mongyan 2	 0	 0	Monghsat, Mongton Mongping, Tachileik 4	 0	Monpyak 1	Kengtong Mongyaung 2

Name	Low CDR≤40% Low CR ≤50%	Low CR ≤50%	LowCDR≤40%	CDR≥ 100% LowCR	CR=100% LowCDR	CDR≥100%	CR=100%	CDR≥70% CR ≥85%	Average
Shan State (Lashio) **18**	0	0	Manton Nyaungcho Namsam Kuitai 4	0	0	Lashio Laukkai Muse 3	Mongmeik 1	Hopan Hsipaw 2	Kunlon, Namkham Kyaukme, Namtu Mabein, Tanyan Theinni, Mongreh 8
Kayin State **7**	0	0	Thandaung 1	0	0	Myawady Hpa-an 2	0	0	Kawkareik Kyainseikkyi Hlaingbwe Papun(Kamamaung) 4
Tanintharyi Region **10**	0	0	Thayetchaung Yebyu, Kyunsu 3	0	0	Dawei, Myeik Kawthaung, Bokpyin 4	0	0	Launglon, Palaw Tanintharyi 3
Bago Region **28**	0	0	Kyaukkyi 1	0	0	Bago Taunggoo Paukkhaung 3	0	Waw Pyay Tharyarwady 3	Daik-U, Kawa Kyauktaga, Latpadan Nyaunglaybin Shwekyin, Phyu Thanatpin, Oktwin Htantabin, Yedashe Paungde, Padaung Shwedaung, Okpo Thegon, Zigon Minhla, Moenyo Gyobingauk, Nattalin 21
Mon State **10**	0	0	0	0	0	Thaton 1	0	Thanbyuzayat Belin Kyaikto 3	Mawlamyaing , Ye Chanungzon, Mudon Kyaikmaraw, Paung 6
Rakhine State **17**	0	0	Rambye Maungdaw Pauktaw 3	0	0	Sittwe 1	0	Kyauktaw Thandwe Gwa 3	Kyaukphyu, Ann Manaung, Minbya Buthidaung Rathedaung Myaukoo, Myebon Ponnagyun, Taungup 10

Name	Low CDR≤40% Low CR ≤50%	Low CR ≤50%	LowCDR≤40%	CDR≥ 100% LowCR	CR=100% LowCDR	CDR≥100%	CR=100%	CDR≥70% CR ≥85%	Average
Yangon Region **45**	CoCo Gyun 1	 0	 0	 0	 0	Dagon(N) Dagon(S) Okkala(N) Okkala(S) Thaketa Thingangyun Dagon Seikkan Kyimyinding Dallah, Insein Mingalardon Shwepyithar Hlaingtharyar 13	Seikkan 1	Botataung Dawbon MingalarTN Yankin, Thanlyin Tarmwe, Kamayu Pazundaung Dagon(E) Sachaung Bahan, Ahlone Mayangon Hlaing, Kayan Seikkyikanaung 16	Kyauktada, Latha Dagon, Pabadan Lanmadaw, Kawhmu Kyauktan Kungganko ne Twantay, Thongwa Taikkyi, Htantabin Hmawbi, Hlegu 14
Ayeyarwaddy Region **26**	 0	 0	Dedaye 1	 0	 0	Pathein Ngaputaw Hinhada Myaungmya 4	 0	Kyaunggon Kyankin Laymtethna Nyaungdon 4	Kangyidaung, Yekyi Kyonpyaw, Thabaung Myanaung Ingapu, Zalun Laputta, Mawgyun Wakema, Einme Pyapon, Bogalay Kyaiklatt, Maubin Pantanaw, Danuphyu 17
Naypyitaw council area **8**	 0	Oaktaratheri Zabutheri 2	 0	 0	 0	Zayyartheri Pyinmana 2	Dekhinatheri 1	 0	Poatpatheri Tatkone, Lewei 3
319	**5** **2%**	**2** **1%**	**61** **19%**	**0** **0%**	**2** **1%**	**51** **16%**	**6** **2%**	**40** **13%**	**152** **48%**

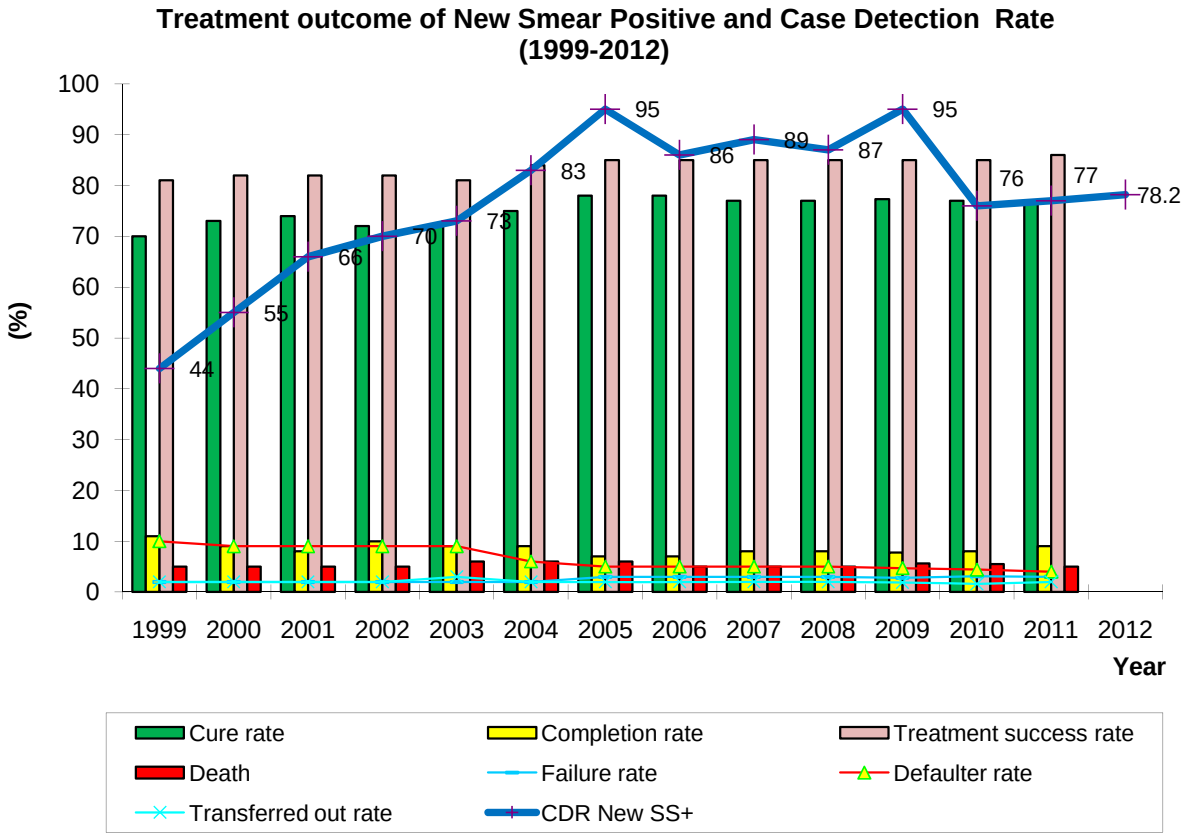
EVALUATION OF TREATMENT OUTCOME OF NEW SMEAR POSITIVE TB PATIENTS (2012)

Annex-24

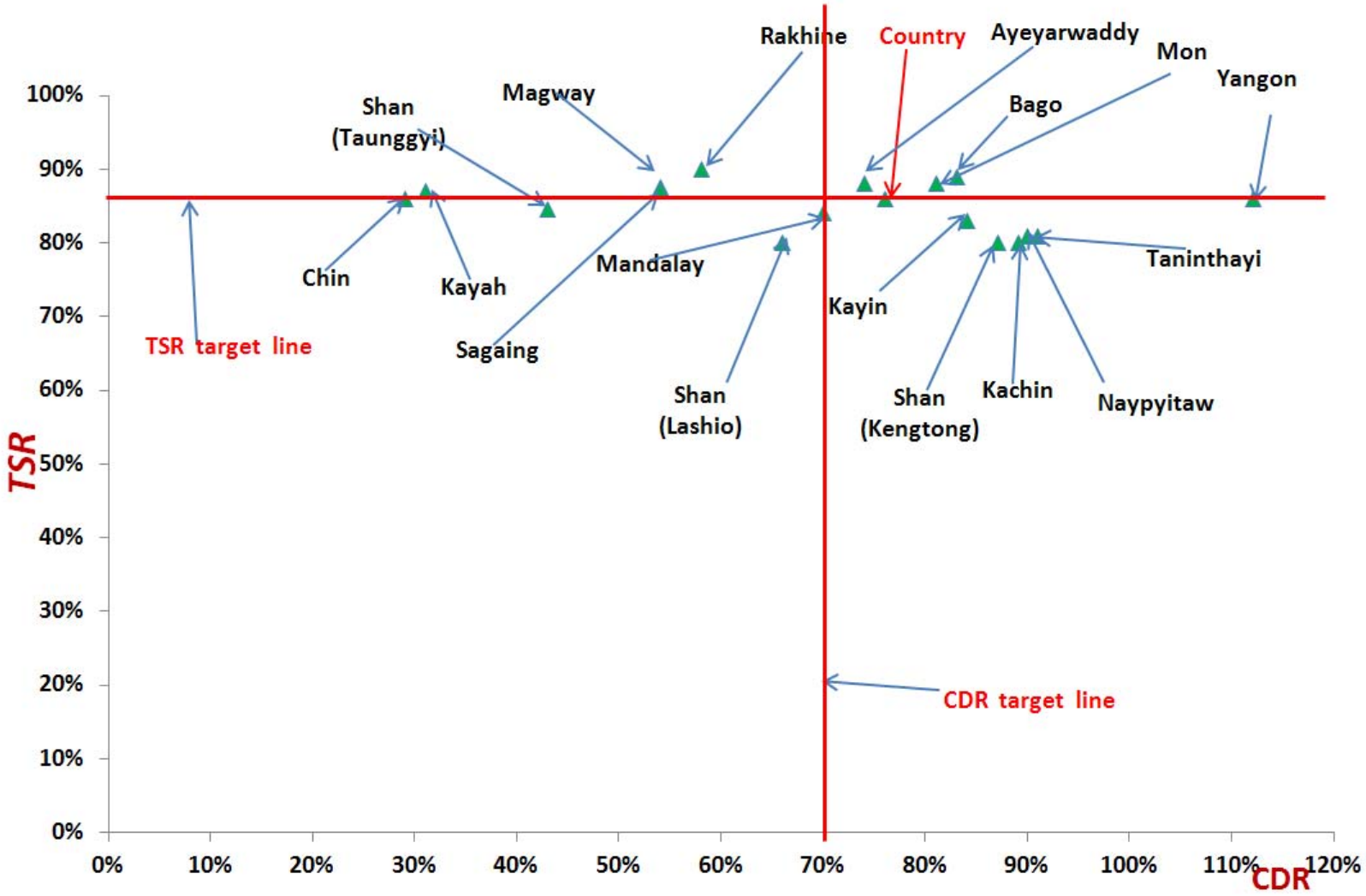
Region & State	DOTS TOWNSHIPS		
	High Defaulter Rate ≥ 10% *means ≥ 20%	Low CR ≤ 50% with TSR ≥ 70%	Sputum Conversion Rate < 80%
Kachin	Moemauk, Tanai	Nil	Nil
Kayah	Phruso	Nil	Phasaung, Phruso
Chin	*Falam	Nil	Nil
Sagaing	Nil	Lashi, Ayardaw	Kyunhla, Butalin, Lashi, Lahel
Magwe	Saw, Kanma	Gantgaw	Pakokku, Gantgaw, Thayet
Mandalay	Natogyi, Singu, Tabeikkyin	Wundwin	Amarapura, Meiktilar, Mogoke, Madayar, Singu, Thabeikkyin, Kyaukse,
Shan State (Taunggyi)	Hsisaing	Nil	Kyethi, Thaunggyi, Hopone, Yatsauk
Shan State (Kengtong)	Monghkhat, Mongton, Mongyaung, Tachileik	Nil	Kengtong, Mongkhat, Monhsat, Mongton
Shan State (Lashio)	Theinni, Lashio, *Laukkai Muse, *Namkhan	Tantyan,	Tantyan,Laukkai,Muse, Kuitkai, Namkhan, Lashio
Kayin	Kawkareik, Kyarinseikkyi, Thandaung	Nil	Myawaddy, Thandaung
Tanintharyi	Thayatchaung, Bokepyin, Myeik, Kyunsu	Nil	Dawei, Thayetchaung, Tanintharyi
Bago	Oktwin, Natalin	Nil	Pyay, Padaung, Thegone
Mon	Nil	Nil	Nil
Rakhine	Nil	Nil	Yathedaung, Sittwe, Maungdaw, Minbya, MyaukOo, Pauktaw, Taunggup
Yangon	Dagon Seikkan, Htantabin	Nil	Kyinmyindine
Ayeyarwady	Nil	Nil	Zalun, Mawgyun, Dedaye
Naypyitaw	Zamuthiri	Oaktarathiri, Zamuthiri	Nil

Progress of NTP (1995-2012)

Indicator\Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	**2011**	**2012**
CDR (New SS+)	39%	39%	43%	44%	55%	66%	70%	73%	83%	95%	86%	89%	87%	95%	76%	**77%**	**78.2%**
CR	75%	73%	74%	70%	73%	74%	72%	72%	75%	78%	78%	77%	78%	77%	77%	**77%**	
TSR	82%	82%	83%	81%	82%	82%	82%	81%	84%	85%	85%	85%	85%	85%	85.5%	**86%**	



Target achievement according to Regions/States and Country (2010-2012)

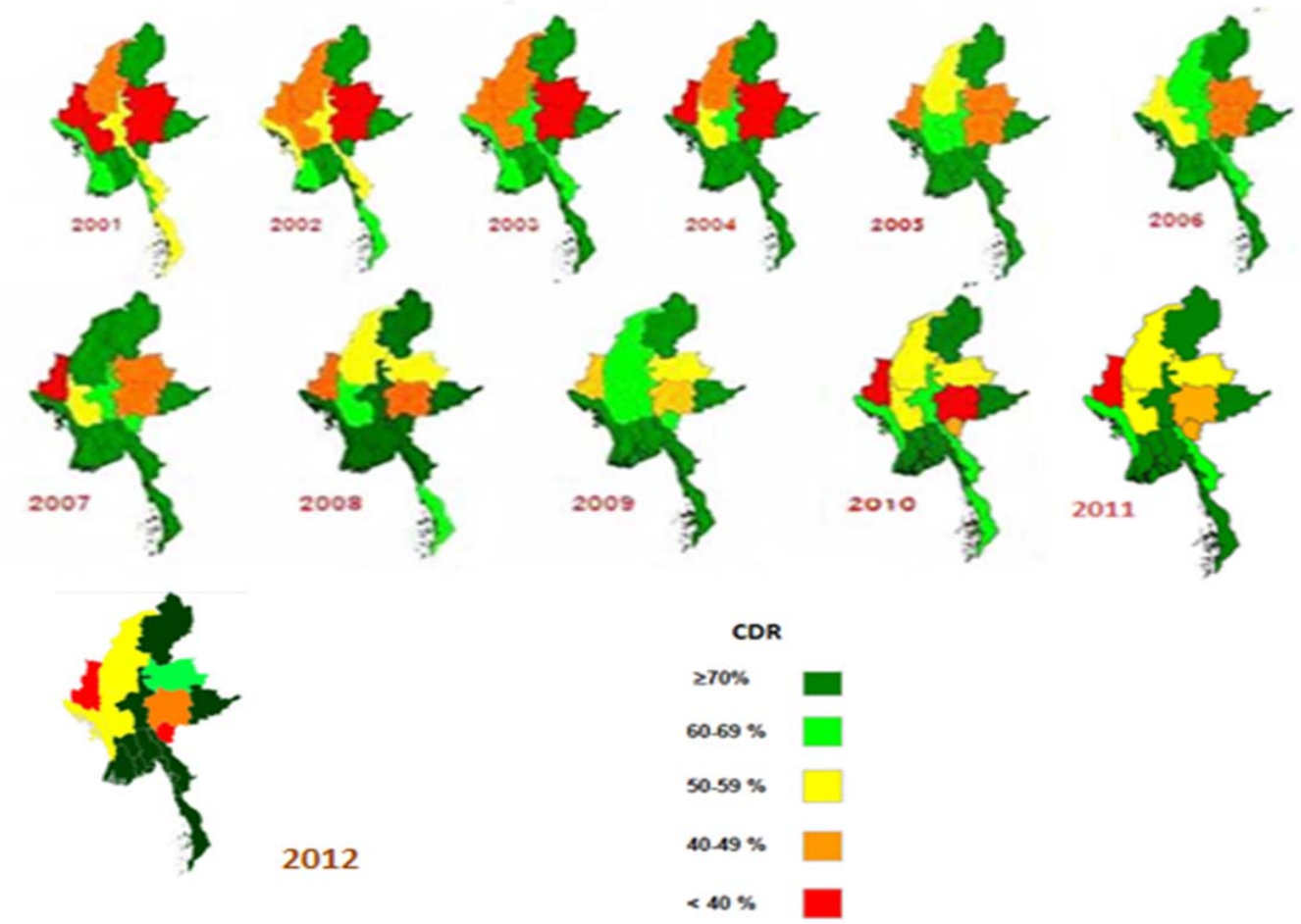


Case Detection Rate (New Smear Positive) of Regions & States (2002-2012)

Region/ State	CDR (NTP only)									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	**2012**
Kachin	118	90	116	131	129	109	122	79	70	**66**
Kayah	71	70	83	79	69	70	60	41	41	**31**
Chin	42	38	42	52	39	41	40	23	21	**23**
Sagaing	45	45	53	60	79	59	61	50	51	**46**
Magway	49	57	65	55	56	68	67	47	45	**45**
Mandalay	60	65	67	65	69	70	64	52	54	**51**
Shan State (Taunggyi)	32	38	40	43	48	46	49	37	43	**42**
Shan State (Kyaingtong)	87	99	103	102	102	106	90	75	68	**80**
Shan State (Lashio)	31	34	42	46	49	55	56	45	48	**54**
Kayin	68	72	86	65	79	81	92	63	55	**77**
Tanintharyi	72	76	75	71	72	69	72	50	61	**64**
Bago Region	81	73	87	82	83	79	82	58	57	**68**
Bago Region (Pyay)	81	87	77	91	101	101	105	69	70	
Mon	74	95	108	93	89	94	114	75	70	**69**
Rakhine	64	84	83	81	75	90	87	64	60	**56**
Yangon	148	156	158	70	81	76	85	83	76	**71**
Ayeyarwady	67	78	86	96	92	84	92	71	71	**65**
Naypyitaw									31	**75**
Country(NTP & Other)	**73**	**83**	**95**	**86**	**89**	**87**	**95**	**76**	**77**	**78.2**

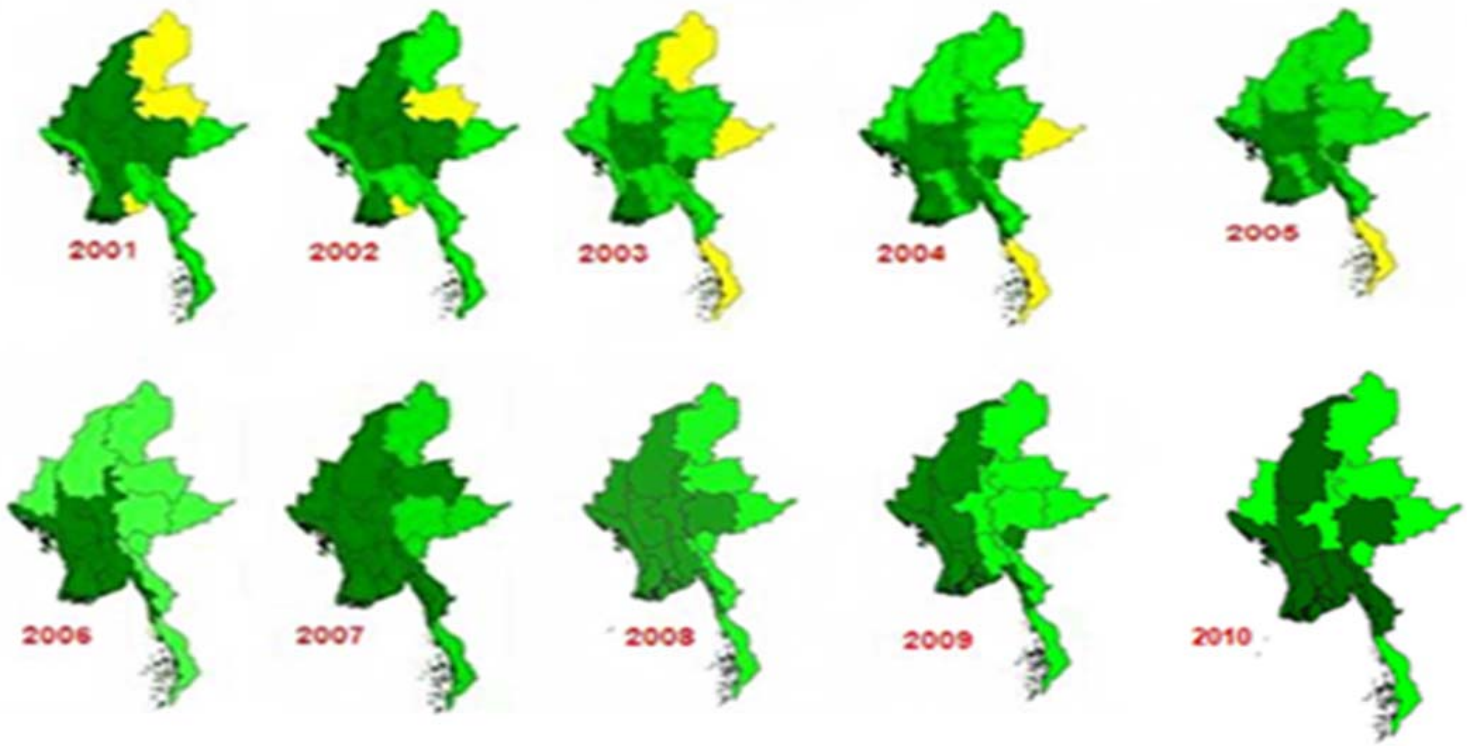
Treatment outcomes of New smear positive in Regions & States (2002-2011)

Region/ State	2003		2004		2005		2006		2007		2008		2009		2010		**2011**	
	CR	TSR	CR	TSR	CR	TSR	CR	TSR	CR	TSR	CR	TSR	CR	TSR	CR	TSR	**CR**	**TSR**
Kachin	67	73	74	78	75	78	73	81	67	77	73	78	71	79	71	80	**72**	**82**
Kayah	92	92	93	94	83	88	76	83	66	78	63	82	83	85	77	81	**80**	**87**
Chin	50	82	68	84	73	84	65	78	72	87	71	90	73	85	74	82	**84**	**87**
Sagaing	56	80	72	80	74	82	74	82	77	86	78	85	81	87	82	88	**81**	**89**
Magway	73	88	77	90	80	89	81	89	77	88	76	86	79	86	78	87	**77**	**86**
Mandalay	83	89	77	87	75	86	79	86	77	86	81	87	70	84	74	83	**76**	**84**
Shan State (Taunggyi)	76	80	79	83	72	83	73	79	74	81	80	86	79	84	78	85	**79**	**86**
Shan State (Kyaingtong)	56	68	64	74	64	78	62	80	64	85	70	84	64	80	71	84	**73**	**81**
Shan State (Lashio)	65	78	69	79	68	81	65	81	68	82	69	80	70	79	68	79	**72**	**82**
Kayin	67	78	68	83	74	83	75	82	78	86	76	83	75	82	80	85	**75**	**83**
Tanintharyi	68	72	56	73	64	73	67	76	71	76	74	79	73	80	70	78	**69**	**83**
Bago Region	80	84	86	88	89	91	84	90	79	87	78	87	76	84	75	86	**77**	**88**
Bago Region (Pyay)	67	78	74	81	74	84	82	86	79	85	80	85	81	87	80	87		
Mon	76	84	77	87	80	88	79	87	79	87	81	85	80	86	78	86	**78**	**87**
Rakhine	72	83	74	87	81	87	85	91	77	88	74	86	76	86	77	89	**77**	**90**
Yangon	67	76	73	82	78	84	78	85	81	87	82	88	83	88	84	87	**85**	**88**
Ayeyarwady	81	85	83	87	82	88	82	91	83	90	81	88	82	89	81	89	**77**	**88**
Naypyitaw																	**74**	**83**
Country (NTP & Other)	72	81	75	84	78	85	78	85	77	85	78	85	77	85	77	85.4	**77**	**86**



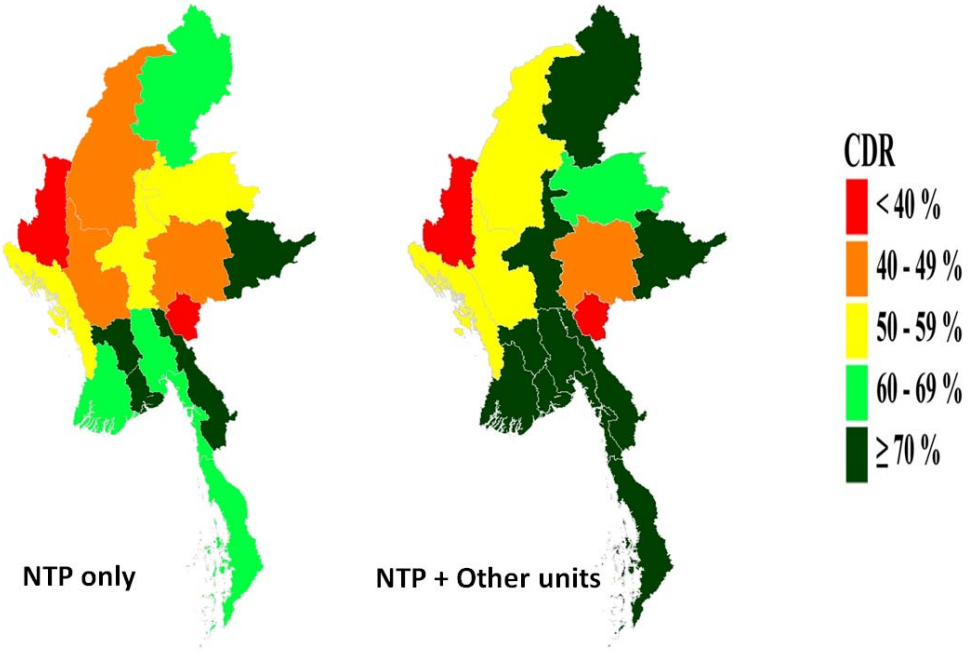
Category of regions & states according to Case Detection Rate (2001 -2012)

Estimated new smear positive TB cases is 105/100000 pop. according to National TB Prevalence Survey, in 2010
Except Yangon Region estimated new smear positive TB cases is 170/100000 population

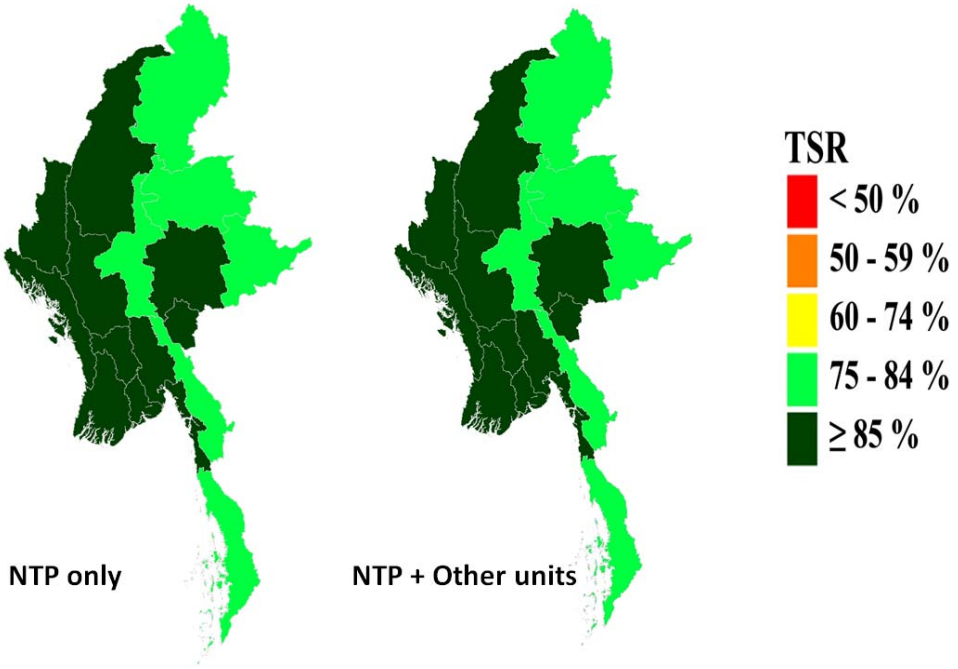


category of regions & states according to Treatment Success Rate (2001 -2012)

Categories of Regions & States according to Case Detection Rate (CDR), 2012



Categories of Regions & States according to Treatment Success Rate (TSR), 2012

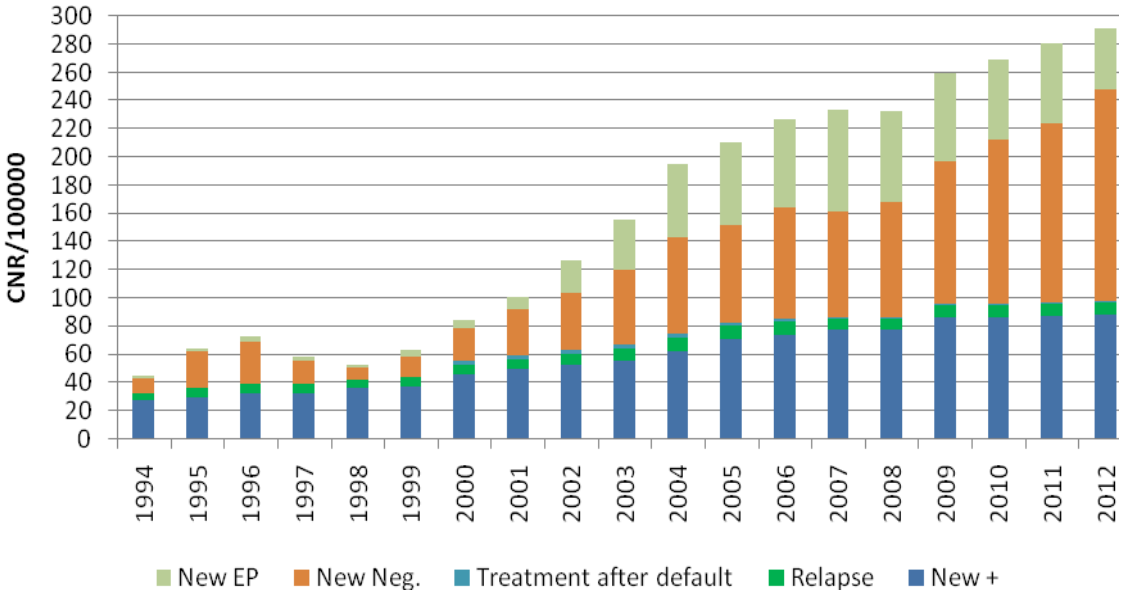


National Tuberculosis Programme
Case finding activities (1994 - 2012)

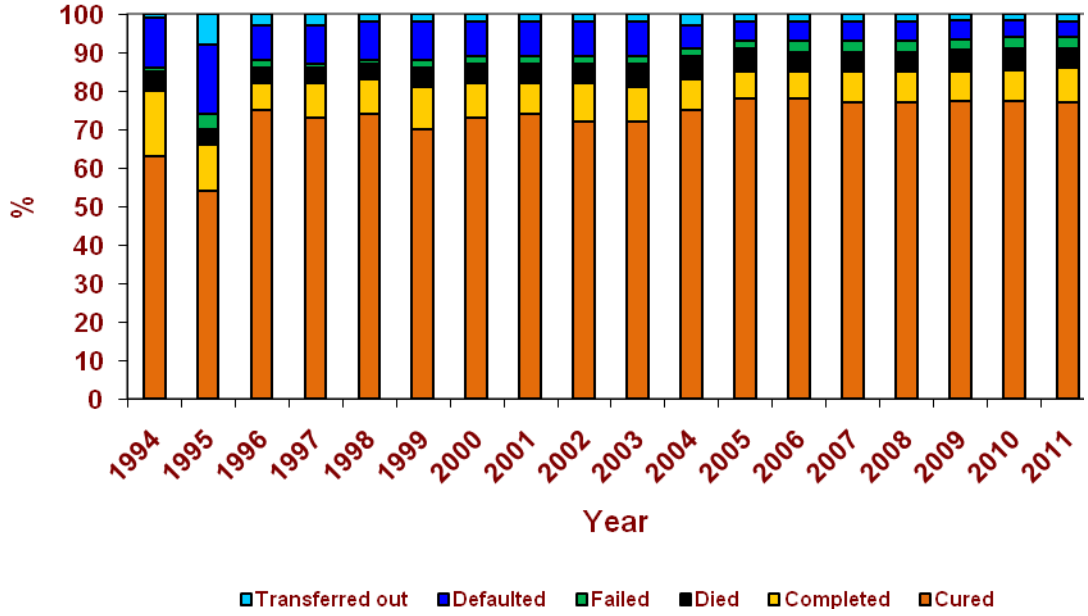
YEAR	DOTS Population	No.of Estimate S(+) cases	CNR All S(+) per 100,000 population	CDR NS(+)	PULMONARY TUBERCULOSIS												Primary Complex		EXTRA PULMONARY TB		Other		Total		
					SMEAR POSITIVE									All S(+) cases	SMEAR NEGATIVE										
					NEW CASES			OLD CASES																		
								RELAPSES		TAD		TAF													
					M	F	T	M	F	M	F	M	F	total	M	F	M	F	M	F	M	F	M	F	T
1994(18Tsp)	3,492,420	3,492	32	33	615	331	946	124	60	0	0			1,130	203	154			33	35			975	580	1,555
1995(144Tsp)	26,180,539	26,182	36	36	4,885	2,692	7,577	1,186	629	0	0			9,392	4,037	2,797			317	296			10,547	6,461	17,008
1996(153Tsp)	27,413,310	27,413	39	39	5,648	3,148	8,796	1,251	551	0	0			10,598	4,823	3,461			580	493			12,472	7,724	20,196
1997(153Tsp)	27,744,233	27,744	39	39	5,844	3,170	9,014	1,133	538	0	0			10,685	2,719	2,029			383	297			10,079	6,034	16,113
1998(153Tsp)	28,260,276	28,260	42	43	6,325	3,764	10,089	1,286	565	0	0			11,940	1,233	982			326	275			9,170	5,586	14,756
1999(168Tsp)	31,245,000	31,247	43	44	7,317	4,141	11,458	1,460	643	0	0			13,561	2,649	1,942			788	686			12,214	7,412	19,626
2000(231Tsp)	37,621,000	37,621	55	56	11,196	6,058	17,254	1,818	805	630	233			20,740	5,167	3,492			1,289	1,015			20,100	11,603	31,703
2001(259Tsp)	42,061,000	42,061	59	66	13,473	7,213	20,686	2,203	911	741	282			24,823	8,296	5,446			2,087	1,803			26,800	15,655	42,455
2002(310Tsp)	46,044,000	34,533	63	70	15,951	8,211	24,162	2,582	1,082	925	306			29,057	11,228	7,260			5,955	4,743			36,641	21,602	58,243
2003(324Tsp)	49,667,413	37,251	67	74	18,017	9,431	27,448	3,235	1,259	1,127	360			33,429	15,759	10,247			9,858	7,938			47,996	29,235	77,231
2004(324Tsp)	50,274,570	37,706	74	83	20,783	10,625	31,408	3,318	1,388	979	268			37,361	20,969	13,363			14,652	11,564			60,701	37,208	97,909
2005(324Tsp)	51,412,552	38,559	82	95	24,204	12,337	36,541	3,264	1,351	766	216			42,138	22,117	13,484			16,902	13,350			67,253	40,738	107,991
2006(325Tsp)	54,286,877	46,911	85	86	26,713	13,528	40,241	3,562	1,433	841	280			46,357	26,027	16,714			19,392	15,103			76,535	47,058	123,593
2007(325Tsp)	55,753,816	48,135	88	89	27,927	14,661	42,588	3,307	1,358	588	160	822	428	49,251	24,979	16,847			22,572	17,430	1,731	737	81,926	51,621	133,547
2008(325Tsp)	53,752,810	45,789	88	90	27,099	14,149	41,248	3,063	1,245	470	149	763	365	47,303	26,243	17,791			19,322	15,125	1,954	1,001	78,914	49,825	128,739
2009(325Tsp)	50,907,881	43,645	94	95	27,386	14,003	41,389	3,255	1,315	460	127	923	408	47,877	30,372	20,840			17,860	13,821	2,274	979	82,530	51,493	134,023
2010(325Tsp)	49,197,091	55,482	99	76	27,962	14,356	42,318	3,146	1,310	418	96	1,028	467	48,783	33,924	22,916			15,722	12,254	2,601	1,203	84,801	25,602	137,403
2011(330 tsp)	48,668,785	54,955	101	77	27,689	14,646	42,335	3,279	1,331	423	119	1,041	484	49,012	36,573	25,470			15,466	12,306	2,970	1,367	87,441	55,723	143,164
2012(330 tsp)	**48,531,478**	**54,837**	**102**	**78.2**	**28184**	**14726**	**42909**	**3198**	**1360**	**401**	**120**	**1140**	**531**	**49659**	**26436**	**17366**	**16442**	**12798**	**11384**	**9277**	**3,228**	**1,559**	**90,413**	**57,736**	**148,149**

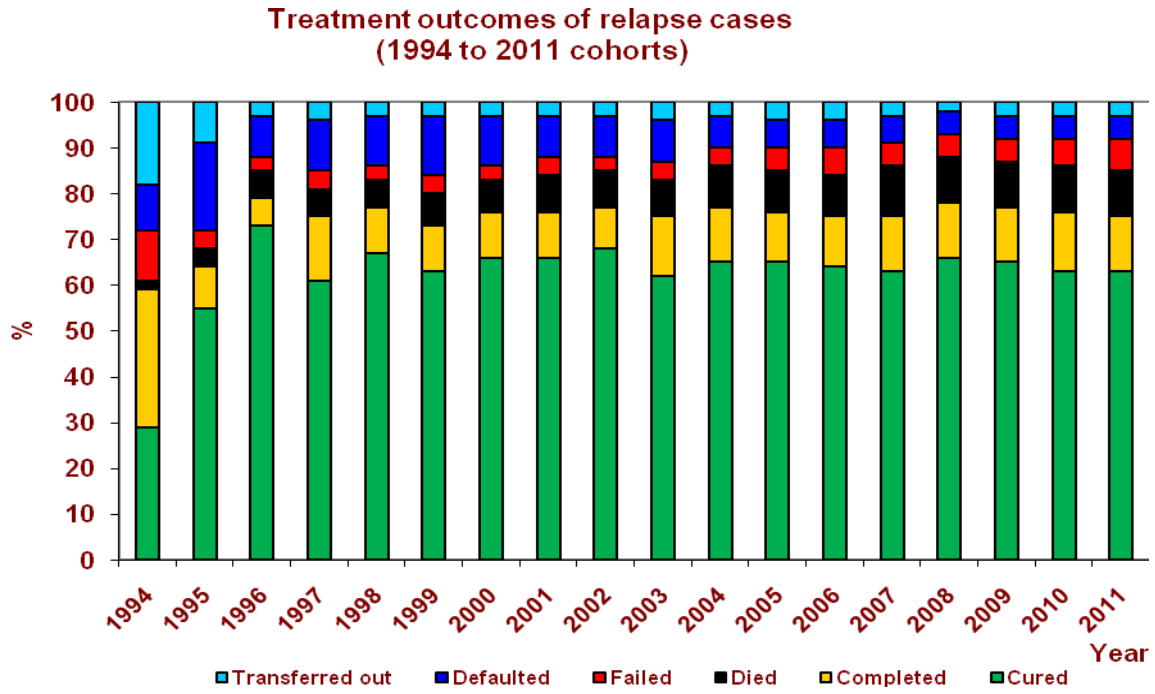
TAD = Treatment after Default
TAF = Treatment after Failure

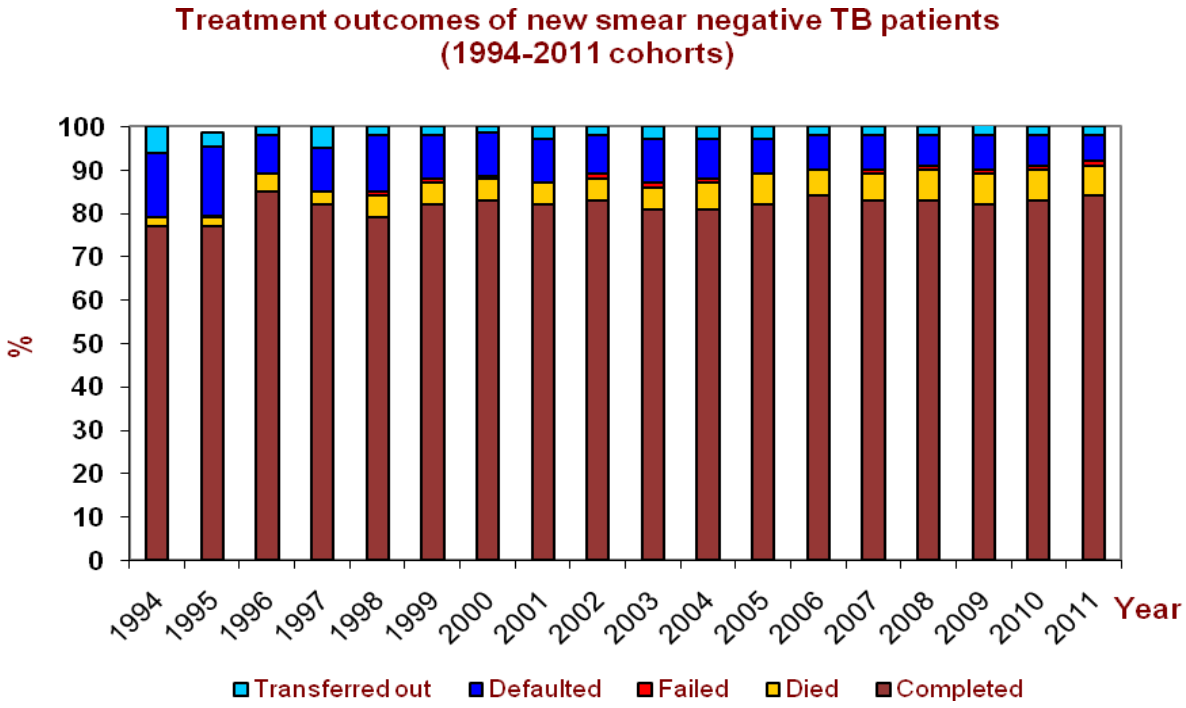
Case Notification Rate by type of TB patients (1994-2012)



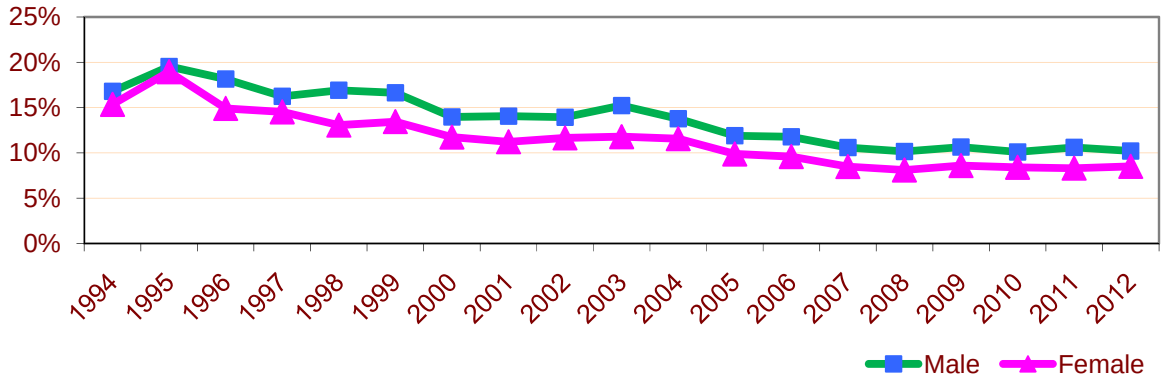
Treatment outcomes of new smear positive TB pateints by percentage (1994 to 2011 cohorts)



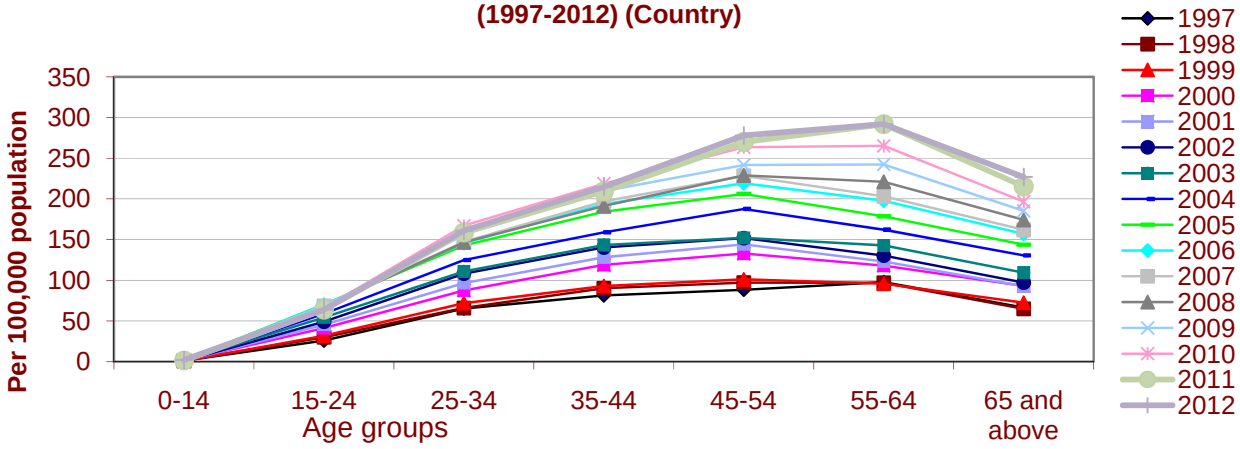

Treatment outcomes of relapse cases
(1994 to 2011 cohorts)
100
90
80
70
60
50
40
30
20
10
0
%
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
Year
Transferred out
Defaulted
Failed
Died
Completed
Cured


Treatment outcomes of new smear negative TB patients
(1994-2011 cohorts)
100
90
80
70
60
50
40
30
20
10
0
%
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
Year
Transferred out
Defaulted
Failed
Died
Completed

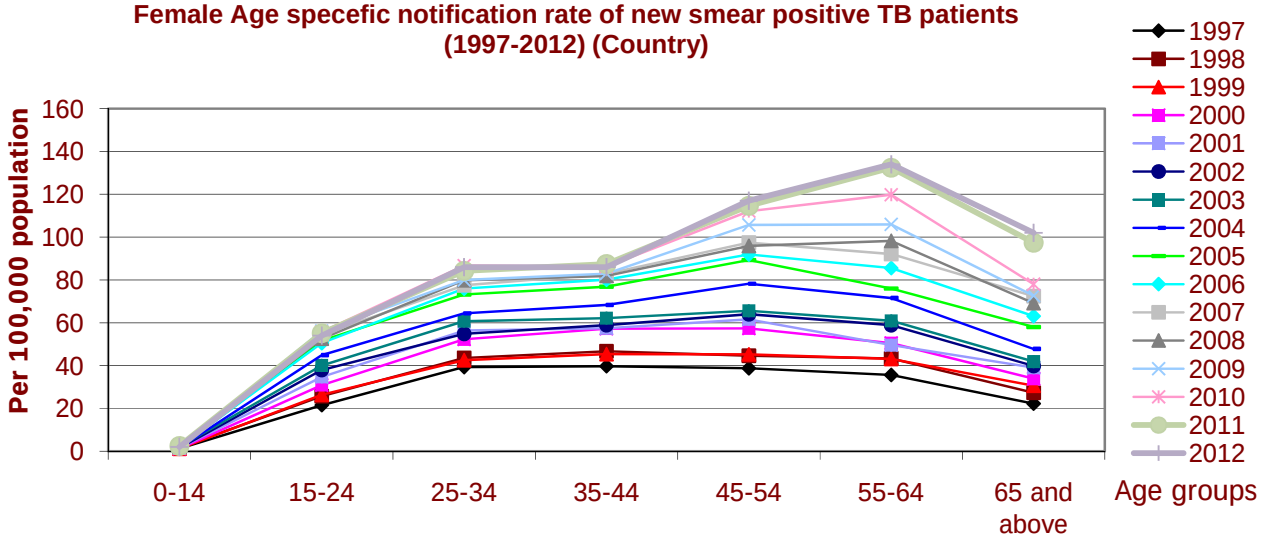
Proportion of Relapses by Male and Female among New Smear Positive cases Plus Relapse cases of Male & Female (1994-2012)



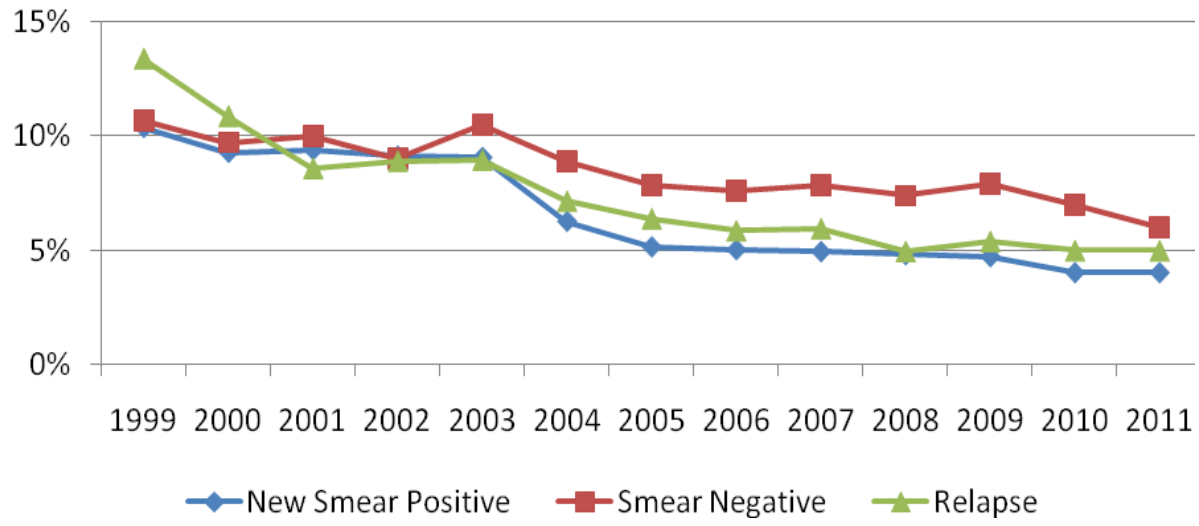
Male Age specific notification rate of new smear positive TB patients (1997-2012) (Country)



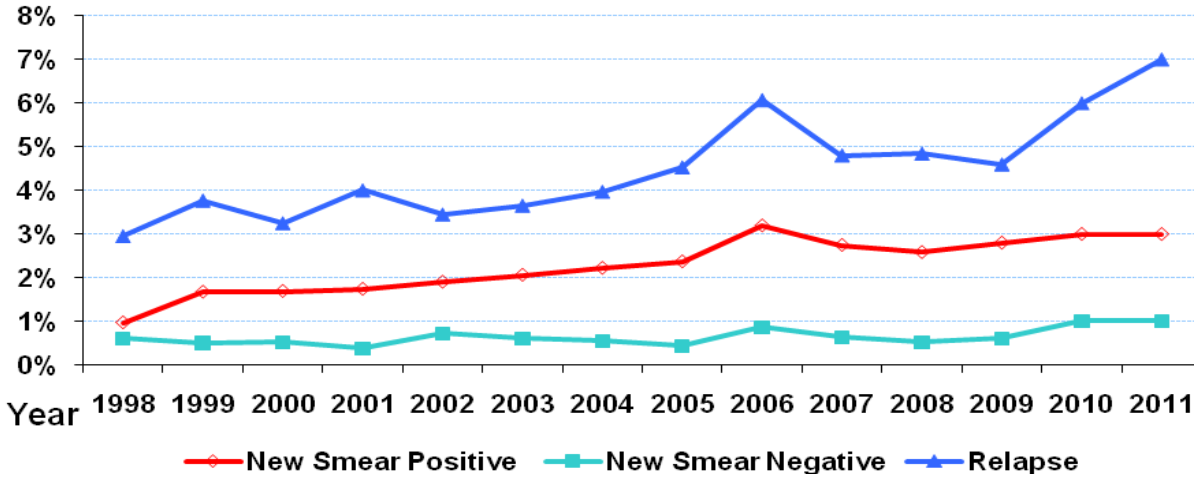
Female Age specefic notification rate of new smear positive TB patients (1997-2012) (Country)



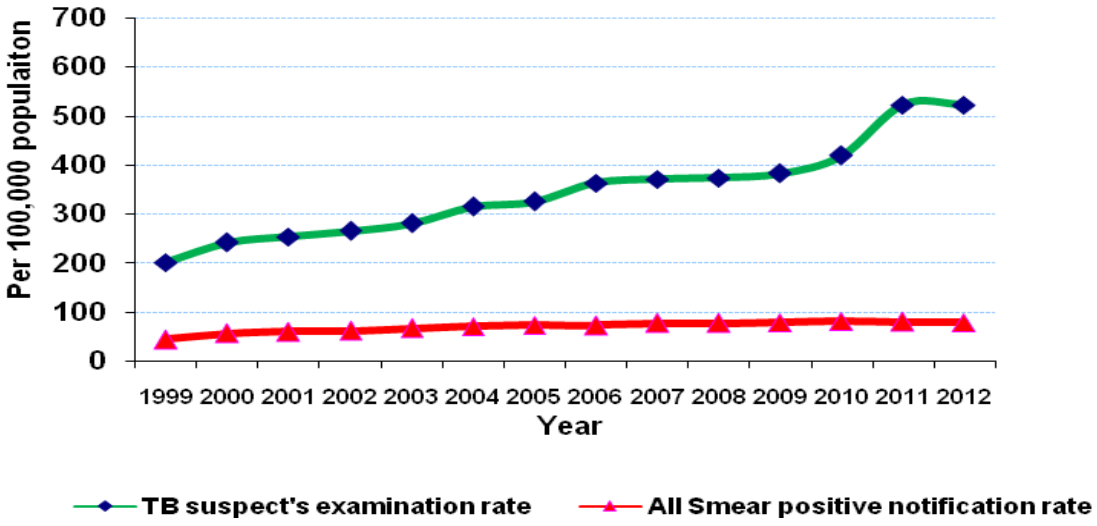
Defaulting of New Smear Positive, Smear Negative & Relapse cases in country (1998-2011)



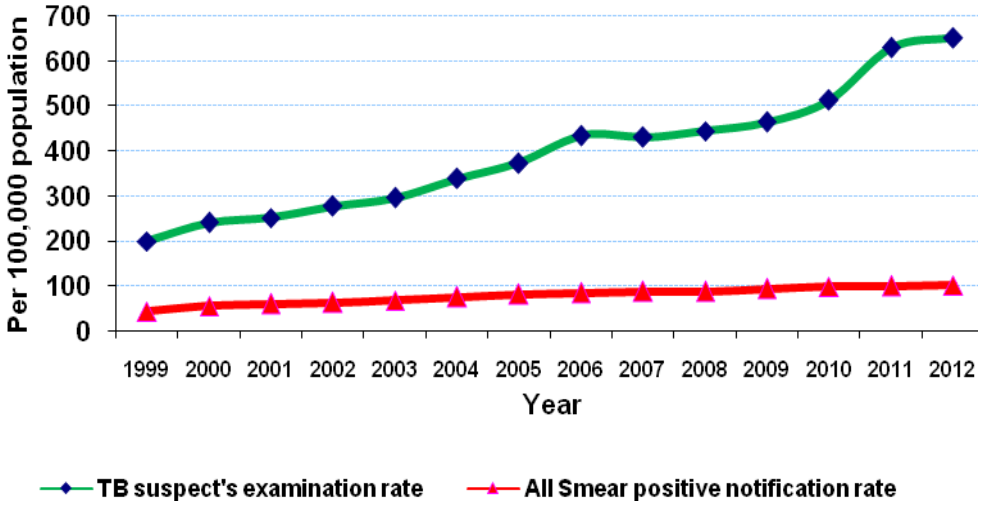
Failure Rate of New Smear Positive, Smear Negative and Relapse cases in country (1998-2011)



NTP only :TB suspect' examination rate & All S (+) notification rate (1999 - 2012)



NTP + Other Unit: TB suspect' examination rate & All S (+) notification rate (1999- 2012)



Trend on New SS+, New Smear negative, Extra Pulmonary & All TB cases load of NTP

(1994 to 2012)