

NATIONAL TUBERCULOSIS PROGRAMME

MYANMAR

ANNUAL REPORT

2007

November, 2008

Abbreviations

ACSM	Advocacy, communication and social mobilization
AD	Assistant Director
AFB	Acid Fast Bacilli
AIDS	Acquired Immunodeficiency Syndrome
ARTI	Annual Risk of Tuberculosis Infection
AZG	ARTSEN ZONDER GRENZEN
BCG	Bacille Calmette Guerin
BHS	Basic Health Staff
CDR	Case detection rate
CNR	Case notification rate
DD	Deputy Director
DHIS	District Health Information Software
DOH	Department of Health
DOT	Directly Observed Treatment
DOTS	Directly Observed Treatment Short Course
DRS	Drug resistant survey
DST	Drug Sensitivity Testing
S/DTO	State/Divisional TB Officer
ELISA	Enzyme-Linked Immuno -solvent Assay
EPI	Expanded Programme of Immunization
EMB	Ethambutol
EQA	External Quality Assessment
FDC	Fixed-dose combination
GDF	Global Drug Facility
GLC	Green Light Committee
GPs	General Practitioners
HIV	Human Immunodeficiency Virus

HA	Health Assistant
IEC	Information, Education, Communication
INH	Isoniazid
IOM	International Organization for Migration
IPT	Isoniazid Preventive Therapy
IUALTD	International Union Against Tuberculosis and Lung Disease
JATA	Japan Anti-Tuberculosis Association
JICA	Japan International Cooperation Agency
KAP	Knowledge Attitude and Practice
LHV	Lady Health Visitor
LQAS	Lot Quality Assurance Sampling
MDR-TB	Multidrug - resistant tuberculosis
MIDCP	Major Infectious Diseases Control Project
MMA	Myanmar Medical Association
MMCWA	Myanmar Maternal and Child Welfare Association
MO	Medical Officer
MOH	Ministry of Health
MWAF	Myanmar Women Affairs Federation
MRCS	Myanmar Red Cross Society
MRTV	Myanmar Radio and Television
MS	Medical Superintendent
MSF	Medecins Sans Frontieres
MWs	Midwives
NAP	National AIDS Programme
NGOs	Non Governmental Organization
NTP	National Tuberculosis Programme
NTRL	National Tuberculosis Reference Laboratory
OI	Opportunistic infection
PHS II	Public Health Supervisor II

PSI	Population Services International
QC	Quality Control
RHC	Rural Health Centre
RMP	Rifampicin
RIT	Research Institute of Tuberculosis
SCC	Sputum collection center
SM	Streptomycin
SOP	Standard Operational Procedure
STD	Sexually Transmitted Disease
STLS	Senior Tuberculosis Laboratory Supervisor
TB	Tuberculosis
TL	Team leader
TOT	Training of Trainers
TSG	Technical Strategic Group
TSR	Treatment Success Rate
TV	Television
TMOs	Township Medical Officers
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
UTI	Union Tuberculosis Institute
WHO	World Health Organization
XDR-TB	Extensive Drug Resistant Tuberculosis
3DF	Three Diseases Fund

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NATIONAL TUBERCULOSIS PROGRAMME

1. Introduction

Tuberculosis (TB) remains one of the major public health problems in Myanmar. Annual Risk of Tuberculosis Infection (ARTI) was 1.66% (0.83/1000 population were sputum smear positive) according to the findings of tuberculin survey conducted in 1972. Sputum positive point prevalence was 1.042/1000 population according to nation-wide survey carried out in 1994. World Health Organization (WHO) estimates the ARTI as 1.5%. Most of the TB patients are in the socially and economically productive age group of 15-54 year.

National Tuberculosis Programme (NTP) has been established since 1966. NTP is running with 14 State and Divisional TB Centres with (101) TB teams at district and township levels in 2007.

TB control activities have been integrated with Primary Health Care since 1978. The standard regimen containing injection Streptomycin and Isoniazid was replaced with Short Course Chemotherapy and introduced in 18 townships and 8 State and Divisional TB Centres in 1994. NTP rapidly expanded the townships up to 144 townships in 1995, another 9 townships in 1996 (total 153 townships) and no further expansion in 1997 and 1998. In 1997, NTP adopted WHO recommended Directly Observed Treatment Short Course (DOTS) strategy. In 1999, NTP covering 64.9% of country population in 168 townships and implementing DOTS strategy through primary health care approach, in co-ordination with the other governmental sectors and non governmental organizations such as Myanmar Maternal and Child Welfare Association (MMCWA), Myanmar Medical Association (MMA) and Myanmar Red Cross Society (MRCS) etc. In 2000, DOTS coverage extended up to 71% (covered 231 out of 324 townships). In 2001, NTP covered 259 townships (80% out of total townships) and covered 90% of population. In 2002, NTP covered 310 townships (95.7% of total townships) and 95% of population. Total township coverage with DOTS strategy achieved in November, 2003.

TB control activities were implemented according to new 'STOP TB STRATEGY' to achieve the global targets within the framework of Millennium Development Goals (MDGs). This annual report aims to record the Myanmar TB situation and to evaluate strength and weakness, challenges to overcome for the better achievement.

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 Millennium Development Goals for 2015.

- To reach and thereafter sustain the targets - achieving at least 70% case detection (Millennium Development Goals: MDGs, Goal 6, Target 8, Indicator 24) and
- Successfully treat at least 85% of detected TB cases under DOTS (MDGs, Goal 6, Target 8, Indicator 24)
- To reach the interim targets of halving TB deaths and prevalence by 2015 from the 1990 situation. (MDGs, Goal 6, Target 8, Indicator 23)

3. Progress of the Stop TB Strategy

The new Stop TB Strategy, WHO recommended in 2006 has been initiated in Myanmar in 2007 to achieve the MDGs by 2015.

Activities as planned in 5-Year National Strategic Plan for TB Control (2006-2010) are revised to be in line with new Stop TB Strategy and global plan. The plan was implemented with the support of the government and funding agencies (WHO, Japan International Cooperation Agency (JICA), Global Fund, Three Diseases Fund (3DF) and 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 other challenges
3. Contributing to health system strengthening
4. Engaging all care providers
5. Empowering patients and communities
6. Enabling and promoting research

NTP Myanmar is implementing those strategies and achieved global TB control targets in 2006 and maintained the achievement in 2007.

(1) Pursue high-quality DOTS expansion and enhancement

NTP, Myanmar ensures the quality of the 5 components of the DOTS strategy. The government increased the budget for TB control. Case finding activities are improved by introduction of EQAS (External Quality Assurance System) since 2006.

TB patients are treated with WHO recommended treatment regimens using Fixed Dose Combination of first line anti-TB drugs (FDC) and Patient's kit under close supervision of Basic Health Staff (BHS). The drugs and supplies could distribute according to schedule without interruption. Global Drug Facility (GDF) supports first line anti-TB drugs since 2002. Second 3-year grant will expire by end of 2008 and one year requirement of the country will be supported for 2009 while NTP develop the transitional and sustainability plan for uninterrupted anti-TB drug supplies for the country.

NTP strengthened the program management and supervision activities. Computerized reporting system was introduced with the support of WHO. Standard Operating Procedure (SOP) for drug and supplies management, laboratory external quality assurance system and guideline for childhood TB management, multi-drug resistant TB (MDR-TB) management were developed.

Related trainings for drug and supplies management, laboratory EQA system, childhood TB management and MDR-TB management were provided.

NTP is taking a step to decentralize DOTS unit or microscopy center up to some of the Station Hospitals with quality assurance system. The case finding activities were improved by means of mobile teams, sputum collection points, initial home visit and contact tracing at rural area. Case holding system was improved by introducing Innovative activity: cohort review meeting and quarterly review meeting at low performance townships with high defaulter rate.

Partner's involvement in Public-Public Mix DOTS (PPM) and Public-Private Mix (PPM) DOTS improved the case finding. The expansion of EQA townships was carried out in phase wise manner and adequate funding is needed for regular supervision. There is a great challenge to have a secure drug supplies beyond 2009 to maintain the current achievement and to cover increased case load of innovative activities.

(2) Address TB/HIV, MDR-TB and other challenges

Human Immuno Deficiency Virus (HIV) co-infection rate is now available for TB patients from the routine National AIDS Programme (NAP) HIV Surveillance system in which TB patients are included as one of the subgroups under surveillance. HIV sero-positive among new TB patients is 9.8% in 10 sentinel sites, however, WHO estimate of HIV prevalence among new TB patients for Myanmar was 2.6% for 2006

(WHO global TB control management report, 2008). Guideline for TB-HIV was developed in 2000 and updated. TB/HIV collaborative activities are conducting in 2 models. One is an Integrated HIV care for TB patients project (IHC) in collaboration with UNION, Total (Yatana) Oil Company, NAP and NTP. The other model is a minimum package of TB/HIV interim policy and activities is implementing in the area where NAP could provide ART. The technical assistance is provided by WHO. IHC project was started with 5 townships (5 townships in Mandalay district, Mandalay Division) and expanded to Patheingyi and Amarapura townships in Mandalay Division and Pakkoku township in Magway Division.

The other model is implementing in Myitkyina (Kachin State), Taunggyi (Southern Shan State) and Lashio (Northern Shan State). Voluntary Confidential Counseling and HIV testing (VCCT) service is providing in TB clinics and co-trimoxazole preventive therapy (CPT).

MDR-TB among new and previously treated patients was 4.5% and 15.5% respectively (2002-03). The second national drug resistant survey was conducted in 2007 to know the current MDR situation compared to 2002. The study on drug resistant patterns of Category II failure patients was conducted for the choice of national drug resistant-TB treatment regimen. National guideline for management of drug-resistant TB was developed and applied to Green Light Committee (GLC) for second line anti-TB drugs for the management of drug resistant TB (DR-TB). The pilot phase will include 5 townships each from Yangon Division (Hlaing, Hlaingthayar, Shwepyitha, Insein and Mayangon) and Mandalay Division (Aungmyaythazan, Chanmyathazi, Chanayethazan, Mahaaungmyay and Pyigyitagon). The clinical management of MDR-TB (DR-TB) patients will be based at 2 TB hospitals (Aungmyaythazan and Patheingyi). DOTS-PLUS pilot project will start by 2009.

Table 1. TB/HIV collaborative activities (2007)

	Mandalay 7 townships	Taunggyi township	Myitkyina township	Lashio township	Pakkoku township	Total
No. of registered TB patients (>14 years)	2422	570	1083	96		4171
No. of VCCT accepted & HIV tested	2093	248	417	63		2821
% of VCCT tested	86%	46%	39%	66%		68%
No. of HIV sero positive among tested	717	35	105	6	10	873
HIV seropositive rate	33%	14%	25%	10%		
No. of TB/HIV patients started or continued on CPT	717	27	105	6	7	862
No. of TB/HIV patients started or continued on ART	348	NA	47	NA	0	395

State/Divisional/District/Township level TB coordinators are coordinating with authorities from prison, hospital TB care unit for TB diagnosis and treatment among prisoners.

Special activities were set at the Myanmar-Thailand border for improvement of TB control in border area : Myawaddy in Kayin State and Tachileik in Shan State (East).

(3) Contribute to health system strengthening

NTP organization structure was expanded according to the requirement. There was only 7 State/Divisional TB Centers in 1982 and expanded to 14 state/divisional TB centers in 2007 and covering the 17 States and Divisions. In line with the human resource development plan, NTP is conducting several trainings on "Management of TB at district level" for Township Medical Officer (TMOs) and TB coordinators, "Management of TB for Health Facility Staff" for BHS, "Leadership and Management" training for Township Medical Officers (TMO) and TB team leaders, new recruit training for sputum smear microscopy and EQA training for laboratory supervisors.

All the township laboratories were equipped with binocular microscopes and sputum microscopy centers were expanded to some station health Units. The facility for culture and drug sensitivity testing is upgraded in Upper Myanmar TB laboratory, Mandalay with the support of 3DF and UNION.

(4) Engage all care providers

Public-private Mix DOTS is implementing with Myanmar Medical Association (MMA), Population Services International (PSI) and JICA, Major Infectious Diseases Control Project (MIDCP). Some general practitioners (GP) use the scheme I which educate about TB and refer the TB suspected patients to TB center and some prefer to use the scheme II, serve as DOT provider also. PSI organizes the PPs and running the "Sun Quality Clinics" as a DOT unit. Private hospitals are not involved under PPM-DOTS schemes yet.

PSI is implementing PPM-DOTS in 99 townships (in 13 States/Divisions) with 86 accredited laboratories (28 private lab. and 58 public lab.). 415 GPs were trained by PSI together with NTP. MMA is implementing scheme I in 19 townships trained 396 GPs.

Public-public mix DOTS is implementing with 4 hospitals (New Yangon General Hospital, Sanpya General Hospital, Thingungyun, General Hospital (East Yangon), General Hospital (West Yangon). ISTC (International Standards for TB Care) will be introduced to all health care providers in 2008.

NTP is also coordinating with Hospitals under Ministry of Defense, Ministry of Labor, Ministry of Home Affairs and Ministry of Railway.

(5) Empower people with TB and communities

People with TB are not yet organized for their involvement in TB control. However, they serve as an informer in the communities to refer the TB suspected patients to TB centers for diagnosis and better case management. This is a finding of a survey conducted in Yangon in 2006. NTP will conduct nation wide Knowledge Attitude and Practice -KAP survey to explore the knowledge, attitude and practice of communities related to TB. It is important to know about the different ethnic groups and people from remote area where the multimedia are not reachable. Base on the findings of KAP survey, NTP will develop the appropriate Advocacy, Communication and Social Mobilization (ACSM) strategy.

NTP conducts World TB Day/Week commemoration ceremony and activities every year. Community involvement was strengthened by providing training for DOT provider who is identified from community volunteers and local NGO members.

(6) Enable and promote research

Second nation-wide Drug Resistant Survey (DRS) (2007-2008) was conducted and will be compared with the first DRS results. TB prevalence survey in Yangon Division and pilot phase in Mandalay Division was conducted in 2006 and planned to conduct national TB prevalence survey in 2009.

Operational researches depending on the problems will be conducted as necessary. NTP is coordinating with the researchers from Medical Research Departments and academic Institutions.

4. Activities of NTP

1. Intensification of health education by using multi-media to increase community awareness about TB.
2. BCG immunization to all children under one year.
3. Implementing Directly Observed Treatment (DOT) up to grass-root level.
4. Early case detection through direct sputum microscopy of chest symptomatic patients attending health services and contact tracing.
5. Regular supervision and monitoring of NTP activities at all levels.
6. Strengthening partnership.
7. Capacity building.
8. Promotion of operational research.

4.1 Health education

4.1.1 IEC materials dissemination

Community awareness concerning TB was accelerated through promoting health education sessions and conducting advocacy meetings at all levels. The IEC materials: pamphlets (50,000), TB stickers (22,000), posters (40,000), World TB Day Tool kit (500) and TB knowledge books (30,000) were produced and distributed through state/divisional TB centers to all townships up to grass-root level.



World TB Day commemoration ceremony in 2007, Naypyitaw

4.1.2 World TB Day and week activities, 2007

World TB Day commemoration session was held on 24.3.2007 at central level, at all States and Divisions except Chin State and at 49 districts and only in 34 townships from Sagaing Division. The Slogan for the year 2006 was “TB Anywhere is TB Everywhere”. (တိဘီရောဂါကင်းဝေးဖို့ အားလုံးမနွှေး ဆောင်ရွက်ဖို့)

The central level World STOP TB Day commemorative ceremony was carried out on 24th March, 2007 at the Assembly Hall of Ministry of Health, Naypyitaw. General Wai Lwin, Commander of Naypyitaw delivered the opening speech and Professor Kyaw Myint, Minister for Health, Ministry of Health (MOH) delivered the opening remarks. Professor Adik Wibowo, Country Representative to Myanmar, read out the message from the Regional Director of WHO South East Asia Region. Video clip developed by Health Education Bureau and JICA (MIDCP) and television (TV) spot developed by PSI were presented in the ceremony. The mini exhibitions were presented by NTP, JICA and PSI. 450 invitees from MOH, DOH, other ministries, WHO and UN agencies and implementing partners attended the ceremony.

The main activities carried out were mainly funded by WHO.

- 1) Community based activities such as health education talk about TB at township level up to Rural Health Centers (RHC) were carried out by BHS. The activity was followed by identification of TB suspects, referral to the Township TB Diagnostic centre, contact tracing and missed dose tracing in their responsible area.
- 2) Dissemination of knowledge about TB was given through mass media: television, news papers, and journals. Health education programme as discussion session, interviews with Myanmar Radio and Television (MRTV) and Myawaddy televisions were broadcasted.
- 3) Mobile team activities were conducted in 3 States/Divisions in 3 townships namely Nyaungshwe in Shan State (South), Pwintphyu in Magway Division and Kantbalu in Sagaing Division). 5 Rural Health Centers in each township were conducted the active case finding activities.



World TB Week activities, 2007

As a contribution from implementing partners: Major Infectious Diseases Project (MIDCP, JICA) supported (30,000) posters, (50,000) TB patient care books, (50,000) TB knowledge books, (850) video clips, (10,000) BHS manual and (1,000) PPM pamphlets for NTP. PSI contributed TV spots and conducted the TB awareness campaign in 30 selected townships. As World TB Week activities, International Organization for Migration (IOM) conducted the active case finding with mobile unit in their functioning area. World Vision International supported T shirts (2,000), street banners (18) and stickers. Pact Myanmar also disseminated the TB information through their out reach workers in Kyaukpandaung, Nyaung U, Magway and Chauk townships. MMA organized the advocacy meetings for TB control in 4 townships, Yangon Division.



TB IEC



Community education

4.2 BCG immunization

This activity was started since 1951 to those who were tuberculin test negative. In 1963, Freeze Dried BCG Vaccine was introduced and direct BCG vaccination has been implemented since 1969. BCG Vaccination has been integrated into Expanded Programme on Immunization (EPI) and the BCG team of NTP has been integrated into State and Divisional 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 State and Division. BCG coverage in 2007 was 89%. (Source: EPI programme)

Table 2. BCG coverage (2005-2007)

State/Division	2005	2006	2007
Ayeyarwaddy Division	75%	64%	85%
Bago Division (East)	74%	81%	89%
Bago Division (West)	90%	90%	94%
Chin State	99%	119%	93%
Kachin State	89%	108%	95%
Kayah State	81%	83%	83%
Kayin State	60%	63%	85%
Magway Division	85%	89%	90%
Mandalay Division	68%	75%	86%
Mon State	86%	80%	94%
Rakhine State	106%	76%	92%
Sagaing Division	88%	83%	91%
Shan State (East)	42%	38%	85%
Shan State (North)	60%	68%	70%
Shan State (South)	84%	71%	83%
Taninthayi Division	93%	91%	97%
Yangon Division	61%	65%	94%
Union	77%	76%	89%

4.3. Case detection

WHO estimates ARTI for Myanmar is 1.5%. The TB prevalence survey conducted in Yangon Division (2006) showed 229/100,000 population. The incidence was estimated as 170/100,000 population which is 2.26 times higher than the current estimates using for all townships. The national estimate is based on the smear

positive national TB prevalence survey conducted in 1994. Therefore, the national estimates should be revised after the technically sound national TB prevalence survey.



Active case finding using mobile team

The Case Detection Rate (CDR) of new smear positive cases for 2007 was 89%. 14% of detected new sputum smear positive cases and 13% of all TB cases were contributed by other reporting unit apart from NTP. Private sector through franchising approach of Populations Services International (PSI) contributed 9% of new smear positive TB cases and 8% of all TB cases notified to NTP. Hospitals also contributed 1.5% and 1.8% of new smear positive and all TB cases reported to NTP. MSF (Holland) contributed 3.6% of all reported TB patients.

Passive case finding is carried out in the DOTS townships. Chest symptomatic TB suspects from community are referred to the microscopy centres for sputum microscopy. Sputum smear microscopy plays an important role in NTP not only for diagnosis of TB patients but also to monitor the progress of TB patients during treatment and to determine the cure of TB patients at the end of treatment.

The diagnosis for TB is mainly done by sputum smear microscopy. Culture is available only at National TB Reference Laboratory (NTRL, Yangon) and Upper Myanmar TB Laboratory (Mandalay). Currently only NTRL could perform drug sensitivity testing and will be perform in Mandalay by end of 2008.

With the Bridging Funding of 3DF, a 45 KVA generator and a large Incubator, hot and cold rooms (incubation room and chemical storage room) were equipped for Upper Myanmar TB Laboratory, Mandalay. After that new Drug Sensitivity Testing (DST) laboratory will be establish at Mandalay. Plan have been made for visit of international expert on culture and DST where bench work training will be given to all technicians of NTRL, Yangon and Mandalay TB Laboratory. This is essential

when DOTS - Plus Project is introduced and also for preparation of next nationwide DRS and national TB prevalence survey.

Case finding activities are supported by radiological examination. All State and Divisional TB Centres except Eastern Shan State and Kayah States are equipped with X-ray facility. One miniature x-ray machine is installed at each Tuberculosis Diagnostic and referral Centers located at Yangon General Hospital Extension compound, Union Tuberculosis Institute (Aungmye) and Mandalay General Hospital compound.



Culture facility in Upper Myanmar TB laboratory, Mandalay

4.4. Laboratory performance

Township level laboratory performance was closely monitored by State and Divisional Laboratories. Three sputum specimens are to be examined for the diagnosis and two specimens are to be examined for follow-up in all laboratories.

Maintaining the quality of AFB Microscopy

The NTP, Myanmar since 1999 have started to develop the framework for the implementation of quality assessment activities using conventional method where all positive slides and 10% of the negative slides examined are checked. The smear workload increases and the burden for quality recheck also increased.

After a pilot study of External Quality Assessment on lot quality assurance system (EQA-LQAS) at Yangon and Mandalay Division, workshops and trainings were given to (20) Senior TB Laboratory Supervisors (STLS) assigned by Ministry of Health to reinforce this work. The National Guidelines on EQA-LQAS for AFB Microscopy was developed in October 2007 and orientation training given in February 2008 to Officers from State and Divisional TB Centers, Laboratory Officers from State and Divisional Hospitals and Senior TB Laboratory Supervisors for proper random selection of six slides per month and sending to State and Divisional TB Centers for blinded re-checking. Timely reporting to peripheral laboratories and supervisory visits for corrective actions are also important components of this new EQA system. Thus, with 3 Diseases Fund enough budget have been allotted for quarterly supervisory visits and visits to places with major errors by the Microbiologists if required. Standardized supervision report form and QA forms were also distributed. Laboratory of Mandalay Divisional TB Centre took responsibility of Kachin State and Mandalay Division. Feed-back together with comments were sent back to State and Divisional level from central and State and Divisional level to township level. The INGOs (PSI and AZG) laboratories performing AFB Microscopy also sent QC slides to NTP (Central).

Panel slides were sent to STLS at State and Divisional TB Centers and Hospitals twice a year from National Health Laboratory (NHL) / NTP. Training for new recruit STLS (5 days) and refresher training for existing STLS (2 days) will be given twice yearly. Laboratory annual meeting will be held once a year.

MIDCP-JICA supports EQA system establishment in both technically and financially.

There are 12 townships each in Yangon and Mandalay Divisions, 3 townships each in Shan State (South), Mon State, Magway Division, Bago Division (East) and Ayeyarwaddy Division and 14 townships in Bago Division (West) altogether 53 townships are under EQA.

Table 3. Townships under EQA (2007)

S.N.	State/Division	Townships	Remarks
1	Yangon Division (12) townships	Latha, Insein, Hlaingthayar, Eastern District, North Okkalapa, Shwepyitha, Dawbon, Thaketa, Thanlyin, Botahtaung, Waibargi Infectious Diseases Hospital, Mingalardon	Major errors reported for the lab of Dawbon and Thaketa.
2	Mandalay (12) townships	Chanmyathazi, Chanayethazan, Aungmyaythazan, Mahaaungmyay, Amarapura, Patheingyi, Myittha, Kyaukse, PyinOoLwin, TB hospital (Mandalay), TB Dx and referral center, Monywa TB center	Major errors reported for the lab. of Mahaaungmyay, Myittha, PyinOoLwin, Amarapura, Chanayethazan
3	Bago Division (West) (14) townships	Pyay, Paukkhaung, Padaung, Okkpo, Paungde, Thegone, Shwedaung, Thayarwaddy, Latpadan, Minhla, Zekone, Moenyo, Nattalin, Gyobingauk	Major error reported for Moenyo lab.
4	Bago Division (East) (3) townships	DaikU, Waw, Thanutpin	
5	Mon State (3) townships	Mudon, Kyaikmaraw, Paung	
6	Shan State (South) (3) townships	Nyaungshwe, Kalaw, Hopone	
7	Magway Division (3) townships	Yenanchaung, Minbu, Taungdwingyi	
8	Ayeyarwaddy Division (3) townships	Myaungmya, Pantanaw, Kyaunggone	

The other township laboratories are under quality control (QC) system using the routine conventional method. Lab. technicians from State/Divisional TB centers or Medical Technologists from the State/Divisional General Hospital labs are responsible for QC on sputum microscopy. Some townships sent QC slides to NTRL for their convenience sake.

Table 4. Quality assessment done at National TB Reference Laboratory on State and Divisional laboratories in 2007

State/ Division	Township	No. of slides received at NTRL			No. of slides examined					Type of Error	
					Total	TRUE		FALSE			
		(+) ve	(-) ve	Total		(+)ve	(-)ve	(+) ve	(-) ve	Major	Minor
Chin	Hakha	29	40	69	23	6	17	0	0	0	0
	Falam	23	31	54	50	20	30	0	0	0	0
	Tunzun	10	2	12	10	8	2	0	0	0	0
	Htantalan	10	15	25	15	7	8	0	0	0	0
Rakhine	Thandwe	3	15	18	18	4	14	0	1	1	
Ayeyarwady	Pyapon	16	44	60	60	18	42	0	2	1	1
	Kyaiklatt	5	55	60	60	7	53	0	2	2	0
	Daydaye	10	45	55	55	13	42	0	3	1	2
Bago (West)	All 14 Townships	322	722	1044	1044	314	672	8	28	29	29
Magway	Magway	9	51	60	60	31	5	26		0	0
Yangon	45Sites*	1932	3558	5490	2958	641	2317	2	51	34	41

* 45 sites = 35 Townships, 7 Hospital and 3 (Others AZG, PSI, Insein Jail)

Table 5. Quality assessment of State/Divisional TB Laboratories on peripheral laboratories, 2007

Qc slides examined at State/Divisional TB Centre	QC slides examined for State/Division	No. of slides examined					Concordance (%)
		Total	TRUE		FALSE		
			(+)ve	(-)ve	(+)ve	(-)ve	
Myitkyina	Kachin	876	236	618	17	5	97%
Mandalay	Mandalay	2798	617	2076	11	94	96%
Monywa	Sagaing and Chin	474	205	262	0	7	97%
Magway	Magway	1312	227	1074	1	10	99%
Taunggyi	Shan (South)	1250	494	756	0	0	100%
Loikaw	Kayah	25	6	19	0	0	100%
KyaingTone	Shan (East)	763	293	432	36	2	95%
Lashio	Shan (North)						No report
Mawlamyine	Mon	647	145	486	5	11	98%
Mawlamyine	Kayin	563	169	375	2	17	97%
Dawei	Tanintharyi						No report
Bago	Bago	936	400	536		6	99.3%
Sittwe	Rakhine	793	463	330			100%
Pathein	Ayeyaraddy	21956	950	1970	19	55	97%
Yangon	45 sites*	2958	641	2317	2	51	

* 45 sites = 35 Townships, 7 Hospital and 3 (Others AZG, PSI, Insein Jail)

Sputum collection centers (SCCs)

Due to lack of laboratory technician posts at peripheral areas, it is not possible to have microscopy services at all station hospitals and rural health centers and sputum collection centers are the possible solution for this.

Case finding activities were strengthened by setting of sputum collection centers. In 2007, SCCs were piloted at (10) sites with Bridging Fund of Three Diseases Fund (3DF). There were 3 sites in Yangon Division (Nethamein Station Hospital, Htantabin township, Thapyaykan RHC, Thanlyin township, Letkhokekone SHU, Kyungyangone township, 5 sites in Mandalay Division (Sinywagyi RHC, Dahattaw RHC, Patheingyi township, Pyinzar RHC, Pyinoolwin township, Taungzin SHU and Ngatayauk SHU in NyaungU township) and 2 sites in Ayeyarwaddy Division (Weigyi RHC, Kyonepyaw township, Letpankwin RHC, Myanaung township) were selected for implementation of sputum collection centers.

Advocacy meetings were conducted at Township level and one day training was provided to local Basic Health Staff of selected SCC sites including laboratory technician. Materials such as table, chair, ice box, ice packs and stationeries were supplied. Transportation cost was also reimbursed to the BHS.

At 2 sites (Nethamein Station Hospital and Letkhokekone SHU) in Yangon Division SCC could not be established due to transfer of technician and Health Assistant. The results of activity were presented in 39th Union World Lung Health Conference in 2008. Sputum collection centers implemented at the seven Health Centers of five townships in three Divisions were drained from 319 villages with population of 0.2 million. 360 TB suspected patients and 142 TB patients used sputum collection centers. Sputum positivity rate for TB diagnosis was 14.4% and TB suspect examination rate was 169/100,000 population. Case detection rate of those Health Centers increased compared to previous year. Total time, traveling distance and cost saved by using sputum collection centers were 1,520 hours, 7,661 miles and 1,311 USD respectively. The pilot phase recommended the community awareness on established sputum collection centers are needed to improve.

In Sagaing Division, (75) SCCs were established with the different approach with the support of Fidelis Project.

Human resource situation in TB laboratories

The human resource at the NTRL and Upper Myanmar TB Laboratory is limited to be able to conduct the culture and DST work and quality check and supportive supervisory visits and training as necessary.

Table 6. Human resource situation in NTRL and Upper Myanmar TB Lab.

S. No.	Category of Staff	NTRL, Yangon		Laboratory at Mandalay TB Center		Remarks
		Posted	Total need	Posted	Total need	
1.	Senior Consultant Microbiologist	1	1	0	0	
2.	Microbiologist	0	1	0	1	
3.	Medical Officer	2	3	1	2	To supervise routine lab. works, QA section and training section
4.	Med. Technologist (Trained)	2	3	0	2	For culture and DST section, Media Prep., QA section and training section
5.	Grade I Technician	6	6	3	4	For culture and DST section, QA section and stains preparation
6.	Grade II Technician	1	3	2	3	For routine microscopy, to assist in stains and media preparation
7.	Computer Assistant	0	1	0	1	For data entry
8.	Electrician	0	1	0	1	
9.	Clerk	1	0	1	0	
10.	Lab Attendant	1	2	2	2	
11.	Watch man	0	1	0	1	

At present there is one Grade I Technician (now designated as Senior TB Laboratory Supervisor STLS) each at Taunggyi, Patheingyi, Mawlamyine and Bago TB Centers. Their duty is to prepare staining solutions, examine QC slides and visit peripheral laboratory for on-site evaluation. Other State and Divisional TB Laboratories: Sittwe, Monywa, Myeik, Lashio, Magwe, Kyaingtong, Myittha and Loileik have no sanction for a Grade I lab. technician. All the State and Divisional level TB laboratories should have at least one Grade I and II lab. technicians.

Those townships with TB team have one Grade II lab. technician. Townships without TB team use a lab. technician either from NTP or general health services/ township hospital for sputum for AFB microscopy. Yet there are townships with no sanction for a laboratory technician.

For easy accessibility of TB suspects and follow-up patients for sputum examination, expansion of TB Microscopy services is suggested. Public Health Supervisors II (PHS II) or natives (10th. Standard passed) from that place should be trained for sputum for AFB Microscopy.

4.5. Treatment

In 2007, altogether 325 townships were implementing DOTS strategy.

Township Medical Officers (TMOs) and TB coordinators of DOTS townships take all the responsibilities of TB control activities. In townships with TB team, team leaders (Doctor or Health Assistant) are serving as TB co-ordinators and where there are no TB teams, Township Medical Officers or assigned health personnel are serving as TB co-ordinators.



Home visit of DOT supervisor

For each and every patient, there is a DOT provider. DOT providers are selected either local BHS or Voluntary Health Workers or members of Non Governmental Organization (NGOs), especially Myanmar Women Affair Federation (MWAF), MMCWA, MMA, MRCS or family members of the TB patients. All BHS and some pre-selected NGO members are trained when the particular township started the DOTS strategy implementation. DOT providers from community could serve as close to the patient as possible to ensure that patient's adherence to the full course of treatment. The drug adherence is aimed to improve after introduction of 4-Fixed Dose Combination (FDC) in 2004. BHS are assigned as DOT supervisors and decentralization of the anti-TB drugs distribution is strengthened. Pre-packed patient kits were introduced to 38 townships in 2007.



Pre-packed patient kits for category I and III

Paediatric formulation for management of TB in children was supported by UNITAD through GDF in 2007 and could distribute the drugs in 2008. SOP for management of TB in children was developed and distributed to TMOs, TB coordinators and paediatricians in trainings at central/ State/Divisional levels.

4.6. Supervision, monitoring and evaluation

4.6.1. Supervision and monitoring

State and Divisional TB Centres are led by State and Divisional TB Officers and they give technical supports to the State and Divisional level, district and township level TB control activities. They also give training, on the job training, supervision, monitoring and feed back to improve the TB control activities for the achievement of the NTP's objectives at State and Divisional level. NTP activities are closely supervised by Central Supervisory Committee for prevention and control of TB chaired by Minister for Health, Ministry of Health.

Regular monitoring of patients progress is carried out at every DOTS townships. Desk monitoring on case finding, sputum conversion and treatment activities through quarterly reports is carried out at all levels. Feed back mechanism from top to bottom using quarterly assessment form was carried out.

Supervisory visits were conducted by central/state/divisional and district/township level supervisors. Laboratory supervision was strengthened by recruiting STLS from general health services.

NTP could made 595 supervisory visits to district and township level and 980 visits to either station hospitals or RHC in 2007 with the support of WHO and 3DF.



Supervision at Pharkant township with lab. major errors

Table 7. Reported supervisory visits (2007)

State/Division	No. of supervisory visits to District/township level	No. of supervisory visits to Station Hospitals and Rural Health Centers
Yangon Division	113	0
Ayeyarwaddy Division	36	32
Bago Division	59	41
Magway Division	53	104
Taninthayi Division	15	17
Sagaing Division	102	530
Mandalay Division	22	1
Mon State	32	66
Kayin State	12	38
Kayah State	18	13
Rakhine State	41	55
Kachin State	19	0
Chin State	6	5
Shan State (E)	23	3
Shan State (S)	17	37
Shan State (N)	27	38
Total	595	980

4.6.2. Evaluation

Evaluation meetings are carried out to assess the TB control activities and achievement by State/Divisions and to identify the problems and constraints facing in different localities at different levels and to seek for the possible solutions and plan for the future.

4.6.2.1. National annual evaluation workshop on NTP activities

National annual TB evaluation workshop was held at meeting hall of Ministry of Health, Naypyitaw from 2-10-2007 to 3-10-2007 with the support of WHO.

Officials from Department of Health, responsible persons from HMIS, Department of Health Planning, NTP central office staff, Medical Superintendent from TB hospitals, State/Divisional Health Directors, State/Divisional TB Officers and District TB team leaders medical officers, representatives from WHO and implementing partners attended the workshop.

Recommendations of Central Annual TB Evaluation Workshop

1. To strengthen the joint supervision of State and Divisional Health Directors and TB Officers.
2. To follow all NTP's Standard Operating Procedures and guidelines at all levels and all partners.
3. To conduct quarterly evaluation meeting at township level.
4. To improve the performance of all townships towards TB control targets at least 70/85.
5. To strengthen the quality of DOTS to prevent MDR-TB.
6. To share the information among the partners including PPM-DOTS at township and State/Divisional level.
7. To develop guideline for Isoniazid Preventive Therapy (IPT).

4.6.2.2. Half year evaluation meeting on TB control activities, Yangon Division

was held on 20-9-2007 to 21-9-2007 at Yangon Divisional Health Office with the support of JICA(MIDCP). The TB control activities conducted in Yangon Division were evaluated for first half year of 2007. The following recommendations were made.

1. To increase case detection in every township
2. To attain Treatment Success Rate (TSR) of 85% in those townships, which are not yet reach target
3. To follow the standardized drug distribution system in all townships
4. To provide binocular microscopes in the townships in need
5. To train new recruit lab. technicians
6. To monitor and supervise every township by the responsible supervisors

4.6.2.3. Half year evaluation meeting on TB control activities, Mandalay

Division was held on 12-10-2007 at Mandalay Divisional Health Office with the support of JICA(MIDCP). The TB control activities conducted in Mandalay Division were evaluated for first half year of 2007. The meeting recommendations were as followed:

1. To develop TB microplan by BHS for 2007
2. To advocate about the TB control to local authorities, GP doctors involved
3. To improve partnership as much as possible for TB control
4. To involve old TB patients in TB control

5. To display TB control achievement (monitoring chart) at every township
6. To expand social mobilization activity up to grass root level
7. To distribute DOTS related video clip up to village level
8. To assign a DOT-provider for every TB patient and to be supervised by the responsible BHS
9. To do active case finding at low CDR townships in coordination with divisional TB center
10. To ensure proper storage and maintenance of anti-TB drugs

State/Divisional TB evaluation meetings were done at all States/Divisions. The activities were conducted with the support of 3DF (Bridge fund). Township quarterly evaluation meetings were also conducted in some low performance townships. (17 townships in Yangon Division, 5 townships in Kayah State, 15 townships in Ayeyarwaddy Division, 15 townships in Mon/Kayin States, 22 townships in Magway Division, 1 townships in Chin State, 7 townships in Southern Shan State were reported to NTP.)



TB evaluation meetings at State/Divisional level

Table 8. Evaluation meetings

State/Divisional level	Date	No. of participants	Remarks
Kachin State	26.2.07	45	Township quarterly reports could not compile.
Kayah State	19.5.07	7	
Chin State	14.8.07	3	
Shan State (South)	9.4.07	40	
Shan State (East)	7.5.2007	14	
Shan State (North)	10.5.07	42	
Mon State	6.3.07	32	
Kayin State	2.4.07	26	
Rakhine State	5.2.07	38	
Mandalay Division	12.10.07	62	
Sagaing Division	7.7.07	75	
Magway Division	11.3.07	50	
Bago Division (East)	18.3.07	28	
Bago Division (West)	10.3.07	28	
Yangon Division	24.4.07	87	
Ayeyarwaddy Division	21.3.07	59	
Taninthayi Division	14.10.07	18	

4.7. Co-ordination and collaboration with other health sectors and NGOs

NTP co-ordinates with the other health sectors such as Laboratory, Medical Care and AIDS/STD Prevention and Control Programme to accelerate the NTP activities. TB/HIV co-infection has an impact on NTP. NTP and NAP have been closely collaborated in prevention and control activities of TB and HIV/AIDS since 1998. TB/HIV collaborative prevention and control activities for TB and HIV/AIDS were implementing in Myitkyina, Taunggyi and Lashio with the support of WHO. Voluntary Confidential Counseling and HIV testing is providing at TB centers.



Signing a MOU for IHC project

Integrated HIV Care for TB patients (IHC) Project was initiated in Mandalay, covering 5 townships (Aungmyaythazan, Chanmyathazi, Chanayethazan, Mahaaungmyay, Pyigyitagon townships in Mandalay District). The project is supported by the Union and Total oil company. The project was expanded to 2 townships (Patheingyi and Amarapura) in Mandalay District and to Pakokku township of Magway Division in 2007.

State/Divisional TB Officers were trained on TB/HIV prevention and control activities. District TB team leaders were trained together with team leaders from HIV/STI teams.



Monthly meeting for TB/HIV collaborative activities in Taunggyi

NTP also co-ordinates with the NGOs such as, MAAF, MMCWA, MMA and MRCS in DOTS implementation. International NGOs co-operating with NTP are Union, MSF (Holland), PSI, Japan Anti-TB Association (JATA), World Vision, Pact Myanmar, Malteser and IOM. JICA is supporting the NTP activities in some townships as a bilateral co-operation agency.



Involvement of local NGO, MCWA in TB control

NTP trained 20 Private Practitioners (PP) as trainers for Public Private Mix-DOTS in 2005 in collaboration with MMA. In 2005, MMA trained 65 PPs in Yangon

and Bago (East) Divisions. In 2006, 213 PPs were trained in Mandalay, Bago (West), Sagaing, Magway Divisions and northern Shan and Mon States.

MMA trained GPs from 19 townships up to 2007 and 398 GPs were practicing scheme I and 22 GPs were practicing scheme II (South Okkalapa, Pyay and Kyaukse townships). MMA referred 4336 TB suspects and 3591 (83%) reached the TB centers. Out of which 3487 (97%) got the feedback from TB centers. Among TB suspect referral who underwent sputum for AFB examination, 929 (26%) were smear positive TB and other 1314 (37%) were put on anti-TB treatment.

Table 9. MMA PPM-DOTS contribution (2007)

S.No.	Township	All GPs	PPM GPs		No. of referral	No. of feedback	S +	Treated for TB	Non TB
			Scheme						
			I	II					
1	Insein	62	22		250	209	39	98	62
2	Kyimyindine	55	13		177	119	24	41	54
3	North Dagon	47	22		126	99	32	45	22
4	South Dagon	51	17		112	76	22	26	28
5	South Okkalapa	110	20	6	284	142	44	71	27
6	Shwepyitha	39	21		273	216	80	113	23
7	Thatketa	107	20		308	225	51	36	138
8	Thanlyin	33	31		194	185	54	36	95
9	Bago	65	35		352	317	89	5	223
10	Pyay	52	12	13	378	324	112	157	55
11	Mawlamyine	63	22		160	157	34	73	50
12	Aungmyaythazan	70	23		592	535	142	200	193
13	Chanayethazan	80	27		385	284	70	198	116
14	Chanmyathazi	49	17		177	163	39	50	74
15	Mahaaungmyay	64	17		142	125	24	21	70
16	Kyaukse	27	22	3	103	73	14	58	1
17	Lashio	32	22		49	35	13	21	1
18	Magway	51	18		116	96	14	31	51
19	Monywa	61	17		158	107	32	34	45
	Total	1118	398	22	4336	3487	929	1314	1328

PPM-DOTS Scheme I was also supported by MIDC Project (JICA) and implementing in North Okkalapa township (Yangon Division started in November, 2006) and PyinOoLwin township, Mandalay Division started in January 2007. After one year, 259 patients were put on anti-TB treatment including 112 smear positive TB patients.

Population Services International (PSI) started the collaboration with NTP in March 2004. PPs and lab. technicians were trained in TB control and they are running the clinics providing Anti-TB treatment in the community. Up till 2007, PSI

ran the Sun Quality Clinics with 415 trained PPs in 99 townships of 13 States/Divisions. TV spot related to TB was aired for 48 times.

Table 10. Contribution of PSI (2004-2007)

Years	Suspected cases tested	Cat I +	Cat I (Neg. & EP)	Cat II	Cat III	Total
2004	3530	840	256	199	927	2222
2005	11048	2262	571	396	2311	5540
2006	19798	3560	1200	556	4116	9432
2007	17687	3837	1694	589	4023	10143
Total	52063	10499	3721	1740	11377	27337

PPM-DOTS (MMA) contributed 13% of smear positive TB patients and 7% of all TB patients of the townships' registered TB patients. PPM-DOTS (JICA) contributed 20% of smear positive TB cases and 15% of all TB patients of the townships' case load.

PPM-DOTS of PSI contributed 9% of smear positive cases and 8% of all registered TB patients nationally.

PPM-DOTS (PSI, MMA and JICA) contributed 11% and 9% of union total new smear positive TB cases and all TB cases.



Advocacy meeting for PPM-DOTS, Pyigyitagon township

NTP started collaboration with ARTSEN ZONDER GRENZEN (AZG) since 2001 in Waingmaw and Momauk townships in Kachin State. Then Kachin State TB center, NTP supported the Anti-TB drugs to AZG in November, 2004. Currently AZG is functioning in Kachin, Northern Shan States, Yangon Division and Rakhine State. NTP had not received the quarterly report from Rakhine State AZG clinics as other areas. AZG mainly focused for HIV co-infected TB patients. Thazin clinics provide not only diagnosis and treatment, but also food for the patients during the intensive phase of treatment. AZG contributed 3% and 4% of union total new smear positive and all TB patients.

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. Public-Public Mix DOTS initiative as a pilot phase aims to strengthen the TB control services, through establishing a system link between public hospitals and public TB centers. Advocacy meetings were conducted and followed by the training of 53 hospitals staff on TB control and PPM-DOTS. Hospital DOTS Committees were formed for each hospital chaired by Medical Superintendent and members from heads of clinical disciplines. Assistant Medical Superintendent were assigned as a PPM Coordinator. Roles of laboratory technicians, nurses, medical social workers and pharmacist were identified.

PPM-DOTS in hospitals had identified four options to implement.

Option 1: Diagnosis of TB cases + prescription of treatment regimen in hospital followed by referral to Health Center 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 + start Directly Observed Treatment (DOT) in hospital followed by referral to Health Center during treatment.

Option 4: Diagnosis of TB case and provide full treatment (DOT) at hospital.

Process of implementation of Hospital DOTS linkage system							
Options	Diagnosis	Classification	Start treatment	Treatment	Referral	Clinical follow-up	Reporting
1							
2							
3							
4							

Currently all hospitals are practicing option 3 and 4. DOT corner had been identified and renovated in all hospital for counseling, health education and DOT activities. NTP and WHO conducted joint monitoring and supervisory visits regularly.

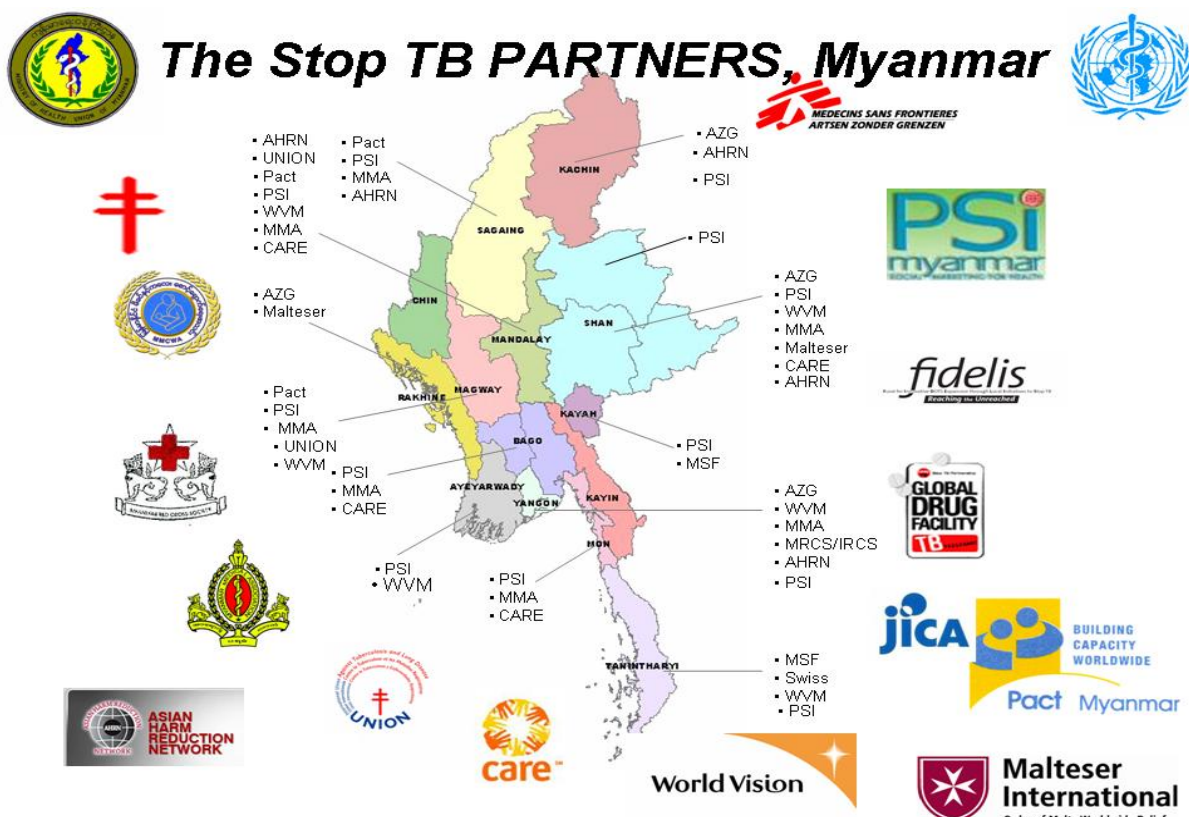
TB hospitals (Aungsan and Patheingyi), Waibagi Specialist Hospital and Specialist Hospital (Mingaladon) are also collaborating with NTP.

Table 11. Implementing partners and activities

NGOs	Area Coverage and activities
MWAF	Case finding, provide Health education and provide DOT in all townships
MCWA	Case finding, provide Health education and provide DOT in all townships
MMA	PPM-DOTS (Scheme I) in 23 Townships
MRCS	6 Townships (Yangon Division) Multiplier Training (Peer Education) for Red Cross Volunteers Comprehensive IEC Campaign Defaulter Tracing Case Detection and Referral Home Base Care and Support World TB Day Celebration

Bilateral agency	Area Coverage and activities
JICA	Support Divisional TB control Programme of Yangon and Mandalay Divisions (76 townships)

INGOs	Area Coverage and activities
PSI	Total no. of providers 415 in 99 townships in 13 States/Divisions, 86 PPM labs are functioning (Private – 28 , public 58)
Pact Myanmar	Improving individual knowledge believe skill and attitude Building commitment to community self-action in health and development Community based TB Case finding and Management System Building access to resource and service, functioning in dry zone of Myanmar.
World Vision International	Case finding and provide nutritional support to Childhood TB cases in Yangon
AZG (MSF - Holland)	Treatment of TB and TB/ HIV patients (Yangon Division, Shan (North), Rakhine & Kachin States)
Malterser	TB case finding and treatment of TB patients in Rakhine state
JATA	Support Township TB control activities in 3 Townships from Yangon Division and 3 Townships from Mandalay Division
IUATLD	Support Integrated TB/HIV care in 7 Townships of Mandalay district and Pakkoku township of Magwe Division
AHRN	Capacity building, training, IEC materials and support to treatment in Shan & Kachin states, Yangon, Mandalay and Sagaing Divisions.
IOM	Case finding activities with decentralized sputum collection centers in Mon State, 6 townships.
Care Myanmar	Improve case finding and case holding activities , Support for TB/HIV patients esp. home base care, PPP, IEC in Sagaing chin, Rakhine, Shan (N), Kayah, & Mon states



4.8. Capacity building

NTP integrated the TB control activities to primary health care services. Training on TB control with the revised WHO modules were conducted in 2006 with the support of GFATM, JICA and WHO. Those trainings were continued in 2007 with the support of 3DF.

Training of trainers on Management of TB at District level WHO new modules and 3 batches of training of trainers on training methodology using "Management of TB for Health Facility Staff, WHO modules" was given to 95 State/Divisional, national and international NGOs in 2005. In 2006, training on "Management of TB at District level" was given in 15 States/Divisions (except Mandalay and Sagaing Divisions) and "Management of TB for health facility staff" was given in Yangon, Mandalay, Bago Divisions and Mon State. The potential DOT providers including BHS, members of the NGOs are gathered and given DOTS training by trained TMOs and TB co-ordinators. Training for GPs on PPM-DOTS was also given in collaboration with MMA. The training on TB/HIV prevention and control activities were given to District TB Officers and team leaders from HIV/STI teams. Refresher training for lab. technicians and new recruit trainings were given as required. Regular training on TB control was given at Institutes and Training Schools of MWs and LHVs.



PPM-DOTS training

At the end of 2007, Training on Leadership and management, Laboratory trainings, District level TB control management training (including 6 TOT on TB control training, 104 BHS training courses) altogether 130 trainings were conducted under the funding of 3DF (Bridge fund). Workshop on TB counseling, Childhood TB management, National framework for MDR-TB management and Dissemination Seminar on Childhood TB management were also conducted under 3DF (Bridge fund).

97 TMOs, 3575 BHS, 53 hospital staff, 94 lab. Technicians were trained in 2007.

Table 12. National Tuberculosis Programme, Training Activities in 2007

Sr. No.	Type of Training	Date	Place	No. of Trainees	Funding
1	Advocacy of GP on Public Private Mix-DOTS		Yangon (4 Districts, 5 occasions)	98	BF (3DF)
	Advocacy on Public Public Mix-DOTS	7-5-07	New YGH	70	BF (3DF)
		7-5-07	East YGH	70	
		7-6-07	West YGH	65	
		7-6-07	Sanpya General Hospital	50	
2	Training on Management of TB for Health facility Staff		Bahmaw	30	BF (3DF)
			Bahmaw	30	BF (3DF)
			Myitkyina	30	BF (3DF)
			Myitkyina	30	BF (3DF)
			Moenyin	30	BF (3DF)
			Moenyin	30	BF (3DF)
			Waingmaw	25	BF (3DF)

Sr. No.	Type of Training	Date	Place	No. of Trainees	Funding
	Training on Management of TB for Health facility Staff		Waingmaw	30	BF (3DF)
			Loikaw	37	BF (3DF)
			Loilaw	38	BF (3DF)
			Sittwe	26	BF (3DF)
			Sittwe	28	BF (3DF)
			Sittwe	30	BF (3DF)
			Sittwe	30	BF (3DF)
			Thandwe	30	BF (3DF)
			Thandwe	30	BF (3DF)
			Thandwe	30	BF (3DF)
			Ponargyun	30	BF (3DF)
			Belin	30	BF (3DF)
			Belin	30	BF (3DF)
			Chaungzon	30	BF (3DF)
			Chaungzon	30	BF (3DF)
			Thanphyuzayat	29	BF (3DF)
			Thanphyuzayat	31	BF (3DF)
			Kyaingtong	32	BF (3DF)
			Kyaingtong	33	BF (3DF)
			Tarchileik	30	BF (3DF)
			Tarchileik	30	BF (3DF)
			Mongphat	26	BF (3DF)
			Monghsat	22	BF (3DF)
			Monghsat	22	BF (3DF)
			Myauk-U	30	BF (3DF)
			Myauk-U	30	BF (3DF)
			Lashio	30	BF (3DF)
			Lashio	30	BF (3DF)
			Kyaukme	34	BF (3DF)
			Kyaukme	35	BF (3DF)
			Hsipaw	30	BF (3DF)
			Theinni	30	BF (3DF)
			Naungcho	30	BF (3DF)
			Naungcho	30	BF (3DF)
			Namkham	30	BF (3DF)
			Tantyan	30	BF (3DF)
			Nansan	30	BF (3DF)
			Dawei	29	BF (3DF)
			Dawei	29	BF (3DF)
			Kawthaung	19	BF (3DF)
			Kawthaung	22	BF (3DF)
			Myeik	24	BF (3DF)
			Myeik	29	BF (3DF)
			Palaw	30	BF (3DF)
			Palaw	30	BF (3DF)
			Kyauktagar	21	BF (3DF)
			Kyauktagar	25	BF (3DF)
			Kyauktagar	26	BF (3DF)
			Letpadan	30	BF (3DF)
			Letpadan	30	BF (3DF)
			Pyay	30	BF (3DF)
			Pyay	30	BF (3DF)
			Pyay	30	BF (3DF)
			Waw	30	BF (3DF)
			Waw	30	BF (3DF)
			Taunggu	27	BF (3DF)
			Taunggu	30	BF (3DF)
			Taunggu	31	BF (3DF)

Sr. No.	Type of Training	Date	Place	No. of Trainees	Funding
	Training on Management of TB for Health facility Staff		Taunggyi	30	BF (3DF)
			Taunggyi	30	BF (3DF)
			Taunggyi	30	BF (3DF)
			Nyaungshwe	30	BF (3DF)
			Nyaungshwe	30	BF (3DF)
			Kalaw	30	BF (3DF)
			Kalaw	30	BF (3DF)
			Loilem	30	BF (3DF)
			Namsan	30	BF (3DF)
			Kungyangone	22	BF (3DF)
			Kungyangone	23	BF (3DF)
			Kyauktan	26	BF (3DF)
			Kyauktan	26	BF (3DF)
			Kyauktan	31	BF (3DF)
			Hlegu	30	BF (3DF)
			Hlegu	34	BF (3DF)
			Hlegu	34	BF (3DF)
			Yangon	29	BF (3DF)
			Yangon	31	BF (3DF)
			Pyinmana	24	BF (3DF)
			Pyinmana	27	BF (3DF)
			Pyinmana	30	BF (3DF)
			Tharzi	29	BF (3DF)
			Tharzi	32	BF (3DF)
			Lewei	34	BF (3DF)
			Lewei	34	BF (3DF)
			Myingyan	32	BF (3DF)
			Myingyan	33	BF (3DF)
			Myingyan	33	BF (3DF)
			Tatkone	30	BF (3DF)
			Tatkone	30	BF (3DF)
			Ngape	31	BF (3DF)
			Natmauk	24	BF (3DF)
			Natmauk	24	BF (3DF)
			Natmauk	24	BF (3DF)
			Pauk	30	BF (3DF)
			Pauk	30	BF (3DF)
			Pwintphyu	32	BF (3DF)
			Pwintphyu	34	BF (3DF)
			Saw	30	BF (3DF)
			Saw	31	BF (3DF)
			Seikphyu	26	BF (3DF)
			Seikphyu	30	BF (3DF)
			Kalay	30	BF (3DF)
			Kalay	31	BF (3DF)
			Tamu	30	BF (3DF)
			Pale	29	BF (3DF)
			Pale	30	BF (3DF)
			Monywa	26	BF (3DF)
			Monywa	32	BF (3DF)
			Monywa	32	BF (3DF)
			Maubin	32	BF (3DF)
			Maubin	33	BF (3DF)
			Maubin	34	BF (3DF)
			Myaungmya	30	BF (3DF)
			Myaungmya	30	BF (3DF)
			Myaungmya	30	BF (3DF)
			Pathein	26	BF (3DF)

Sr. No.	Type of Training	Date	Place	No. of Trainees	Funding
	Training on Management of TB for Health facility Staff		Patheingyi Patheingyi Pyawbwe Pyawbwe Pyawbwe Tharabaw Tharabaw	33 37 29 30 30 30 33	BF (3DF) BF (3DF) BF (3DF) BF (3DF) BF (3DF) BF (3DF) BF (3DF)
3	Training on Management of TB at District Level for TMOs and TB coordinators	13-8-07	Yangon	30	WHO, RB
4	Training on DOTS for Hospital Staff	8-5-07 to 9-5-07 25-6-07 to 26-6-07 25-6-07 to 26-6-07 10-11-07 to 11-11-07	New YGH Sanpya General Hospital West YGH East YGH	9 9 15 20	BF (3DF)
5	Workshop on the development of national framework on MDR-TB	28-6-07 to 29-6-07	Yangon	31	WHO, RB
6	Training on TB/HIV for HA	10-7-07 to 14-7-07	Yangon	24	BF (3DF)
7	Training on HIV testing for lab. technicians	5-4-2007 25-4-2007	Yangon Mandalay	2 2	BF (3DF)
8	Training on pre-packed patients' kit	13-3-07 to 15-3-07	Yangon (38 tps)	32	BF (3DF)
9	Training on drug management for BHS		Yangon (30 tps) Mandalay (8 tps)	850	WHO, RB
10	Regular meeting on TB/HIV coordinating body	24-12-07	Naypyitaw	20	WHO, RB
11	Refresher training on NTP personnel for data management using DHIS	13-3-07 to 15-3-07	Yangon	38	BF (3DF)
12	Training on leadership and management for TMOs	4-6-07 to 8-6-07 11-6-07 to 15-6-07	Mon Sagaing (Monywa)	29 32	BF (3DF)
13	Refresher training on TOT on TB control management	11-5-07 to 12-5-07	Naypyitaw	25	BF (3DF)
14	TOT for trainings on TB control	16-6-07 to 20-6-07 23-7-07 to 27-7-07 23-7-07 to 27-7-07 6-8-07 to 10-8-07 20-8-07 to 24-8-07 27-8-07 to 31-8-07	Ayeyarwaddy Kachin Rakhine Shan (S) Bago Mandalay	17 30 28 21 29 30	BF (3DF)
15	Workshop on TB counseling	2-7-07 to 4-7-07	Nay Pyi Taw	38	BF (3DF)
16	Workshop on childhood TB management	19-3-07 to 20-3-07	Yangon	35	BF (3DF)
17	Paediatric seminars	15-8-07 22-8-07	Yangon Mandalay	70 60	BF (3DF)
18	Refresher Training of AFB Microscopy (3 days)	18.6.07 to 20.6.07 20.6.07 to 27.6.07 3.7.07 to 5.7.07)	Bago Yangon Mandalay	20 techs. 20 techs. 20 techs.	BF (3DF)
19	Training of AFB Microscopy (5-10 days)	5.3.07 to 15.3.07 28.3.07 to 1.4.07	Taunggyi Mandalay	10 techs. 16 techs.	BF (3DF)

Sr. No.	Type of Training	Date	Place	No. of participants	Funding
20	Training of Technicians from Sagaing Division (5 days)	30.7.07 to 3.8.07 24.8.07 to 28.8.07	Mandalay Mandalay	15 techs. 15 techs.	Fidelis
21	Training of technicians from Hospital Laboratories (3 days)	21.8.07 to 23.8.07 30.8.07 to 1.9.07	Mandalay Mandalay	10 techs 10 techs.	JICA
22	Training of drug media preparation and DST	11.6.07 to 15.6.07	Yangon	10 techs.	BF (3DF)
23	Pre survey training of persons from DRS sites	23.6.07 to 24.6.07	Yangon	85	BF (3DF)
24	Workshop Introducing SOP on EQA for AFB Microscopy	21.5.07 to 22.5.07	Yangon	29	JICA
25	TB Microscopist Training	6.8.07 to 10.8.07	Mawlamyine	15	IOM
26	Training for TB team leaders in qualitative research methodology	27.3.07 to 31.3.07	Yangon	20	JICA



Trainings



Table 13. International training and meetings/Workshops/Seminars, 2007

Sr.	Name and Designation	Duration	Country	Attended course and meeting
1	U Hein Aung Bwa Lab: technician Grade I DTB center, Ayeyarwaddy Division. Daw Tin Zar Aung Lab. Technician Grade 2 300 bedded hospital, Naypyitaw	7.5.07 to 15.6.07	India	Training on Laboratory techniques
2	Dr. Than Swe, DTBO, Tanintharyi Division Dr. Nan Singh Zin District TB Team Leader, Taunggyi District, Southern Shan State	7.5.07 to 18.5.07	India	Training on TB control
3	Dr. Zaw Myint District TB Team Leader, Tarchileik District, Eastern Shan State	8.5.07 to 4.8.07	Japan	Stop TB Action training course
4	Dr. Zaw Win, MS, TB hospital, Mandalay Dr. Bo Myint, DTBO, Divisional TB center, Mandalay Division Dr. Tin Soe, AMS TB hospital, Aungmye	6.8.07 to 10.8.07	India	Workshop on management of Drug resistant TB
5	Dr. Win Mg, DD, NTP	6.8.07 to 7.8.07	Thai	Myanmar- Thai cooperating meeting
6	Dr. Ti Ti, Senior consultant Microbiologist, NTRL Dr. Tin Tin Mar, MO Lab Divisional TB Center, Mandalay	10.9.07 to 14.9.07	Thai	Strengthen laboratory services For TB control
7	Dr. Tin Maung Swe, Medical Officer, NTP central unit	1-10-2007 to 15-11- 2007	Japan	TB/HIV training
8	Dr. Wint Wint Nyunt, Microbiologist, NTRL	21-9-2007 to 1-12- 2007	Japan	TB laboratory network
9	Dr. Win Mg, DD, NTP Dr. Hlaing Myint, MS TB hospital, Aungmye Dr. Thandar Lwin, AD, NTP	8.11.07 to 12.11.07	South Africa Cape Town	DOTS expansion working group meeting and 38 th Union world conference on lung health

4.9. Special occasions

4.9.1 WHO External Programme Review Mission (2007)

The WHO external programme review mission (20-1-2007 to 2-2-2007) consisted 13 external reviewers. The reviewers including NTP officials were divided into 3 groups. Team 1 visited to Yangon Divisional TB Center, Central TB drug store, lower Myanmar TB drug store, JICA, UNICEF, AZG, UNAIDS, WVI, UNDP offices. Team 1 also visited to Eastern Shan State, Kyaingtong, Mongpyat and Tachileik townships

Team 2 visited to Mandalay Divisional Health Office, Mandalay Divisional TB center, TB diagnostic center, Mandalay General Hospital, Integrated HIV care project, TB Hospital, Patheingyi, Mahaaungmyay, Chanayethazan townships in Mandalay Division, Sagaing Divisional Health Office, Sagaing township, Ywathitkyi Station Hospital, Myinmu, Monywa TB centre, Ayardaw, Wartan RHC and Shwebo townships of Sagaing Division.

Team 3 visited to Bago Division (West), Thayarwaddy, Gyobingauk, Pyay Divisional Health Office, PPM-DOTS project, Magway Divisional Health Office, Aunglan, University of Medicine, University of Community Health, Chauk (PACT), Taungdwingyi township in Magway Division.

The following recommendations were made by the review team.

RECOMMENDATIONS

For the Ministry of Health

- (1) Mobilize additional resources from both domestic and external sources; secure anti-TB drugs beyond 2008.
- (2) Strengthen capacity for coordination, planning, budgeting, implementation and supervision at division, district and township levels, in the context of 3DF.
- (3) Fill current vacancies, particularly of laboratory technicians and nurses; prepare a comprehensive human resource development plan.
- (4) Implement the recommendations of the workshop on “Implementation of the TB/HIV initiative in Myanmar, August 2006”.
- (5) Engage general practitioners and specialists through the international Standards for TB Care for better diagnosis and case management, to prevent MDR-TB and Extensive Drug Resistant TB (XDR-TB).

- (6) Consider resuming the border health programme; strengthen surveillance for TB/HIV and MDR-TB and introduce a minimum package of TB/HIV collaborative activities in high HIV prevalence border townships.
- (7) Strengthen human resources to ensure timely and smooth implementation of the large-scale 3DF programme.
- (8) Increase domestic funding for programme functions at all levels, and for drugs.

For the National TB Programme

- (1) Focus on improving case detection and case holding.
- (2) Prevent and address emerging multidrug resistance.
- (3) Jointly develop a strategic plan for effective collaboration to implement TB/HIV interventions.
- (4) Build on partnership initiatives with all stakeholders, particularly the private sector, teaching and large hospitals.
- (5) Increase community awareness and involvement for better utilization of available services and or long-term sustainability.
- (6) Secure drug supplies beyond 2008.
- (7) Build technical and managerial capacity at the township level for planning, implementing, budgeting and monitoring and evaluation in the light of the opportunity provided by the 3DF.
- (8) Develop a sustainable plan for human resource development.
- (9) Improve supervision at township and sub-township levels.
- (10) Augment infrastructure
 - for drug storage and logistics at central and sub-national levels;
 - at central laboratory in Yangon and in Mandalay for expanded scope of laboratory activities;
 - at state and divisional levels, and township and sub-township levels, particularly for diagnosis.

For the Global Drug Facility

- Improve timeliness of delivery of drugs.

For WHO and international Partners

- (1) Consider extensions of free grants of drugs for countries least capable of raising additional funding for anti-TB drugs.
- (2) Provide necessary technical assistance to build technical and managerial capacity in countries for effective implementation of all interventions under the Stop TB strategy.
- (3) Ensure coordination to maximize the benefits of each partner contribution.
- (4) Advocate for greater financial commitments to control TB and other priority diseases towards achieving the Millennium Development Goals.
- (5) Support critical gaps not covered by 3DF (core funding of UN agencies; JICA, IUATLD)

For the Three Diseases Fund

- (1) Include a budget line for anti-TB drugs in the next call for Expressions of Interest.
- (2) Support essential package of activities at central and divisional levels through WHO/UN.
- (3) Avoid parallel supply management system for TB drugs/laboratory supplies.
- (4) Build upon the existing monitoring and evaluation framework.
- (5) Support capacity for technical and administrative support for implementation and oversight at WHO required to cater 3DF funding for the three national programmes (TB, AIDS, Malaria)



De-briefing of external review team

4.9.2. GDF mission

As GDF monitoring mission, Dr. Hugo Adelbert Vrakking, Ms. Nigor Siltou Mouzafarava from GDF visited to Myanmar during 4.3.2007 to 16.3.2007. It was followed second term second year GDF monitoring mission by Mr. Adam Thomos and Dr. Vinnet Bhatia from GDF and made following recommendations.

Recommendations of 2nd Term, 2nd Year GDF Monitoring Mission, Myanmar, 23-29 September, 2007

Recommendations	Responsible Department/ Organization/ Person	Due Date
1. Continue further increase in Govt. funds for TB drugs in order to sustain the gains and further improve the performance	MOH	Financial year 2008/2009 onwards
2. Higher levels to continue to advocate with partners for enhanced support for TB drugs	MOH	Q-4-2007
3. Plan for procurement through possible additional funding sources-joint supplies wherever possible to reduce transportation costs	MOH	Q-4-2007
4. CMSD to have written procurement policy document	Deputy Director, CMSD	Q-2-2008
5. Plan and prioritize drug needs in view of financial constraints	NTP Manager	Q-4-2007
6. Collaborate with FDA for QA of TB drugs with regular schedule	NTP Manager	Ongoing as and when TB drugs are received/ purchased
7. Ensure effective execution of planned drug management trainings	NTP Manager	Q-4 2007 Q-1-2008
8. Continued improvement of Central drug stores-rack, fire safety, back-up for electricity, batch recording, stock arrangements	NTP Manager	Q-2-2008
9. Continue to work on lowering the default rates, especially in the two hospitals where DOTS-plus is planned.	NTP manager and the two TB Hospital Directors	Q-4-2007
10. Investigate reasons for high Sputum Negatives and EP cases; implementation of diagnostic guidelines for paediatric cases; examine role of various sources of cases including PPM and IHC projects.	NTP manager	Q-1-2008
11. Regular PPM monitoring for adherence to NTP guidelines	NTP manager	Ongoing
12. Avoid parallel reporting, Hospitals and NGO delivery units should preferably report to township of location with copy to Centre for information. However final choice is left with NTP.	NTP Manager	Ongoing
13. Strengthen DOT for TB patients released from hospitals through linkage with community, specifically to reduce default rates and improve treatment success rates.	NTP Manager	Q-1-2008
14. Family DOT: (i) Regular monitoring e.g collection of empty blisters to verify consumption and frequent consumption and frequent interaction with DOT provider. (ii) Offer facility based DOT.	NTP Manager	Ongoing

To Donors/Partners

Recommendations	Responsible Department/ Organization/ Person	Due Date
1. Assist NTP in bridging immediate gap for TB drugs and for future sustainability	JATA, 3DF, WHO	Q-4-2007
2. Increase support as per programme priorities- drugs, monitoring and supervision and transporting of drugs are some of the critical areas.	JATA, 3DF, WHO	Ongoing
3. DOTS implementing partners to ensure NTP guidelines being followed for diagnosis, treatment and recording of data.	JATA, 3DF, WHO	Ongoing
4. Assist NTP in developing procurement policy as per international standards	WHO	Q-2-2008



Inspection of TB drug store

4.9.3 FIDELIS project in Sagaing Division (Reaching the unreachable)

Reaching the Unreached project was implemented in Sagaing Division in 2007. Project budget was USD\$ 219,314 for Sagaing Division divided into 8 Districts, 37 Townships, 1,817 village tracts, 6,276 villages and had 847,175 households with the population of 5.46 million.

It is a pilot testing of community-based TB case detection and treatment strategies to reach remote population groups. The target set for the project was to find new smear positive TB patients to be calculated with the estimate of (150/100,000 population) for Sagaing Division.

The **objectives** of the project were:

1. To increase case detection rate among new smear positive TB patients in Sagaing Division from existing 22.5% to 70% by decentralization of services and introducing community based case finding strategies.

2. To successfully treat 85% of these patients through decentralized DOT and implementing an incentive-based treatment interrupter retrieval mechanism up to the grass root level
3. To develop a community based TB control model for duplication in similar remote and cross border regions of Myanmar.

The activities were -

- 1) Enhancing commitment of local authorities and partners for TB control
- 2) Improving community awareness through school programme
- 3) Increasing supervisory visits
- 4) Providing motivation and incentives for additional infectious TB patients detected
- 5) Opening additional microscopy centers and sputum collection points
- 6) Support of microscopes.

The project conducted the essential trainings and trained 1080 volunteers in 37 townships. For the 120 TMOs and Medical Officers were also trained. The project also identified the local authorities and influential persons and advocated 4900 school teachers, NGO staff and local authorities. All the trained or advocated persons were responsible for identification of TB suspects and referred for TB diagnosis.

Sputum collection points at community level were established for 3 sputum collections points each in 25 townships, total 75 sputum collection points were established. Total transportation of sputum specimens to township TB laboratory by BHS was made 594 times in the 1st quarter, 600 times in the 2nd quarter, 593 times in the 3rd quarter and 549 times in the 4th quarter. Transportation of sputum samples/TB suspects by volunteers to township TB laboratory was made 1116 times in 1st quarter, 1119 times in 2nd quarter, 1087 times in 3rd quarter and 1119 times in 4th quarter.

According to the reports, district/township level supervisors made supervisory visits about 119 visits in 1st quarter, 121 visits in 2nd quarter, 94 visits in 3rd quarter and 100 visits in 4th quarter, 2007 to the periphery health centers. From Divisional level, 13 supervisory visits in 1st quarter, 27 visits in 2nd quarter, 25 visits in 3rd quarter and 24 visits in 4th quarter were also conducted. Supervisory visits to newly

established station hospital laboratories were conducted by TMO and Senior TB Laboratory Supervisor (STLS) from Divisional laboratory centre 29 visits per each quarter.

BHS also receiving transport fees for conducting missed dose tracing/contact tracing as 820 BHS in 1st quarter, 965 BHS in 2nd quarter, 920 BHS in 3rd quarter, 788 in 4th quarter. Some incentive for BHS was provided if they could detect a new sputum smear positive TB cases. It was recorded as 2600 new sputum positive cases (570 BHS in 1st quarter, 688 BHS in 2nd quarter, 765 BHS in 3rd quarter, 700 BHS 4th quarter) were detected due to the afford of BHS.

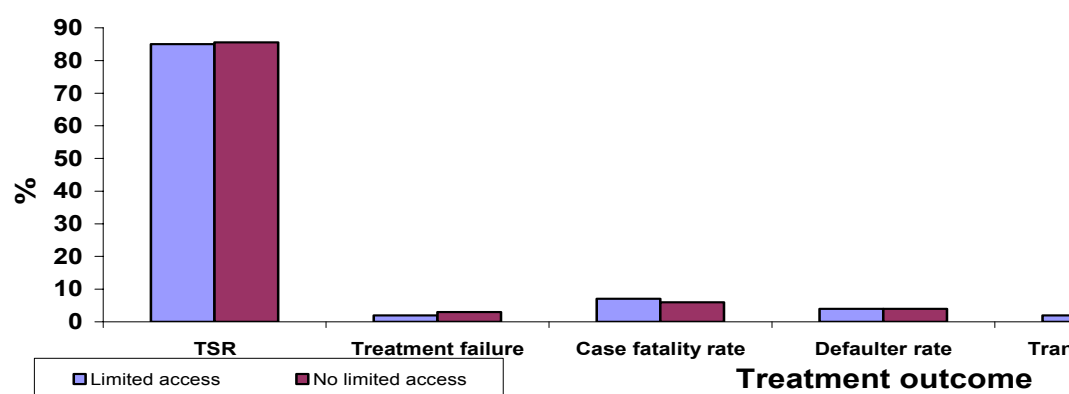
Table 14. TB control performance of Sagaing Division (2005-2007)

	2005	2006	2007
TB suspect examined	14102	21462	37371
TB suspect/100,000 pop.	262	393	602
New smear positive detected	2595	2811	4008
New smear positive notification rate (per 100,000 pop.)	48.5	51.5	72
Sputum positivity rate (%)	18	13	11
Case detection rate (%)	60	53	79
Treatment success rate (%)	80	82	82

Although the activities did not meet its targets, great achievement was obtained that leads to the conclusion of *fidelis* approaches are practical and replicable for targeted community. Myanmar continues most of the activities in the Sagaing Division and expand to Magway Division with the funding from Central Emergency Response Fund (CERF) of United Nations in 2008.

The first joint FIDELIS monitoring visit was conducted by Dr. Chan Yu Chun, Dr. Ezra Shimeles Tessera during (12-8-2007 to 18-8-2007) and visited to Myinmu, Myaung, ChaungU, KhinU, Shwebo, Wetlet, Sagaing District TB team and Divisional TB center.

Figure 1. Treatment outcomes of detected new smear positive TB patients according to accessibility status in Sagaing Division, 2007



Limited access: Duration of symptoms more than 3 weeks

No limited access: Duration of symptoms less than 3 weeks

4.9.4 TB screening for factory workers in Hlaingthayar and Shwepyitha townships, Yangon Division (Northern District) and Industrial zone of Pyigyitagon township, Mandalay Division

The objective of the TB screening in factories is to educate the workers about TB and to detect TB cases in factories and treat.

Firstly, in December, 2006, registered TB patients working at any factory were reviewed according to the township where the factory is located. From the mapping of the TB patients, 2 townships (Hlaingthayar and Shwepyithar townships) were selected for Yangon division.

NTP organized a team together with Occupational Health (OH) Department and one day training was conducted. Before the screening, advocacy meeting with NTP, OH and industrial zone supervisory committee was conducted.

The workers were interviewed by using the structured questionnaire on socio-economic information, past history of TB and anti-TB history and the knowledge about TB. All the workers were screened by Chest X-ray examination. Sputum examination was done if a person had TB symptoms (Cough more than 3 weeks or haemoptysis) or past history of TB or currently on anti-TB or Chest X-ray showed

any abnormal lesions. 3 sputum specimens were taken from TB suspected cases and microscopic examination was done on the spot.

Altogether 20 factories (3989 factory workers) in Hlaingthayar township and one factory (172 factory workers) in Shwepyitha township totally 4161 were screened. Out of which 525 were requested for sputum examination and found 4 sputum smear positive. Altogether 67 patients were put on treatment after the central re-reading of all Chest X-ray films.

For Mandalay Division, Industrial zone located in Pyigyitagon township was selected. 28 factories (4024 workers) were screened for TB and found 5 smear positive TB patients and 50 patients were put on treatment.

The activities were funded by JICA (MIDCP).

Table 15. TB screening among factory workers in Hlaingtharyar Industrial Zone (16-2-07 to 10-3-07)

Sr. No	Date	Factory Name and Product	No. of people taken CXR	No. of people not taken CXR	No. of people requested for sputum	Sputum positive	No. of people interviewed	No. of people need anti-TB Treatment
1	16-2-07	Mar Mar (Noodle)	167	-	26	-	167	5
2	17-2-07	Golden Lion (Fertilizer)	118	-	21	1	115	5
3	19-2-07	Reva (Rubber)	442	8	48	-	450	9
4	20-2-07	Tha Ra Phu (Vermisili)	99	-	-	-	99	-
5	21-2-07 to 23-2-07	Good morning (Bakery)	550	1	63	1	551	4
6	23-2-07	GP (Battery)	92	-	14	-	92	1
7	24-2-07	Teak Farm (Wood)	170	-	22	-	170	9
8	24-2-07	Fudak (Wood)	20	-	1	-	20	-
9	26-2-07	Happy Cow (Milk)	92	1	12	1	93	1
10	26-2-07	Mr. Candy (Candy)	83	-	8	-	83	2
11	27-2-07	Khine (Wood)	168	2	30	-	170	2
12	28-2-07	Shwe (Oil)	117	-	18	-	117	-
13	28-2-07	Teak Team (Wood)	98	1	17	-	99	1
14	1-3-07	Chwe (Rubber)	164	1	21	-	165	3
15	3-3-07 to 7-3-07	Pearl (Garment)	870	4	98	1	874	14
16	7-3-07	Mega Steel	79	2	19	-	81	-
17	8-3-07	Golden Lion (Wire)	122	-	7	-	122	-

Sr. No	Date	Factory Name and Product	No. of people taken CXR	No. of people not taken CXR	No. of people requested for sputum	Sputum positive	No. of people interviewed	No. of people need anti-TB Treatment
18	9-3-07	Samsaung Electronic	82	-	14	-	82	2
19	9-3-07	Shin Shin (Vermisli)	173	-	24	-	173	2
20	28-2-07	Great (Cold Room)	286	1	30	-	287	5
Total			3989	21	493	4	4010	65

21	14-3-07	Shwepyithar Industrial Zone PMG (Alcohol)	172	-	32	-	172	2
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Sr. No	Township	Date	No. of people taken CXR	No. of people not taken CXR	No. of people requested for sputum	Sputum positive	No. of people interviewed	No. of people need anti-TB Treatment
1	Hlaingthayar	16-2-07 to 10-2-07	3989	21	493	4	4010	65
2	Shwepyithar	14-3-07	172	-	32	-	172	2
Total			4161	21	525	4	4182	67

Table 16. TB screening among factory workers in Pyigyitagon Industrial Zone (2-4-07 to 8-5-07)

Sr. No	Date	Factory Name and Product	No. of people interviewed	No. of people taken CXR	No. of people not taken CXR	No. of people requested for sputum	Sputum positive	No. of people need anti-TB Treatment
1	2-4-07	Royal industry	11	10	1	1	0	0
2	2-4-07	Asia Myanmar	13	10	3	4	0	1
3	2-4-07	Myat Kyaw	2	2	0	1	0	0
4	2-4-07	Mandalay Royal industry	75	75	0	28	0	5
5	3-4-07	Mandalay Royal industry	18	18	0	6	0	2
6	3-4-07	Myanmar Wunli	89	88	1	26	0	2
7	3-4-07	AMA (Car)	15	15	0	7	0	0
8	4-4-07	Rose detergent	166	166	0	44	2	2
9	5-4-07	Rose detergent	37	36	1	4	0	2
10	5-4-07	Power dry cell	200	197	3	39	0	1
11	6-4-07	Mandalay walking tractor	115	114	1	31	0	0
12	6-4-07	Aung Naing Thu	66	65	1	9	0	1
13	7-4-07	Golden lion textile	231	225	6	27	0	2
14	9-4-07	Zalatwa biscuit	183	183	0	34	0	2
15	10-4-07	Kyaw Kyaw Aung timber	181	177	4	8	0	2
16	11-4-07	Kyaw Kyaw Aung timber	36	36	0	9	0	0
17	11-4-07	JLC timber	89	85	4	10	0	0
18	23-4-07	JLC timber	221	215	6	82	0	2

Sr. No	Date	Factory Name and Product	No. of people interviewed	No. of people taken CXR	No. of people not taken CXR	No. of people requested for sputum	Sputum positive	No. of people need anti-TB Treatment
19	24-4-07	HI-tech timber	79	78	1	13	0	0
20	24-4-07	Myanmar May Kaung timber	74	74	0	19	0	1
21	25-4-07	Man star (Car)	174	173	1	12	0	2
22	26-4-07	UD group (Car)	98	98	0	16	0	2
23	27-4-07	Industry zone 1	178	178	0	51	1	7
24	28-4-07	Industry zone 2	111	107	4	20	0	2
25	28-4-07	Naychi biscuit	18	18	0	0	0	0
26	2-5-07	Rocket	119	119	0	23	0	2
27	2-5-07	CYT textile	160	158	2	37	0	1
28	3-5-07	CYT textile	291	289	2	40	0	2
29	5-5-07	Sweetie home furniture	180	178	2	16	0	1
30	5-5-07	Mandalay textile	122	120	2	17	0	0
31	7-5-07	Mandalay textile	320	313	7	22	0	3
32	8-5-07	MGS beverage	132	132	0	23	0	1
		Total	3804	3752	52	679	3	48

1	4-5-07	Patheingyi township Myanmar elephant cement	220	219	1	19	2	2
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Sr. No	Township	Date	No. of people interviewed	No. of people taken CXR	No. of people not taken CXR	No. of people requested for sputum	Sputum positive	No. of people need anti-TB Treatment
1	Pyigyitagon	2-4-07 to 8-5-07	3804	3752	52	679	3	48
2	Patheingyi	4-5-07	220	219	1	19	2	2
Total			4024	3971	53	698	5	50

4.9.5. Three Diseases Fund (3DF) (Bridge fund)

Following the withdrawal of GFATM in August, 2005, a consortium of donors (Australia, EC, the Netherlands, Norway, Sweden and the UK) agreed to work together and developed the concept of the Three Diseases Fund (3DF) and offered Myanmar to continue the critical activities related to three diseases. Coordinating Body (CB) and Technical Strategic Groups (TSG) were organized and developed the 3 - year operational plan and Expression of Interest in line with 5-year national strategic plan together with implementing partners. Bridge 3DF covered the critical activities in between the GF termination phase and initiation of 3DF. Bridging fund activities started in March, 2007.



MOU signing ceremony for 3DF

Table 17. TB control activities under 3DF (Bridge Fund February to August 2007)

Activities under NTP component	Target	Achievement	Allotted budget in USD
Support drug transportation cost	17 States/ Divisions	17 States/ Divisions	8500
Activities for low performance townships	in 27 townships	in 27 townships	20000
Nation wide Drug Resistant Survey (DRS)	40 sites	On going	25000
BHS training (30 participants/course)	100 courses	100 courses	100000
State/Divisional level TB evaluation meetings	17 States/Divisions	17 S/D + Sagaing 2 nd Quarterly Evaluation meeting	15000
Training on leadership, Management and budgeting	1 course	1 course	10000
Active case finding wit mobile teams	3 townships	3 townships	10000
KAP survey	1 survey	Cancelled and reprogrammed under WHO RB (08-09)	15000

Activities under NTP component	Target	Achievement	Allotted budget in USD
Public-Public Mix – DOTS implementation	4 hospitals	4 hospitals	10355
Community based DOTS pilot project in Myawaddy township	1 township	1 township	5000
Strengthened TB/HIV collaborative activities	Training and TB/HIV sentinel surveillance		31080
Establishment of sputum collection points	10 points	10 sites	5000
Lab. trainings	2 courses	2 courses	2020
DST for 2 nd line anti-TB drugs for Cat. II failure		100 isolates sent to Belgium, Antwerp lab. (Supra national TB reference lab.)	200
Total budget for NTP			257,155
Activities under WHO component	Target	Achievement	Allotted budget in USD
Workshop on development of TB counseling guide	1	1	10000
Upgrading of Upper Myanmar TB Lab. Mandalay	1	1	85000
Procurement of wooden storage slide boxes			9000
Training of NTP staff on DHIS software	1	1	1500
Procurement of computers and accessories	14	14	35000
X-ray accessories for 13 State/Divisional X-ray units	13 sets	13 sets	155870
Workshop on development of national guidelines on childhood TB	2	2	10000
Workshop on development of national framework of MDR-TB management	1	1	4000
Training of pre packed patient kits	2	2	2000
WHO staffing & operation cost			25200
General operation expenses			10000
Total budget for WHO			347,570

Total funding for TB under Bridge fund 3DF (2007) was 257,155 USD for NTP component and 347,570 USD for WHO component altogether 604,725 USD.

Bridge Fund (3DF) supported 17 townships in Yangon Division (South Dagon, North Dagon, Dagon Seikkan, North Okkalapa, Thingungyun, Yankin, Thaketa, Sanchaung, Hlaing, Mayangone, Insein, Hlaingthaya, Shwepyitha, Mingaladon, Taikkyi, Dalla, Thonegwa) and 10 townships in Ayeyarwaddy Division (Laymyatnar, Myaungmya, Hinthada, Thapaung, Kyaunggone, MaUbin, Pathein, Pyarpon, Bogalay, Zalun) which were identified as '**Low performance townships**' to have Initial home visits and contact tracing, defaulter tracing mechanism. **Quarterly township cohort review meetings** were conducted with all BHS reviewed the TB patients with unfavorable outcomes. This activity is aiming to improve both case finding and case holding to achieve the MDGs for all townships. **Quarterly evaluation meetings** were conducted at the State/Divisional level and provided guidance for the township TB control activities. **Mobile team activities** were also conducted at Nyaungshwe (6 smear positive/251 suspects), Kantbalu (11 smear positive / 306 suspects) and Pwintphyu (8 smear positive/233 suspects) townships to improve the case finding. 790 TB suspects were identified and examined sputum for AFB and identified 25 sputum smear positive TB cases (3%).



Cohort review meeting in low performance township

Critical trainings were provided to BHS and lab. technicians. Leadership and management trainings were introduced to TMOs and team leaders of HIV/AIDS, TB and Vector born disease control programmes at the operational level. The refresher training for trainers (TOT) were conducted at Naypyitaw. TOTs for State/Divisional level were conducted in Pathein, Myitkyina, Sittwe, Bago, Taunggyi and Mandalay. **Training aids** (overhead projectors and tripod screens), training

package for facilitators were provided to all State/Divisional TB centers. Photocopiers were supported to selected States/Divisions.

Drug resistant TB problem is also observing with **periodical DRS**, which started in 2007.

TB/HIV collaborative activities were continued and 4 TB lab. technicians were trained at NHL and Public Health Laboratory (PHL) for the HIV testing.

Public-Public Mix DOTS was piloted in 4 specialist hospitals in Yangon. The appropriate trainings were provided for hospital staff, DOT corner was established and IEC material distributed. Dissemination of health information was provided using IEC materials and mass media. Social workers were also trained to provide counseling service and make home visits. After regular supervisory visits of NTP and WHO, some weaknesses such as frequent turn over of trained doctors and staff, weak recording and reporting, some major errors in laboratory were identified and improved.

Border area DOTS pilot project was initiated in 2007 at Myawaddy. 4 training courses for BHS/DOTS providers and lab. technicians were provided. The establishment of border health committee is a barrier for improvement of border TB control activities.

10 **sputum collection centers** were established in Yangon Division (Kungyangone, Htantabin and Thanlyin townships), Ayeyarwady Division (Kyonepyaw and Myanaung townships) and Mandalay Division (Patheingyi and Nyaung U townships). Out of them only 7 sputum collection centers successfully collected the sputum specimens and transported to township lab. 52 new sputum smear positive TB patients were detected.

Initial home visit and contact tracing



WHO assisted on the development of **guideline on childhood TB management, draft guideline for counseling for TB, national framework to manage MDR-TB**, and training on pre packed TB patient kits. The dissemination seminars (Upper Myanmar and Lower Myanmar) on childhood TB management were also conducted.

For improvement of data management and analysis, training on District Health Information Software (**DHIS**) for staff of NTP central unit and all State/Divisional TB centers were conducted.

The **supplies and equipment** including equipment for upgrading of upper Myanmar TB lab., Mandalay and **accessories for X-ray units and computers/printers** and accessories were supported by 3DF.

Table 18. Indicators and targets of five years strategic plan and achievement (2006-2010)

No	Indicator	Base line		Target	Year 1 (2006)	Year 2 (2007)
		Value	Year		Achievement	Achievement
1.	% of DOTS Covered Population	95 %	2005	95 %	95 %	95%
2.	Case Detection Rate	83 %	2004	At least 70 %	86%	89%
3.	Treatment Success Rate	82 %	2004	At least 85 %	85 %	85%
4.	Proportion of sputum smear positive cases out of all pulmonary TB cases	52 %	2003	52%	52%	54%
5.	No. of new smear positive cases detected under DOTS	31405	2004	66,405	40,241	42,588
6.	No. of additional microscopy centers established	0	2004	30	30	0
7.	No. of microscopy centers under Q/C	294	2003	260	268	53 townships under EQA & 237 townships under routine QC system
8.	No. of deaths (all forms of TB) per 100,000 population	27	2005	26	17	13
9.	No. of health facilities where both TB and HIV services are available	7	2005	17	7	11
10.	No. of partners (NGOs, CBOS, public, private and others participating in a national stop TB partnership)	15	2005	20	15	15
11.	No. of MDR-TB patients enrolled on treatment	0	2005	0	0	0

All the inputs provided from 3DF will be supportive for improvement of TB control problems covering critical needs for 2007 after termination of GF support.

5. Manpower situation of NTP

NTP has 101 vertical TB teams under the 14 State/Divisional TB centers. 47 District TB teams (40 are led by Team Leader doctors and 7 led by Health Assistant) and 54 Township TB teams (led by team leader Health Assistants) are implementing TB control activities as well as providing technical support, supervision and monitoring, evaluation of TB control activities at township level.

Two Junior Consultant Microbiologists and 2 junior Consultant posts for Yangon and Mandalay Divisional TB Centres are vacant. 13 Medical Officers (3 at NTP central, 2 at Yangon Divisional TB Center, 2 at Mandalay Divisional TB Center, Loikaw, Taunggoo, Mawlamyine, Mindat, Falam and Loikaw TB Centers are vacant. 8 team leaders (H.A), 15 trained nurses, 2 radiographers and 45 Grade II Lab. technicians are vacant. Vacancies of radiographer should be replaced and needed to be posted in the State/Divisional TB centers with newly equipped X-ray machines.

Post graduated course on TB and Chest Diseases (Dip.Med.Sc) has trained 53 doctors in the period of 1998-2007.

6. Drugs, laboratory equipment situation and transport facilities of NTP

Drugs, laboratory supplies and equipment for National Tuberculosis Programme are mainly supplied by WHO, GDF, IUATLD and Ministry of Health.

Quarterly drug distribution system is using in NTP. Central TB medical store, Yangon distributes to Upper and Lower Myanmar stores according to case load. Upper Myanmar store has to distribute six State and Divisional TB Centres (Mandalay, Magway, Shan (S), Shan (E), Shan (N), Kachin and Sagaing) and Lower Myanmar store distributes six State and Divisional TB Centres (Yangon, Ayeyarwady, Mon, Kayin, Bago, Rakhine and Tanintharyi). Upper and Lower Myanmar stores distribute to State and Divisional level according to case load of their quarterly reports. The State and Divisional level distributes to townships quarterly according to their case load of previous quarter. At township level, TMOs distribute monthly to RHC level. Implementing partner: PSI collects drugs from Lower Myanmar TB store, Yangon and distribute to their PPM Scheme III clinics and AZG (MSF-Holland) collects drugs from the either State/Divisional level or township level where they are implementing.

SOP for Drug and supplies management was drafted and planned to provide training on drug and supplies management for TMOs and TB coordinators in 2008. Drug transportation cost were provided for airport warehouse to central TB store,

central store to Upper/Lower Myanmar stores, Upper/Lower Myanmar stores to state/divisional level TB stores and up to township level by 3DF.

Laboratory equipment like slides, slide boxes and stains are distributed from State and Divisional TB Centres to DOTS townships. Binocular microscopes were supported from JICA in 2007.

Table 19. Nikon Binocular microscopes (MIDCP-JICA) distributed in 2007

State/ Division	Townships distributed	No. distributed
Yangon Division	Kyimyindine TB Center	1
	Divisional TB Center, Pathein	1
	Divisional TB Center, Pathein	1
	Quality Assessment Center	1
	Mayangone TB center	1
	Sanchaung TB center	1
	Divisional TB Laboratory, Mandalay Division	4
	Yangon General Hospital (Bacteriology Lab)	1
	Marked for Hlaing and Tamwe TMO Office	2
Total		13

GFATM supported 2 X-ray machines (500mA) and 11 X-ray machines (63-200mA) are functioning except in Mon State (Mawlamyine) and Rakhine State (Sittway) due to the low voltage of available electricity. Provision of a generator for those 2 State TB centers is one of the solutions for the X-ray machine to be able to function.

For data management, 14 new desk top computers/printers were supported by 3DF and distributed to State/Divisional TB centers and central NTP office.

7. Budget and external support

7.1. Budget

Government budget for NTP

Government budget was only 14 million Kyats in 1995-1996, and it increased to (447.8) million Kyats in 2007-2008. 74.7 million Kyats were used for drugs purchase in 2007-2008, which increases from only 0.78 million Kyats in 1995-1996.

Table 20. 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

Figure 2. Government contribution for NTP (1995 – 2007)

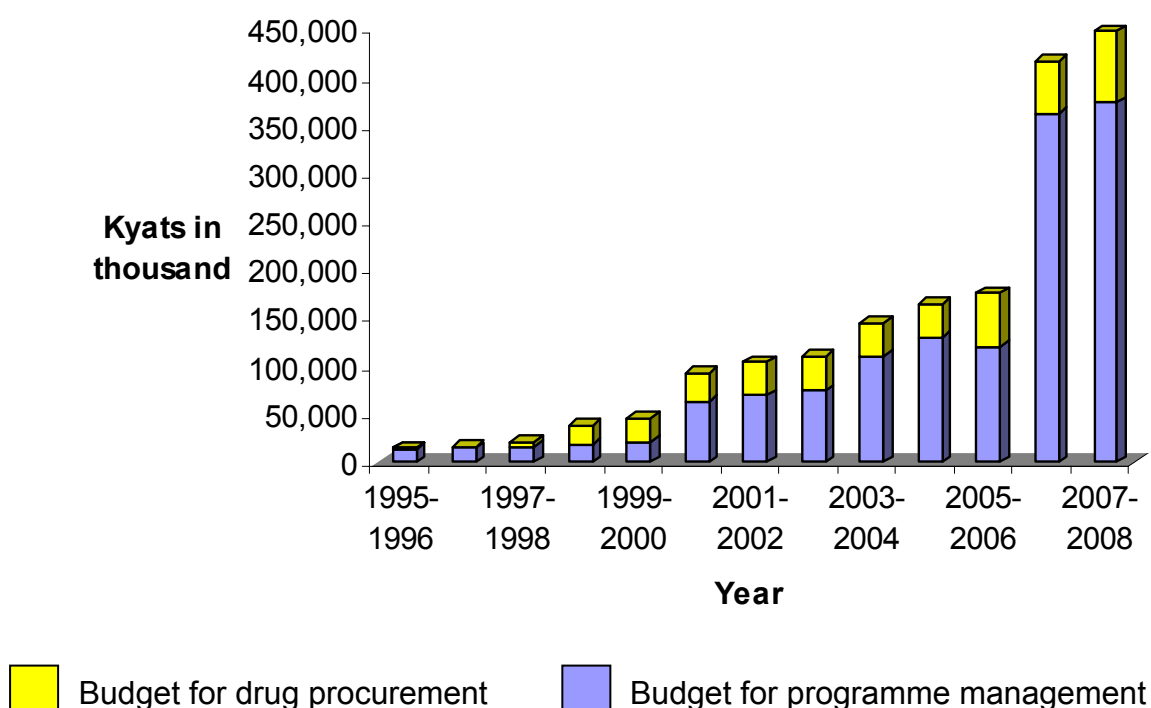


Table 21. External support

No.	Agencies	Budget	Activities	Implementing areas
1.	WHO	Regular Budget 2000-2001 = 450,000 \$ 2002-2003 = 383,900 \$ 2004-2005 = 289,300 \$ Additional budget = 30,000 \$ 2006-2007 = 321,700 \$ 2007-2008 = 316,700 \$	Technical support for TB control	325 townships
2.	Global Drug Facility (GDF)	Value for Anti-TB drugs 1 st term 3 years grant 2002 = 238,276 \$ 2003 = 1,068,838 \$ 2004 = 3,662,715 \$ Sub total = 4,969,829 \$ 2 nd term 3 years grant 2006 = 1,169,606 \$ 2007 = 1,000,000 \$ 2008 = 2,654,810 \$ Sub total = 4,824,416 \$	80% of country requirement of anti-TB drugs	325 townships
3.	JATA	¥ 1,000,000 / year since 2001	Training of laboratory technicians on sputum microscopy, logistics supply, evaluation, research, World TB day commemorative activities	6 model townships Yangon Division: (Minglartaungnyunt, Thalyin, Kyauktan) Mandalay Division: (Pyinmana, Leiwe, Tatkone)
4.	JICA	2006-2007 = 93,000 \$ 2007-2008 = 82,579 \$	Training, TB Prevalence survey, TB patient care books, IEC, Lab. Supplies and equipment, PPM-DOTS	Yangon and Mandalay Divisions
5.	3DF (Bridge fund)	604,725 \$	Trainings, DRS, development of SOPs and guideline, PPM, Border area DOTS, sputum collection points and activities for low performance townships, drug transportation cost and supplies and equipment	325 townships
6.	Union and Total Oil Company	200,000 \$	Integrated HIV Care for TB patients Project	Mandalay Division: Aungmyaythazan, Chanayethazan, Chanmyathazi, Mahaaungmyay, Pyigyitagon, Amarapura, Patheingyi townships and Magway Division: Pakokku township

Table 22. Different sources of funding for NTP according to activities (2007)

Items	Gov	WHO	GDF	JICA	JATA	3DF	Union	FIDELIS	Total
						Bridge F			
First line TB drugs	122222		1000000						1122222
Staff working for TB control	761931	25500			2100	25200		54900	869631
Routine programme management and supervision activities		36000		52000	6380	374890		110328	579598
Lab. supplies and equipment for smears culture and DST						94000		25900	119900
PAL									0
PPM				5000		10355		2400	17755
Collaborative TB/HIV activities		6500				41080	200000		247580
Second line drugs for MDR-TB						4000			0
Management of MDR-TB									4000
Community involvement						5000			5000
ACSM				3000					3000
Operation research									0
Surveys				9000		40200			49200
Other technical assistant	82675			13579		10000		555	116230
Total	966828	68000	1000000	92000	8480	604725	200000	194083	3134116

External technical support

Technical support were provided by WHO and JICA/JATA for NTP, Myanmar.



Technical assistance on sputum smear microscopy (JICA)

Table 23. International visitors in 2007

S.N	Name and Designation	Duration	Remarks
1	Prof. Aime De Muyunk	14.1.2007 to 22.1.2007	Epidemiological review
2	Dr. Nani Nair Dr. Samsak Ms. Nigor Silton Mouzafarava Dr. Malgosia Grzamska Dr. K. Osuga Dr. Sriprapa Naerlyom Dr. Rose Pray Dr. Richard Urbanazik Dr. Nils Billo Dr. Knut Lonnorth Dr. Akramul Islam Dr. Karim Bergstorm	20.1.2007 to 2.2.2007	External review mission
3	Dr. Jai Naarin	21.1.2007 to 6.2.2007	Joined the mission
4	Dr. Hugo Adelbert Vrakking Ms. Nigor Silton Mouzafarava	4.3.2007 to 16.3.2007	GDF mission
5	Prof. Robert Perter Gie	18.3.2007 to 22.3.2007	Development of national guideline on management of childhood TB
6	Dr. George L. Dorros	14.5.2007 to 22.6.2007	Development of capacity for leadership and management
7	Ms. Akiko Fujiki	16.5.2007 to 29.5.2007	EQA workshop and strengthening laboratory network
8	Dr. Mahran Hosseni Ms Norah Joy Stoops	28.5.2007 to 7.6.2007	DHIS soft ware development
9	Mr. Somsak Reinthong	10.6.2007 to 16.6.2007	Laboratory supervision
10	Dr. Michael Eli Kimerling	24.6.2007 to 3.7.2007	DOTS-Plus guideline development
11	Dr. Ikushi Onozaki	24.6.2007 to 3.7.2007	TB prevalence survey
12	Mr. Bredan Dalay	12.8.2007 to 19.8.2007	Risk mitigation strategy mission
13	Dr. Chen-Yuan Chiang Dr. Ezra Shimeles Tessera	12.8.2007 to 18.8.2007	Joint supervision on Fidelis project by NTP, WHO, Union
14	Dr. Norio Yamada	16.9.2008 to 22.9.2007	TB prevalence surevey
15	Dr. Kosuke Okad	26.9.2007 to 10.10.2007	Duty hand over for MIDC project, JICA
16	Mr. Adam Thomos Dr. Vinnestia Bhatin	23.9.2007 to 26.9.2007	GDF mission
17	Dr. Nani Nair	1.10.2007	DOTS-Plus
18	Dr. John Mac. Athur (regional advisor)	4.10.2007 to 19.10.2007	Visit to the NTRL
19	Prof. Aime De Muyunk	26.11.2007 to 1.12.2007	TB data management and analysis

8. Research

NTP conducted several researches and presented in internal and international research congress. The abstracts of the presented posters, published paper are recorded.

8.1. Research conducted in collaboration with Gade Institute and University of Norway

Predominance of *Mycobacterium tuberculosis* Beijing genotype in Yangon, Myanmar

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ABSTRACT

The *Mycobacterium tuberculosis* Beijing genotype is associated with hyper-virulence, drug-resistance and increased transmissibility. The diversity and frequency of *M. tuberculosis* genotypes from Myanmar is largely unknown. Thus, 310 isolates from pulmonary tuberculosis patients from Yangon, Myanmar were genotyped by IS6110 restriction-fragment length polymorphism and spoligotyping. We show that isolates of the Beijing lineage dominate in Yangon (31.6 %). The East-African-Indian (EAI) family was the largest family, comprising 143 of 212 non-Beijing isolates followed by Central-Asian (CAS) (15), Latin-American-Mediterranean (LAM) (15), T (ill defined) (11), Manilar Unit (MANU) (5) and X (ill defined) (2). All Beijing and 149 non-Beijing isolates had high-copy numbers of IS6110 (>7 copies) whereas, 40 non-Beijing isolates had only 1 copy. Drug-resistance was higher among Beijing isolates (45.3%) compared to non-Beijing isolates (29.7%) [$P=0.01$]. The probability of being infected with a Beijing vs. non-Beijing isolate was higher ($P=0.04$) for patients previously exposed to anti-TB drugs. This is the first comprehensive study that reports on prevalent *M. tuberculosis* genotypes from Yangon, Myanmar.

8.2. Abstracts of posters presented in 38th World Conference on Lung Health, 2007

VCCT ADEQUACY AND TREATMENT OUTCOME OF A COHORT OF TB-HIV CO-INFECTED PATIENTS IN MYANMAR

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^{*} National AIDS Programme, Department of Health, Ministry of Health Myanmar

[§] World Health Organization, Myanmar

Background: Since 2005, two TBHIV pilot sites in Myanmar (covering a population of 528,609) are implementing joint TBHIV collaborative activities under the national AIDS and tuberculosis programmes and supported by WHO country office.

Objective: to evaluate the TBHIV activities.

Methods: quarterly field missions for quantitative and qualitative monitoring.

Results: TB and STI/OI care is provided respectively by TB centre and STI clinic within the same compound, while ART is distributed at another health facility, at 0,5 miles distance from TB and STI services.

Pre and post-counseling for TB patients is offered at TB centre and HIV testing at STI clinic; TB patients or blood samples are referred for testing and the result is provided within a week.

Among 3296 TB patients notified up to December 2006, HIV VCCT has been offered to 58% with an acceptance rate of 52%. VCCT was accepted by 51 partners, among whom 20 (39%) were HIV positive.

Among 992 HIV positive TB cases (17% of those who accepted), 61% were PTB ss-, 34% PTB ss+, 5% EPTB, all receiving CPT during TB treatment. 9% of the patients were under ART. The majority were between 25-34 years of age.

Among the 2005 cohort of 70 TBHIV patients, 48 (69%) were successfully treated and 15 (21%) died.

Conclusion: VCCT is offered to a modest proportion of TB patients and acceptance is suboptimal. CPT is fully available; ART is available for a limited number of patients, due to geographical selection as limiting criteria.

SEX AND AGE SPECIFIC NOTIFICATION RATE: A USEFUL INDICATOR FOR PROGRAM MANAGEMENT

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[§] World Health Organization

Background: In Myanmar, NTP is covering the whole country since 2004; in various divisions & states the program implementation was gradually consolidated, resulting in increasing case notification rates. The question has to be raised if the consolidation concerned all age groups and both sexes equally.

Method: Retrospective analysis of the case finding data at national and division/state level, from 1999 till 2006, using the case notification rate indicator stratified by age and sex; the denominator being the DOTS covered population, stratified in the same age & sex groups.

Results: The modal age group in males was the 45-54 yrs, the age specific S+ notification rate was 80/100,000 in 1997 and reached 200+/100,000 in 2005; the distribution remained uni-modal all the time. The same modal age group was found in females; the age specific S+ notification rate was 40/100,000 in 1997 and reached 90/100,000 in 2005; the distribution became bimodal in recent years; the second mode affecting the 25-34 yrs age group, the cause of which has to be further explored (HIV/TB ?).

Conclusion: The consolidation of the NTP implementation has affected all age groups and both sexes equally. The trends of the annual age & sex specific S+ notification rates pinpoint to an increasing problem in the younger females, the nature of which could HIV related.

TB SUSPECTS' EXAMINATION RATE: AN USEFUL INDICATOR FOR PROGRAM MONITORING

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[§] World Health Organization

Background: In Myanmar, the case detection rate is routinely used as key indicator for case finding monitoring, but the denominator relies on non-recent incidence estimates that need to be updated and that are probably no longer valid at subnational level, as suggested by recent ARTI work done in Yangon. Therefore the case notification rate is preferred. But is there a simple indicator that allows to predict trends in case finding?

Method: Retrospective analysis of the case finding data at national and division/state level, from 1999 till 2006, using the case notification rate indicator ; the denominator being the DOTS covered population. Exploration of the association with TB suspects' examination rate.

Results: The smear positive case notification rate was 40/100,000 in 1999, increasing linearly to reach 81/100,000 in 2005. At national level a linear association was observed between the number of TB suspects examined and S+ patients diagnosed ($R^2 = 0.98$); even at sub-national level a similar linear association was found ($R^2 = 0.85$). This association holds also at the individual division/state level.

Conclusion: These observations suggest that the use of the TB suspects' examination rate indicator could add a very relevant indicator to the monitoring arsenal of NTP officers.

TB DISEASE PREVALENCE SURVEY IN YANGON DIVISION (2006)

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Background: The NTP of Myanmar successfully carried out TB disease prevalence survey in the capital division of Yangon in 2006. The field operation in 30 clusters was done from January to June, 2006. MOH/Myanmar, GF-ATM/UNDP, JICA, WHO and RIT/JATA co-funded the survey and provided technical assistance to the NTP.

Setting: Yangon division with a population of 6.4 million where a case notification rate of smear positive new was 118/100,000, that of all smear positive was 143/100,000 in 2005, and that of all TB was 384/100,000 under DOTS program.

Objective: To clarify the magnitude and trend of TB in the capital district of Yangon

Design: A cross sectional survey with population proportionate cluster sampling: 20,792 eligible subjects of aged 10 or more in 9 rural and 21 urban clusters were invited to receive structured interview and Chest X-ray, and those with “TB treatment history” or “cough more than 3 weeks or blood contained sputum” or “any abnormality by X-ray” were asked to submit three sputum specimens

Results: 18,809, 90.5%, among 20,792 eligible subjects participated in the study. 1,059 had a previous TB treatment history and 64 were on TB treatment. 58 smear positive pulmonary TB cases, S(+)TB, 279 (204-381)/100,000 aged 10 or more, and 53 smear negative/culture positive TB cases, S(-)C(+)TB, 255(182-357)/100,000 were detected. 40 (76%) of S(+)TB and 48 (91%) of S(-)C(+)TB were unknown new. Assuming there was no S(+)TB among 4,389 children aged less than 10 in the study areas who were not screened, a prevalence rate of S(+) TB was 230 (168-314)/100,000. Age distribution of S(+)TB was bi-modal with modes of 492/100,000 in aged 35-44 and 378/100,000 aged 65+. Male, 43 (451/100,000), had significantly more S(+)TB than female, 15 (133/100,000), however, this difference was smaller in S(-)C(+)TB, male 30 (314/100,000), female 23 (204/100,000). There was no significant difference between urban (245/100,000) and rural (360/100,000).

Conclusion: TB burden in Yangon is much higher than expected. And the epidemic seems to be younger when we compare with the results of 1972 survey. There might be the second wave of epidemic in the last two decades, and it cannot be explained only by TB/HIV. To clarify nationwide situation, national survey should be carried out.

8.3. Qualitative research methodology training (27 to 31-3-2007) was provided to selected TB team leaders from State/Divisional or District levels. The training was followed by the qualitative research “Factors for defaulting TB treatment among new pulmonary TB patients in Myanmar (2006)” with the support of JICA (MIDCP).



Training on qualitative research methodology for TB team leader

“Factors for defaulting TB treatment among new pulmonary TB patients in Myanmar (2006)”

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Method : This Qualitative research was conducted in collaboration of Department of Medical Research (Lower Myanmar) and JICA (MIDC Project) and National TB Programme. The study was conducted in four townships of 4 selected State/Divisions. The cross sectional descriptive study using both quantitative and qualitative approach was started from September, 2007. Data collection techniques were chosen as record review, Key Informant Interview (KII) and In-Depth Interview (IDI) by using guideline. Data collection period ranged from September, 2007 to February, 2008.

Objective: To describe factors for defaulting TB treatment among new pulmonary TB patients in Maubin, Thanatpin, Yaksauk and Amarapura townships in 2006.

Results: Almost all defaulted cases sought treatment at home when they had common symptoms of TB such as cough and fever. Self treatment included self medication and over the counter drugs. The most common reasons for self treatment

were related to low socio-economic status they cannot afford to consult with GP. About half of the defaulter consulted with GPs when they did not relieve from the symptoms. Respondents said that choice of treatment depend on severity of symptoms and emergency of symptoms.

Most common reasons for **defaulter** were getting adverse side effects of anti-TB drugs, relief of symptoms and sense of well being. Some respondents expressed difficulty in seeking care at public TB center, including opening hours, long waiting time and long distance from their residence. Inadequate pre-treatment health education at the beginning of treatment was the key barrier for defaulting TB treatment. Many reasons were inter related with pre treatment health education according to IDI interview and KII interview, all key facts were not included in providing each TB patient.

Most of the defaulted patients got pretreatment health education including the importance of regular treatment, time of drug administration, side effect of drugs and duration of treatment. Some of defaulters received the information about prevention of TB, follow up sputum examination and requirement of the nutritional support. Few respondents were discussed about physical exercises. However one got the information about identification of DOT provider.

Some key informants did not know with term missed dose. General Practitioners were not familiar with missed dose tracing activity. Many key informants mentioned the activity was done together with other occasions such as through messenger who lived near the defaulted patients, during home delivery, during home visit to TB patient and during supervision for other purposes.

Conclusion: all Key informants performed proper health education before treatment although they had shortage of manpower and increased case load. So they couldn't conduct health education to every TB patient. Interpreter was necessary for ethnic group such as Shan, Palaung in a few rural areas.

Recommendations: In the light of operational research findings and round table discussion with Project Manager NTO, the following recommendations were made.

To ensure effective, complete pretreatment health education for every TB patients with reference to BHS guideline.

1. To practise repeated health education throughout the treatment course.

2. To introduce pretreatment counseling
3. To emphasize on importance/key message of TB health education in township Continuing Medical Education (CME) sessions
4. To improve effective utilization of IEC
5. To motivate staff for effective DOT
6. To enhance early missed dose tracing
7. To advocate healthcare provider for NTP guideline
8. To conduct initial home visit for every TB patients
9. To strengthen collaboration and coordination with NGO for qualified DOTS

8.4. HIV prevalence among new TB patients was reported from the routine sentinel surveillance of NAP at 10 selected sites. The intake period for serum collection among new TB patients is up most 3 months for the collections of 150 specimens.



TB/HIV group work during national annual TB evaluation meeting, 2007

**Table 24. HIV prevalence among new TB patients, sentinel surveillance
(2005 - 2007)**

Sentinel sites	2005	2006	2007
Yangon	17/150 11.3%	13/150 8.7%	13/150 8.7%
Pyay	25/150 16.7%	16/150 10.7%	5/150 3.3%
Hpa-an	5/150 3.3%	5/150 3.3%	10/150 6.7%
Nyaung U	5/55 9%	6/71 9%	11/150 7.3%
Magway		16/150 1%	9/150 6%
Monywa		35/151 23%	24/149 16.1%
Patheingyi		9/150 6%	14/150 9.3%
Bago		17/150 11%	16/150 10.7%
Myeik			23/150 15.3%
Mawlamyine		22/150 15%	22/150 14.7%
Total	52/505 10.3%	139/1272 10.9%	147/1499 9.8%

9. Constraints

- 1. Uncertain supply of 1st line anti-TB drugs after GDF support will expire by end of 2009**
- 2. Limited human resource development for the whole country is a barrier for high achievement.**
- 3. Limited access to DOTS service especially in hard to reach area**
- 4. A large financial gap for prevention and control activities for TB/HIV co-infection and Multi Drug Resistant-TB which are included in Five-year national strategic plan (Including antiretroviral drugs, opportunistic infection (OI) drugs, Psycho-social support).**

10. Comments and Recommendations on NTP activities in 2007

This annual report based on the State and Divisional TB Centre annual reports and quarterly reports from DOTS townships received during 2007 and reports from other reporting units.

10.1. Case finding and case notification

NTP targeted to achieve 70% case detection of estimated new smear positive patients in the community. In 2007, NTP covered 55,753,816 populations in 325 DOTS townships. These townships were estimated to have 55,753 smear positive TB patients including 48,135 new smear positive TB patients. The estimated new smear positive TB patients and all smear positive TB patients were modified according to the findings of Yangon Divisional TB prevalence survey conducted in 2006. For the other States/Divisions (apart from Yangon Division) and Union estimates we calculated the estimated new smear positive TB patients as 75/100,000 population and only Yangon Division was revised as 170/100,000 population based on the survey results.

NTP detected 49,251 smear positive cases including 42,588 new smear positive cases. NTP achieved case detection rate of new smear positive cases 77% from **315 townships in 17 States and Divisions**.

The Case Detection Rates (CDRs) were high in Kachin State (129%), Shan State (E) (102%), Bago Division (W) (101%), Ayeyarwady Division (92%), Mon State (89%), Bago Division (E) (83%), Yangon Division (81%), Sagaing Division and Kayin State (79%), Rakhine State (75%) and Tanintharyi Division (72%) achieved the NTP target. The lowest CDRs were found in Chin State (39%), Shan State (S) (48%), Shan State (N) (49%), Magway Division (56%) and Mandalay Division (66%).

There are 17,390 reported TB cases from **other reporting units** as Aung San TB Hospital, Patheingyi TB Hospital, Waibargi Infectious Disease Hospital, Defense Hospital (Pyin Oo Lwin) and INGOs: PSI and AZG. Out of them 5,447 were new smear positive TB patients.

However, CDR increased after adding the case finding of other reporting units. **Case Detection Rate** of new smear positive became 89% (42588/48135) for all NTP covered townships.

Table 25. CDRs of States/Divisions for 2007

State/Division	CDR for 2007	
	Only NTP	NTP + other reporting units
Kachin State	129	157
Kayah State	69	69
Chin State	39	40
Sagaing Division	79	86
Magway Division	56	60
Mandalay Division	66	79
Shan State (S) State	48	49
Shan State (E) State	102	102
Shan State (N) State	49	72
Kayin State	79	81
Taninthayi Division	72	72
Bago Division	90	104
Mon State	89	95
Rakhine State	75	75
Yangon Division	81	103
Ayeyarwaddy Division	92	97
Union CDR	77	89

National Tuberculosis Programme

Yangon Division detected (24.7%) of new smear positive cases out of total new smear positive cases, followed by Ayeyarwaddy Division (14.3%), Mandalay Division (10.4%) and Sagaing Division (9.8%).

Out of all notified smear positive TB cases 9.7% of smear positive pulmonary TB cases were relapse cases. Treatment after default contributed 1.6% of smear positive TB patients.

31% of total notified TB cases were contributed by smear negative TB cases. Extra-pulmonary TB cases were also treated and contributed 30% of all notified TB cases. Among extra-pulmonary TB cases, 27% was primary complex cases (childhood TB) and 1.1% was treated for TB meningitis. Primary complex cases (28,743) contributed 22% of all notified TB cases.

Table 26. Proportions of state/divisional sputum smear positive and new smear positive TB cases out of union total (2007)

Sr. No.	States / Divisions	% of DOTS covered townships in each State / Division	% of new smear (+) out of union total new smear(+) TB cases	% of smear (+) out of union total smear(+) TB cases
1	Kachin State	18/18=100%	3.7%	3.7%
2	Kayah State	7/7=100%	0.3%	0.4%
3	Chin State	9/9=100%	0.4%	0.4%
4	Sagaing Divison	37/37=100%	9.8%	9.7%
5	Magway Division	25/25=100%	6.0%	5.7%
6	Mandalay Division	31/31=100%	10.4%	10.6%
7	Shan State (South)	21/21=100%	2.1%	2.2%
8	Shan State (East)	10/10=100%	1.5%	1.5%
9	Shan State (North)	24/24=100%	2.5%	2.5%
10	Kayin State	7/7=100%	2.7%	2.6%
11	Taninthayi Division	10/10=100%	2.3%	2.3%
12	Bago Division (East)	14/14=100%	5.4%	5.4%
13	Bago Division(West)	14/14=100%	4.4%	4.2%
14	Mon State	10/10=100%	4.5%	4.6%
15	Rakhine State	17/17=100%	4.9%	4.7%
16	Yangon Division	45/45=100%	24.7%	25.6%
17	Ayeyarwaddy Division	26/26=100%	14.3%	13.8%
Union Total		325/325=100%	100%	100%

Table 27. Categories of case detection rates in States and Divisions (2007)

CDR					Total
≥ 70%	60-69%	50-59%	40-49%	<40%	
Kachin	Kayah	Magway	Shan (S)	Chin	
Sagaing	Mandalay		Shan (N)		
Shan (E)					
Tanintharyi					
Bago (E)					
Bago (W)					
Mon					
Rakhine					
Ayeyarwaddy					
Kayin					
Yangon					
11	2	1	2	1	17

Figure 3. Proportions of state/divisional all smear positive TB cases out of union total all smear positive TB cases (2007)

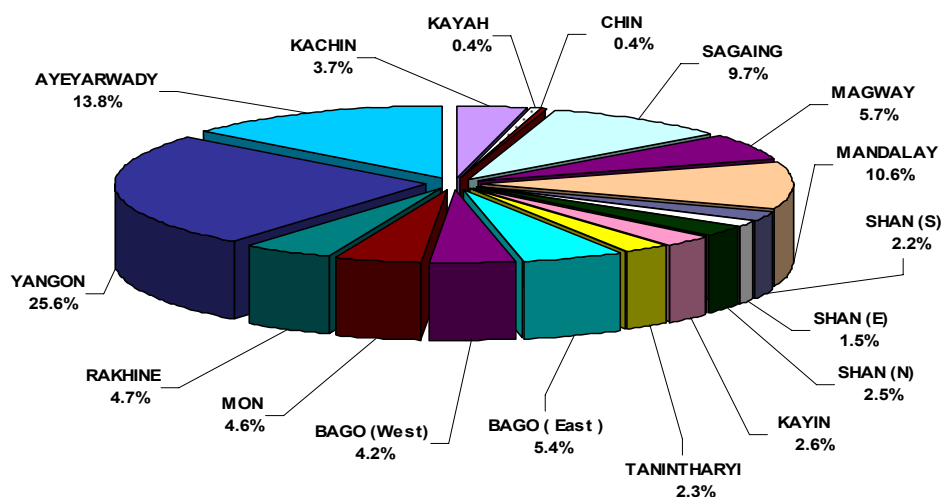


Figure 4. Proportions of state/divisional new smear positive TB cases out of union total new smear positive TB cases (2007)

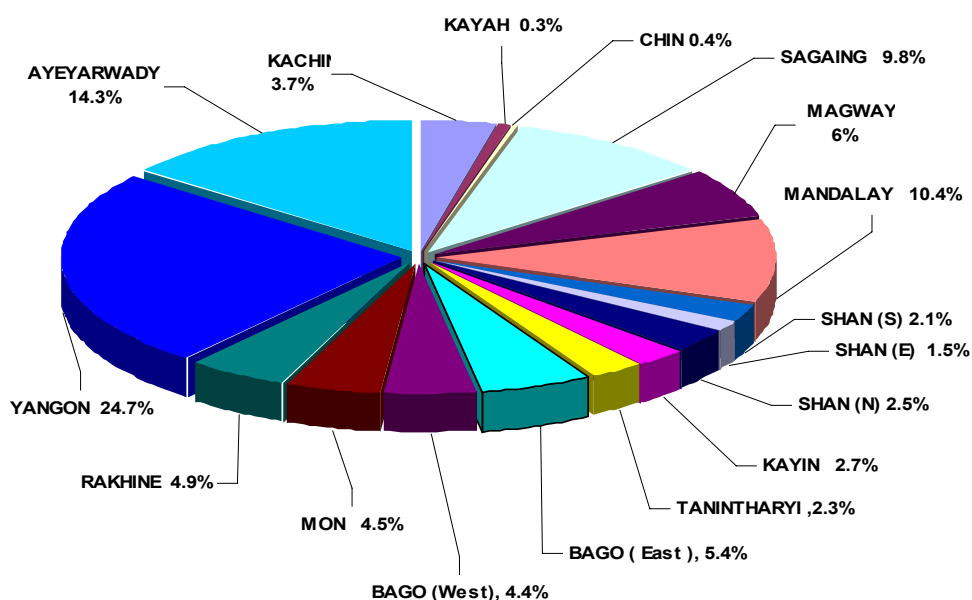


Table 28. Categories of case detection rates in States and Divisions (2007)

Sr. No.	State/ Division	CDR					Total	Report not received
		≥70%	60-69%	50-59%	40-49%	<40%		
1	Kachin State	8	1	0	1	3	13	5
2	Kayah State	4	0	1	0	2	7	0
3	Chin State	0	1	2	2	4	9	0
4	Sagaing Division	20	3	5	6	3	37	0
5	Magway Division	6	4	4	4	7	25	0
6	Mandalay Division	12	4	4	6	5	31	0
7	Shan(S) State	3	1	3	4	10	21	0
9	Shan(E) State	6	0	1	0	2	9	1
8	Shan (N) State	5	1	1	3	10	20	4
10	Kayin State	3	1	0	1	2	7	0
11	Tanintharyi Division	3	1	0	1	5	10	0
12	Bago(E) Division	11	2	0	1	0	14	0
13	Bago(W) Division	12	2	0	0	0	14	0
14	Mon State	7	3	0	0	0	10	0
15	Rakhine State	9	3	0	3	2	17	0
16	Yangon Division	21	5	4	8	7	45	0
17	Ayeyarwady Division	20	4	1	0	1	26	0
Total		150	36	26	40	63	315	10
		48%	11.5%	8%	12.5%	20%	100%	

* Annual reports had not been received from 10 townships.

In 2007, CDRs of 315 townships were evaluated and 63 townships (20%) had CDRs less than 40% and 150 townships (48%) achieved the target (≥70%).

The case notification rate of all forms of TB cases and new smear positive TB cases from 315 townships plus other reporting units were 241/100,000 population and 77/100,000 population.

As State and Divisional wise, the case notification rates of all TB cases were high in Yangon Division (387/100,000 population), Tanintharyi Division (341/100000), Kachin State (312/100,000 population).

The case notification rate of new smear positive cases was high in Yangon Division (137/100,000 population), Kachin State (97/100,000 population), however, Chin State (28/100,000 population), Southern Shan State (36/100,000 population) and Northern Shan state (37/100,000 population) had low case notification rate for new smear positive cases.

Table 29. TB Case notification rates of States and Divisions (2007)

Sr. No.	States / Divisions 315 Townships + Other Units	Case notification rates of new Smear (+) TB cases in DOTS townships	Case notification rates of all smear (+) TB cases in DOTS townships	Case notification rates of all TB cases in DOTS townships
1	Kachin State	97/100,000 pop:	112/100,000 pop:	312/100,000 pop:
2	Kayah State	52/100,000 pop:	62/100,000 pop:	229/100,000 pop:
3	Chin State	28/100,000 pop:	34/100,000 pop:	204/100,000 pop:
4	Sagaing Division	59/100,000 pop:	67/100,000 pop:	155/100,000 pop:
5	Magway Division	42/100,000 pop:	46/100,000 pop:	160/100,000 pop:
6	Mandalay Division	49/100,000 pop:	57/100,000 pop:	157/100,000 pop:
7	Shan State (South)	36/100,000 pop:	41/100,000 pop:	125/100,000 pop:
8	Shan State (East)	76/100,000 pop:	88/100,000 pop:	228/100,000 pop:
9	Shan State (North)	37/100,000 pop:	42/100,000 pop:	152/100,000 pop:
10	Kayin State	59/100,000 pop:	65/100,000 pop:	230/100,000 pop:
11	Taninthayi Division	54/100,000 pop:	63/100,000 pop:	341/100,000 pop:
12	Bago Division (East)	62/100,000 pop:	72/100,000 pop:	188/100,000 pop:
13	Bago Division (West)	76/100,000 pop:	83/100,000 pop:	229/100,000 pop:
14	Mon State	67/100,000 pop:	78/100,000 pop:	232/100,000 pop:
15	Rakhine State	56/100,000 pop:	62/100,000 pop:	185/100,000 pop:
16	Yangon Division	137/100,000 pop:	163/100,000 pop:	387/100,000 pop:
17	Ayeyarwaddy Division	69/100,000 pop:	76/100,000 pop:	175/100,000 pop:
Population 55,753,816		77/100,000 pop:	89/100,000 pop:	241/100,000 pop:
Union* 57,606,774		74/100,000 pop:	85/100,000 pop:	232/100,000 pop:

* Population from 2002 Statistical Year Book, Ministry of National Planning & Economics Department, Central Statistical Organization.

The proportion of sputum smear positive pulmonary TB cases to all pulmonary TB cases was 54% and the ratio of new sputum smear positive TB cases to new sputum smear negative TB cases was 1:1.

Proportion of sputum smear positive pulmonary TB cases of all pulmonary TB cases was high above 60% only in Sagaing Division. Taninthayi Divisions treated more sputum smear negative pulmonary TB cases and 38% of reported all pulmonary TB cases were smear positive.

Ratio of new smear positive to new smear negative cases and EP cases were less than national figure (0.5:1) in Kayah, Chin, Shan (South), Shan (North), Kayin, Mon States, Magway and Taninthayi Divisions.

10.2. Age and sex distribution of new sputum smear positive TB cases

The age and sex distributions of new sputum smear positive TB cases reported to the NTP in 2007 shows that 47% of them were in 25-34 age group and 35-44 age groups. Male to female ratio of those patients was 1.9:1.

0.7%(286/42588) of new sputum smear positive TB patients was in the age group of (0-14), and male to female ratio of those patients was 0.8:1.

Case notification rate of total new smear positive male TB cases was 98/100,000 and case notification rate of total new smear positive female TB cases was 51/100,000.

Table 30. Case notification rates of new smear positive cases according to age and sex (2007)

Age groups	Total		Males		Females	
	TB patients / pop. *	CNR / 100,000	TB patients/ pop. **	CNR / 100,000	TB patients/ pop. ***	CNR /100,000
1-14	286 / 18835	2	127 / 9563	1	159 / 9272	2
15-24	6310 / 10569	60	3591 / 5411	66	2719 / 5158	53
25-34	10069 / 9275	109	6569 / 4610	142	3500 / 4665	75
35-44	9824 / 7317	134	6826 / 3579	191	2998/ 3738	80
45-54	7993 / 5128	156	5507 / 2491	221	2486 / 2637	94
55-64	4753 / 3400	140	3152 / 1603	197	1601 / 1797	89
65+	3353 / 3084	109	2155 / 1374	157	1198 / 1710	70
Total	42588 / 57607	74	27927/ 28631	98	14661 / 28976	51

* Total TB pts / pop. in thousand

** Total Males TB pts / pop. in thousand

*** Total Females TB pts / pop. in thousand

All denominators are populations in thousand.

(Source: 2002 Statistical Year Book, Ministry of National Planning & Economics Department, Central Statistical Organization, population projected with 2% population growth rate)

Figure 5. New smear positive TB case notification rate/100,000 by sex and age groups (2007)

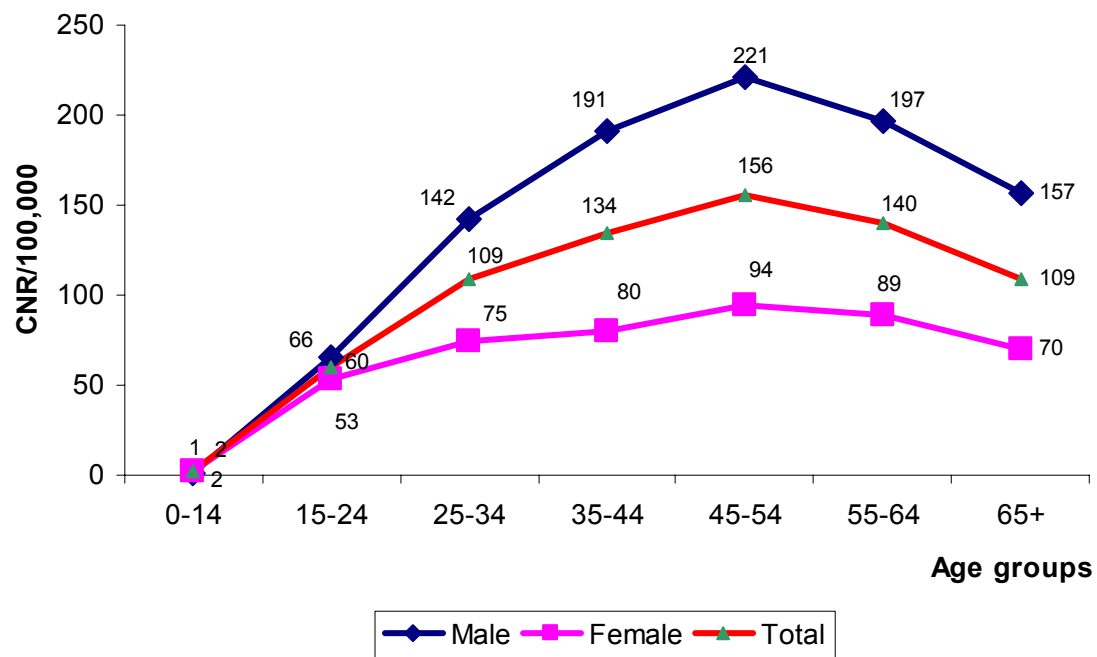
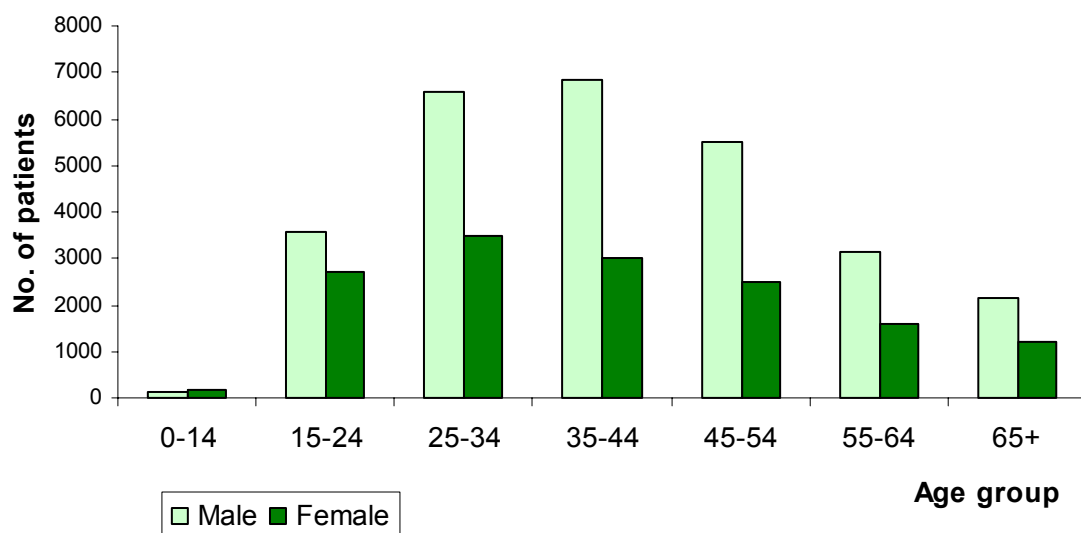


Figure 6. Age and sex distribution of new smear positive TB patients (2007)



10.3. Categories of Treatment regimen

The reported total TB patients were (133,547) in TB 07 - block - 1, but altogether (135,582) patients were treated in TB 07 block 3 after counting transferred in cases and others cases.

According to reports, 58% of reported cases were treated with Category I regimen, 7% with Category II regimen and 35% with Category III regimen. 37% and 8.4% of Category I patients were sputum smear negative and extra pulmonary cases respectively. 3.5%, 0.6%, 0.9% and 2.1% of total patients were relapse cases, treatment after default, treatment after failure and others cases. Out of 133,547 reported TB cases in block 3, 30% was extra-pulmonary TB patients.

Taninthayi Division, Kayah, Chin States treated more extra-pulmonary TB cases compared to other States/Divisions.

High proportion of relapse cases was treated in Yangon, Mandalay, Ayeyarwaddy, Sagaing and Bago (E) Divisions (32%, 14%, 10%, 8%, 6% of all relapse cases respectively).

Figure 7. Proportions of patients according to treatment regimens (2007)

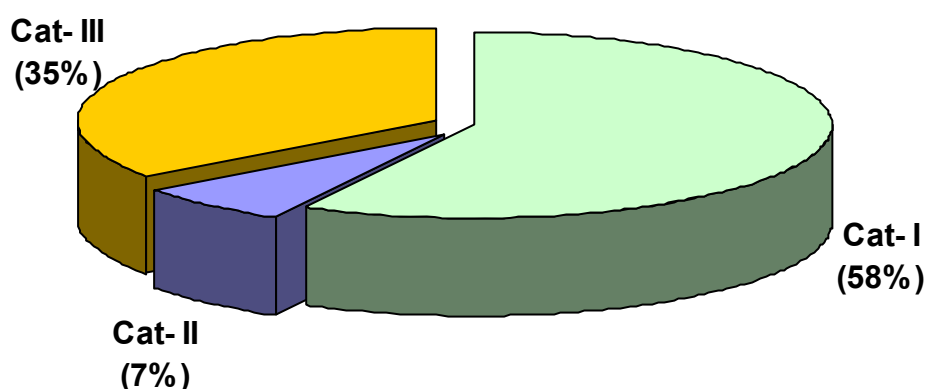


Table 31. Categories of Treatment Regimens

Year	Cat I			Cat II			Cat III		Total	Proportion of relapse on s(+) total (%)	Proportion of failure on s(+) total (%)
	Sputum smear positive	Severe Smear negative	EP	Relapse	Treatment after default	Other (Failure)	Less severe form smear negative	EP			
2000	16923	2608	313	2600	907	386	6157	1962	31856	13	2
2001	20697	4604	485	3072	1042	363	9166	3383	42812	13	2
2002	24203	8063	866	3661	1242	697	10796	9866	59394	13	2
2003	27295	13537	1693	4453	1454	964	12179	16185	77760	14	3
2004	31551	21098	2938	4820	1293	1522	13627	23267	100116	13	4
2005	38598	23164	6234	4817	976	2024	13309	26158	115280	11	4
2006	40742	30031	5620	5229	1007	2852	13924	29141	128546	11	6
2007	43230	29177	6602	4750	757	4003	13077	33986	135582	10	3

10.4. Laboratory performance

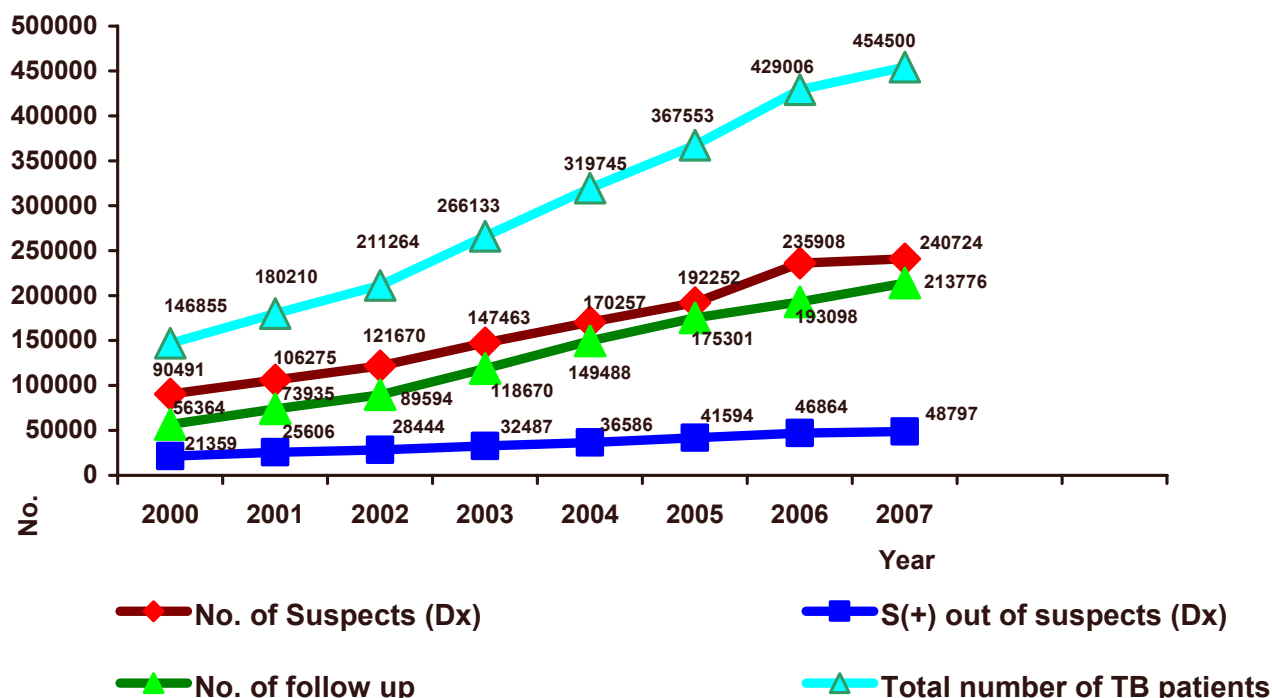
There were 240,822 patients examined for sputum microscopy and 20% of them were sputum smear positive (48813/240822).

14% of TB suspected cases and 14% of sputum positive cases were contributed by other reporting units.

In States/ Divisions, sputum positive rates were range from 11% to 28%. Sputum positivity rates of 7 States and Divisions (Kachin, Chin, Shan (E), Shan (N) States, Taninthayi, Bago (E), Bago (W), Yangon, Ayeyarwaddy and Mandalay Divisions were high $\geq 20\%$.

In Yangon Division and Kachin State, more TB suspects were examined and CDRs were high than other States/Divisions. Other States and Divisions examined less than half of estimated TB suspects in community, which is 1% of total population especially **Chin, Shan (South) and Shan (North) States and Magway, Mandalay Divisions** needs to improve the identification of TB suspects and referral for TB diagnosis.

Figure 8. Laboratory performance (2000-2007)



10.5. Sputum conversion rate of new smear positive pulmonary TB cases

Sputum conversion rate for 2007 cohort was **89%**. It was improved compared to last year. Sputum conversion rates were Shan (E) State (81%), Shan (N) State (83%), Kayah State (83%), Taninthayi Division (84%) and Other reporting unit reported only (79%).

10.6. Treatment outcomes of TB patients (2006 cohort)

Treatment outcomes of the TB patients (2006 cohort) were evaluated from 315 townships (NTP). The cure rate and treatment success rate of new sputum smear positive TB patients were 78% and 86% for 2006 cohort (NTP).

When treatment outcome of new smear positive TB patients were analysed according to known HIV status, cure rate and treatment success rate of HIV negative TB patients were 78% and 85% for 315 townships and other reporting units. However cure rate and treatment success rate of HIV positive TB patients were 52% and 59% respectively for 2006 cohort.

In 2006 cohort, 315 townships reported case finding in 2007. NTP received reports from 315 townships, out of which (210) townships achieved treatment

outcome target of TSR ($\geq 85\%$) and (6) townships (1.9%) got less than 50% of TSR. Yangon, Magway, Mandalay, Bago (East), Bago (West), Ayeyarwaddy Divisions and Rakhine and Mon States achieved 85% treatment success rate. Only Rakhine State reached the 85% targets of cure rate in 2006.

Table 32. Categories of treatment success rates of new sputum smear positive TB patients in States/Divisions (2006 cohort) from 315 townships

Sr. No	State/ Division	TSR					Total
		$\geq 85\%$	75-84%	60-74%	50-59%	<50%	
1	Kachin State	7	1	4	0	1	13
2	Kayah State	6	0	1	0	0	7
3	Chin State	6	0	1	2	0	9
4	Sagaing Division	21	10	5	0	1	37
5	Magway Div:	22	2	1	0	0	25
6	Mandalay Div:	19	11	1	0	0	31
7	Shan(S) State	10	3	6	0	2	21
8	Shan(E) State	2	4	2	1	0	9
9	Shan (N) State	9	3	6	1	1	20
10	Kayin State	4	1	2	0	0	7
11	Tanintharyi Div:	5	2	3	0	0	10
12	Bago(E) Div:	12	2	0	0	0	14
13	Bago(W) Div:	10	4	0	0	0	14
14	Mon State	9	1	0	0	0	10
15	Rakhine State	14	3	0	0	0	17
16	Yangon Div:	31	12	1	0	1	45
17	Ayeyarwaddy Division	23	3	0	0	0	26
Total		210	62	33	4	6	315
		66.7%	19.7%	10.5%	1.3%	1.9%	

Table 33. Categories of State/Divisional cure rates of new sputum smear positive TB patients (2006 cohort)

Sr. No.	State/ Division	Cure Rate					Total
		≥ 85%	75-84%	60-74%	50-59%	<50%	
1	Kachin State	4	4	2	1	2	13
2	Kayah State	3	1	1	0	2	7
3	Chin State	4	0	2	1	2	9
4	Sagaing Division	14	12	6	2	3	37
5	Magway Div:	12	7	4	0	2	25
6	Mandalay Div:	13	9	6	1	2	31
7	Shan(S) State	9	3	4	1	4	21
8	Shan (E) State	0	3	3	1	2	9
9	Shan(N) State	6	0	2	3	9	20
10	Kayin State	1	2	3	1	0	7
11	Tanintharyi Div:	3	1	2	3	1	10
12	Bago(E) Div:	8	4	1	0	1	14
13	Bago(W) Div:	4	8	2	0	0	14
14	Mon State	3	4	3	0	0	10
15	Rakhine State	11	3	3			17
16	Yangon Div:	15	22	6	1	1	45
17	Ayeyarwaddy Division	10	9	7	0	0	26
Total		120 38.1%	92 29.2%	57 18.1%	15 4.8%	31 9.8%	315

Table 34. Categories of State/Divisional CR and TSR of new sputum smear positive TB patients (2006 cohort)

≥85%		75-84%		60-74%		50-59%		<50%	
CR	TSR	CR	TSR	CR	TSR	CR	TSR	CR	TSR
Rakhine	Yangon	Kayin	Kachin	Chin					
	Magway	Kayah	Kayah	Sagaing					
	Mandalay	Magway	Chin	Shan (S)					
	Bago(E)	Mandalay	Tanintharyi	Shan (E)					
	Mon	Mon	Shan (S)	Shan (N)					
	Bago(W)	Bago(W)	Shan (E)	Tanintharyi					
	Rakhine	Yangon	Sagaing	Kachin					
	Ayeyarwady	Ayeyarwady	Shan (N)						
		Bago (E)	Kayin						
1	8	9	9	7	0	0	0	0	0

Treatment outcome according to types of TB was evaluated for NTP and found new smear positive (52) and new smear negative (279) cases were evaluated more than registered in 2006. Relapse (105) and treatment after default (105) patients were evaluated less than registered cases.

When we evaluated the treatment outcome of other reporting units: new smear positive (57), Relapse (19) and new smear negative TB patients (440) were evaluated more than registered for treatment in 2006. However, evaluated treatment after default cases were (128) less than registered cases.

When we combined NTP and other reporting units: new smear positive (109) and smear negative (161) were evaluated more than registered cases and relapse (86) and treatment after default (23) were evaluated less than registered for 2006.

We stratified into reporting units, the other reporting units contributed half of the cases which were not registered in 2006 for new smear positive. For NTP Shan (East), Sagaing, Rakhine, Shan (S), Kachin, Chin, Kayah, Shan (N), Kayin, Taninthayi and Mandalay had discrepancies in evaluated number of new smear positive TB patients in 2006.

Defaulter rate for new smear positive TB cases reduced to 5% from 9% of 2003 cohort. However defaulter rate of TB/HIV patients was 6%. **Case fatality rates during treatment** was 5% for HIV status unknown TB patients and 26% for TB/HIV co-infected patients.

Treatment failure rates were 3% for new smear positive cases, 3% for TB patients with unknown HIV status and 6% for HIV co-infected TB patients.

For **other reporting units** : AZG reported high failure rate of new smear positive TB cases as 12% where as PSI, Waibargi hospital and Aungsan TB hospital reported failure rate were 6%, 6% and 5% respectively. Case fatality rate was high in Waibargi hospital (38%).

Case fatality rates of new smear positive cases during treatment were high above 5% in Shan State (South) (10%), Bago Division (West), Mandalay Division and Kayah State (7%) and Sagaing Division (6%).

Treatment failure rates of new smear positive TB cases in States/Divisions were higher than 3% in Kachin State, Sagaing Division, Shan State (East) and Yangon Division.

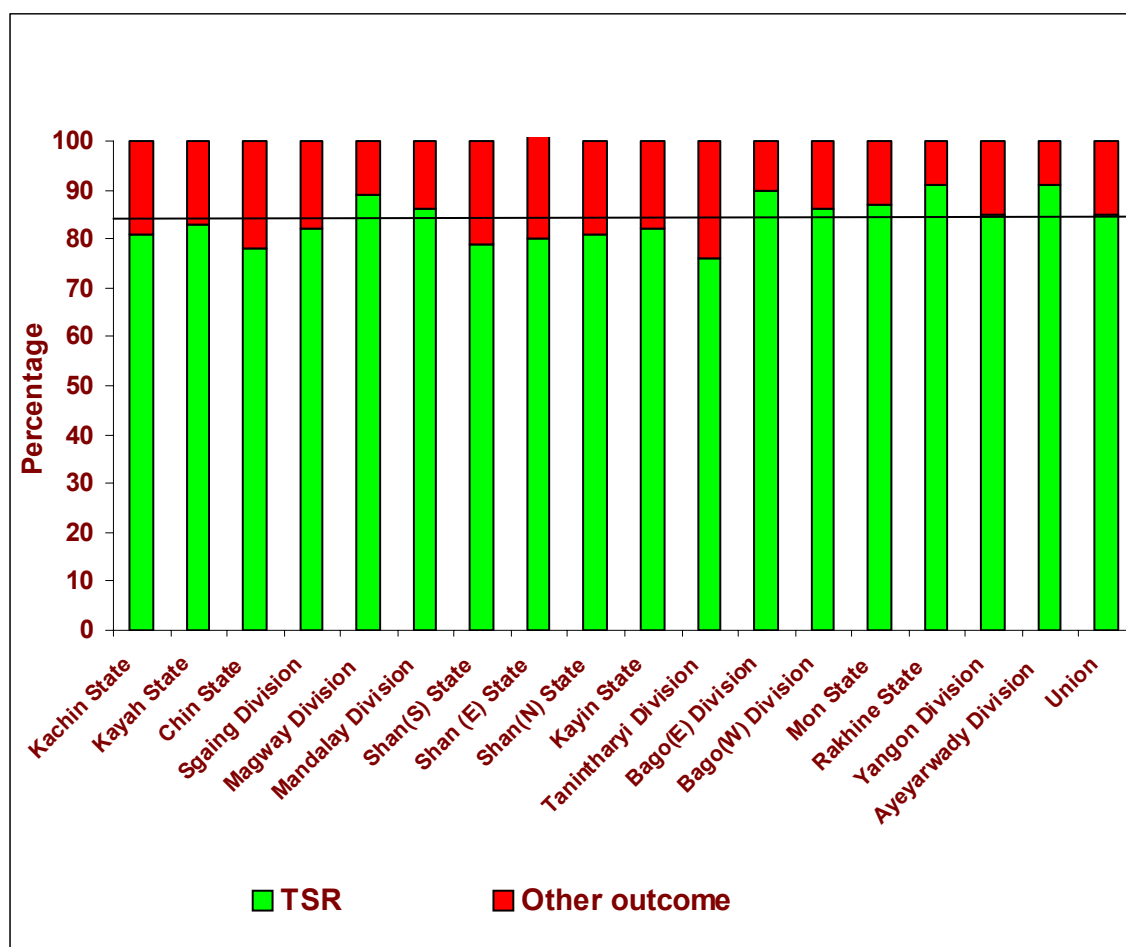
Table 35. Treatment outcomes of TB patients reported to NTP (2006 cohorts)

Type of TB patients		Total no. evaluated	Cured	Completed	Deaths	Failure	Defaulter	Transferred out	Total no. evaluated
New S (+) cases	HIV (+)	1341	700 52 %	89 7%	344 26%	79 6%	82 6%	47 4%	1341
	Unknown HIV status	39009	30367 78%	2875 7%	1883 5%	1211 3%	1937 5%	736 2%	39009
	Total	40350	31067 77%	2964 7%	2227 6%	1290 3%	2019 5%	783 2%	40350
S(-) cases	HIV (+)	3030		1942 64%	723 24%	56 2%	216 7%	93 3%	3030
	Unknown HIV status	40430		33830 84%	2253 6%	320 1%	3093 8%	934 2%	40430
	Total	43460		35772 82%	2976 7%	376 1%	3309 8%	1027 2%	43460
Relapse Cases	HIV (+)	296	92 31%	66 22%	106 36%	13 4%	8 3%	11 4%	296
	Unknown HIV status	4613	2965 64%	512 11%	418 9%	285 6%	280 6%	153 3%	4613
	Total	4909	3057 62	578 12	524 11	298 6	288 6	164 3	4909
Other cases	HIV (+)	463	3 1%	241 52%	173 37%	4 1%	30 6%	12 3%	463
	Unknown HIV status	1931	561 29%	749 39%	177 9%	122 6%	179 9%	143 7%	1931
	Total	2394	564 24%	990 41%	350 15%	126 5%	209 9%	155 6%	2394
Primary Complex Cases	HIV (+)	160		109 68%	35 22%	0	12 8%	4 2%	160
	Unknown HIV status	24891		23351 94%	178 1%	0	1048 4%	314 1%	24891
	Total	25051		23460 94%	213 1%	0	1060 4%	318 1%	25051
TB Meningitis cases	HIV (+)	50		26 52%	18 36%	0	5 10%	1 2%	50
	Unknown HIV status	392		309 79%	43 11%	0	27 7%	13 3%	392
	Total	442		335 76%	61 14%	0	32 7%	14 3%	442
Treatment After Default cases	HIV (+)	90	22 24%	12 13%	38 42%	2 2%	13 14%	3 3%	90
	Unknown HIV status	798	420 53%	151 19%	61 8%	46 6%	89 11%	31 4%	798
	Total	888	442 50%	163 18%	99 11%	48 5%	102 11%	34 4%	888
Treatment After failure cases	HIV (+)	122	58 48%	8 7%	31 25%	12 10%	10 8%	3 2%	122
	Unknown HIV status	553	292 53%	44 8%	38 7%	94 17%	51 9%	34 6%	553
	Total	675	350 52%	52 8%	69 10%	106 16%	61 9%	37 5%	675
Grand Total	HIV (+)	5552	875	2493	1468	166	376	174	5552
	Unknown HIV status	112617	34605	61821	5051	2078	6704	2358	112617
	Total	118169	35480	64314	6519	2244	7080	2532	118169

Defaulter rates of new smear positive cases were high above 5% in Chin State (15%), Tanintharyi Division (12%), Shan (North) States (11%), Kayin State (10%), Shan (E) State (10%), Kachin State (9%), Shan (South) State (7%) and Sagaing Division (6%).

Transferred out rate was high in Taninthay Division (6%) and Kayah State (4%). 24% of transferred out cases were reported from other reporting units.

Figure 9. Treatment success of new smear positive TB patients (2006 cohort)



10.8. Evaluation of State and Divisional TB control activities

NTP, Myanmar achieved the global TB control target 70% CDR and 85% TSR in 2007. The achievement of 2006 was maintained. The performance of State/Divisional level was evaluated and Bago (East), Bago (West), Yangon and Ayeyarwaddy Divisions, Mon and Rakhine States achieved the targets. Among 315 townships reported, 54 townships achieved the TB control targets.

10.8.1. Yangon Divisional TB Centre

Yangon Divisional TB Centre covers Yangon Division with 45 townships. It achieved CDR of 81% and if added the contribution of other reporting units CDR increased to 103%. Cure rate increased to 78% from 67% (2003 cohort) and TSR increased to 85% from 76% (2003 cohort). Reporting efficacy was 100%.

The estimated new smear positive TB patients were calculated with 170/100,000 population based on the Yangon Divisional TB Prevalence Survey results (2006). 8 townships: Pabedan, Kawhmu, Kyauktan, Kunggyangone, Twantay, Thongwa, Htantabin and Cocogyun townships (CDR <40%) were needed to improve the case finding activities. Only 4 townships (Kyinmyindine, Seikkan, Seikkyaikanaungto, Hlaingthayar) achieved the both targets in 2007.

Defaulter rate was reduced to 4% from 13% in 2003 cohort. Defaulter rate was high above 10% in Mingaladon (11%). Case fatality rate was high ($\geq 8\%$) in Dawbon, Mingalataungnyunt, Mayangone, Lanmadaw, Kayan townships. Transferred out cases were 191 patients and that is 24% of total transferred out cases.

Tuberculosis Diagnostic Centre (Yangon)

Reported new TB cases increased compared to 2006 although number of referred TB suspects reduced in 2007.

Table 36. Case load of Tuberculosis Diagnostic Centers in Yangon Division in 2007

Month	Referred TB suspects		New		Follow-up		Total
	Div. TBC Aung San	Latha Diagnostic Center	Div. TBC Aung San	Latha Diagnostic Center	Div. TBC Aung San	Latha Diagnostic Center	
January	435	410	1239	662	692	1224	4662
February	425	396	1358	1080	588	1771	5618
March	472	432	1408	779	615	1121	4827
April	316	290	864	583	604	924	3581
May	418	408	1397	727	636	1184	4770
June	495	359	1515	703	451	1012	4535
July	469	353	1753	668	518	1088	4849
August	621	432	1729	855	677	1141	5455
September	422	358	1260	609	548	893	4090
October	462	348	1188	664	724	955	4341
November	442	373	1104	695	805	923	4342
December	446	353	1300	892	579	843	4413
Total	5423	4512	16115	8917	7437	13079	55483

10. 8. 2 Mandalay Divisional TB Centre

Mandalay Divisional TB Centre covers 31 townships of Mandalay Division. Mandalay Division achieved 66% CDR and 86% TSR. Reporting efficacy was 100% in Mandalay Division. If the other reporting units were added CDR increased to 79% and TSR was 86%.

Twelve townships achieved the CDR target. 7 out of 12 townships (Aungmyaythazan, Chanmyathazi, Mahaaungmyay, Pyigyitagon, Singu, Thabeikkyin and Kyaukse) got CDR more than 100%. Meikhtila, Mahlaing, Natogyi, Ngazun, Taungtha, Pyawbwe townships got CDR less than 40%.

In Mandalay Division, cure rate of 2 townships (Thabeikkyin and Thazi townships) were less than 50%. Although CR was low treatment success rate is high above 70% in Madayar, Thabeikkyin and Thazi townships. Defaulter rate was high (10%) in Amarapura township. Failure rate was high above 5% in Kyaukse and Thabeikkyin townships. Case fatality rate was high above 10% in PyinOoLwin, Madaya, Thabeikkyin, Myittha, Wundwin, Myingyan and Myeikhtila. Myeikhtila, Kyaukpadaung, Pyigyidagon, PyinOoLwin and Pyinmana townships had a high transferred out problem (>5%).

Table 37. Case load of Tuberculosis Diagnosis Centre, (Mandalay General Hospital Compound) in 2007

Month	New	Follow-up	Total
January	461	801	1261
February	492	537	1029
March	577	407	984
April	401	432	833
May	474	382	856
June	533	384	917
July	514	310	824
August	542	481	1023
September	414	368	782
October	446	576	1022
November	392	468	860
December	361	401	762
Total	5607	5547	11153

Problems were identified as frequent turn over of trained staff, human resource shortage and inconsistent population data to be used for target setting.

Mandalay District is implementing the "Integrated HIV care" Project with the support of MoH, Union and Yadana oil company.

Table 38. Treatment outcome of new smear positive TB patients of Mandalay District (2006 cohort)

Cohort year	TB patients	Cured	Completed	TSR	Died	Failure	Defaulted	Transfer-red out	Total
2005	HIV (-)	296	21	94.6	8	4	0	6	335
	HIV (+)	68	6	90.2	7	1	0	0	82
	Total	364	27	93.8	15	5	0	6	417
2006	HIV (-)	410	32	92.7	8	14	3	10	477
	HIV (+)	93	11	83.2	14	1	2	4	125
	Total	503	43	90.7	22	15	5	14	602
2007	HIV (-)	255	28	90.4	10	6	7	7	313
	HIV (+)	71	7	78.0	16	1	4	1	100
	Total	326	35	87.4	26	7	11	8	413

Table 39. Treatment outcome of new smear negative TB patients of Mandalay District (2006 cohort)

Cohort year	TB patients	Completed	Completion rate	Died	Failure	Defaulted	Transfer-red out	Total
2005	HIV (-)	233	93.6	10	0	3	3	249
	HIV (+)	134	85.4	20	0	1	2	157
	Total	367	91.4	30	0	4	5	406
2006	HIV (-)	274	93.2	8	1	5	6	294
	HIV (+)	197	83.8	26	0	8	4	235
	Total	471	89.0	34	1	13	10	529
2007	HIV (-)	203	94.0	5	1	3	4	216
	HIV (+)	88	74.5	24	1	3	2	118
	Total	291	87.1	29	2	6	6	334

Table 40. Treatment outcome of HIV positive new extra-pulmonary TB patients of Mandalay District (2006 cohort)

Cohort year	TB patients	Completed	Completion rate	Died	Defaulted	Transfer-red out	Total
2005	HIV (-)	68	95.8	1	0	2	71
	HIV (+)	52	91.2	3	2	0	57
	Total	120	93.8	4	2	2	128
2006	HIV (-)	77	97.5	1	0	1	79
	HIV (+)	84	84.8	15	0	0	99
	Total	161	90.4	16	0	1	176
2007	HIV (-)	95	96.8	2	0	0	98
	HIV (+)	75	90.4	5	1	0	83
	Total	170	93.9	7	1	0	181

10.8.3. Shan State (South) TB Centre

Shan State (South) TB Centre covers Southern Shan State and DOTS is implementing in 21 townships. Southern Shan State achieved 48% CDR, 73% CR and 79% TSR. The CDR increased to 49% in addition of partners' notification. Reporting efficacy was 100%.

In Southern Shan State, only Mongshu township achieved the TB control targets. Out of 21 townships 3 townships achieved the CDR targets however, 11 townships were lower than CDR 40%. Maukme and Mongpan had low CDR, low CR and Lauksauk and Kunhein also had CR lower than 50%.

Defaulter rates were high in Loilem, Lauksauk, Namsan and Hsiseng. Case fatality rate was higher than 10% in Linkay, Loilem, Kunhein, Namsam, Taunggyi, Hsiseng, Kalaw, Lauksauk, Pinlong, Nyaungshwe townships.

Problems identified in Southern Shan State were vacancies of lab. technicians, transport difficulties and language barriers.

Taunggyi township is implementing the TB/HIV collaborative activities. TSR of HIV positive, new smear positive TB patients was 75%. Case fatality rate was as high as 25%.

Table 41. Treatment outcomes of new smear positive TB/HIV patients

Township	Cured	Completed	Defaulted	Died	Failure	Transferred out	Total
Taunggyi	8	1	0	3	0	0	12

10.8.4. Ayeyarwady Divisional TB Centre

Ayeyarwady Divisional TB Centre covers only Ayeyarwady Division and has 26 townships. It achieved CDR of 92%, CR of 82% and TSR of 91%. Reporting efficacy was 100%. CDR increased to 97% when other reporting units were added.

9 townships achieved the TB control targets. Out of 26 DOTS townships, Kangyidaunt township is the only township with CDR below 40%. Defaulter rate of Ayeyarwaddy Division is only 3% which was 4% in 2005 cohort. Defaulter rates were high above 10% in 4 townships in last year however, there was no township with high defaulter rate in 2006 cohort. Case fatality rate for the division is 5% and it was high above 10% only in Bogalay (11%).

Ayeyarwaddy division, with the best achievement identified the problems differently from other State/Divisions. Accessibility and increased in diagnosis of smear negative TB patients after initiation of PPM-DOTS and weakness in supervision of BHS were the issues for Ayeyarwaddy Division.

10.8.5. Mon State TB Centre

Mon State TB Centre covers Kayin State and Mon State and DOTS is implementing in 17 townships. Mon State achieved CDR of 89%, CR of 79% and TSR of 87%. Kayin State achieved CDR of 79%, CR of 75% and TSR of 82%. Reporting Efficacy was 100% in both States. CDR of Mon State increased to 95% and for Kayin State 81% when contribution from other reporting units were counted.

Belin and Paung from Mon State achieved the TB control targets. No township with low CDR and low CR. For Kayin State, none of the townships reached the TB control targets yet. 2 townships (Kyarinnseikkyi and Thandaung townships) had low CDR. Kyarinnseikkyi township was in the category of low CDR and low CR last year and improved in treatment outcome in this year however, it needs much attention to improve.

Defaulter rate of Kayin State was 10% and high above 10% in 2 townships (Myawaddy and Hpa-an). Death rate is high above 10% in Thandaung, Pharpon (Kamamaung) and Kyarinseikkyi. Failure rate was high in Thandaung (13%)

Defaulter rate of Mon State is only 4%. Failure rate was high in Ye (6%).

Special attention should be provided to Kyarinseikkyi, Thandaung townships of Kayin State to improve the overall performance of Kayin State.

Mon State had a problem to keep functioning of a new X-ray machine funded by GFATM due to instability of electricity. Identified low performance townships were needed to be improved with the special strategies for reaching the TB control targets.

10.8.6. Bago Divisional TB Centre

Bago Divisional TB Centre covers Bago (East) and (West) Divisions totally 28 townships. Bago (East) Division achieved CDR of 83%, CR of 84% and TSR of 90%. Bago (West) Division achieved CDR of 101%, CR of 82% and TSR of 86%. Reporting efficiency rates of both divisions were 100%. CDR of Bago Division was 90% for NTP and increased to 104% when other reporting units were added.

Eight townships each from Bago (East) Division and 3 townships from Bago (West) Division achieved the TB control targets.

Only Kyaukkyi township was in the category of low CDR and low CR.

Defaulter rate as high as 10% was reported in Kawa and Oktwin. Case fatality rate was high in Thanutpin, Yetashe, Tharyarwaddy and Gyobingauk.

Bago Division identified low community awareness, transfer of trained health staff and poor motivation of health staff and transport difficulties for supervision as problems.

10.8.7. Rakhine State TB Centre

Rakhine State TB Centre covers Rakhine State and DOTS is implementing in 17 townships. It achieved CDR of 75%, CR of 85% and TSR of 91%. Reporting efficacy was 100%. There was no other reporting units/INGOs notified case finding or treatment outcomes although MSF –Holland is implementing activities there.

Seven (Kyaukphyu, MyaukU, Yathaetaung, Kyauktaw, Gwa, Minbya, Thandwe) out of 17 townships achieved TB control targets. Only Yanbywe and Manaung for low CDR <40% needs to be improved.

Defaulter rates were high above 10% in 2 townships (Myebon and Pauktaw).

Rakhine State TB Officer is also responsible for Palettwa township of Chin State.

The problems identified in Rakhine State were low community awareness, poor involvement of GPs in TB control and frequent turn-over of trained health staff including TMOs.

10.8.8. Sagaing Divisional TB Centre

Sagaing Divisional TB Centre covers Sagaing Division and Northern Chin State and DOTS is implementing in 42 townships. Sagaing Division achieved CDR of 79%, CR 74%, TSR 82% in 2007. CDR was increased to 86% when other reporting units were added. The CDR was only 60% in 2006 and it was dramatically increased due to support of FIDELIS project. Reporting efficacy was 100%.

Chin State got CDR of 39% (40% when other reporting units were added), CR of 65% and TSR of 78%. Reporting efficacy was 100% for Chin State.

Five townships (Myaung, Myinmu, Indaw, Kalaywa, Minkin) out of 37 townships in Sagaing Division and non in Chin State achieved the TB control targets. CDR was higher than 100% in Myinmu, Shwebo, Kyunhla, Katha, Kalay, Khamti, Tamu, Mawleik, Phaungbyin and Lahal. Low CDR is reported in Nanyun, Taze, Kani townships. Low CR is reported in Nanyun and Homalin. Nanyun was fall in the category of low CDR and low CR.

For Chin State, only Tunzan achieved the CDR. Matupi was fall in the low CDR and low CR category. Tiddim, Htantalan and Kanpalet were in the low CDR category and Palettwa had low CR.

In 2006 cohort, Defaulter rate was 6%, case fatality rate was 6% and treatment failure rate was 5% for Sagaing Division. Defaulter rates were high above 10% in 6 townships of Sagaing Division (Monywa, Pale, Kawlin, Khamti, Homalin and Lashi). Death rate is high above 10% in Sagaing, Kyunhla, Butalin, ChaungU, Yinmabin, Katha, Pinlebu, Wuntho townships.

The defaulter rate is 15% for Chin State. Chin State needs special activities which is appropriate for the local situation.

Major problems of Sagaing Division were identified as transportation difficulty for supervision and timely reporting, human resource shortage and frequent turn over of trained staff, increase work load on divisional TB lab. for QC and additional sputum collection centers. For Chin State, health man power shortage, limitation in supervisory visits and lack of trainings were identified as problems.

10.8.9. Tanintharyi Divisional TB Centre

Tanintharyi Divisional TB Centre covers only Tanintharyi Division and DOTS is implementing in 10 townships. It achieved CDR of 72%, CR of 67% and TSR of 76%. Reporting Efficacy was 100%.

Dawei township achieved the TB control targets. Longlon township was identified as low CDR and low CR township and Thayetchaung, Yebyu, Kyunsu, Taninthayi were identified as low CDR townships. CR was low below 50% in Palaw township.

Default rate was 14% for the division and Kyunsu, Palaw, Kawthaung, Myeik townships were having defaulter rate more than 10%. Treatment failure rate was high in Kyunsu township (11%)

The main problems of Taninthayi Division were low community awareness, low CDR and CR and high defaulter.

10.8.10. Shan (North) State TB Centre

Shan (North) State TB Centre covers only Shan (North) State and DOTS is implementing in 24 townships. It achieved CDR of 49%, CR of 65% TSR of 81%

in 2006 cohort. CR and TSR reduced compared to 2005 cohort. The CDR increased to 72% when other reporting units were added. Reporting efficiency was 83%. NTP did not receive the reports from Kongyan, Panwine, Mongmaw, Manphant townships.

Only Hsipaw township achieved the TB control targets. Manton, Kuikai, Namsam, Mongreh, Pangyan townships were identified as low CDR and low CR townships. There are 6 townships with low CR and 4 townships with low CDR. State as a whole needs special activities under close monitoring system to improve the CDR and CR.

Defaulter rate was 11% for the whole State. The defaulter rate was high above 10% in 9 townships (Lashio, Theinni, Namkham, Laukkai, Moemeik, Kutkai, Pangyan, Mabein and Mongreh). Case fatality rate was high above 10% in Moemeik, Namsam and Namkham townships. Failure rate was high in Laukkai and Namkham townships.

The main problems were low CDR, low CR and high defaulter rates.

10.8.11. Magway Divisional TB Centre

Magway Divisional TB Centre covers Magway Division and Chin (south) State. DOTS is implementing in 29 townships. Magway Division achieved CDR of 56% and CR of 81% and TSR of 89%. CDR increased to 60% when other reporting units were added. Reporting efficiency was 100%.

Myothit, Yenanchaung, Pauk townships achieved the TB control targets. Only Natmauk townships needs attention for improvement of CDR and CR. Saytoketayar township also had a low CR. CDR was lower than 40% in 7 townships (Yesagyo, Saw, Pakokku, Pwintphyu, Minhla, Sinpaungwe and Htilin).

High defaulter rate was only in Magway and Saw townships. Treatment failure high above 5% was in Natmauk and case fatality rate was high in Kanma.

Low community awareness, poor accessibility and low motivation of staff were identified as problems for Magway Division.

10.8.12. Shan State (East) TB Centre

Shan State (East) TB Centre covers only Shan State (East) and DOTS is implementing in 10 townships. It achieved CDR of 102%, CR of 62% and TSR of 80%. Reporting efficacy was 90%. No report from Matman.

Five townships achieved the CDR target. 2 out of 10 townships (Monghkat and Mongyan) got CDR less than 40% as well as CR less than 50%. Kengtong got cure rate less than 50%.

Defaulter rate was 10% reduced from 20% in 2003. Defaulter rates were high above 10% in 4 townships (Kengtong, Monghkat, Mongyang and Mongton). Failure

rate is high in Kengtong and Mongtong townships. Case fatality rate is also high in Mongton and Mongpyat townships

Major problems identified were human resource limitation, lack of incentives (accommodation and vehicles) for TB staff, lack of X-ray machine for State TB center and delay reimbursement of drug transportation cost.

10.8.13 Kachin State TB center

Kachin state TB center covers 18 townships and central unit of NTP did not received reports from 5 townships (N'ginyan, Hsawlaw, Naungmun, Khaunglanbu, Sumprbum). Reporting efficiency was 72%. CDR for 2007 was 129% and when added other reporting units like AZG, CDR increased to 157%. The TSR was 81%.

In Kachin State, Bahmo, Mansi and Shwegu townships achieved the targets. Chipway township had low CDR and low CR. 2 townships (Pharkant and Machanbaw) had low CDR where as Momauk had high CR with low CDR. Waingmaw had high CDR and low CR.

Defaulter rate was high in Mohnyin, Waingmaw townships (>10%). Case fatality rate was high in Tanai (>10%). Treatment failure rate was high above 5% in Pharkant (14%), Waingmaw (10%) and PutaO (7%). Failure rate was high in other reporting units (8%). Pharkant township needs special activities to control TB in this township with high mobile population and GPs, not following the NTP's guideline. The strategy for TB control in Pharkant should be coordinated with MMA.

In Kachin State, high CDR, TB/HIV problems, transportation difficulties and human resource shortage were the problems to be solved for better performance.

Myitkyina township is implementing the TB/HIV collaborative activities. TSR of HIV positive, new smear positive TB patients was 50%. Case fatality rate was as high as 23% and defaulter rate was 19%.

Table 42. Treatment outcome of new smear positive TB cases with known HIV positive

Township	Cured	Completed	Defaulted	Died	Failure	Transferred out	Total
Myitkyina	13	0	5	6	0	2	26

10.8.14. Kayah state

Kayah State was newly established as the State TB center. It covers 7 townships in Kayah State. The CDR was 69%, CR was 76% and 83%. Reporting efficiency was 100%.

Only Shataw township achieved the TB control targets. Phruhso township had low CDR and low CR. Only one township (Pasaung) had low CDR and one township with low CR (Balake).

Possible actions to be taken for the problems

A. Case Detection Rate less than 40%

- to promote community awareness by widespread health education concerning TB with the support of IEC materials
- to educate family members of TB patients and promote contact tracing
- to advocate TB control activities to general practitioners and local NGOs
- 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 all smear positive TB patients in the laboratory register are registered and treated
- to ensure that sputum microscopy is accessible to patients with trained laboratory technicians in place
- to improve laboratory quality assurance system and involve TMOs in laboratory supervision
- to establish sputum collection points in hard to reach areas

B. Cure Rate less than 50% in new smear positive TB cases

- to strengthen health education session for TB patients at the time of registration for treatment and during follow up visits for sputum microscopy
- to identify TB suspected patients as early as possible
- to ensure every dose of medication is directly observed
- to intensify the follow-up sputum examination during and at the end of treatment
- to take accurate history taking for the most effective treatment.
- to give refresher training to DOT supervisors and DOT providers if required
- to consider HIV co- infection
- to use quarterly cohort review meeting for early identification of missed dose patients

C. Cure Rate less than 50% and Case Detection Rate less than 40%

- to treat TB patients till cured with DOTS and raise the Cure rate first and then to raise the case detection rate according to suggestions A and B.

D. CDR more than 100% and Cure Rate less than 50%

- to assess laboratory quality assessment system is implementing or not
- to ensure that TB patients only reside in the respective township are being treated
- to treat TB patients till cured with DOTS
- to check the township actual population
- to evaluate the current situation of TB in terms of prevalence of sputum smear positive TB cases in that particular township and how much it deviates from the national figure (1 sputum positive TB cases per 1000 population)
- to conduct epidemiological surveillance

E. Cure Rate >85% with Case Detection Rate less than 40%

- to maintain CR and raise the CDR as suggestion A.

F. Sputum Positivity Rate less than 10%

- to ensure 3 sputum specimens are examined for all TB suspects
- to check quality of laboratory performance
- to check quality of stains and microscopes using in that microscopy centre
- to improve the accessibility of TB suspects to sputum microscopy centers

G. Sputum Positivity Rate more than 10%

- to evaluate the prevalence of TB in that particular township

H. Sputum Conversion Rate less than 80-85% in new smear positive TB cases

- to explain all the staff involving in TB control about the importance of follow-up sputum examination in TB control
- to ensure sputum microscopy accuracy with quality assurance system
- to check that every dose of medication is directly observed
- to check categorization of TB patients based on proper history taking is correct or not

- to check correctness of TB-07, Block 5
- to provide qualified DOT to every patient
- to monitor the drug resistant TB situation

I. Death Rate more than 5% in new smear positive TB cases

- to ensure that every dose of medication is directly observed
- to advocate local GPs and encourage more prompt referral for diagnosis and treatment
- to consider HIV prevalence among TB patients
- to find out other causes of death other than TB
- to identify TB suspect as early as possible

J. Treatment Failure Rate more than 5% in new smear positive TB cases

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

K. Defaulter Rate more than 10% in new smear positive TB cases

- to strengthen DOTS by supervision and close monitoring
- to educate TB patients concerning TB disease, its treatment and follow-up
- 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.

L. Transferred out Rate more than 5% in new smear positive TB cases

- to ensure defaulted TB patients are not counted as transferred out cases
- to ask for the treatment outcome of transferred out patient

M. Cure Rate less than 50% but Treatment Success Rate more than 70% in new smear positive cases

- to intensify follow-up sputum examination as 2nd , 5th and 6th month of treatment in new smear positive Category I 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

N. Proportion of new smear positive TB patients out of all pulmonary TB cases is less than 55%

- to check direct sputum microscopy is used as a diagnostic method or not
- to check 3 sputum smear examinations are being done on all chest symptomatic
- to check quality assessment system of laboratory performance

10.9 Recommendations

1. To mobilize the resources for secure drug supplies
2. To scale up the decentralization of the DOTS services at SHU/RHCs
3. To evaluate the programme impact on TB situation by conducting national TB prevalence survey, drug resistant survey and TB/HIV sentinel surveillance
4. To develop Advocacy, Communication and Social Mobilization (ACSM) strategy
5. To establish mobile teams for improvement of access to diagnostic and treatment especially in hard to reach area
6. To evaluate the defaulter reduction actions and scale up in townships with high defaulter rate
7. To evaluate and scale up the prevention and control activities for TB/HIV co-infection
8. To initiate DOTS-Plus application and initiation at Yangon and Mandalay
9. To review and scale up on Public-Private Mix and strengthen the public-public Mix
10. To review and revise the national guidelines
11. To establish external quality assurance system for all the laboratories both public and private sectors
12. To increase the sputum microscopy facilities as one at least for 100,000 population
13. To develop the computerized recording and reporting system at Central level and State/ Divisional level first and later up to all reporting units.

14. To supervise and closely monitor the recording and reporting system of not only NTP but also for implementing partners to avoid the overlapping of notified cases and evaluated more than notified cases in next year.

11. Conclusion

NTP, Myanmar covered all the townships since November, 2003. NTP achieved case detection rate 89% and cure rate 78% (treatment success rate 85%) reached the global TB control targets since 2006 and maintained. The achievement should be maintained by implementing innovative approaches and strategies according to the accessibility status of different location in the country. The States/Divisions, which have not reached the targets should improve the performance of townships with the appropriate strategies. In conclusion, improvement of coordination with the partners is also important to maintain the achievement.

NATIONAL TUBERCULOSIS PROGRAMME
Anti-TB drugs received, issued and balance, 2007

Annex-1

		4 FDC	2 FDC	ETB	Z 400	H 300	H 300	S 1 G	Syringes+ Needles	D/W	D/W	R 300	Cat I Kit	Cat II Kit
Opening Balance		0	25673088	565152	11334624	569856	3000000	234050	96600	53700	0	336000	18996	425
Received		14208096	12874848	2679936	0	0	0	261800	300000	399900	160000	750000	0	0
Issued		12667872	30753408	1618848	4841088	569856	3000000	444850	396600	235000	160000	1086000	17184	143
Closing Balance		1540224	7794528	1626240	6493536	0	0	51000	0	218600	0	0	1812	282
Expired Date	2009-2				6,493,536									
	2009-7												1812	282
	2010-5	1540224												
	2010-6									11200				
	2010-7		3918432					51000		124600				
	2010-8		3876096							2300				
	2010-10									80500				
	2012-7			1626240										

4 FDC = 4 Fixed Dose Combination

2 FDC = 2 Fixed Dose Combination

ETB = Ethambutol

Z = Pyrazinamide

H = Isoniazid

S = Injection Streptomycin

D/W = Distilled Water

NATIONAL TUBERCULOSIS PROGRAMME
Upper Myanmar Drug Store Balance

		4FDC	2FDC	ETB	PZA	INH 300	Inj: SM	Syringe/ needle	Water	RMP 300	Cat I
Opening Balance		137,760	7,572,768	160,608	1,538,880	1,603,000	18,950	36,850	38,000	0	0
Received		5,388,096	10,191,552	602,784	2,302,272	925,000	153,300	130,410	130,222	736,500	1896
Issued		3,602,592	7,869,120	461,664	1,438,080	1,433,000	111,500	105,660	107,322	736,500	420
Closing Balance		1,923,264	9,895,200	301,728	2,403,072	1,095,000	60,750	61,600	60,900	0	1,476
Expiry Date	2008-6					1095000					
	2008-8						60750				
	2009-1		9895200								
	2009-6								60900		
	2009-7										1476
	2009-12				2403072						
	2010-1			301728							
	2010-5	1923264									
	2010-7		5080320								
	2010-8							61600			

Lower Myanmar Drug Store Balance

		4FDC	2FDC	ETB	PZA	INH 300	Inj: SM	Syringe/ needle	Water	RMP 300	Cat I Kit	Cat II Kit
Opening Balance		1,774,080	1,029,504	518,112	825,216	4,000	76,250	81,000	101,700	594,000	0	0
Received		7,279,776	20,580,672	1,319,808	2,540,160	2,080,000	295,850	266,300	265,000	349,500	15288	143
Issued		7,848,960	16,595,712	1,712,256	2,921,184	320,000	344,300	296,800	317,100	943,500	14412	143
Closing Balance		1,204,896	5,014,464	125,664	444,192	1,764,000	27,800	50,500	49,600	0	876	0
Expiry Date	2008-6					1,764,000						
	2008-11		4,394,208									
	2009-1		620,256									
	2009-7										879	
	2010-2				444,192				49,600			
	2010-5	1,204,896										
	2010-6							50,500				
	2010-7						27,800					
	2012-7			125,664								

NATIONAL TUBERCULOSIS PROGRAMME

Laboratory supplies and equipment (2007)

Sr.No.	Items	Opening balance (31-12-06)	Received 2007	Issued 2007	Closing balance (31-12-07)
1	Fuhsin Basic(25 gm)	60	115	130	45
2	Phenol Crystals (500 gm)	116	12	102	26
3	Methylated Spirit (cans)	10	0	10	0
4	Binocular Microscopes	8	10 JICA	13 ***	5
5	Binocular Microscopes (Fidelis) for Sagaing	0	37	37	0
6	Microscope Glass Slides 3600/unit	0	79	79***	0
7	Xylene (1 Litre)	370	20	70	320
8	Xylene (500 ml)	0	2	2	0
9	Objective lens	50	0	4	46
10	Methylene Blue (25 gm)	154	2	74	82
11	Sulphuric Acid (2.5L)	253	100	118	235
12	Sulphuric Acid (500 ml)	72	0	0	72
13	Sputum containers (bags of 1000)***		275+340	615	0
14	Immersion Oil (1 liter)	185	2	21	166
15	Computer HP Compaq (WHO)	0	2	2	0
16	Computer HP Laser Jet (JICA)	0	1	1	0
17	Methanol (2.5L)	120	12	0	132

NATIONAL TUBERCULOSIS PROGRAMME

Distribution of Sputum containers (1000Nos. / bag) in 2007

Sr. No.	State / Division	2007			
		9th. March	8th. August	8th Oct.	25th. Sept.
1.	Yangon	10	30	25	5
		30	70		
2.	Mandalay		75	50	30
3.	Southern Shan			20	For all DRS townships One bag each (40)
4.	Kayah		10	0	
5.	Ayeyarwady		25	20	
6.	Mon			0	
7.	Bago			10	
8.	Rakhine			10	
9.	Sagaing/Chin		30	60	
10.	Tanintharyi			5	
11.	Magwe		30		
12.	Shan East				
13.	Shan North				
14.	Kachin		30		
Total (340 + 275)		40	300	200	75

Total (615) bags distributed

X'ray Film Balance (2007)

	X- Ray Film (14** 14")	X- Ray Film (14** 14")	X- Ray Film (18* 24cm)	X- Ray Film (24*30cm)	X- Ray Film (30*40cm)
	MXG G Type 500's	Green J Type 500's	100's	100's	100's
Opening Balance	8,800	600	10,000	10,000	10,000
Received	4,000	0	0	0	0
Issued	8,600	0	10,000	10,000	10,000
Closing Balance (Central)	4,200	600	0	0	0
Closing Balance (LM)	0	0	500	0	200
Closing Balance (UM)	1,900		7,100	4,700	6,400

NATIONAL TUBERCULOSIS PROGRAMME
TB staff situation in DOTS townships (2007)

Sr. No.	State/Division	Total DOTS townships	DOTS townships		
			With M.O team leader	With HA team leader	With TB staff
1	Kachin State	18	2	3	0
2	Kayah State	7	1	1	0
3	Chin State	9	2	2	0
4	Sagaing Division	37	2	2	1
5	Magway Division	25	2	4	2
6	Mandalay Division	31	4	4	2
7	Shan (S) State	21	2	4	7
8	Shan (E) State	10	2	0	2
9	Shan (N) State	24	2	7	8
10	Kayin State	7	2	1	0
11	Tanintharyi Division	10	2	1	1
12	Bago (E) Division	14	2	4	0
13	Bago (W) Division	14	1	2	2
14	Mon State	10	2	5	1
15	Rakhine State	17	3	7	0
16	Yangon Division	45	4	1	20
17	Ayeyarwady Division	26	5	13	3
	Total	325	40	61	49

Out of (65) Districts (40) TB Teams are led by Medical Officers, (7) led by Health Assistant = (47) District TBC

Out of (260) Townships (325-65), (54) Township TB Teams are led by Health Assistant

No. of District TB Team Leader Doctor = 38 + 2 (Tarchileik, Maubin)

No. of District Team Leader HA = 7 (Pynmana, NyaungU, Putao, Tharyarwady, Kawthaung, Sagaing, Mohnyin)

**NATIONAL TUBERCULOSIS PROGRAMME
CASE FINDING ACTIVITIES (2007)**

Block 1

Annex- 5

Tsp: reported	No.of Total tsp:	State/Division	Population	Estimated cases	PULMONARY TUBERCULOSIS																				Total	Extra Pulmonary TB			Total			Other			Total		
					SMEAR POSITIVE										Smear Negative																						
					New Cases			NCDR	Relapses			Old Cases						Total																			
					M	F	T		M	F	M	F	TAD	M	F	TAF	M	F	M	F																	
					13	18	Kachin State	1413935	1060	889	483	1372	129%	101	41	16	3	28	17	1578	876	471	1347	828		629	1457	18	8	2756	1652	4408					
7	7	Kayah State	246372	185	96	31	127	69%	16	2	3	0	4	1	153	79	45	124	186	96	282	4	2	388	177	565											
9	9	Chin State	483175	362	92	51	143	39%	13	5	6	1	0	2	170	158	93	251	337	221	558	23	16	629	389	1018											
37	37	Sagaing Division	6200596	4650	2443	1219	3662	79%	217	113	42	14	71	29	4148	1356	857	2213	1934	1329	3263	52	26	6115	3587	9702											
25	25	Magway Division	5336907	4003	1427	803	2230	56%	125	39	17	1	13	12	2437	1383	1013	2396	1989	1583	3572	87	54	5041	3505	8546											
31	31	Mandalay Division	7861434	5896	2611	1260	3871	66%	398	134	26	8	32	21	4490	2136	1165	3301	2500	1788	4288	197	79	7900	4455	12355											
21	21	Shan (S) State	2210733	1658	533	264	797	48%	57	15	17	4	19	7	916	447	287	734	644	454	1098	14	9	1731	1040	2771											
9	10	Shan (E) State	713398	535	389	156	545	102%	39	19	16	4	1	1	625	293	151	444	299	246	545	12	4	1049	581	1630											
20	24	Shan (N) State	2540130	1905	636	303	939	49%	69	24	22	8	10	4	1076	860	508	1368	805	595	1400	12	3	2414	1445	3859											
7	7	Kayin State	1703357	1278	661	351	1012	79%	58	19	10	5	2	0	1106	871	665	1536	704	574	1278	0	0	2306	1614	3920											
10	10	Tanintharyi Division	1558868	1169	542	300	842	72%	83	23	16	6	7	0	977	1000	626	1626	1428	1199	2627	59	23	3135	2177	5312											
14	14	Bago (East) Division	3193668	2395	1308	684	1992	83%	190	86	13	6	14	5	2306	1178	811	1989	912	785	1697	3	5	3618	2382	6000											
14	14	Bago (West) Division	2168784	1627	1053	589	1642	101%	84	27	5	3	23	10	1794	1165	847	2012	610	547	1157	8	2	2948	2025	4973											
10	10	Mon State	2480596	1860	1097	563	1660	89%	133	64	26	8	29	12	1932	1217	1084	2301	834	682	1516	5	1	3341	2414	5755											
17	17	Rakhine State	3224360	2418	1148	668	1816	75%	104	51	23	10	8	1	2013	1037	1279	2316	901	729	1630	3	0	3224	2738	5962											
45	45	Yangon Division	6687623	11336	6091	3073	9164	81%	876	383	179	35	162	87	10886	5302	3015	8317	3156	2701	5857	568	226	16334	9520	25854											
26	26	Ayeyarwady Division	7729880	5797	3296	2031	5327	92%	253	143	40	23	48	20	5854	2478	2062	4540	1668	1320	2988	86	59	7869	5658	13527											
315	325	All State & Division	55753816	48135	24312	12829	37141	77%	2816	1188	477	139	471	229	42461	21836	14979	36815	19735	15478	35213	1151	517	70798	45359	116157											
		Other Units			3615	1832	5447		491	170	111	21	351	199	6790	3143	1868	5011	2837	1952	4789	580	220	11128	6262	17390											
		Union of Myanmar	55753816	48135	27927	14661	42588	89%	3307	1358	588	160	822	428	49251	24979	16847	41826	22572	17430	40002	1731	737	81926	51621	133547											

TAD = Treatment after default
TAF = Treatment after failure

CDR = 89% CR = 78% TSR = 85%

(315/325) tsp:

Reporting Efficiency Rate = 97%

Report had not been received from (10) Townships

- Kachin State (5) Tsps
Shan (N) State (4) Tsps
Shan (E) State (1) Tsp.
1. N'ganyan
1. Korgyan
1. Matman
2. Hsawlaw
2. Panwine
3. Mongmaw
3. Naungmun
4. Khaunglanbu
5. Sumprabum

NATIONAL TUBERCULOSIS PROGRAMME (Myanmar)
CASE FINDING ACTIVITIES (2007)

(Townships list) **Annex-5**

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																		Extra Pulmonary Tuberculosis				other				TOTAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
				SMEAR POSITIVE						Previously treated cases												Total		Smear Negative		Total		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F	

* Note* (Nr.) Report had not been received from townships
Nr. 5 Tsp; N'ganyan Hsawlaw Naungmun Khaunglanbu Sumprabum

Sr.	TOWNSHIP	Population	Estimated News(+) cases	PULMONARY TUBERCULOSIS																			Total	Extra Pulmonary Tuberculosis	Total				other				TOTAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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				M		F		T		Relapses		TAD		M		F		M		F		M			F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		M		F		

CHIN STATE

1	Falam	48136	36	13	8	21	58%	2	1	2	0	0	0	26	16	6	22	31	23	54	1	1	65	39	104
2	Hakha	49723	37	11	8	19	51%	0	0	0	0	0	0	19	19	19	38	118	67	185	11	6	159	100	259
3	Htantalan	57933	43	7	2	9	21%	0	0	0	0	0	0	9	8	2	10	35	29	64	0	0	50	33	83
4	Tiddim	86941	65	13	2	15	23%	2	2	0	0	0	0	19	8	4	12	5	7	12	0	0	28	15	43
5	Tunzan	29702	22	4	7	11	49%	0	2	0	1	0	1	15	15	21	36	27	19	46	0	0	46	51	97
6	Mindat	41152	31	6	8	14	45%	0	0	0	0	0	0	14	22	6	28	24	24	48	2	0	54	38	92
7	Kanpetlet	20231	15	2	1	3	20%	0	0	0	0	0	1	4	5	1	6	5	2	7	0	0	12	5	17
8	Matupi	65091	49	8	1	9	18%	5	0	2	0	0	0	16	54	31	85	84	40	124	9	9	162	81	243
9	Paletwa	84266	63	28	14	42	66%	4	0	2	0	0	0	48	11	3	14	8	10	18	0	0	53	27	80
	Total	483175	362	92	51	143	39%	13	5	6	1	0	2	170	158	93	251	337	221	558	23	16	629	389	1018

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																				Extra Pulmonary Tuberculosis		Total		other		TOTAL	
				SMEAR POSITIVE												Smear Negative															
				New Cases				CDR				Previously treated cases																			
				M		F		T		Relapses		TAD		TAF																	
SAGAING DIVISION																															
1	Sagaing	389004	292	135	85	220	75%	5	1	2	0	2	0	2	0	230	57	24	81	99	71	170	1	2	301	183	484				
2	Myaung	179858	135	80	45	125	93%	2	3	0	0	0	0	0	0	130	8	1	9	35	20	55	2	0	127	69	196				
3	Myinmu	162192	122	105	84	189	155%	3	3	0	0	0	0	0	0	195	90	55	145	56	30	86	0	0	254	172	426				
4	Shwebo	343413	258	193	137	330	128%	13	9	0	1	0	0	0	0	353	48	36	84	130	95	225	5	1	389	279	668				
5	Kanbalu	304859	229	65	31	96	42%	2	3	5	1	1	0	0	0	108	21	8	29	61	48	109	3	6	158	97	255				
6	Khin-U	191787	144	51	20	71	49%	0	3	1	0	0	0	0	0	75	22	9	31	94	63	157	3	1	171	96	267				
7	Kyunhla	86245	65	46	27	73	113%	3	1	0	0	0	0	0	0	77	15	8	23	23	18	41	0	0	87	54	141				
8	Tabayin	180558	135	56	14	70	52%	3	0	0	0	1	0	0	0	74	17	7	24	44	26	70	2	1	123	48	171				
9	Taze	213132	160	44	16	60	38%	8	3	1	0	0	0	0	1	73	25	8	33	27	22	49	0	0	105	50	155				
10	Wetlet	284932	214	72	21	93	44%	17	2	1	0	2	1	0	2	116	22	12	34	45	31	76	0	0	159	67	226				
11	Ye-U	168643	126	36	18	54	43%	3	1	1	1	3	2	0	0	65	17	8	25	38	28	66	3	0	101	58	159				
12	Monywa	403911	303	142	64	206	68%	11	6	7	2	7	4	243	87	34	121	150	89	239	12	4	416	203	619						
13	Ayadaw	239004	179	59	34	93	52%	6	2	2	0	0	0	103	50	32	82	73	29	102	3	3	193	100	293						
14	Budalin	186759	140	81	31	112	80%	3	1	0	0	8	0	124	28	21	49	81	64	145	1	1	202	118	320						
15	ChaungU	137557	103	44	19	63	61%	6	3	0	0	1	2	75	17	7	24	72	40	112	1	0	141	71	212						
16	Kani	166194	125	32	8	40	32%	5	2	0	0	0	0	47	16	5	21	23	25	48	0	0	76	40	116						
17	Pale	179509	135	58	17	75	56%	0	1	1	1	0	0	78	12	5	17	35	33	68	0	2	106	59	165						
18	Salingyi	175310	131	61	49	110	84%	3	5	0	0	0	0	118	11	8	19	37	24	61	2	1	114	87	201						
19	Yinmabin	170612	128	43	14	57	45%	0	0	0	0	0	0	57	12	9	21	24	21	45	2	1	81	45	126						
20	Katha	157521	118	76	42	118	100%	11	5	0	0	0	0	134	75	51	126	47	46	93	0	0	209	144	353						
21	Banmauk	102319	77	28	9	37	48%	1	1	0	0	0	0	39	5	0	5	9	4	13	0	0	43	14	57						
22	Htigyaing	121493	91	65	24	89	98%	4	1	0	0	0	0	94	18	12	30	18	12	30	5	0	110	49	159						
23	Indaw	133693	100	58	13	71	71%	6	0	0	0	2	0	79	7	9	16	15	7	22	0	0	88	29	117						
24	Kawlin	151797	114	56	22	78	69%	2	0	2	0	3	0	85	25	23	48	54	31	85	2	0	144	76	220						
25	Pinlebu	131454	99	34	21	55	56%	0	0	0	0	1	3	59	14	7	21	31	24	55	0	0	80	55	135						
26	Wuntho	80707	61	25	9	34	56%	2	0	0	0	0	2	38	6	1	7	6	1	7	0	0	39	13	52						
27	Kalay	312217	234	157	92	249	106%	28	13	4	0	24	8	326	203	165	368	218	155	373	0	0	634	433	1067						
28	Kalewa	71384	54	33	17	50	93%	4	1	2	2	0	1	60	11	4	15	10	15	25	0	0	60	40	100						
29	Minkin	126580	95	49	25	74	78%	3	4	1	0	1	0	83	12	8	20	32	16	48	1	0	99	53	152						
30	Tamu	95089	71	150	75	225	315%	28	17	2	2	6	3	283	145	93	238	149	87	236	2	1	482	278	760						
31	Mawlaik	60537	45	53	17	70	154%	2	2	0	1	0	0	75	14	6	20	31	20	51	0	0	100	46	146						
32	Phaungbyin	119927	90	85	44	129	143%	3	1	0	0	2	1	136	18	8	26	36	20	56	0	0	144	74	218						
33	Khamti	40033	30	55	25	80	266%	27	14	3	1	1	0	126	94	218	37	31	68	1	1	248	166	414							
34	Homalin	184022	138	70	31	101	73%	2	4	5	1	2	1	116	93	68	161	60	44	104	0	1	232	150	382						
35	Layshi	19937	15	10	4	14	94%	0	0	1	0	2	0	17	2	5	7	5	4	9	0	0	20	13	33						
36	Lahel	53867	40	29	14	43	106%	0	1	0	0	1	0	45	6	5	11	2	0	2	1	0	39	20	59						
37	Nanyun	74540	56	7	1	8	14%	1	0	1	1	1	0	12	3	1	4	27	35	62	0	0	40	38	78						
	Total	6200596	4650	2443	1219	3662	79%	217	113	42	14	71	29	4148	1356	857	2213	1934	1329	3263	52	26	6115	3587	9702						

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS															TOTAL							
				SMEAR POSITIVE																						
				New Cases						CDR			Previously treated cases										Total		Smear Negative	
				M	F	T	M	F	TAF	Relapses	M	F	M	F	M	F	M	F	M	F						
				Extra Pulmonary Tuberculosis			Total			M			F			M			F			M			F	

MAGWE DIVISION

1	Magway	379022	284	189	133	322	113%	21	15	6	0	8	8	380	172	152	324	327	294	621	27	14	750	616	1366
2	Chauk	309694	232	82	47	129	56%	9	2	0	0	0	0	140	195	137	332	92	75	167	5	2	383	263	646
3	Taundwingyi	316581	237	73	40	113	48%	4	2	0	0	0	0	119	85	60	145	74	73	147	3	8	239	183	422
4	Myothit	203658	153	58	52	110	72%	2	0	0	0	0	0	112	59	40	99	5	6	11	4	3	128	101	229
5	Natmauk	306813	230	51	38	89	39%	7	0	0	0	0	0	96	15	19	34	21	12	33	2	1	96	70	166
6	Yenanchaung	246774	185	73	70	143	77%	12	5	0	0	3	2	165	116	104	220	93	62	155	7	8	304	251	555
7	Pakokku	423338	318	87	40	127	40%	6	1	1	0	0	0	135	104	45	149	133	105	238	15	11	346	202	548
8	Yesagyo	347568	261	45	16	61	23%	2	0	0	0	0	0	63	46	27	73	70	46	116	1	0	164	89	253
9	Pauk	210310	158	74	36	110	70%	5	0	0	0	0	0	115	26	40	66	377	268	645	3	2	485	346	831
10	Myaing	344613	258	88	39	127	49%	7	1	0	0	0	1	136	10	5	15	83	57	140	0	0	188	103	291
11	Seikphyu	127055	95	37	23	60	63%	3	1	0	0	0	0	64	4	1	5	26	13	39	3	0	73	38	111
12	Gantgaw	150616	113	34	20	54	48%	2	0	0	0	0	0	56	17	23	40	34	15	49	1	0	88	58	146
13	Saw	91701	69	14	2	16	23%	0	1	2	0	0	0	19	7	2	9	6	1	7	2	0	31	6	37
14	Htinlin	78692	59	5	0	5	8%	1	0	0	0	0	0	6	2	3	5	4	6	10	0	0	12	9	21
15	Minbu	223577	168	55	33	88	52%	11	1	0	0	0	0	100	89	45	134	167	158	325	0	0	322	237	559
16	Ngape	54443	41	22	5	27	66%	2	0	0	0	0	0	29	12	8	20	23	20	43	0	0	59	33	92
17	Pwintphyu	217513	163	26	12	38	23%	1	1	0	0	0	0	40	29	11	40	61	56	117	0	0	117	80	197
18	Saytoketaya	58030	44	19	10	29	67%	1	1	0	0	0	0	31	23	23	46	6	4	10	2	0	51	38	89
19	Salin	314753	236	87	39	126	53%	4	2	0	0	0	0	132	80	52	132	74	71	145	1	0	246	164	410
20	Thayet	152582	114	77	35	112	98%	9	0	4	0	1	1	127	76	61	137	41	36	77	0	0	208	133	341
21	Minhla	152549	114	26	18	44	38%	10	2	0	0	0	0	56	26	8	34	66	48	114	0	0	128	76	204
22	Kanna	110129	83	52	30	82	99%	1	0	0	0	0	0	83	36	32	68	51	30	81	0	0	140	92	232
23	Sinpaungwae	142603	107	25	11	36	34%	3	0	2	0	0	0	41	21	15	36	27	29	56	2	0	80	55	135
24	Mindon	88671	67	28	6	34	51%	0	1	0	1	0	0	36	39	21	60	46	28	74	5	2	118	59	177
25	Aunglan	285622	214	100	48	148	69%	2	3	2	0	1	0	156	94	79	173	82	70	152	4	3	285	203	488

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																				Total		Extra Pulmonary Tuberculosis		other		TOTAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																Total	Extra Pulmonary Tuberculosis	other			TOTAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																		Total	Extra Pulmonary Tuberculosis	Total	other	TOTAL		
				SMEAR POSITIVE																								
				New Cases						CDR		Previously treated cases																
				M		F		T		Relapses		TAD		TAF		Smear Negative												
																											Total	
				M		F		T		M		F		M		F		M		F								

Nr. 1 tsp: Matman

SHAN (NORTH) STATE

1	Kunlon	146968	110	45	19	64	58%	4	1	0	0	0	0	0	0	0	69	14	12	26	9	11	20	0	0	72	43	115
2	Hopan	91817	69	55	18	73	106%	6	1	6	0	0	0	0	0	0	86	0	3	3	11	9	20	0	0	78	31	109
3	Kyaukme	207475	156	78	37	115	74%	13	4	0	0	0	0	0	0	0	132	78	32	110	99	70	169	1	0	269	143	412
4	Hsipaw	170236	128	67	39	106	83%	8	2	0	0	0	0	0	0	0	116	68	36	104	37	32	69	1	1	181	110	291
5	Mabein	35324	26	8	5	13	49%	3	0	0	0	0	0	1	17	8	3	11	29	5	34	0	0	0	48	14	62	
6	Manton	42703	32	4	3	7	22%	0	0	0	0	0	0	0	7	5	4	9	1	1	2	0	0	0	10	8	18	
7	Mongmeik	73884	55	23	13	36	65%	1	0	0	1	1	1	1	40	42	19	61	11	6	17	0	0	0	78	40	118	
8	Namtu	106707	80	13	9	22	27%	3	1	1	0	0	0	0	27	21	6	27	15	21	36	0	0	0	53	37	90	
9	Nyaungcho	135415	102	18	8	26	26%	1	0	1	2	1	0	31	32	29	61	26	15	41	0	0	0	79	54	133		
10	Lashio	278751	209	131	48	179	86%	18	8	9	2	6	1	223	157	76	233	88	58	146	9	1	418	194	612	194	612	
11	Namsam	89651	67	16	8	24	36%	1	0	0	0	0	0	25	17	15	32	33	34	67	0	0	67	57	124	124	124	
12	Mongmaw	15571	12	Nr.																								
13	Theinni	75964	57	45	25	70	123%	2	0	2	1	0	0	75	16	17	33	22	13	35	0	0	87	56	143	143	143	
14	Mongreh	73204	55	5	8	13	24%	0	1	0	0	0	0	14	6	6	12	70	55	125	0	0	81	70	151	151	151	
15	Manphant	59253	44	Nr.																								
16	Pangyan	86981	65	11	4	15	23%	1	0	0	0	1	0	17	20	12	32	3	2	5	0	0	36	18	54	54	54	
17	Narphant	37761	28			0								0			0						0	0	0	0	0	
18	Panwaing	14793	11	Nr.																								
19	Tanyan	197534	148	22	12	34	23%	5	2	2	1	0	0	44	125	85	210	55	34	89	1	0	210	134	344	344	344	
20	Laukkai	73110	55	18	7	25	46%	2	1	1	1	1	1	32	47	20	67	30	14	44	0	0	99	44	143	143	143	
21	Kongyan	47162	35	Nr.																								
22	Muse	155191	116	20	6	26	22%	0	1	0	0	0	0	27	144	99	243	183	154	337	0	0	347	260	607	607	607	
23	Kuitai	198194	149	32	17	49	33%	1	1	0	0	0	0	51	40	21	61	62	51	113	0	1	135	91	226	226	226	
24	Namkham	126481	95	25	17	42	44%	0	1	0	0	0	0	43	20	13	33	21	10	31	0	0	66	41	107	107	107	
Total		2540130	1905	636	303	939	49%	69	24	22	8	10	4	1076	860	508	1368	805	595	1400	12	3	2414	1445	3859	3859	3859	

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

Nr. 4 Tsp: Manphant, Panwaing, Mongmaw, Kongyan

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																		Total	Extra Pulmonary Tuberculosis	Total	TOTAL			
				SMEAR POSITIVE										Smear Negative														
				New Cases				CDR		Previously treated cases																		
										Relapses		TAD		TAF														
										M	F	T								M	F							
				M	F	T								M	F	M	F	M	F									
				M	F	T								M	F	M	F	M	F									

KAYIN STATE

1	Kawkareik	319404	240	98	52	150	63%	20	5	3	1	1	0	180	61	36	97	145	100	245	0	0	328	194	522
2	Kyainseikkyi	266402	200	29	16	45	23%	1	0	0	0	0	0	46	24	16	40	18	10	28	0	0	72	42	114
3	Myawady	55003	41	80	30	110	267%	3	0	2	0	1	0	116	39	27	66	6	7	13	0	0	131	64	195
4	Hpa-an	509134	382	306	150	456	119%	18	4	3	0	0	0	481	621	451	1072	320	246	566	0	0	1268	851	2119
5	Hlaingbwe	352352	264	75	44	119	45%	6	6	2	4	0	0	137	53	43	96	47	53	100	0	0	183	150	333
6	Papun(Kamamaung)	94325	71	60	43	103	146%	5	3	0	0	0	0	111	61	81	142	159	144	303	0	0	285	271	556
7	Thandaung	106737	80	13	16	29	36%	5	1	0	0	0	0	35	12	11	23	9	14	23	0	0	39	42	81
	Total	1703357	1278	661	351	1012	79%	58	19	10	5	2	0	1106	871	665	1536	704	574	1278	0	0	2306	1614	3920

TANINTHARYI DIVISION

1	Dawei	206161	155	105	64	169	109%	12	3	0	0	2	0	186	163	94	257	232	160	392	14	5	528	326	854
2	Launglon	200078	150	16	9	25	17%	7	1	0	0	2	0	35	3	3	6	4	3	7	0	0	32	16	48
3	Thayetchaung	165462	124	15	17	32	26%	2	1	0	0	2	0	37	6	6	12	13	14	27	0	0	38	38	76
4	Yebyu	148636	111	19	13	32	29%	5	3	0	0	0	0	40	11	10	21	7	4	11	0	0	42	30	72
5	Kawthaung	73223	55	99	45	144	262%	12	1	0	0	0	0	157	143	71	214	75	51	126	0	0	329	168	497
6	Bokpyin	64028	48	14	7	21	44%	4	1	1	1	1	0	29	13	9	22	46	29	75	0	0	79	47	126
7	Myeik	292021	219	200	104	304	139%	26	9	13	2	0	0	354	562	358	920	848	727	1575	38	15	1687	1215	2902
8	Kyunsu	148223	111	5	1	6	5%	1	0	1	1	0	0	9	20	8	28	54	49	103	0	0	81	59	140
9	Tanintharyi	101462	76	21	8	29	38%	5	1	1	0	0	0	36	36	23	59	48	35	83	0	0	111	67	178
10	Palaw	159574	120	48	32	80	67%	9	3	0	2	0	0	94	43	44	87	101	127	228	7	3	208	211	419
	Total	1558868	1169	542	300	842	72%	83	23	16	6	7	0	977	1000	626	1626	1428	1199	2627	59	23	3135	2177	5312

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																				Total	Extra Pulmonary Tuberculosis		other		TOTAL		
				SMEAR POSITIVE												Smear Negative															
				New Cases				CDR	Previously treated cases								Total														
				M	F	T	Relapses				TAD				TAF				M	F	M	F									
							M	F	M	F	M	F	M	F	M	F															
				BAGO (EAST) DIVISION																											
1	Bago	495448	372	295	148	443	119%	61	31	8	2	6	2	553	226	139	365	167	140	307	1	4	764	466	1230						
2	Daik-U	226180	170	90	45	135	80%	5	7	0	0	0	0	147	104	89	193	44	32	76	1	0	244	173	417						
3	Kawa	252884	190	65	49	114	60%	5	4	1	3	1	0	128	49	30	79	44	34	78	0	0	165	120	285						
4	Kyauktaga	260496	195	106	51	157	80%	12	3	0	0	2	1	175	62	52	114	69	65	134	0	0	251	172	423						
5	Nyaunggaybin	258168	194	83	65	148	76%	12	2	0	0	0	0	162	117	87	204	66	55	121	1	0	279	209	488						
6	Shwekyin	88625	66	40	20	60	90%	2	0	0	0	0	0	62	30	25	55	21	18	39	0	0	93	63	156						
7	Thanatpin	191038	143	61	41	102	71%	7	3	0	0	0	0	112	75	66	141	38	41	79	0	0	181	151	332						
8	Waw	232689	175	112	59	171	98%	5	3	1	0	0	0	180	113	98	211	60	55	115	0	1	291	216	507						
9	Taunggoo	272797	205	112	40	152	74%	18	7	3	1	0	0	181	103	46	149	79	83	162	0	0	315	177	492						
10	Kyaukkyi	122059	92	26	11	37	40%	8	2	0	0	0	0	47	42	29	71	53	36	89	0	0	129	78	207						
11	Oktwin	168456	126	49	32	81	64%	15	10	0	0	0	0	106	43	23	66	62	56	118	0	0	169	121	290						
12	Phyu	281944	211	128	60	188	89%	22	7	0	0	3	1	221	152	93	245	116	86	202	0	0	421	247	668						
13	Htantabin	126527	95	47	26	73	77%	8	1	0	0	1	0	83	8	5	13	84	67	151	0	0	148	99	247						
14	Yedashe	216357	162	94	37	131	81%	10	6	0	0	1	1	149	54	29	83	9	17	26	0	0	168	90	258						
	Total	3193668	2395	1308	684	1992	83%	190	86	13	6	14	5	2306	1178	811	1989	912	785	1697	3	5	3618	2382	6000						
BAGO (WEST) DIVISION																															
1	Pyay	227892	171	225	111	336	197%	9	8	1	0	9	3	366	211	144	355	114	101	215	2	0	571	367	938						
2	Paukkhaung	138502	104	54	31	85	82%	10	3	0	0	0	0	98	45	39	84	59	46	105	0	0	168	119	287						
3	Paungde	139418	105	48	24	72	69%	4	2	0	0	0	0	78	58	69	127	42	42	84	0	0	152	137	289						
4	Padaung	132309	99	76	26	102	103%	7	4	0	0	0	0	113	85	51	136	33	40	73	0	0	201	121	322						
5	Shwedaung	141246	106	58	30	88	83%	10	2	0	0	0	0	100	92	70	162	46	33	79	0	0	206	135	341						
6	Thegon	130793	98	51	25	76	77%	8	1	0	1	0	2	88	135	105	240	70	71	141	0	0	264	205	469						
7	Tharyarwady	169931	127	109	59	168	132%	4	0	0	0	5	2	179	101	56	157	30	29	59	0	0	249	146	395						
8	Zigon	72937	55	37	40	77	141%	4	0	0	0	0	0	81	36	36	72	11	7	18	0	0	88	83	171						
9	Minhla	170430	128	57	35	92	72%	8	0	4	1	2	2	109	33	26	59	17	25	42	3	2	124	91	215						
10	Moenyoy	137841	103	51	42	93	90%	2	0	0	0	2	0	97	34	26	60	16	13	29	2	0	107	81	188						
11	Okpo	135784	102	87	40	127	125%	5	1	0	1	1	1	136	60	31	91	36	27	63	0	0	189	101	290						
12	Gyobingauk	135321	101	63	37	100	99%	6	3	0	0	0	0	109	68	45	113	45	39	84	1	0	183	124	307						
13	Nattalin	217592	163	64	41	105	64%	3	1	0	0	4	0	113	65	36	101	37	35	72	0	0	173	113	286						
14	Latpadan	218788	164	73	48	121	74%	4	2	0	0	0	0	127	142	113	255	54	39	93	0	0	273	202	475						
	Total	2168784	1627	1053	589	1642	101%	84	27	5	3	23	10	1794	1165	847	2012	610	547	1157	8	2	2948	2025	4973						

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																		Total	Extra Pulmonary Tuberculosis		other		TOTAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																				Total	Extra Pulmonary Tuberculosis	other			TOTAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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West District

1	Kamayut	100018	170	58	35	93	55%					13	6	1	1	0	0	114	59	39	98	29	33	62	4	1	164	115	279
2	Kyauktada	52984	90	22	18	40	45%					8	3	1	0	0	2	54	23	13	36	12	15	27	4	1	70	52	122
3	Kyinmyindine	105235	178	85	48	133	75%					19	3	6	1	2	1	165	103	44	147	67	62	129	20	5	302	164	466
4	Sanchaung	94850	161	78	40	118	73%					13	8	2	0	2	3	146	75	43	118	50	43	93	3	6	223	143	366
5	Seikkan	1677	3	5	1	6	211%					0	0	0	0	0	0	6	4	2	6	2	0	2	0	0	11	3	14
6	Dagon	48077	81	23	11	34	42%					4	0	3	0	0	0	41	35	20	55	17	12	29	1	1	83	44	127
7	Pabadan	57074	97	18	6	24	25%					9	1	0	0	0	0	34	14	9	23	12	19	31	1	0	54	35	89
8	Hahan	114492	194	55	25	80	41%					9	5	1	0	0	1	96	69	29	98	31	26	57	9	6	174	92	266
9	Mayangon	220003	373	193	105	298	80%					35	12	3	2	9	2	361	137	96	233	122	92	214	17	6	516	315	831
10	Latha	28704	49	22	16	38	78%					3	1	0	0	1	0	43	13	12	25	15	4	19	1	0	55	33	88
11	Lanmadaw	43659	74	22	12	34	46%					3	4	2	1	0	1	45	26	16	42	16	12	28	3	2	72	48	120
12	Hlaing	201978	342	149	74	223	65%					21	14	2	2	2	2	266	144	103	247	65	56	121	19	11	402	262	664
13	Ahlon	52477	89	55	22	77	87%					16	3	3	0	2	0	101	71	45	116	23	23	46	10	3	180	96	276
	Total	1121228	1900	785	413	1198	63%					153	60	24	7	18	12	1472	773	471	1244	461	397	858	92	42	2306	1402	3708

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																				Total	Extra Pulmonary Tuberculosis		other		TOTAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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				M	F	T	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																		Total	Extra Pulmonary Tuberculosis		other				TOTAL													
				SMEAR POSITIVE										Smear Negative																												
				New Cases				CDR				Relapses																					Previously treated cases									
				M	F	T		M	F	T		M	F	T		M	F	T		M	F												T		M	F	T		M	F	T	
				AYEYARWADY DIVISION																																						
1	Patheingyi	365914	274	293	166	459	167%	24	18	5	3	2	0	511	307	254	561	300	231	531	23	21	954	693	1647																	
2	Kanyidaung	242521	182	29	18	47	26%	1	0	0	0	0	0	48	36	24	60	8	9	17	2	3	76	54	130																	
3	Yekyi	280369	210	99	44	143	68%	13	3	2	0	0	0	161	91	58	149	74	64	138	1	0	280	169	449																	
4	Kyaunggon	191446	144	56	32	88	61%	5	8	0	0	0	0	101	72	38	110	46	37	83	2	1	181	116	297																	
5	Kyongpyaw	313811	235	98	61	159	68%	15	4	3	0	2	0	183	55	46	101	28	29	57	4	0	205	140	345																	
6	Ngaputaw	348362	261	94	73	167	64%	5	4	7	4	1	2	190	65	39	104	29	24	53	4	0	205	146	351																	
7	Thabaung	197108	148	87	43	130	88%	7	9	0	0	2	3	151	34	17	51	21	13	34	0	0	151	85	236																	
8	Hinhada	481917	361	341	200	541	150%	17	10	1	1	0	0	570	218	205	423	110	86	196	3	0	690	502	1192																	
9	Kyankin	138665	104	67	39	106	102%	7	4	2	2	2	0	123	61	36	97	20	18	38	1	1	160	100	260																	
10	Myanaung	320120	240	119	55	174	72%	20	12	0	0	2	1	209	142	124	266	102	65	167	3	2	388	259	647																	
11	Ingapu	322928	242	116	67	183	76%	6	5	0	0	1	2	197	149	138	287	159	105	264	2	0	433	317	750																	
12	Zalun	262486	197	146	131	277	141%	5	6	3	0	1	0	292	52	55	107	44	25	69	1	1	252	218	470																	
13	Laymteihna	154886	116	56	31	87	75%	0	1	1	0	2	1	92	35	29	64	26	24	50	0	0	120	86	206																	
14	Myaungmya	418043	314	161	112	273	87%	11	5	1	1	9	3	303	242	243	485	157	146	303	3	2	584	512	1096																	
15	Laputta	369158	277	168	102	270	98%	19	8	1	0	1	0	299	79	92	171	38	35	73	2	1	308	238	546																	
16	Mawgyun	345723	259	131	79	210	81%	4	4	0	0	2	0	220	51	40	91	21	10	31	1	0	210	133	343																	
17	Wakema	377457	283	150	115	265	94%	10	8	2	1	8	5	299	117	124	241	111	86	197	9	3	407	342	749																	
18	Einme	221663	166	91	59	150	90%	9	5	1	2	1	0	168	35	36	71	19	21	40	3	4	159	127	286																	
19	Pyapon	259654	195	189	112	301	155%	2	3	1	2	7	1	317	123	99	222	62	56	118	0	0	384	273	657																	
20	Bogalay	455387	342	166	109	275	81%	23	9	0	0	0	0	307	76	58	134	66	34	100	4	4	335	214	549																	
21	Dedaye	257470	193	58	40	98	51%	5	1	1	1	1	2	109	25	25	50	17	14	31	0	0	107	83	190																	
22	Kyaikkatt	225748	169	83	47	130	77%	3	1	1	0	0	0	135	63	37	100	27	25	52	4	0	181	110	291																	
23	Maubin	390489	293	166	79	245	84%	11	3	4	2	4	0	269	113	55	168	97	100	197	10	14	405	253	658																	
24	Nyaungdon	253112	190	96	46	142	75%	7	3	0	0	0	0	152	48	36	84	33	26	59	0	0	184	111	295																	
25	Pantanaw	289787	217	110	64	174	80%	11	3	0	0	0	0	188	52	38	90	50	36	86	3	2	226	143	369																	
26	Danuphyu	245656	184	126	107	233	126%	13	6	4	4	0	0	260	137	116	253	3	1	4	1	0	284	234	518																	
	Total	7729880	5797	3296	2031	5327	92%	253	143	40	23	48	20	5854	2478	2062	4540	1668	1320	2988	86	59	7869	5658	13527																	

Sr.	TOWNSHIP	Population	Estimated NewS(+) cases	PULMONARY TUBERCULOSIS																					Total	Extra Pulmonary Tuberculosis		other		TOTAL	
				SMEAR POSITIVE											Smear Negative		M	F	M	F											
				New Cases			CDR	Previously treated cases						Total																	
				M	F	T		Relapses		TAD	TAF		M	F																	
							M	F	M		F	M			F																
				M		F		T		M		F		M		F					M	F	M	F							
				M		F		T		M		F		M		F															
				M		F		T		M		F		M		F					M	F	M	F							
M		F		T		M		F		M		F																			
OTHER REPORTING UNITS																															
1	Aung San TB hospital			78	27	105				33	13	22	3	12	6	194	50	22	72	12	13	25	123	52	330	136	466				
2	Patheingyi TB hospital			39	19	58				41	14	2	1	5	2	123	31	23	54	27	15	42	41	8	186	82	268				
3	East YGH			0	0	0				0	0	0	0	0	0	0	1	0	1	37	25	62	0	0	38	25	63				
4	Mingalardon hospital			25	11	36				2	0	1	0	0	0	39	162	49	211	23	10	33	18	6	231	76	307				
5	Wabargi hospital			122	39	161				23	10	15	5	1	2	217	291	144	435	269	114	383	50	15	771	329	1100				
6	No.1MBH (PyinOoLwin)			94	14	108				38	1	0	0	0	0	147	83	15	98	6	2	8	0	0	221	32	253				
7	AZG (Ygn)			342	187	529				72	29	9	2	148	86	875	345	216	561	390	260	650	296	126	1602	906	2508				
8	AZG (Kachin)			212	86	298				31	11	5	0	27	23	395	201	158	359	172	83	255	0	0	648	361	1009				
9	PSI			2460	1356	3816				223	85	48	8	118	65	4363	1718	1066	2784	1651	1246	2897	30	5	6248	3831	10079				
10	AZG (Shan-North)			243	93	336				28	7	9	2	40	15	437	261	175	436	250	184	434	22	8	853	484	1337				
Other reporting Units Total				3615	1832	5447				491	170	111	21	351	199	6790	3143	1868	5011	2837	1952	4789	580	220	11128	6262	17390				

NATIONAL TUBERCULOSIS PROGRAMME
AGE AND SEX DISTRIBUTION OF NEW SMEAR POSITIVE TB PATIENTS (2007)

Annex- 6

Block 2

Sr.No	State/ Division	AGE GROUP (YEAR)																TOTAL			
		0-14		15-24		25 - 34		35 - 44		45 - 54		55 - 64		≥ 65				M	F	T	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F						
1	Kachin State	10	8	182	104	211	127	221	104	142	75	87	47	36	18			889	483	1372	
2	Kayah State	0	1	15	7	30	7	22	7	9	6	13	1	7	2			96	31	127	
3	Chin State	2	0	8	12	13	11	26	12	21	8	10	6	12	2			92	51	143	
4	Sagaing Division	11	12	234	155	484	229	555	246	490	227	346	170	323	180			2443	1219	3662	
5	Magway Division	7	4	170	113	281	159	343	160	285	156	212	122	129	89			1427	803	2230	
6	Mandalay Division	10	16	378	256	662	297	647	244	443	201	286	151	185	95			2611	1260	3871	
7	Shan (S) State	6	10	83	63	104	70	138	48	123	44	52	19	27	10			533	264	797	
8	Shan (E) State	1	2	57	28	97	47	112	23	76	37	35	12	11	7			389	156	545	
9	Shan (N) State	6	8	119	81	178	74	132	58	111	57	56	17	34	8			636	303	939	
10	Kayin State	1	3	51	38	123	60	162	89	147	68	102	61	75	32			661	351	1012	
11	Tanintharyi Division	3	2	66	61	123	59	119	53	123	61	68	34	40	30			542	300	842	
12	Bago (East) Division	5	5	172	130	292	168	312	134	287	131	137	75	103	41			1308	684	1992	
13	Bago (West) Division	0	3	117	97	205	146	247	122	265	114	134	56	85	51			1053	589	1642	
14	Mon State	4	4	107	99	236	121	265	131	228	91	151	65	106	52			1097	563	1660	
15	Rakhine State	4	3	103	76	205	152	300	165	257	135	175	75	104	62			1148	668	1816	
16	Yangon Division	24	40	877	747	1660	793	1540	586	1088	439	582	272	320	196			6091	3073	9164	
17	Ayeyarwady Division	9	9	353	284	620	454	800	429	779	403	417	256	318	196			3296	2031	5327	
All State & Division Total		103	130	3092	2351	5524	2974	5941	2611	4874	2253	2863	1439	1915	1071			24312	12829	37141	
Other Units		24	29	499	368	1045	526	885	387	633	233	289	162	240	127			3615	1832	5447	
Union of Myanmar		127	159	3591	2719	6569	3500	6826	2998	5507	2486	3152	1601	2155	1198			27927	14661	42588	

NATIONAL TUBERCULOSIS PROGRAMME
AGE GROUP OF PRIMARY COMPLEX AND TB MEMINGITIS CASES
Annex- 7

Sr.No	State/Division	Primary Complex Cases (PC) and TB Meningitis (TBM) by age groups					Total
		PC		Total	TBM		
		<15 Yrs	≥15 Yrs		<15 Yrs	≥15 Yrs	
1	Kachin State	1227	12	1239	6	1	7
2	Kayah State	249	2	251	1	0	1
3	Chin State	310	60	370	9	1	10
4	Sagaing Division	2575	549	3124	25	12	37
5	Magway Division	2754	72	2826	10	9	19
6	Mandalay Division	3111	136	3247	19	13	32
7	Shan (S) State	764	30	794	2	1	3
8	Shan (E) State	195	17	212	5	1	6
9	Shan (N) State	1082	37	1119	21	17	38
10	Kayin State	997	2	999	3	12	15
11	Tanintharyi Division	2299	18	2317	10	2	12
12	Bago (East) Division	1113	18	1131	11	10	21
13	Bago (West) Division	936	63	999	12	7	19
14	Mon State	1161	7	1168	1	0	1
15	Rakhine State	1015	11	1026	12	7	19
16	Yangon Division	3536	164	3700	67	38	105
17	Ayeyarwady Division	2159	10	2169	21	18	39
All State & Division Total		25483	1208	26691	235	149	384
Other Units		2209	158	2367	17	28	45
Union of Myanmar		27692	1366	29058	252	177	429

**NATIONAL TUBERCULOSIS PROGRAMME
NOTIFIED TB PATIENTS ACCORDING TO CATEGORY OF REGIMENS (2007)**

BLOCK 3			Union				Annex- 8								
Sr.No	State/ Division	Category I				Category II				Category III			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	1419	1036	149	2604	146	19	45	82	292	433	1356	1789	4685	
2	Kayah State	133	80	38	251	17	3	5	6	31	55	254	309	591	
3	Chin State	145	137	103	385	19	7	2	26	54	129	474	603	1042	
4	Sagaing Division	3708	1606	408	5722	345	56	109	82	592	742	3519	4261	10575	
5	Magway Division	2256	1503	306	4065	166	19	25	144	354	954	3338	4292	8711	
6	Mandalay Division	3931	2747	831	7509	562	33	52	291	938	655	3557	4212	12659	
7	Shan (S) State	805	437	137	1379	73	21	25	28	147	320	981	1301	2827	
8	Shan (E) State	550	252	40	842	57	10	1	33	101	269	484	753	1696	
9	Shan (N) State	958	1203	184	2345	99	29	22	17	167	214	1209	1423	3935	
10	Kayin State	1040	845	39	1924	77	16	3	2	98	738	1259	1997	4019	
11	Tanintharyi Division	859	1391	184	2434	110	23	8	84	225	266	2469	2735	5394	
12	Bago (East) Division	2039	1037	245	3321	233	15	13	4	265	832	1245	2077	5663	
13	Bago (West) Division	1710	1115	116	2941	100	6	24	13	143	780	890	1670	4754	
14	Mon State	1715	1284	93	3092	209	34	41	9	293	1089	1452	2541	5926	
15	Rakhine State	1820	1048	129	2997	152	36	16	23	227	1286	1606	2892	6116	
16	Yangon Division	9269	7290	1526	18085	1288	218	255	824	2585	1149	4485	5634	26304	
17	Ayeyarwady Division	5391	3001	498	8890	403	65	67	163	698	1664	2524	4188	13776	
All State & Division Total		37748	26012	5026	68786	4056	610	713	1831	7210	11575	31102	42677	118673	
Other Units		5482	3165	1576	10223	694	147	495	964	2300	1502	2884	4386	16909	
Union of Myanmar		43230	29177	6602	79009	4750	757	1208	2795	9510	13077	33986	47063	135582	
										7%				35%	

**NATIONAL TUBERCULOSIS PROGRAMME
LABORATORY PERFORMANCE (2007)**

Block 4

Annex- 9

Sr. No.	State/ Division	A		B			C		D		TB suspects per 100,000
		Number of suspects(Dx) examined by microscopy for case finding		Number of smear positive pts detected out of suspects (Dx)		Number of patients examined by microscopy for follow-up		Number of smear positive out of follow-up patients			
		No. of Pts	No. of slides	No. of Pts	positivity rate	No. of slides	No. of Pts	No. of slides	No. of Pts	No. of slides	
1	Kachin State	6911	20699	1602	23%	4791	6984	13921	314	628	489
2	Kayah State	1276	3449	144	11%	412	587	1158	43	81	518
3	Chin State	896	2337	197	22%	416	717	1427	86	174	185
4	Sagaing Division	37371	110624	4008	11%	10629	14192	29310	793	1493	603
5	Magway Division	13473	39210	2460	18%	6788	10763	21155	479	889	252
6	Mandalay Division	18634	52256	3870	21%	11014	19407	36214	973	1831	237
7	Shan (S) State	6240	14448	908	15%	1752	3208	5223	187	274	282
8	Shan (E) State	2234	3504	520	23%	616	2062	1487	43	38	313
9	Shan (N) State	4728	10851	1146	24%	2491	3843	5900	172	329	186
10	Kayin State	5707	16736	1112	19%	2852	5676	10789	136	261	335
11	Tanintharyi Division	4411	12066	920	21%	2149	4811	8983	198	356	283
12	Bago (East) Division	8757	25373	2267	26%	6365	10176	20359	169	331	274
13	Bago (West) Division	7561	22245	2125	28%	5176	9165	18178	326	612	349
14	Mon State	12271	36407	2079	17%	5493	9814	19848	279	473	495
15	Rakhine State	11681	29726	2002	17%	4553	8021	12943	686	1368	362
16	Yangon Division	40336	114209	10651	26%	23497	52040	100011	3490	6268	603
17	Ayeyarwady Division	24036	69723	5822	24%	15153	25342	53656	864	1725	311
All State & Division Total		206523	549419	41833	20%	96824	186808	338459	9238	15835	371
Other Units		34299	56684	6980	20%	10950	26990	32565	3006	4126	
Union of Myanmar		240822	606103	48813	20%	107774	213798	371024	12244	19961	433

NATIONAL TUBERCULOSIS PROGRAMME
SPUTUM CONVERSION OF NEW SMEAR POSITIVE PULMONARY TB PATIENTS (2007)

Block- 5

Annex- 10

Sr.No.	State/ Division	Registered new smear (+) cases	Smear not done at eighter 2 or 3 months	Sputum conversion at				Remaining positive at 3 month	TOTAL 2+3+4+5	Sputum conversion rate
				2 month		3 month				
				No	%	No	%			
1	Kachin State	1372	142	1098	80%	115	8%	17	1372	88%
2	Kayah State	127	20	88	69%	17	13%	2	127	83%
3	Chin State	143	16	112	78%	12	8%	3	143	87%
4	Sagaing Division	3662	296	2960	81%	290	8%	116	3662	89%
5	Magway Division	2230	189	1851	83%	135	6%	55	2230	89%
6	Mandalay Division	3871	330	3088	80%	328	8%	125	3871	88%
7	Shan (S) State	797	89	633	79%	53	7%	22	797	86%
8	Shan (E) State	545	85	401	74%	40	7%	19	545	81%
9	Shan (N) State	939	150	742	79%	36	4%	11	939	83%
10	Kayin State	1012	96	838	83%	68	7%	10	1012	90%
11	Tanintharyi Division	842	111	655	78%	54	6%	22	842	84%
12	Bago (East) Division	1992	139	1826	92%	18	1%	9	1992	93%
13	Bago (West) Division	1642	163	1332	81%	126	8%	21	1642	89%
14	Mon State	1660	153	1397	84%	88	5%	22	1660	89%
15	Rakhine State	1816	134	1523	84%	122	7%	37	1816	91%
16	Yangon Division	9164	634	7432	81%	819	9%	279	9164	90%
17	Ayeyarwady Division	5327	286	4616	87%	358	7%	67	5327	93%
All State & Division Total		37141	3033	30592	82%	2679	7%	837	37141	90%
Other Units		5447	769	3774	69%	537	10%	367	5447	79%
Union of Myanmar		42588	3802	34366	81%	3216	8%	1204	42588	88%

NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOMES OF NEW SMEAR POSITIVE TB PATIENTS (2006 COHORT)

Annex-11

Union

Sr.No	State/ Division	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	No	Rate	
1	Kachin State	1370		73%	112	8%	81%	54	4%	54	4%	118	9%	31	2%	1370	
2	Kayah State	150		76%	10	7%	83%	10	7%	3	2%	7	5%	6	4%	150	
3	Chin State	176		65%	23	13%	78%	8	5%	1	1%	27	15%	2	1%	176	
4	Sagaing Division	2474		74%	187	8%	82%	160	6%	112	5%	142	6%	37	1%	2474	
5	Magway Division	2171		81%	176	8%	89%	105	5%	33	2%	64	3%	40	2%	2171	
6	Mandalay Division	3733		79%	285	8%	86%	262	7%	89	2%	75	2%	82	2%	3733	
7	Shan (S) State	682		73%	39	6%	79%	66	10%	15	2%	45	7%	19	3%	682	
8	Shan (E) State	571		62%	102	18%	80%	28	5%	25	4%	57	10%	5	1%	571	
9	Shan (N) State	883		65%	140	16%	81%	37	4%	22	2%	96	11%	16	2%	883	
10	Kayin State	839		75%	58	7%	82%	33	4%	15	2%	82	10%	18	2%	839	
11	Tanintharyi Division	830		67%	73	9%	76%	32	4%	17	2%	99	12%	52	6%	830	
12	Bago (East) Division	1945		84%	101	5%	90%	95	5%	12	1%	78	4%	17	1%	1945	
13	Bago (West) Division	1539		82%	68	4%	86%	108	7%	28	2%	57	4%	18	1%	1539	
14	Mon State	1704		79%	144	8%	87%	102	6%	26	2%	63	4%	26	2%	1704	
15	Rakhine State	1864		85%	111	6%	91%	58	3%	14	1%	77	4%	11	1%	1864	
16	Yangon Division	7803		78%	482	6%	85%	411	5%	291	4%	315	4%	191	2%	7803	
17	Ayeyarwady Division	5472		82%	441	8%	91%	272	5%	54	1%	166	3%	25	0%	5472	
State & Division Total			26838	78%	2552	7%	86%	1841	5%	811	2%	1568	5%	596	2%	34206	
NS+ TB patients, Unknown HIV status (NTP)			26582	79%	2504	7%	86%	1659	5%	806	2%	1543	5%	579	2%	33673	
Other Unit			4229	69%	412	7%	76%	386	6%	479	8%	451	7%	187	3%	6144	
NS+ TB patients, Unknown HIV status (Other units)			3785	71%	371	7%	78%	224	4%	405	8%	394	7%	157	3%	5336	
Union of Myanmar			31067	77%	2964	7%	84%	2227	6%	1290	3%	2019	5%	783	2%	40350	
NS+ TB patients, unknown HIV status (Union)			30367	78%	2875	7%	85%	1883	5%	1211	3%	1937	5%	736	2%	39009	

TREATMENT OUTCOME OF TB/HIV PATIENTS IN 2007 (2006 COHORT)

Sr.No	Reporting units	TOTAL	NEW SMEAR POSITIVE TB PATIENTS (KNOWN HIV POSITIVE)														Total
			Cured		Completed		TSR %		Died		Failure		Defaulted		Transfer		
			No	CR	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	
1	NTP	533	256	48%	48	9%	57%	182	34%	5	1%	25	5%	17	3%	533	
2	Other Units	808	444	55%	41	5%	60%	162	20%	74	9%	57	7%	30	4%	808	
Total		1341	700	52%	89	7%	59%	344	26%	79	6%	82	6%	47	4%	1341	

**NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOMES OF NEW SMEAR POSITIVE TB PATIENTS (2006 COHORT)**

KACHIN STATE

(Townships list) Annex- 11

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transferred out		Total eva. Pts.
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
1	Bahmo	107	95	89%	0	0%	89%	2	2%	3	3%	3	3%	4	4%	107
2	Mansi	40	34	85%	0	0%	85%	2	5%	2	5%	2	5%	0	0%	40
3	Momauk	9	9	100%	0	0%	100%	0	0%	0	0%	0	0%	0	0%	9
4	Shwegu	55	52	95%	0	0%	95%	3	5%	0	0%	0	0%	0	0%	55
5	Mohynin	137	83	61%	10	7%	68%	10	7%	3	2%	22	16%	9	7%	137
6	Kamaing	22	13	59%	3	14%	73%	0	0%	3	14%	2	9%	1	5%	22
7	Mogaung	169	126	75%	20	12%	86%	2	1%	9	5%	6	4%	6	4%	169
8	Tanai	23	14	61%	2	9%	70%	4	17%	1	4%	2	9%	0	0%	23
9	Myitkyina	485	402	83%	11	2%	85%	15	3%	5	1%	45	9%	7	1%	485
10	Chipway	0	0													0
11	Hsawlaw	Nr.														
12	N Jan Yan	Nr.														
13	Waingmaw	231	104	45%	61	26%	71%	11	5%	22	10%	33	14%	0	0%	231
14	Putao	87	65	75%	4	5%	79%	5	6%	6	7%	3	3%	4	5%	87
15	Khaunglanbu	0	0													0
16	Machanbaw	5	4	80%	1	20%	100%	0	0%	0	0%	0	0%	0	0%	5
17	Nogmun	Nr.														
18	Sumprabum	0	0													0
Total		1370	1001	73%	112	8%	81%	54	4%	54	4%	118	9%	31	2%	1370

KAYAH STATE

1	Bawlake	2	1	50%	1	50%	100%	0	0%	0	0%	0	0%	0	0%	2
2	Masai	4	3	75%	1	25%	100%	0	0%	0	0%	0	0%	0	0%	4
3	Pasaung	12	12	100%	0	0%	100%	0	0%	0	0%	0	0%	0	0%	12
4	Loikaw	90	60	67%	6	7%	73%	9	10%	2	2%	7	8%	6	7%	90
5	Dimawhso	35	33	94%	0	0%	94%	1	3%	1	3%	0	0%	0	0%	35
6	Phruho	2	0	0%	2	100%	100%	0	0%	0	0%	0	0%	0	0%	2
7	Shataw	5	5	100%	0	0%	100%	0	0%	0	0%	0	0%	0	0%	5
Total		150	114	76%	10	7%	83%	10	7%	3	2%	7	5%	6	4%	150

CHIN STATE

1	Falam	10	6	60%	0	0%	60%	1	10%	0	0%	2	20%	1	10%	10
2	Hakha	21	18	86%	1	5%	90%	1	5%	0	0%	1	5%	0	0%	21
3	Htantalan	19	17	89%	2	11%	100%	0	0%	0	0%	0	0%	0	0%	19
4	Tiddim	24	14	58%	9	38%	96%	0	0%	1	4%	0	0%	0	0%	24
5	Tunzan	22	22	100%	0	0%	100%	0	0%	0	0%	0	0%	0	0%	22
6	Mindat	10	7	70%	2	20%	90%	0	0%	0	0%	0	0%	1	10%	10
7	Kanpetlet	5	5	100%	0	0%	100%	0	0%	0	0%	0	0%	0	0%	5
8	Matupi	16	4	25%	5	31%	56%	3	19%	0	0%	4	25%	0	0%	16
9	Paletwa	49	22	45%	4	8%	53%	3	6%	0	0%	20	41%	0	0%	49
Total		176	115	65%	23	13%	78%	8	5%	1	1%	27	15%	2	1%	176

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR		Died		Failure		Defaulted		Transferred out		Total eva. Pts.
			No	CR	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate			
SAGAING DIVISION																	
1	Sagaing	126	92	73%	5	4%	77%	15	12%	2	2%	9	7%	3	2%	126	
2	Myaung	59	50	85%	1	2%	86%	4	7%	0	0%	4	7%	0	0%	59	
3	Myinmu	62	53	85%	3	5%	90%	3	5%	1	2%	0	0%	2	3%	62	
4	Shwebo	125	98	78%	5	4%	82%	5	4%	3	2%	8	6%	6	5%	125	
5	Kanbalu	65	55	85%	2	3%	88%	6	9%	0	0%	1	2%	1	2%	65	
6	Khin-U	52	51	98%	0	0%	98%	0	0%	0	0%	1	2%	0	0%	52	
7	Kyunhla	30	23	77%	2	7%	83%	3	10%	0	0%	2	7%	0	0%	30	
8	Tabayin	51	48	94%	0	0%	94%	2	4%	0	0%	0	0%	1	2%	51	
9	Taze	44	42	95%	1	2%	98%	1	2%	0	0%	0	0%	0	0%	44	
10	Wetlet	44	36	82%	0	0%	82%	4	9%	3	7%	1	2%	0	0%	44	
11	Ye-U	49	40	82%	3	6%	88%	1	2%	4	8%	1	2%	0	0%	49	
12	Monywa	216	135	63%	23	11%	73%	15	7%	14	6%	22	10%	7	3%	216	
13	Ayadaw	80	73	91%	2	3%	94%	4	5%	0	0%	1	1%	0	0%	80	
14	Budalin	84	68	81%	1	1%	82%	8	10%	5	6%	2	2%	0	0%	84	
15	ChaungU	54	46	85%	0	0%	85%	6	11%	2	4%	0	0%	0	0%	54	
16	Kani	29	28	97%	0	0%	97%	1	3%	0	0%	0	0%	0	0%	29	
17	Pale	24	19	79%	0	0%	79%	1	4%	1	4%	3	13%	0	0%	24	
18	Salingyi	33	25	76%	3	9%	85%	1	3%	1	3%	2	6%	1	3%	33	
19	Yinmabin	30	25	83%	2	7%	90%	3	10%	0	0%	0	0%	0	0%	30	
20	Katha	80	53	66%	8	10%	76%	8	10%	3	4%	7	9%	1	1%	80	
21	Banmauk	32	29	91%	1	3%	94%	1	3%	1	3%	0	0%	0	0%	32	
22	Htigyaing	51	37	73%	0	0%	73%	4	8%	10	20%	0	0%	0	0%	51	
23	Indaw	56	49	88%	1	2%	89%	4	7%	1	2%	1	2%	0	0%	56	
24	Kawlin	78	60	77%	2	3%	79%	4	5%	1	1%	9	12%	2	3%	78	
25	Pinlebu	25	20	80%	0	0%	80%	3	12%	2	8%	0	0%	0	0%	25	
26	Wuntho	27	24	89%	0	0%	89%	3	11%	0	0%	0	0%	0	0%	27	
27	Kalay	254	162	64%	23	9%	73%	22	9%	25	10%	20	8%	2	1%	254	
28	Kalewa	40	35	88%	0	0%	88%	0	0%	2	5%	2	5%	1	3%	40	
29	Minkin	67	57	85%	2	3%	88%	5	7%	0	0%	3	4%	0	0%	67	
30	Tamu	140	111	79%	11	8%	87%	3	2%	11	8%	3	2%	1	1%	140	
31	Mawlaik	36	27	75%	3	8%	83%	1	3%	4	11%	0	0%	1	3%	36	
32	Phaungbyin	80	45	56%	23	29%	85%	6	8%	2	3%	4	5%	0	0%	80	
33	Khamti	96	44	46%	18	19%	65%	5	5%	5	5%	22	23%	2	2%	96	
34	Homalin	113	53	47%	24	21%	68%	8	7%	9	8%	13	12%	6	5%	113	
35	Layshi	10	6	60%	3	30%	90%	0	0%	0	0%	1	10%	0	0%	10	
36	Lahel	32	17	53%	15	47%	100%	0	0%	0	0%	0	0%	0	0%	32	
37	Nanyun	0	0	0%	0	0%	0%	0	0%	0	0%	0	0%	0	0%	0	
Total		2474	1836	74%	187	8%	82%	160	6%	112	5%	142	6%	37	1%	2474	

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transferred out		Total eva. Pts.
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
MAGWE DIVISION																
1	Magway	290	218	75%	16	6%	81%	5	2%	12	4%	35	12%	4	1%	290
2	Chauk	141	87	62%	34	24%	86%	8	6%	2	1%	10	7%	0	0%	141
3	Taundwingyi	134	116	87%	0	0%	87%	11	8%	1	1%	0	0%	6	4%	134
4	Myothit	58	57	98%	0	0%	98%	0	0%	1	2%	0	0%	0	0%	58
5	Natmauk	79	39	49%	28	35%	85%	6	8%	6	8%	0	0%	0	0%	79
6	Yenanchaung	137	121	88%	1	1%	89%	7	5%	5	4%	1	1%	2	1%	137
7	Pakokku	159	127	80%	8	5%	85%	11	7%	2	1%	4	3%	7	4%	159
8	Yesagyo	88	84	95%	0	0%	95%	4	5%	0	0%	0	0%	0	0%	88
9	Pauk	84	81	96%	1	1%	98%	2	2%	0	0%	0	0%	0	0%	84
10	Myaing	86	73	85%	11	13%	98%	2	2%	0	0%	0	0%	0	0%	86
11	Seikphyu	59	58	98%	0	0%	98%	1	2%	0	0%	0	0%	0	0%	59
12	Gantgaw	50	37	74%	7	14%	88%	4	8%	1	2%	0	0%	1	2%	50
13	Saw	14	11	79%	0	0%	79%	0	0%	0	0%	2	14%	1	7%	14
14	Htinlin	6	6	100%	0	0%	100%	0	0%	0	0%	0	0%	0	0%	6
15	Minbu	82	57	70%	2	2%	72%	7	9%	0	0%	6	7%	10	12%	82
16	Ngape	23	18	78%	4	17%	96%	1	4%	0	0%	0	0%	0	0%	23
17	Pwintphyu	41	32	78%	8	20%	98%	0	0%	0	0%	0	0%	1	2%	41
18	Saytoketaya	26	12	46%	10	38%	85%	2	8%	1	4%	0	0%	1	4%	26
19	Salin	137	99	72%	30	22%	94%	8	6%	0	0%	0	0%	0	0%	137
20	Thayet	103	78	76%	10	10%	85%	7	7%	1	1%	4	4%	3	3%	103
21	Minhla	63	62	98%	0	0%	98%	1	2%	0	0%	0	0%	0	0%	63
22	Kanma	69	56	81%	4	6%	87%	7	10%	0	0%	0	0%	2	3%	69
23	Sinpaungwae	37	34	92%	1	3%	95%	1	3%	0	0%	0	0%	1	3%	37
24	Mindon	42	41	98%	0	0%	98%	1	2%	0	0%	0	0%	0	0%	42
25	Aunglan	163	149	91%	1	1%	92%	9	6%	1	1%	2	1%	1	1%	163
Total		2171	1753	81%	176	8%	89%	105	5%	33	2%	64	3%	40	2%	2171

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR		Died		Failure		Defaulted		Transferred out		Total eva. Pts.
			No	CR	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate			
MANDALAY DIVISION																	
1	Amarapura	83	52	63%	15	18%	81%	2	2%	3	4%	11	13%	0	0%	83	
2	Aungmyaytharzan	187	164	88%	0	0%	88%	13	7%	4	2%	1	1%	5	3%	187	
3	Chanayetharzan	137	112	82%	6	4%	86%	7	5%	4	3%	3	2%	5	4%	137	
4	Chanmyatharzi	223	199	89%	5	2%	91%	1	0%	12	5%	4	2%	2	1%	223	
5	Maharaungmyae	166	145	87%	4	2%	90%	12	7%	1	1%	0	0%	4	2%	166	
6	Pyigyitagonn	105	70	67%	18	17%	84%	6	6%	3	3%	2	2%	6	6%	105	
7	Patheingyi	90	82	91%	0	0%	91%	4	4%	1	1%	1	1%	2	2%	90	
8	Meiktilar	67	43	64%	8	12%	76%	7	10%	2	3%	1	1%	6	9%	67	
9	Mahlaing	58	50	86%	5	9%	95%	3	5%	0	0%	0	0%	0	0%	58	
10	Tharzi	83	34	41%	46	55%	96%	3	4%	0	0%	0	0%	0	0%	83	
11	Wundwin	172	133	77%	0	0%	77%	32	19%	0	0%	6	3%	1	1%	172	
12	Myingyan	184	159	86%	0	0%	86%	22	12%	0	0%	3	2%	0	0%	184	
13	Kyaukpadaung	211	179	85%	0	0%	85%	8	4%	8	4%	4	2%	12	6%	211	
14	Natogyi	63	49	78%	4	6%	84%	5	8%	2	3%	2	3%	1	2%	63	
15	Ngazun	34	33	97%	0	0%	97%	1	3%	0	0%	0	0%	0	0%	34	
16	Taungtha	100	72	72%	22	22%	94%	4	4%	1	1%	1	1%	0	0%	100	
17	NyaungU	126	108	86%	4	3%	89%	7	6%	4	3%	0	0%	3	2%	126	
18	Pyin oo Lwin	70	51	73%	1	1%	74%	10	14%	0	0%	2	3%	6	9%	70	
19	Madayar	122	61	50%	32	26%	76%	22	18%	6	5%	0	0%	1	1%	122	
20	Mogok	94	83	88%	1	1%	89%	6	6%	1	1%	2	2%	1	1%	94	
21	Sintgu	154	126	82%	19	12%	94%	7	5%	2	1%	0	0%	0	0%	154	
22	Thabeikkyin	133	63	47%	38	29%	76%	18	14%	8	6%	5	4%	1	1%	133	
23	Yamethin	83	79	95%	0	0%	95%	0	0%	0	0%	3	4%	1	1%	83	
24	Lewei	139	94	68%	19	14%	81%	13	9%	2	1%	10	7%	1	1%	139	
25	Pyawbwei	100	75	75%	24	24%	99%	1	1%	0	0%	0	0%	0	0%	100	
26	Pyinmana	286	245	86%	2	1%	86%	13	5%	8	3%	0	0%	18	6%	286	
27	Tatkone	81	67	83%	0	0%	83%	7	9%	2	2%	5	6%	0	0%	81	
28	Kyaukse	171	141	82%	4	2%	85%	10	6%	10	6%	6	4%	0	0%	171	
29	Myitha	89	69	78%	6	7%	84%	9	10%	0	0%	3	3%	2	2%	89	
30	Sintgine	65	56	86%	0	0%	86%	4	6%	3	5%	0	0%	2	3%	65	
31	TadaOo	57	46	81%	2	4%	84%	5	9%	2	4%	0	0%	2	4%	57	
Total		3733	2940	79%	285	8%	86%	262	7%	89	2%	75	2%	82	2%	3733	

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transferred out		Total eva. Pts.
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate			
SHAN (SOUTH) STATE																
1	Linkhay	17	15	88%	0	0%	88%	2	12%	0	0%	0	0%	0	0%	17
2	Maukme	0	0	0%	0	0%	0%	0	0%	0	0%	0	0%	0	0%	0
3	Monai	12	11	92%	1	8%	100%	0	0%	0	0%	0	0%	0	0%	12
4	Mangpang	0	0	0%	0	0%	0%	0	0%	0	0%	0	0%	0	0%	0
5	Loilem	20	15	75%	0	0%	75%	2	10%	1	5%	2	10%	0	0%	20
6	Kunhein	35	17	49%	9	26%	74%	6	17%	0	0%	3	9%	0	0%	35
7	Kyeethi	12	9	75%	1	8%	83%	0	0%	0	0%	0	0%	2	17%	12
8	Laikha	33	33	100%	0	0%	100%	0	0%	0	0%	0	0%	0	0%	33
9	Mongaking	15	10	67%	3	20%	87%	1	7%	0	0%	1	7%	0	0%	15
10	Mongshu	10	10	100%	0	0%	100%	0	0%	0	0%	0	0%	0	0%	10
11	Namsan	33	17	52%	6	18%	70%	4	12%	1	3%	5	15%	0	0%	33
12	Taunggyi	190	129	68%	10	5%	73%	19	10%	8	4%	17	9%	7	4%	190
13	Hopone	10	9	90%	0	0%	90%	0	0%	0	0%	0	0%	1	10%	10
14	Hpekon	21	20	95%	1	5%	100%	0	0%	0	0%	0	0%	0	0%	21
15	Hsiseng	41	27	66%	0	0%	66%	6	15%	0	0%	7	17%	1	2%	41
16	Kalaw	69	48	70%	1	1%	71%	11	16%	2	3%	4	6%	3	4%	69
17	Lauksauk	40	19	48%	7	18%	65%	4	10%	0	0%	5	13%	5	13%	40
18	Pindaya	5	5	100%	0	0%	100%	0	0%	0	0%	0	0%	0	0%	5
19	Pinlaung	52	47	90%	0	0%	90%	5	10%	0	0%	0	0%	0	0%	52
20	Nyaungshwe	60	50	83%	0	0%	83%	6	10%	3	5%	1	2%	0	0%	60
21	Ywangan	7	7	100%	0	0%	100%	0	0%	0	0%	0	0%	0	0%	7
Total		682	498	73%	39	6%	79%	66	10%	15	2%	45	7%	19	3%	682

SHAN (EAST) STATE

1	Kengtong	180	88	49%	56	31%	80%	2	1%	14	8%	18	10%	2	1%	180	180
2	Mongkhat	2	1	50%	0	0%	50%	0	0%	0	0%	1	50%	0	0%	2	2
3	Mongyan	33	10	30%	22	67%	97%	1	3%	0	0%	0	0%	0	0%	33	33
4	Monghsat	66	50	76%	6	9%	85%	3	5%	2	3%	5	8%	0	0%	66	66
5	Mongping	50	30	60%	11	22%	82%	4	8%	1	2%	4	8%	0	0%	50	50
6	Mongton	52	31	60%	0	0%	60%	6	12%	4	8%	11	21%	0	0%	52	52
7	Monpyak	41	34	83%	0	0%	83%	4	10%	2	5%	1	2%	0	0%	41	41
8	Mongyaung	32	20	63%	0	0%	63%	1	3%	1	3%	10	31%	0	0%	32	32
9	Tachileik	115	90	78%	7	6%	84%	7	6%	1	1%	7	6%	3	3%	115	115
10	Matman	Nr.															
Total		571	354	62%	102	18%	80%	28	5%	25	4%	57	10%	5	1%	571	571

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR		Died		Failure		Defaulted		Transferred out		Total eva. Pts.
			No	CR	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate			
SHAN (NORTH) STATE																	
1	Kunlon	73	67	92%	0	0%	92%	4	5%	1	1%	1	1%	0	0%	0	73
2	Hopan	62	30	48%	32	52%	100%	0	0%	0	0%	0	0%	0	0%	0	62
3	Kyaukme	87	43	49%	23	26%	76%	6	7%	2	2%	7	8%	6	7%	6	87
4	Hsipaw	126	122	97%	0	0%	97%	3	2%	0	0%	1	1%	0	0%	0	126
5	Mabein	8	7	88%	0	0%	88%	0	0%	0	0%	0	13%	0	0%	0	8
6	Manton	0	0	0%	0	0%	0%	0	0%	0	0%	0	0%	0	0%	0	0
7	Mongmeik	39	24	62%	1	3%	64%	6	15%	2	5%	6	15%	0	0%	0	39
8	Namtu	40	23	58%	12	30%	88%	1	3%	0	0%	3	8%	1	3%	1	40
9	Nyaungcho	37	35	95%	0	0%	95%	0	0%	2	5%	0	0%	0	0%	0	37
10	Lashio	151	107	71%	0	0%	71%	5	3%	3	2%	31	21%	5	3%	5	151
11	Namsam	14	6	43%	4	29%	71%	3	21%	0	0%	1	7%	0	0%	0	14
12	Mongmaw	Nr.															
13	Theinni	58	29	50%	13	22%	72%	1	2%	0	0%	13	22%	2	3%	2	58
14	Mongreh	5	1	20%	3	60%	80%	0	0%	0	0%	1	20%	0	0%	0	5
15	Manphant	Nr.															
16	Pangyan	14	2	14%	10	71%	86%	0	0%	0	0%	2	14%	0	0%	0	14
17	Narphant	4	2	50%	1	25%	75%	0	0%	1	25%	0	0%	0	0%	0	4
18	Panwaing	Nr.															
19	Tanyan	22	19	86%	2	9%	95%	0	0%	0	0%	1	5%	0	0%	0	22
20	Laukkai	58	26	45%	10	17%	62%	0	0%	6	10%	15	26%	1	2%	1	58
21	Kongyan	Nr.															
22	Muse	8	7	88%	0	0%	88%	0	0%	0	0%	0	0%	1	13%	1	8
23	Kuitai	52	11	21%	27	52%	73%	3	6%	2	4%	9	17%	0	0%	0	52
24	Namkham	25	11	44%	2	8%	52%	5	20%	3	12%	4	16%	0	0%	0	25
Total		883	572	65%	140	16%	81%	37	4%	22	2%	96	11%	16	2%	16	883

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transferred out		Total eva. Pts.
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate			
KAYIN STATE																
1	Kawkareik	182	155	85%	5	3%	88%	10	5%	4	2%	5	3%	3	2%	182
2	Kyainseikkyi	26	20	77%	3	12%	88%	3	12%	0	0%	0	0%	0	0%	26
3	Myawady	77	40	52%	11	14%	66%	0	0%	3	4%	18	23%	5	6%	77
4	Hpa-an	330	242	73%	25	8%	81%	3	1%	3	1%	48	15%	9	3%	330
5	Hlaingbwe	135	114	84%	3	2%	87%	6	4%	1	1%	10	7%	1	1%	135
6	Papun(Kamamaung)	66	48	73%	8	12%	85%	8	12%	1	2%	1	2%	0	0%	66
7	Thandaung	23	14	61%	3	13%	74%	3	13%	3	13%	0	0%	0	0%	23
	Total	839	633	75%	58	7%	82%	33	4%	15	2%	82	10%	18	2%	839
TANINTHARYI DIVISION																
1	Dawei	139	122	88%	1	1%	88%	5	4%	5	4%	2	1%	4	3%	139
2	Launglon	23	21	91%	0	0%	91%	0	0%	2	9%	0	0%	0	0%	23
3	Thayetchaung	23	12	52%	9	39%	91%	0	0%	2	9%	0	0%	0	0%	23
4	Yebyu	44	41	93%	0	0%	93%	1	2%	1	2%	0	0%	1	2%	44
5	Kawthaung	120	83	69%	8	7%	76%	9	8%	1	1%	14	12%	5	4%	120
6	Bokpyin	35	20	57%	12	34%	91%	0	0%	0	0%	1	3%	2	6%	35
7	Myeik	319	193	61%	19	6%	66%	12	4%	1	0%	56	18%	38	12%	319
8	Kyunsu	19	10	53%	2	11%	63%	0	0%	2	11%	4	21%	1	5%	19
9	Tanintharyi	58	47	81%	0	0%	81%	4	7%	2	3%	5	9%	0	0%	58
10	Palaw	50	8	16%	22	44%	60%	1	2%	1	2%	17	34%	1	2%	50
	Total	830	557	67%	73	9%	76%	32	4%	17	2%	99	12%	52	6%	830

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transferred out		Total eva. Pts.
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
BAGO (EAST) DIVISION																
1	Bago	381	321	84%	21	6%	90%	17	4%	1	0%	16	4%	5	1%	381
2	Daik-U	136	119	88%	1	1%	88%	9	7%	5	4%	2	1%	0	0%	136
3	Kawa	127	97	76%	8	6%	83%	7	6%	0	0%	14	11%	1	1%	127
4	Kyauktaga	166	156	94%	1	1%	95%	5	3%	0	0%	4	2%	0	0%	166
5	Nyaunglaybin	173	149	86%	12	7%	93%	5	3%	0	0%	7	4%	0	0%	173
6	Shwekyin	91	88	97%	1	1%	98%	1	1%	0	0%	1	1%	0	0%	91
7	Thanatpin	71	60	85%	0	0%	85%	7	10%	0	0%	4	6%	0	0%	71
8	Waw	163	139	85%	6	4%	89%	7	4%	1	1%	8	5%	2	1%	163
9	Taunggoo	92	81	88%	2	2%	90%	2	2%	0	0%	3	3%	4	4%	92
10	Kyaukkyi	44	17	39%	25	57%	95%	1	2%	0	0%	0	0%	1	2%	44
11	Oktwin	79	57	72%	6	8%	80%	7	9%	0	0%	9	11%	0	0%	79
12	Phyu	203	169	83%	10	5%	88%	10	5%	5	2%	8	4%	1	0%	203
13	Htantabin	69	68	99%	0	0%	99%	1	1%	0	0%	0	0%	0	0%	69
14	Yedashe	150	121	81%	8	5%	86%	16	11%	0	0%	2	1%	3	2%	150
	Total	1945	1642	84%	101	5%	90%	95	5%	12	1%	78	4%	17	1%	1945
BAGO (WEST) DIVISION																
1	Pyay	283	227	80%	3	1%	81%	23	8%	13	5%	13	5%	4	1%	283
2	Paukkhaung	90	82	91%	0	0%	91%	6	7%	0	0%	2	2%	0	0%	90
3	Paungde	70	66	94%	0	0%	94%	3	4%	0	0%	1	1%	0	0%	70
4	Padaung	87	61	70%	12	14%	84%	4	5%	1	1%	8	9%	1	1%	87
5	Shwedaung	87	71	82%	7	8%	90%	5	6%	0	0%	4	5%	0	0%	87
6	Thegon	75	60	80%	0	0%	80%	7	9%	1	1%	6	8%	1	1%	75
7	Tharyawady	227	187	82%	0	0%	82%	24	11%	8	4%	0	0%	8	4%	227
8	Zigon	73	72	99%	0	0%	99%	1	1%	0	0%	0	0%	0	0%	73
9	Minhla	101	82	81%	4	4%	85%	5	5%	2	2%	7	7%	1	1%	101
10	Moeyo	91	69	76%	11	12%	88%	4	4%	2	2%	5	5%	0	0%	91
11	Okpo	68	63	93%	0	0%	93%	3	4%	1	1%	0	0%	1	1%	68
12	Gyobingauk	67	55	82%	3	4%	87%	7	10%	0	0%	2	3%	0	0%	67
13	Nattalin	97	71	73%	11	11%	85%	7	7%	0	0%	8	8%	0	0%	97
14	Lapadan	123	94	76%	17	14%	90%	9	7%	0	0%	1	1%	2	2%	123
	Total	1539	1260	82%	68	4%	86%	108	7%	28	2%	57	4%	18	1%	1539

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR		Died		Failure		Defaulted		Transferred out		Total eva. Pts.
			No	CR	No	Rate			No	Rate	No	Rate	No	Rate	No	Rate	

MON STATE

1	Chanungzon	365	258	71%	60	16%	87%	23	6%	1	0%	20	5%	3	1%	365
2	Chanungzon	73	67	92%	0	0%	92%	3	4%	2	3%	1	1%	0	0%	73
3	Kyaikmaraw	111	68	61%	31	28%	89%	6	5%	1	1%	5	5%	0	0%	111
4	Mudon	158	132	84%	3	2%	85%	10	6%	2	1%	11	7%	0	0%	158
5	Thanbyuzayat	114	96	84%	7	6%	90%	9	8%	0	0%	2	2%	0	0%	114
6	Ye	111	68	61%	21	19%	80%	7	6%	7	6%	7	6%	1	1%	111
7	Thaton	288	239	83%	7	2%	85%	18	6%	2	1%	9	3%	13	5%	288
8	Belin	148	131	89%	3	2%	91%	12	8%	1	1%	1	1%	0	0%	148
9	Kyaikto	148	121	82%	11	7%	89%	7	5%	1	1%	6	4%	2	1%	148
10	Paung	188	163	87%	1	1%	87%	7	4%	9	5%	1	1%	7	4%	188
Total		1704	1343	79%	144	8%	87%	102	6%	26	2%	63	4%	26	2%	1704

RAKHINE STATE

1	Kyaukphyu	106	91	86%	6	6%	92%	3	3%	1	1%	5	5%	0	0%	106
2	Ann	36	25	69%	2	6%	75%	2	6%	1	3%	2	6%	4	11%	36
3	Manaung	24	24	100%	0	0%	100%	0	0%	0	0%	0	0%	0	0%	24
4	Rambye	42	39	93%	0	0%	93%	2	5%	0	0%	1	2%	0	0%	42
5	Maungdaw	152	141	93%	3	2%	95%	6	4%	2	1%	0	0%	0	0%	152
6	Buthidaung	218	212	97%	2	1%	98%	4	2%	0	0%	0	0%	0	0%	218
7	Rathedaung	136	119	88%	1	1%	88%	4	3%	1	1%	11	8%	0	0%	136
8	Sittwe	232	140	60%	61	26%	87%	10	4%	2	1%	19	8%	0	0%	232
9	Kyauktaw	116	106	91%	0	0%	91%	2	2%	1	1%	5	4%	1	1%	115
10	Minbya	133	121	91%	0	0%	91%	3	2%	4	3%	5	4%	0	0%	133
11	Myaukoo	237	225	95%	1	0%	95%	8	3%	0	0%	1	0%	3	1%	238
12	Myebon	86	67	78%	4	5%	83%	1	1%	0	0%	14	16%	0	0%	86
13	Pauktaw	59	37	63%	10	17%	80%	5	8%	0	0%	7	12%	0	0%	59
14	Ponnagyun	73	56	77%	10	14%	90%	2	3%	0	0%	5	7%	0	0%	73
15	Thandwe	82	76	93%	1	1%	94%	4	5%	0	0%	0	0%	1	1%	82
16	Gwa	52	48	92%	0	0%	92%	2	4%	2	4%	0	0%	0	0%	52
17	Taungup	80	66	83%	10	13%	95%	0	0%	0	0%	2	3%	2	3%	80
Total		1864	1593	85%	111	6%	91%	58	3%	14	1%	77	4%	11	1%	1864

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transferred out		Total eva. Pts.
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
YANGON DIVISION																
	East District	8	8	100%	0	0%	100%	0	0%	0	0%	0	0%	0	0%	8
1	Botataung	36	30	83%	2	6%	89%	0	0%	2	6%	2	6%	0	0%	36
2	Dawbon	115	94	82%	0	0%	82%	11	10%	9	8%	0	0%	1	1%	115
3	Dagon(N)	210	176	84%	9	4%	88%	9	4%	2	1%	9	4%	5	2%	210
4	Dagon(S)	606	491	81%	8	1%	82%	33	5%	32	5%	36	6%	6	1%	606
5	MingalarTN	124	103	83%	0	0%	83%	10	8%	6	5%	3	2%	2	2%	124
6	Okkala(N)	414	349	84%	3	1%	85%	21	5%	26	6%	10	2%	5	1%	414
7	Okkala(S)	198	134	68%	21	11%	78%	11	6%	16	8%	6	3%	10	5%	198
8	Tharkata	261	207	79%	20	8%	87%	18	7%	4	2%	5	2%	7	3%	261
9	Thingangyun	314	244	78%	25	8%	86%	16	5%	12	4%	10	3%	7	2%	314
10	Yankin	118	107	91%	1	1%	92%	8	7%	0	0%	0	0%	2	2%	118
11	Tarmwe	107	93	87%	1	1%	88%	5	5%	6	6%	1	1%	1	1%	107
12	Pazundaung	45	39	87%	0	0%	87%	3	7%	2	4%	1	2%	0	0%	45
13	Dagon(E)	198	163	82%	14	7%	89%	7	4%	1	1%	10	5%	3	2%	198
14	Dagon Seikkan	93	77	83%	3	3%	86%	3	3%	0	0%	6	6%	4	4%	93
	Total	2847	2315	81%	107	4%	85%	155	5%	118	4%	99	3%	53	2%	2847
West District																
1	Kamayut	68	66	97%	0	0%	97%	1	1%	1	1%	0	0%	0	0%	68
2	Kyauktada	36	31	86%	1	3%	89%	2	6%	2	6%	0	0%	0	0%	36
3	Kyinmyindine	113	96	85%	0	0%	85%	6	5%	6	5%	4	4%	1	1%	113
4	Sanchaung	109	81	74%	12	11%	85%	7	6%	4	4%	5	5%	0	0%	109
5	Seikkan	7	7	100%	0	0%	100%	0	0%	0	0%	0	0%	0	0%	7
6	Dagon	54	42	78%	1	2%	80%	2	4%	4	7%	2	4%	3	6%	54
7	Pabadan	31	28	90%	0	0%	90%	2	6%	0	0%	0	0%	1	3%	31
8	Hahan	85	63	74%	8	9%	84%	2	2%	5	6%	3	4%	4	5%	85
9	Mayangon	249	190	76%	10	4%	80%	21	8%	13	5%	7	3%	8	3%	249
10	Latha	24	20	83%	0	0%	83%	1	4%	2	8%	0	0%	1	4%	24
11	Lanmadaw	35	29	83%	1	3%	86%	3	9%	1	3%	1	3%	0	0%	35
12	Hlaing	218	181	83%	17	8%	91%	9	4%	4	2%	2	1%	5	2%	218
13	Ahlone	88	70	80%	4	5%	84%	4	5%	3	3%	2	2%	5	6%	88
	Total	1117	904	81%	54	5%	86%	60	5%	45	4%	26	2%	28	3%	1117

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transferred out		Total eva. Pts.
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
South District																
1	Seikkikanaungto	26	25	96%	0	0%	96%	1	4%	0	0%	0	0%	0	0%	26
2	Dallah	202	149	74%	23	11%	85%	14	7%	5	2%	11	5%	0	0%	202
3	CoCogyun	0	0	0%	0	0%	0%	0	0%	0	0%	0	0%	0	0%	0
4	Kawhmu	113	95	84%	1	1%	85%	8	7%	5	4%	3	3%	1	1%	113
5	Kyauktan	162	136	84%	12	7%	91%	8	5%	0	0%	5	3%	1	1%	162
6	Kunggyangone	91	83	91%	2	2%	93%	5	5%	1	1%	0	0%	0	0%	91
7	Kayan	164	144	88%	5	3%	91%	13	8%	2	1%	0	0%	0	0%	164
8	Twantay	184	159	86%	4	2%	89%	11	6%	4	2%	4	2%	2	1%	184
9	Thonegwa	135	101	75%	11	8%	83%	10	7%	7	5%	5	4%	1	1%	135
10	Thanlyin	286	214	75%	37	13%	88%	13	5%	8	3%	10	3%	4	1%	286
	Total	1363	1106	81%	95	7%	88%	83	6%	32	2%	38	3%	9	1%	1363
North District																
1	Mingalardon	618	391	63%	48	8%	71%	9	1%	42	7%	71	11%	57	9%	618
2	Shwepyithar	303	167	55%	79	26%	81%	13	4%	12	4%	28	9%	4	1%	303
3	Hlaingtharyar	318	283	89%	0	0%	89%	15	5%	9	3%	5	2%	6	2%	318
4	Insein	416	278	67%	74	18%	85%	19	5%	17	4%	15	4%	13	3%	416
5	Taikkyi	186	168	90%	1	1%	91%	9	5%	1	1%	7	4%	0	0%	186
6	Htantabin	92	76	83%	6	7%	89%	6	7%	1	1%	3	3%	0	0%	92
7	Hmawbi	246	196	80%	10	4%	84%	9	4%	8	3%	7	3%	16	7%	246
8	Hlegu	161	149	93%	1	1%	93%	5	3%	0	0%	4	2%	2	1%	161
	U.T.I	116	69	59%	3	3%	62%	27	23%	6	5%	9	8%	2	2%	116
	NTP(Diagnostic C)	20	11	55%	4	20%	75%	1	5%	0	0%	3	15%	1	5%	20
	Total	2476	1788	72%	226	9%	81%	113	5%	96	4%	152	6%	101	4%	2476
	Yangon Div:	7803	6113	78%	482	6%	85%	411	5%	291	4%	315	4%	191	2%	7803

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transferred out		Total eva. Pts.
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
AYEYARWADY DIVISION																
1	Patheingyi	464	337	73%	74	16%	89%	26	6%	5	1%	20	4%	2	0%	464
2	Kanyidaung	52	43	83%	4	8%	90%	4	8%	0	0%	1	2%	0	0%	52
3	Yekyi	206	148	72%	35	17%	89%	12	6%	0	0%	11	5%	0	0%	206
4	Kyaunggon	113	95	84%	11	10%	94%	5	4%	0	0%	2	2%	0	0%	113
5	Kyongpyaw	138	130	94%	0	0%	94%	8	6%	0	0%	0	0%	0	0%	138
6	Ngaputaw	186	133	72%	27	15%	86%	11	6%	1	1%	14	8%	0	0%	186
7	Thabaung	145	91	63%	38	26%	89%	12	8%	1	1%	3	2%	0	0%	145
8	Hinhada	521	474	91%	16	3%	94%	20	4%	0	0%	7	1%	4	1%	521
9	Kyankin	123	112	91%	6	5%	96%	1	1%	3	2%	0	0%	1	1%	123
10	Myanaung	187	160	86%	1	1%	86%	11	6%	0	0%	14	7%	1	1%	187
11	Ingapu	243	225	93%	7	3%	95%	6	2%	2	1%	1	0%	2	1%	243
12	Zalun	160	124	78%	17	11%	88%	10	6%	2	1%	5	3%	2	1%	160
13	Laymethna	90	74	82%	4	4%	87%	6	7%	3	3%	3	3%	0	0%	90
14	Myaungmya	256	203	79%	27	11%	90%	10	4%	9	4%	6	2%	1	0%	256
15	Laputta	305	292	96%	4	1%	97%	3	1%	1	0%	4	1%	1	0%	305
16	Mawgyun	184	133	72%	40	22%	94%	4	2%	3	2%	3	2%	1	1%	184
17	Wakema	382	326	85%	40	10%	96%	2	1%	8	2%	5	1%	1	0%	382
18	Einme	201	164	82%	4	2%	84%	15	7%	0	0%	18	9%	0	0%	201
19	Pyapon	296	245	83%	1	0%	83%	27	9%	6	2%	11	4%	6	2%	296
20	Bogalay	247	198	80%	14	6%	86%	28	11%	0	0%	7	3%	0	0%	247
21	Dedaye	94	57	61%	19	20%	81%	7	7%	2	2%	8	9%	1	1%	94
22	Kyaiklatt	120	78	65%	32	27%	92%	5	4%	0	0%	5	4%	0	0%	120
23	Maubin	243	191	79%	20	8%	87%	17	7%	6	2%	9	4%	0	0%	243
24	Nyaungdon	156	148	95%	0	0%	95%	6	4%	0	0%	0	0%	2	1%	156
25	Pantanaw	184	170	92%	0	0%	92%	3	2%	2	1%	9	5%	0	0%	184
26	Danuphyu	176	163	93%	0	0%	93%	13	7%	0	0%	0	0%	0	0%	176
	Total	5472	4514	82%	441	8%	91%	272	5%	54	1%	166	3%	25	0%	5472

Sr. No.	Townships	Reg. Pts.	Cured		Completed		TSR	Died		Failure		Defaulted		Transferred out		Total
			No	CR	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate	
Other reporting Units																
1	Aung San TB hospital	79	42	53%	5	6%	59%	17	22%	4	5%	2	3%	9	11%	79
2	Patheingyi hospital	98	49	50%	11	11%	61%	8	8%	3	3%	8	8%	19	19%	98
3	East YGH	0	0	0%	0	0%	0%	0	0%	0	0%	0	0%	0	0%	0
4	Mingalardon hospital	0	0	0%	0	0%	0%	0	0%	0	0%	0	0%	0	0%	0
5	Wabargi hospital	120	60	50%	0	0%	50%	46	38%	7	6%	5	4%	2	2%	120
6	No.1MBH (PynOoLwin)	100	98	98%	0	0%	98%	0	0%	0	0%	2	2%	0	0%	100
7	AZG (Ygn)	1504	981	65%	38	3%	68%	127	8%	190	13%	140	9%	28	2%	1504
8	AZG (Kachin)	474	312	66%	41	9%	74%	27	6%	36	8%	34	7%	24	5%	474
9	PSI	3543	2559	72%	304	9%	81%	141	4%	201	6%	247	7%	91	3%	3543
10	AZG (Shan-North)	226	128	57%	13	6%	62%	20	9%	38	17%	13	6%	14	6%	226
	Total	6144	4229	69%	412	7%	76%	386	6%	479	8%	451	7%	187	3%	6144

NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOME OF SMEAR NEGATIVE TB PATIENTS (2006 COHORT)

Annex - 12

Union

Sr.No.	State/ Division	SMEAR NEGATIVE TB PATIENTS											
		Total No.		Completed		Died		Failure		Defaulted		Transfer out	
		Reg: pts:	No	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate
1	Kachin State	1162	874		75%	78	7%	18	2%	152	13%	40	3%
2	Kayah State	223	160		72%	17	8%	0	0%	14	6%	32	14%
3	Chin State	350	274		78%	12	3%	0	0%	64	18%	0	0%
4	Sagaing Division	2995	2448		82%	213	7%	27	1%	254	8%	53	2%
5	Magway Division	2657	2219		84%	216	8%	3	0%	168	6%	51	2%
6	Mandalay Division	3224	2725		85%	291	9%	12	0%	100	3%	96	3%
7	Shan (S) State	888	669		75%	111	13%	1	0%	83	9%	24	3%
8	Shan (E) State	416	333		80%	18	4%	3	1%	56	13%	6	1%
9	Shan (N) State	1051	814		77%	57	5%	14	1%	150	14%	16	2%
10	Kayin State	1494	1226		82%	60	4%	2	0%	169	11%	37	2%
11	Tanintharyi Division	1700	1201		71%	53	3%	4	0%	366	22%	76	4%
12	Bago (East) Division	2337	2017		86%	136	6%	2	0%	158	7%	24	1%
13	Bago (West) Division	2617	2129		81%	252	10%	2	0%	177	7%	57	2%
14	Mon State	2043	1787		87%	111	5%	9	0%	117	6%	19	1%
15	Rakhine State	1139	1006		88%	52	5%	3	0%	70	6%	8	1%
16	Yangon Division	9387	7915		84%	501	5%	114	1%	555	6%	302	3%
17	Ayeyarwady Division	4641	4145		89%	245	5%	10	0%	208	4%	33	1%
State & Division Total		38324	31942		83%	2423	6%	224	1%	2861	7%	874	2%
NS+ TB patients, Unknown HIV status (NTP)		36976	31109		84%	2054	6%	216	1%	2774	8%	823	2%
Other Unit		5136	3830		75%	553	11%	152	3%	448	9%	153	3%
NS+ TB patients, Unknown HIV status (Other units)		3454	2721		79%	199	6%	104	3%	319	9%	111	3%
Union of Myanmar		43460	35772		82%	2976	7%	376	1%	3309	8%	1027	2%
NS+ TB patients, unknown HIV status (Union)		40430	33830		84%	2253	6%	320	1%	3093	8%	934	2%

TREATMENT OUTCOMES OF TB/HIV PATIENTS IN 2007 (2006 COHORT)

Sr.No.	Reporting units	SMEAR NEGATIVE TB PATIENTS											
		Total No.		Completed		Died		Failure		Defaulted		Transfer out	
		Reg: pts:	No	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate
1	NTP	1348	833		62%	369	27%	8	1%	87	6%	51	4%
2	Other Units	1682	1109		66%	354	21%	48	3%	129	8%	42	2%
Total		3030	1942		64%	723	24%	56	2%	216	7%	93	3%

**NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOME OF RELAPSES (2006 COHORT)**

Annex-13

Sr.No.	State/ Division	RELAPSE 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	162	114	70%	13	8%	14	9%	4	2%	15	9%	2	1%	162
2	Kayah State	11	7	64%	1	9%	0	0%	1	9%	0	0%	2	18%	11
3	Chin State	39	22	56%	2	5%	5	13%	4	10%	4	10%	2	5%	39
4	Sagaing Division	301	170	56%	62	21%	27	9%	14	5%	22	7%	6	2%	301
5	Magway Division	176	124	70%	22	13%	18	10%	6	3%	5	3%	1	1%	176
6	Mandalay Division	486	317	65%	74	15%	59	12%	8	2%	11	2%	17	3%	486
7	Shan (S) State	51	34	67%	8	16%	3	6%	0	0%	4	8%	2	4%	51
8	Shan (E) State	41	21	51%	4	10%	5	12%	6	15%	5	12%	0	0%	41
9	Shan (N) State	91	55	60%	17	19%	4	4%	4	4%	10	11%	1	1%	91
10	Kayin State	77	44	57%	6	8%	8	10%	2	3%	14	18%	3	4%	77
11	Tanintharyi Division	85	43	51%	19	22%	4	5%	1	1%	9	11%	9	11%	85
12	Bago (East) Division	249	180	72%	16	6%	28	11%	10	4%	10	4%	5	2%	249
13	Bago (West) Division	168	111	66%	17	10%	16	10%	11	7%	9	5%	4	2%	168
14	Mon State	250	162	65%	25	10%	26	10%	10	4%	18	7%	9	4%	250
15	Rakhine State	187	127	68%	30	16%	11	6%	9	5%	8	4%	2	1%	187
16	Yangon Division	1174	732	62%	102	9%	110	9%	99	8%	82	7%	49	4%	1174
17	Ayeyarwady Division	488	380	78%	33	7%	36	7%	15	3%	18	4%	6	1%	488
State & Division Total		4036	2643	65%	451	11%	374	9%	204	5%	244	6%	120	3%	4036
NS+ TB patients, Unknown HIV status (NTP)		3993	2623	66%	450	11%	356	9%	204	5%	241	6%	119	3%	3993
Other Unit		873	414	47%	127	15%	150	17%	94	11%	44	5%	44	5%	873
NS+ TB patients, Unknown HIV status (Other units)		620	342	55%	62	10%	62	10%	81	13%	39	6%	34	5%	620
Union of Myanmar		4909	3057	62%	578	12%	524	11%	298	6%	288	6%	164	3%	4909
NS+ TB patients, unknown HIV status (Union)		4613	2965	64%	512	11%	418	9%	285	6%	280	6%	153	3%	4613

TREATMENT OUTCOMES OF TB/HIV PATIENTS (2006 COHORT)

Sr.No.	Reporting units	RELAPSE CASES													
		Total	Cured		Completed		Died		Failure		Defaulted		Transfer out		Total
			No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	
1	NTP	43	20	47%	1	2%	18	42%	0	0%	3	7%	1	2%	43
2	Other Units	253	72	28%	65	26%	88	35%	13	5%	5	2%	10	4%	253
Total		296	92	31%	66	22%	106	36%	13	4%	8	3%	11	4%	296

NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOME OF TREATMENT AFTER DEFAULT (2006 COHORT)

Annex- 14

Union

Sr.No.	State/ Division	TOTAL	TREATMENT AFTER DEFAULT												Total	
			Cured		Completed		Died		Failure		Defaulted		Transfer			
			No	CR	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate		
1	Kachin State	28	16	57%	3	11%	3	11%	2	7%	4	14%	0	0%	28	
2	Kayah State	3	1	33%	0	0%	1	33%	0	0%	0	0%	1	33%	3	
3	Chin State	9	3	33%	0	0%	1	11%	0	0%	5	56%	0	0%	9	
4	Sagaing Division	80	31	39%	24	30%	7	9%	2	3%	12	15%	4	5%	80	
5	Magway Division	30	21	70%	5	17%	0	0%	1	3%	3	10%	0	0%	30	
6	Mandalay Division	35	17	49%	8	23%	4	11%	3	9%	1	3%	2	6%	35	
7	Shan (S) State	19	9	47%	4	21%	2	11%	0	0%	3	16%	1	5%	19	
8	Shan (E) State	19	9	47%	5	26%	2	11%	0	0%	3	16%	0	0%	19	
9	Shan (N) State	26	10	38%	10	38%	0	0%	3	12%	3	12%	0	0%	26	
10	Kayin State	2	2	100%	0	0%	0	0%	0	0%	0	0%	0	0%	2	
11	Tanintharyi Division	25	20	80%	3	12%	0	0%	1	4%	1	4%	0	0%	25	
12	Bago (East) Division	21	19	90%	0	0%	0	0%	0	0%	2	10%	0	0%	21	
13	Bago (West) Division	15	11	73%	2	13%	1	7%	0	0%	1	7%	0	0%	15	
14	Mon State	25	17	68%	1	4%	1	4%	0	0%	5	20%	1	4%	25	
15	Rakhine State	16	8	50%	4	25%	1	6%	0	0%	3	19%	0	0%	16	
16	Yangon Division	207	97	47%	44	21%	12	6%	17	8%	25	12%	12	6%	207	
17	Ayeyarwady Division	113	68	60%	24	21%	14	12%	5	4%	2	2%	0	0%	113	
State & Division Total			673	53%	137	20%	49	7%	34	5%	73	11%	21	3%	673	
NS+ TB patients, Unknown HIV status (NTP)			663	53%	135	20%	47	7%	34	5%	73	11%	20	3%	663	
Other Unit			215	39%	26	12%	50	23%	14	7%	29	13%	13	6%	215	
NS+ TB patients, unknown HIV status (Other units)			135	49%	16	12%	14	10%	12	9%	16	12%	11	8%	135	
Union of Myanmar			888	50%	163	18%	99	11%	48	5%	102	11%	34	4%	888	
NS+ TB patients, unknown HIV status (Union)			798	420	53%	151	19%	61	8%	46	6%	89	11%	31	4%	798

TREATMENT OUTCOME OF TB/HIV PATIENTS (2006 COHORT)

Sr.No.	Reporting units	TOTAL	TREATMENT AFTER DEFAULT CASES													
			Cured		Completed		Died		Failure		Defaulted		Transfer		Total	
			No	CR	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate		
1	NTP	10	5	50%	2	20%	2	20%	0	0%	0	0%	1	10%	10	
2	Other Units	80	17	21%	10	13%	36	45%	2	3%	13	16%	2	3%	80	
Total		90	22	24%	12	13%	38	42%	2	2%	13	14%	3	3%	90	

NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOME OF TREATMENT AFTER FAILURE (2006 COHORT)

Union

Annex- 15

Sr.No.	State/ Division	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	6	2	33%	0	0%	1	17%	1	17%	2	33%	0	0%	6	
2	Kayah State	1	1	100%	0	0%	0	0%	0	0%	0	0%	0	0%	1	
3	Chin State	2	0	0%	0	0%	0	0%	2	100%	0	0%	0	0%	2	
4	Sagaing Division	39	20	51%	10	26%	0	0%	2	5%	3	8%	4	10%	39	
5	Magway Division	18	9	50%	1	6%	4	22%	3	17%	0	0%	1	6%	18	
6	Mandalay Division	15	6	40%	2	13%	1	7%	3	20%	0	0%	3	20%	15	
7	Shan (S) State	9	6	67%	1	11%	0	0%	0	0%	1	11%	1	11%	9	
8	Shan (E) State	2	2	100%	0	0%	0	0%	0	0%	0	0%	0	0%	2	
9	Shan (N) State	13	7	54%	1	8%	1	8%	0	0%	4	31%	0	0%	13	
10	Kayin State	2	0	0%	0	0%	0	0%	1	50%	0	0%	1	50%	2	
11	Tanintharyi Division	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	
12	Bago (East) Division	3	2	67%	0	0%	0	0%	1	33%	0	0%	0	0%	3	
13	Bago (West) Division	11	6	55%	0	0%	1	9%	4	36%	0	0%	0	0%	11	
14	Mon State	12	8	67%	0	0%	3	25%	1	8%	0	0%	0	0%	12	
15	Rakhine State	3	2	67%	0	0%	0	0%	0	0%	1	33%	0	0%	3	
16	Yangon Division	25	13	52%	1	4%	2	8%	8	32%	1	4%	0	0%	25	
17	Ayeyarwady Division	29	17	59%	7	24%	1	3%	2	7%	1	3%	1	3%	29	
State & Division Total			190	101	53%	23	12%	14	7%	28	15%	13	7%	11	6%	190
NS+ TB patients, unknown HIV status (NTP)			188	101	54%	23	12%	13	7%	28	15%	13	7%	10	5%	188
Other Unit			485	249	51%	29	6%	55	11%	78	16%	48	10%	26	5%	485
NS+ TB patients, Unknown HIV status (Other units)			365	191	52%	21	6%	25	7%	66	18%	38	10%	24	7%	365
Union of Myanmar			675	350	52%	52	8%	69	10%	106	16%	61	9%	37	5%	675
NS+ TB patients, unknown HIV status (Union)			553	292	53%	44	8%	38	7%	94	17%	51	9%	34	6%	553

TREATMENT OUTCOME OF TB/HIV PATIENTS IN 2007 (2006 COHORT)

Sr.No.	Reporting units	TOTAL	TREATMENT AFTER FAILURE CASES													
			Cured		Completed		Died		Failure		Defaulted		Transfer			
			No	CR	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate
1	NTP	2	0	0%	0	0%	1	50%	0	0%	0	0%	1	50%	2	
2	Other Units	120	58	48%	8	7%	30	25%	12	10%	10	8%	2	2%	120	
Total		122	58	48%	8	7%	31	25%	12	10%	10	8%	3	2%	122	

**NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOME OF OTHER CASES (2006 COHORT)**

Annex- 16

Union

Sr.No.	State/ Division	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	68	40	59%	12	18%	5	7%	1	1%	7	10%	3	4%	68
2	Kayah State	0	0												0
3	Chin State	17	3	18%	11	65%	1	6%	0	0%	2	12%	0	0%	17
4	Sagaing Division	175	78	45%	60	34%	13	7%	9	5%	15	9%	0	0%	175
5	Magway Division	7	2	29%	4	57%	1	14%	0	0%	0	0%	0	0%	7
6	Mandalay Division	226	51	23%	106	47%	41	18%	9	4%	5	2%	14	6%	226
7	Shan (S) State	20	10	50%	3	15%	3	15%	0	0%	2	10%	2	10%	20
8	Shan (E) State	21	11	52%	4	19%	1	5%	0	0%	3	14%	2	10%	21
9	Shan (N) State	30	3	10%	22	73%	1	3%	0	0%	1	3%	3	10%	30
10	Kayin State	3	1	33%	0	0%	2	67%	0	0%	0	0%	0	0%	3
11	Tanintharyi Division	53	26	49%	12	23%	3	6%	6	11%	3	6%	3	6%	53
12	Bago (East) Division	4	2	50%	0	0%	0	0%	0	0%	2	50%	0	0%	4
13	Bago (West) Division	10	3	30%	5	50%	1	10%	0	0%	1	10%	0	0%	10
14	Mon State	19	8	42%	6	32%	2	11%	3	16%	0	0%	0	0%	19
15	Rakhine State	10	1	10%	8	80%	1	10%	0	0%	0	0%	0	0%	10
16	Yangon Division	853	268	31%	273	32%	83	10%	64	8%	87	10%	78	9%	853
17	Ayeyarwady Division	150	45	30%	65	43%	17	11%	2	1%	18	12%	3	2%	150
State & Division Total		1666	552	33%	591	35%	175	11%	94	6%	146	9%	108	6%	1666
NS+ TB patients; unknown HIV status (NTP)		1650	549	33%	589	36%	167	10%	94	6%	144	9%	107	6%	1650
Other Unit		728	12	2%	399	55%	175	24%	32	4%	63	9%	47	6%	728
NS+ TB patients; unknown HIV status (Other units)		281	12	4%	160	57%	10	4%	28	10%	35	12%	36	13%	281
Union of Myanmar		2394	564	24%	990	41%	350	15%	126	5%	209	9%	155	6%	2394
NS+ TB patients; unknown HIV status (Union)		1931	561	29%	749	39%	177	9%	122	6%	179	9%	143	7%	1931

TREATMENT OUTCOME OF TB/HIV PATIENTS (2006 COHORT)

Sr.No.	Reporting units	OTHER CASES													
		Total	Cured		Completed		Died		Failure		Defaulted		Transfer out		Total
			No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	
1	NTP	16	3	19%	2	13%	8	50%	0	0%	2	13%	1	6%	16
2	Other Units	447	0	0%	239	53%	165	37%	4	1%	28	6%	11	2%	447
Total		463	3	1%	241	52%	173	37%	4	1%	30	6%	12	3%	463

NATIONAL TUBERCULOSIS PROGRAMME
TREATMENT OUTCOME OF PRIMARY COMPLEX AND TB MENINGITIS (2006 COHORT)

Annex- 17

Union

Sr.No.	State/ Division	PRIMARY COMPLEX								TB MENINGITIS						
		Total No. Reg pts	Completed		Died	Defaulted		Transfer out	Total	Total No. Reg pts	Comple- ted	Died	Defaulted	Transfer out	Total	
			No	Rate		No	Rate									
1	Kachin State	1081	1037	96%	4	36	3%	4	1081	0	0	0	0	0	0	
2	Kayah State	426	368	86%	2	29	7%	27	426	1	1	0	0	0	1	
3	Chin State	332	315	95%	2	15	5%	0	332	6	6	0	0	0	6	
4	Sagaing Division	2853	2752	96%	22	56	2%	23	2853	40	25	10	5	0	40	
5	Magway Division	2036	1948	96%	8	13	1%	67	2036	14	13	1	0	0	14	
6	Mandalay Division	2423	2327	96%	37	35	1%	24	2423	33	26	6	1	0	33	
7	Shan (S) State	571	551	96%	5	10	2%	5	571	6	3	1	1	1	6	
8	Shan (E) State	370	344	93%	3	23	6%	0	370	8	4	2	2	0	8	
9	Shan (N) State	745	670	90%	6	63	8%	6	745	20	15	0	3	2	20	
10	Kayin State	783	695	89%	3	70	9%	15	783	5	4	0	1	0	5	
11	Tanintharyi Division	1950	1548	79%	7	317	16%	78	1950	21	16	1	2	2	21	
12	Bago (East) Division	760	730	96%	10	16	2%	4	760	5	3	1	1	0	5	
13	Bago (West) Division	1128	1067	95%	7	51	5%	3	1128	11	9	2	0	0	11	
14	Mon State	955	906	95%	9	36	4%	4	955	6	5	1	0	0	6	
15	Rakhine State	765	745	97%	4	16	2%	0	765	46	43	1	0	2	46	
16	Yangon Division	3230	3072	95%	20	116	4%	22	3230	106	87	8	9	2	106	
17	Ayeyarwady Division	1791	1725	96%	18	43	2%	5	1791	37	32	3	2	0	37	
State & Division Total		22199	20800	94%	167	945	4%	287	22199	365	292	37	27	9	365	
NS+ TB patients, Unknown HIV status (NTP)		22101	20736	94%	143	938	4%	284	22101	361	289	36	27	9	361	
Other Unit		2852	2660	93%	46	115	4%	31	2852	77	43	24	5	5	77	
NS+ TB patients, Unknown HIV status (Other units)		2790	2615	94%	35	110	4%	30	2790	31	20	7	0	4	31	
Union of Myanmar		25051	23460	94%	213	1060	4%	318	25051	442	335	61	32	14	442	
NS+ TB patients, unknown HIV status (Union)		24891	23351	94%	178	1048	4%	314	24891	392	309	43	27	13	392	

TREATMENT OUTCOME OF TB/HIV PATIENTS IN 2007 (2006 COHORT)

Sr.No.	Reporting units	PRIMARY COMPLEX										TB MENINGITIS					
		Total No. Reg pts	Completed		Died	Defaulted		Transfer out	Total	Total No. Reg pts	Comple- ted	Died	Defaulted	Transfer out	Total		
			No	Rate		No	Rate										
1	NTP	98	64	65%	24	7	7%	3	98	4	3	1	0	0	4		
2	Other Units	62	45	73%	11	5	8%	1	62	46	23	17	5	1	46		
Total		160	109	68%	35	12	8%	4	160	50	26	18	5	1	50		

OTHER REPORTING UNITS

Caes finding activities

Block (1)

Annex - 18

Sr. No.	Reporting units	PULMONARY TUBERCULOSIS																				Total	Other		Total		Extra Pulmonary TB		Total		Total																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		SMEAR POSITIVE										Total		Smear Negative																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		New Cases					Previously treated cases																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
M	F	T	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M

OTHER REPORTING UNITS

Age and sex distribution of new smear positive TB patients

Block 2

Sr.No	Reporting units	AGE GROUP (YEAR)																TOTAL			
		0-14		15-24		25 - 34		35 - 44		45 - 54		55 - 64		≥ 65							
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	T	
1	Aung San hospital	0	0	7	4	21	9	17	3	13	4	8	4	12	3	78	27	105			
2	Patheingyi hospital	1	0	5	2	14	4	9	5	7	5	2	3	1	0	39	19	58			
3	East YGH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4	Mingalardon hospital	0	0	1	1	15	6	7	3	1	1	1	0	0	0	25	11	36			
5	Wabargi hospital	0	3	9	7	56	16	43	11	14	1	0	1	0	0	122	39	161			
6	No.1MBH (PyinOoLwin)	0	0	23	0	17	9	26	2	22	2	3	1	3	0	94	14	108			
7	AZG (Ygn)	7	5	29	36	147	81	93	40	47	15	11	9	8	1	342	187	529			
8	AZG (Kachin)	1	2	39	17	66	26	57	25	32	11	8	4	9	1	212	86	298			
9	PSI	15	17	360	284	616	349	568	270	459	183	244	134	198	119	2460	1356	3816			
10	AZG (Shan-North)	0	2	26	17	93	26	65	28	38	11	12	6	9	3	243	93	336			
	Total	24	29	499	368	1045	526	885	387	633	233	289	162	240	127	3615	1832	5447			

Primary complex cases and TB meningitis cases by age group

Sr.No	Reporting units	PC and TBM cases by age group					
		PC		Total		TBM	
		<15	≥15	<15	≥15	<15	≥15
1	Aung San hospital	0	0	0	0	0	0
2	Patheingyi hospital	28	2	30	0	0	0
3	East YGH	62	0	62	0	0	0
4	Mingalardon hospital	0	0	0	0	0	0
5	Wabargi hospital	0	0	0	0	0	0
6	No.1MBH (PyinOoLwin)	0	0	0	0	0	0
7	AZG (Ygn)	58	45	103	13	13	26
8	AZG (Kachin)	42	87	129	2	8	10
9	PSI	2019	24	2043	2	6	8
10	AZG (Shan-North)	0	0	0	0	1	1
	Total	2209	158	2367	17	28	45

OTHER REPORTING UNITS

NOTIFIED TB PATIENTS ACCORDING TO CATEGORY OF REGIMENS (2007)

Block 3

Sr.No	Reporting 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 hospital	105	72	25	202	46	25	18	165	254	0	0	0	456
2	Patheingyi hospital	61	48	15	124	58	3	7	52	120	7	27	34	278
3	East YGH	12	40	2	54	10	2	0	2	14	0	69	69	137
4	Mingalardon hospital	35	201	31	267	2	0	2	37	41	0	0	0	308
5	Wabargi hospital	128	358	271	757	33	21	8	64	126	51	12	63	946
6	No.1MBH (PyinOoLwin)	108	98	0	206	39	0	0	0	39	0	8	8	253
7	AZG (Ygn)	533	528	590	1651	102	11	234	425	772	37	64	101	2524
8	AZG (Kachin)	298	274	234	806	51	16	40	84	191	33	26	59	1056
9	PSI	3837	1459	235	5531	312	56	115	106	589	1348	2675	4023	10143
10	AZG (Shan-North)	334	107	101	542	35	11	72	24	142	0	0	0	684
	Total	5451	3185	1504	10140	688	145	496	959	2288	1476	2881	4357	16785

LABORATORY PERFORMANCE (2007)

Block 4

Sr.No	Reporting units	A		B		C		D	
		No. of suspects(Dx) examined by microscopy for case finding		No. of smear positive pts detected out of suspects (Dx)		No. of patients examined by microscopy for follow-up		No. of smear positive out of follow-up patients	
1	Aung San hospital	No. of Pts	No. of slides	No. of Pts	No. of slides	No. of Pts	No. of slides	No. of Pts	No. of slides
2	Patheingyi hospital	169	432	95	227	712	1167	169	280
3	East YGH	1316	3610	311	464	808	1748	231	256
4	Mingalardon hospital	146	438	22	44	34	68	0	0
5	Wabargi hospital	154	NA	40	NA	112	NA	18	NA
6	No.1MBH (PyinOoLwin)	1685	NA	292	NA	691	NA	23	NA
7	AZG (Ygn)	631	NA	106	NA	630	NA	0	0
8	AZG (Kachin)	6522	NA	1451	NA	5657	NA	720	NA
9	PSI	3297	9878	655	1956	1850	4149	386	791
10	AZG (Shan-North)	17687	36362	3514	7189	14387	21554	1057	1969
	Total	2692	5964	494	1070	2109	3879	402	830
	Total	34299	56684	6980	10950	26990	32555	3006	4126

NA = Not available

OTHER REPORTING UNITS

SPUTUM CONVERSION

Block 5

Sr.No.	Reporting units	Registered cases	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 hospital	105	40	58	55%	2	2%	5	105
2	Patheingyi hospital	58	23	33	57%	2	3%	0	58
3	East YGH								
4	Mingalardon hospital	36	10	26	72%	0	0%	0	36
5	Wabargi hospital	161	33	128	80%	0	0%	0	161
6	No.1MBH (PyinOoLwin)	108	0	108	100%	0	0%	0	108
7	AZG (Ygn)	529	112	299	57%	51	10%	67	529
8	AZG (Kachin)	298	101	144	48%	23	8%	30	298
9	PSI	3816	357	2880	75%	404	11%	175	3816
10	AZG (Shan-North)	336	93	98	29%	55	16%	90	336
Total		5447	769	3774	69%	537	10%	367	5447

OTHER REPORTING UNITS

TREATMENT OUTCOMES

Sr. No	Reporting units	SMEAR POSITIVE CASES															
		Total	Cured		Completed		TSR	Died		Failure		Defaulted		Transfer out		Total	
			No	Rate	No	Rate		No	Rate	No	Rate	No	Rate	No	Rate		
1	Aung San hospital	79	42	53%	5	6%	59%	17	22%	4	5%	2	3%	9	11%	79	
2	Patheingyi hospital	98	49	50%	11	11%	61%	8	8%	3	3%	8	8%	19	19%	98	
3	East YGH	0	0	0%	0	0%	0%	0	0%	0	0%	0	0%	0	0%	0	
4	Mingalardon hospital	0	0	0%	0	0%	0%	0	0%	0	0%	0	0%	0	0%	0	
5	Wabargi hospital	120	60	50%	0	0%	50%	46	38%	7	6%	5	4%	2	2%	120	
6	No.1MBH (PyinOolwin)	100	98	98%	0	0%	98%	0	0%	0	0%	2	2%	0	0%	100	
7	AZG (Ygn)	1504	981	65%	38	3%	68%	127	8%	190	13%	140	9%	28	2%	1504	
8	AZG (Kachin)	474	312	66%	41	9%	74%	27	6%	36	8%	34	7%	24	5%	474	
9	PSI	3543	2559	72%	304	9%	81%	141	4%	201	6%	247	7%	91	3%	3543	
10	AZG (Shan-North)	226	128	57%	13	6%	62%	20	9%	38	17%	13	6%	14	6%	226	
	Total	6144	4229	69%	412	7%	76%	386	6%	479	8%	451	7%	187	3%	6144	

Sr. No	Reporting units	RELAPSE 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 hospital	30	13	43%	1	3%	7	23%	3	10%	0	0%	6	20%	30
2	Patheingyi hospital	71	13	18%	4	6%	11	15%	17	24%	13	18%	13	18%	71
3	East YGH	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
4	Mingalardon hospital	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0
5	Wabargi hospital	115	20	17%	39	34%	45	39%	2	2%	4	3%	5	4%	115
6	No.1MBH (PyinOolwin)	53	38	72%	15	28%	0	0%	0	0%	0	0%	0	0%	53
7	AZG (Ygn)	186	97	52%	15	8%	30	16%	30	16%	9	5%	5	3%	186
8	AZG (Kachin)	98	31	32%	29	30%	21	21%	5	5%	6	6%	6	6%	98
9	PSI	284	194	68%	13	5%	23	8%	34	12%	11	4%	9	3%	284
10	AZG (Shan-North)	36	8	22%	11	31%	13	36%	3	8%	1	3%	0	0%	36
	Total	873	414	47%	127	15%	150	17%	94	11%	44	5%	44	5%	873

Sr. No	Reporting units	SMEAR NEGATIVE CASES											
		Total	Completed		Died		Failure		Defaulted		Transfer out		Total
			No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	
1	Aung San Hos:	65	43	66%	6	9%	2	3%	5	8%	9	14%	65
2	Patheingyi Hos:	93	55	59%	10	11%	0	0%	10	11%	18	19%	93
3	East YGH	0	0	0%	0	0%	0	0%	0	0%	0	0%	0
4	Mingalardon Hos:	0	0	0%	0	0%	0	0%	0	0%	0	0%	0
5	Wabargi Hospital	623	400	64%	152	24%	13	2%	42	7%	16	3%	623
6	No.1MBH (PyinOolwin)	126	126	100%	0	0%	0	0%	0	0%	0	0%	126
7	AZG (Ygn)	1210	884	73%	130	11%	79	7%	101	8%	16	1%	1210
8	AZG (Kachin)	286	200	70%	50	17%	3	1%	21	7%	12	4%	286
9	PSI	2468	1951	79%	152	6%	46	2%	250	10%	69	3%	2468
10	AZG (Shan-North)	265	171	65%	53	20%	9	3%	19	7%	13	5%	265
	Total	5136	3830	75%	553	11%	152	3%	448	9%	153	3%	5136

OTHER REPORTING UNITS

TREATMENT OUTCOMES OF TREATMENT AFTER DEFAULT (2006 COHORT)

Sr.No.	Reporting units	TOTAL	Cured		Completed		Died		Failure		Defaulted		Transfer		Total
			No	CR	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	
1	Aung San hospital	24	9	38%	2	8%	5	21%	2	8%	2	8%	4	17%	24
2	Patheingyi hospital	0	0												0
3	East YGH	0	0												0
4	Mingalardon hospital	0	0												0
5	Wabargi hospital	40	3	8%	4	10%	29	73%	0	0%	3	8%	1	3%	40
6	No.1MBH (PyinOolwin)	0	0												0
7	AZG (Ygn)	50	18	36%	4	8%	7	14%	6	12%	12	24%	3	6%	50
8	AZG (Kachin)	34	9	26%	14	41%	5	15%	1	3%	3	9%	2	6%	34
9	PSI	58	42	72%	2	3%	4	7%	2	3%	7	12%	1	2%	58
10	AZG (Shan-North)	9	2	22%	0	0%	0	0%	3	33%	2	22%	2	22%	9
	Total	215	83	39%	26	12%	50	23%	14	7%	29	13%	13	6%	215

TREATMENT OUTCOMES OF TREATMENT AFTER FAILURE (2006 COHORT)

Sr.No.	Reporting units	TOTAL	Cured		Completed		Died		Failure		Defaulted		Transfer		Total
			No	CR	No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	
1	Aung San hospital	0	0												0
2	Patheingyi hospital	0	0												0
3	East YGH	0	0												0
4	Mingalardon hospital	0	0												0
5	Wabargi hospital	0	0												0
6	No.1MBH (PyinOolwin)	0	0												0
7	AZG (Ygn)	228	109	48%	7	3%	42	18%	45	20%	20	9%	5	2%	228
8	AZG (Kachin)	39	21	54%	3	8%	4	10%	3	8%	4	10%	4	10%	39
9	PSI	188	108	57%	13	7%	6	3%	26	14%	19	10%	16	9%	188
10	AZG (Shan-North)	30	11	37%	6	20%	3	10%	4	13%	5	17%	1	3%	30
	Total	485	249	51%	29	6%	55	11%	78	16%	48	10%	26	5%	485

OTHER REPORTING UNITS

TREATMENT OUTCOMES

Sr. No	Reporting units	OTHER CASES											
		Total	Cured		Completed		Died		Failure		Defaulted		Total
			No	Rate	No	Rate	No	Rate	No	Rate	No	Rate	
1	Aung San hospital	0	0										0
2	Patheingyi hospital	84	4	5%	20	24%	8	10%	6	7%	16	19%	84
3	East YGH	0	0										0
4	Mingalardon hospital	0	0										0
5	Wabargi hospital	37	0	0%	14	38%	22	59%	0	0%	0	0%	37
6	No.1MBH (PyinOoLwin)	0	0										0
7	AZG (Ygn)	559	0	0%	336	60%	141	25%	24	4%	43	8%	559
8	AZG (Kachin)	8	0	0%	4	50%	2	25%	0	0%	2	25%	8
9	PSI	16	4	25%	10	63%	0	0%	2	13%	0	0%	16
10	AZG (Shan-North)	24	4	17%	15	63%	2	8%	0	0%	2	8%	24
	Total	728	12	2%	399	55%	175	24%	32	4%	63	9%	728

Sr. No.	Reporting units	PRIMARY COMPLEX								TB MENINGITIS						
		Total No. Reg pts	Completed		Died	Defaulted		Transfer out	Total	Total No Reg pts	Comple- ted	Died	Defaulted	Transfer out	Total	
			No	Rate		No	Rate									
1	Aung San hospital	4	4	100%	0	0	0%	0	4	0					0	
2	Patheingyi hospital	14	13	93%	0	1	7%	0	14	0					0	
3	East YGH	0							0	0					0	
4	Mingalardon hospital	0							0	0					0	
5	Wabargi hospital	0							0	0					0	
6	No.1MBH (PyinOoLwin)	0							0	0					0	
7	AZG (Ygn)	156	131	84%	10	15	10%	0	156	55	27	19	4	5	55	
8	AZG (Kachin)	177	140	79%	16	13	7%	8	177	11	7	3	1	0	11	
9	PSI	2496	2368	95%	19	86	3%	23	2496	1	1	0	0	0	1	
10	AZG (Shan-North)	5	4	80%	1	0	0%	0	5	10	8	2	0	0	10	
	Total	2852	2660	93%	46	115	4%	31	2852	77	43	24	5	5	77	

Reporting Status (2007)

Annex - 19

STATE / DIVISION	DOTS Townships	1 st Quarter 2007			2 nd Quarter 2007			3 rd Quarter 2007			4 th Quarter 2007			Annual		
		No	%	NR	No	%	NR	No	%	NR	No	%	NR	No	%	NR
Kachin State	18	12	67%	6	12	67%	6	11	61%	7	12	67%	6	13	72%	5
Kayah State	7	7	100%	0	5	71%	2	7	100%	0	7	100%	0	7	100%	0
Chin (S)	4	4	100%	0	3	75%	1	3	75%	1	2	50%	2	4	100%	0
Chin (N)	5	5	100%	0	5	100%	0	5	100%	0	5	100%	0	5	100%	0
Sagaing Division	37	37	100%	0	37	100%	0	37	100%	0	37	100%	0	37	100%	0
Magway Division	25	25	100%	0	25	100%	0	25	100%	0	25	100%	0	25	100%	0
Mandalay Division	31	31	100%	0	31	100%	0	31	100%	0	31	100%	0	31	100%	0
Shan (S) State	21	19	90%	2	20	95%	1	20	95%	1	21	100%	0	21	100%	0
Shan (E) State	10	9	90%	1	9	90%	1	9	90%	1	9	90%	1	9	90%	1
Shan (N) State	24	18	75%	6	19	79%	5	19	79%	5	19	79%	5	20	83%	4
Kayin State	7	7	100%	0	7	100%	0	7	100%	0	7	100%	0	7	100%	0
Tanintharyi Division	10	10	100%	0	10	100%	0	10	100%	0	10	100%	0	10	100%	0
Bago (E) Division	14	14	100%	0	14	100%	0	14	100%	0	14	100%	0	14	100%	0
Bago (W) Division	14	14	100%	0	14	100%	0	14	100%	0	14	100%	0	14	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	16	94%	1	16	94%	1	17	100%	0	17	100%	0
Yangon Division	45	45	100%	0	45	100%	0	45	100%	0	45	100%	0	45	100%	0
Ayeyarwady Division	26	26	100%	0	26	100%	0	26	100%	0	26	100%	0	26	100%	0
Total townships	325	310	95%	15	308	95%	17	309	95%	16	311	96%	14	315	97%	10
																3%

Annual report had not been received from (10) Townships

Kachin State (5) Tsps 1. N'ganyan 2. Hsawlaw 3. Naungmun 4. Khaunglanbu 5. Sumprabum

Shan (N) State (4) Tsps 1. Kongyan 2. Panwine 3. Mongmaw 4. Manphant

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

NATIONAL TUBERCULOSIS PROGRAMME
EVALUATION OF TB CONTROL ACTIVITIES IN STATES / DIVISIONS (2006-2007)

Annex - 20

No. of Reported Township	No. of total Tsp.	State/ Division	Population	Estimated New Smear (+) case	Total New Smear Positive detected	Total notified TB cases	CDR	Prop: of SS(+) pul: TB cases out of all pul: TB cases	Ratio of NSS+ to NSS (-) cases and EP cases	Ratio of NSS+ to NSS (-) cases	Sputum Positivity Rate	Sputum Conversion Rate	Cure Rate	Treatment Success Rate (TSR)
13	18	Kachin State	1413935	1060	1372	4408	129%	54%	0.5:1	1:1	23%	88%	73%	81%
7	7	Kayah State	246372	185	127	565	69%	55%	0.3:1	1:1	11%	83%	76%	83%
9	9	Chin State	483175	362	143	1018	39%	41%	0.2:1	0.6:1	23%	87%	65%	78%
37	37	Sagaing Division	6200596	4650	3662	9702	79%	65%	0.7:1	1.7:1	11%	89%	74%	82%
25	25	Magway Division	5336907	4003	2230	8546	56%	50%	0.4:1	0.9:1	18%	89%	81%	89%
31	31	Mandalay Division	7861434	5896	3871	12355	66%	58%	0.5:1	1.2:1	21%	88%	79%	86%
21	21	Shan (S) State	2210733	1658	797	2771	48%	56%	0.4:1	1.1:1	15%	86%	73%	79%
9	10	Shan (E) State	713398	535	545	1630	102%	58%	0.6:1	1.2:1	23%	81%	62%	80%
19	24	Shan (N) State	2540130	1905	939	3859	49%	44%	0.3:1	0.7:1	24%	83%	65%	81%
7	7	Kayin State	1703357	1278	1012	3920	79%	42%	0.4:1	0.7:1	19%	90%	75%	82%
10	10	Tanintharyi Division	1558868	1169	842	5312	72%	38%	0.2:1	0.5:1	21%	84%	67%	76%
14	14	Bago (East) Division	3193668	2395	1992	6000	83%	54%	0.5:1	1:1	26%	93%	84%	90%
14	14	Bago (West) Division	2168784	1627	1642	4973	101%	47%	0.5:1	0.8:1	28%	89%	82%	86%
10	10	Mon State	2480596	1860	1660	5755	89%	46%	0.4:1	0.7:1	17%	89%	79%	87%
17	17	Rakhine State	3224360	2418	1816	5962	75%	47%	0.5:1	0.8:1	17%	91%	85%	91%
45	45	Yangon Division	6687623	11336	9164	25854	81%	57%	0.6:1	1.1:1	26%	90%	78%	85%
26	26	Ayeyarwady Division	7729880	5797	5327	13527	92%	56%	0.7:1	1.2:1	24%	93%	82%	91%
315	325	NTP	55753816	48135	37141	116157	77%	54%	0.5:1	1:1	20%	90%	79%	86%
Other reporting Units					5447	17390		58%	0.6:1	1.1:1	20%	79%	71%	78%
Union Total			5575381	48135	42588	133547	89%	54%	0.5:1	1:1	20%	88%	78%	85%

NATIONAL TUBERCULOSIS PROGRAMME
EVALUATION OF TB CONTROL ACTIVITIES IN TOWNSHIPS (2006-2007)

(Townships list) Annex- 20

Sr.No	TOWNSHIPS	Population	Estimated NewS(+) cases	Total New Smear Positive detected	Total notified TB cases	CDR	Prop: of SS(+) pul:TB cases out of all pul: TB cases	Ratio of NSS+ to NSS (-)cases and EP cases	Ratio of NSS+ to NSS (-)cases	Sputum Positivity Rate	Sputum Conversion Rate	Cure Rate	Treatment Success Rate
KACHIN STATE													
1	Bahmo	104197	78	103	243	132%	67%	0.9:1	1.7:1	35%	92%	89%	89%
2	Mansi	62814	47	49	93	104%	70%	1.3:1	2:1	59%	92%	85%	85%
3	Momauk	90491	68	27	73	40%	64%	0.6:1	1.7:1	34%	96%	100%	100%
4	Shwegu	80291	60	50	87	83%	73%	1.6:1	2.5:1	31%	100%	95%	95%
5	Mohynin	226366	170	111	409	65%	53%	0.4:1	1:1	25%	85%	61%	68%
6	Kamaing	128826	97	21	164	22%	33%	0.2:1	0.4:1	8%	82%	59%	73%
7	Mogaung	131359	99	171	559	174%	64%	0.5:1	2:1	26%	89%	75%	86%
8	Tanai	39130	29	53	133	181%	57%	0.8:1	1.1:1	26%	92%	61%	70%
9	Myitkyina	219498	165	388	1300	236%	48%	0.5:1	0.8:1	20%	87%	83%	85%
10	Chipway	20044	15	0	1	0%	100%						
11	Hsawlaw	18621	14	Nr.									
12	N Jan Yan	24346	18	Nr.									
13	Waingmaw	110313	83	329	1031	398%	56%	0.5:1	1.1:1	31%	88%	45%	71%
14	Putao	84363	63	66	311	104%	40%	0.3:1	0.5:1	11%	76%	75%	79%
15	Khaunglanbu	21140	16	Nr.									
16	Machanbaw	23297	17	4	4	23%	100%			6%	100%	80%	100%
17	Nogmun	12206	9	Nr.									
18	Sumprabum	16633	12	Nr.									
	Total	1413935	1060	1372	4408	129%	54%	0.5:1	1:1	23%	88%	73%	81%

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

Nr. 5 Tsp:

N'ganyan Hsawlaw

Naungmun

Khaunglanbu

Sumprabum

Sr.No	TOWNSHIPS	Population	Estimated NewS(+) cases	Total New Smear Positive detected	Total notified TB cases	CDR	Prop. of SS(+) pul:TB cases out of all pul: TB cases	Ratio of NSS+ to NSS (-)cases and EP cases	Ratio of NSS+ to NSS (-)cases	Sputum Positivity Rate	Sputum Conversion Rate	Cure Rate	Treatment Success Rate
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KAYAH STATE

1	Bawlake	9658	7	16	35	221%	91%	1.1:1	0.8:1	30%	88%	50%	100%
2	Masai	4290	3	6	9	186%	75%	2:1	3:1	33%	33%	75%	100%
3	Pasaung	15094	11	3	14	27%	50%	0.3:1	0.6:1	7%	100%	100%	100%
4	Loikaw	115296	86	62	353	72%	47%	0.2:1	0.8:1	11%	76%	67%	73%
5	Dimawhso	69601	52	27	128	52%	53%	0.3:1	0.9:1	8%	96%	94%	94%
6	Phruhso	27302	20	7	19	34%	69%	0.8:1	2:1	3%	100%	0%	100%
7	Shataw	5131	4	6	7	156%	100%	1:0	1:0	36%	100%	100%	100%
	Total	246372	185	127	565	69%	55%	0.3:1	1:1	11%	83%	76%	83%

CHIN STATE

1	Falam	48136	36	21	104	58%	54%	0.3:1	1:1	24%	95%	60%	60%
2	Hakha	49723	37	19	259	51%	33%	0.1:1	0.5:1	10%	84%	86%	90%
3	Htantalan	57933	43	9	83	21%	47%	0.1:1	0.9:1	12%	100%	89%	100%
4	Tiddim	86941	65	15	43	23%	61%	0.6:1	1.3:1	25%	100%	58%	96%
5	Tunzan	29702	22	11	97	49%	29%	0.1:1	0.3:1	75%	100%	100%	100%
6	Mindat	41152	31	14	92	45%	38%	0.2:1	0.6:1	18%	71%	70%	90%
7	Kanpetlet	20231	15	3	17	20%	40%	0.0:1	0.0:1	5%	50%	100%	100%
8	Matupi	65091	49	9	243	18%	16%	0.0:1	0.1:1	9%	80%	25%	56%
9	Paletwa	84266	63	42	80	66%	77%	1.3:1	3:1	39%	85%	45%	53%
	Total	483175	362	143	1018	39%	41%	0.2:1	0.6:1	23%	87%	65%	78%

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SAGAING DIVISION													
1	Sagaing	389004	292	220	484	75%	74%	0.9:1	2.7:1	10%	88%	73%	77%
2	Myaung	179858	135	125	196	93%	94%	2:1	13.9:1	9%	95%	85%	86%
3	Myinmu	162192	122	189	426	155%	57%	0.8:1	1.3:1	7%	98%	85%	90%
4	Shwebo	343413	258	330	668	128%	81%	1.1:1	3.9:1	21%	88%	78%	82%
5	Kanbalu	304859	229	96	255	42%	79%	0.7:1	3.3:1	8%	86%	85%	88%
6	Khin-U	191787	144	71	267	49%	71%	0.4:1	2.3:1	7%	97%	98%	98%
7	Kyunhla	86245	65	73	141	113%	77%	1.1:1	3.2:1	15%	70%	77%	83%
8	Tabayin	180558	135	70	171	52%	76%	0.7:1	2.9:1	6%	97%	94%	94%
9	Taze	213132	160	60	155	38%	69%	0.7:1	1.8:1	8%	90%	95%	98%
10	Wetlet	284932	214	93	226	44%	77%	0.8:1	2.7:1	8%	91%	82%	82%
11	Ye-U	168643	126	54	159	43%	72%	0.6:1	2.2:1	10%	89%	82%	88%
12	Monywa	403911	303	206	619	68%	67%	0.6:1	1.7:1	13%	78%	63%	73%
13	Ayadaw	239004	179	93	293	52%	56%	0.5:1	1.1:1	6%	82%	91%	94%
14	Budalin	186759	140	112	320	80%	72%	0.6:1	2.3:1	9%	79%	81%	82%
15	ChaungU	137557	103	63	212	61%	76%	0.5:1	2.6:1	7%	98%	85%	85%
16	Kani	166194	125	40	116	32%	69%	0.6:1	1.9:1	9%	100%	97%	97%
17	Pale	179509	135	75	165	56%	82%	0.9:1	4.4:1	11%	83%	79%	79%
18	Salingyi	175310	131	110	201	84%	86%	1.4:1	5.8:1	9%	96%	76%	85%
19	Yinmabin	170612	128	57	126	45%	73%	0.9:1	2.7:1	4%	96%	83%	90%
20	Katha	157521	118	118	353	100%	52%	0.5:1	0.9:1	13%	94%	66%	76%
21	Bannaik	102319	77	37	57	48%	89%	2.1:1	7.4:1	8%	89%	91%	94%
22	Htigyaing	121493	91	89	159	98%	76%	1.5:1	3:1	19%	74%	73%	73%
23	Indaw	133693	100	71	117	71%	83%	1.9:1	4.4:1	4%	94%	88%	89%
24	Kawlin	151797	114	78	220	69%	64%	0.6:1	1.6:1	7%	90%	77%	79%
25	Pinlebu	131454	99	55	135	56%	74%	0.7:1	2.6:1	11%	85%	80%	80%
26	Wuntho	80707	61	34	52	56%	84%	2.4:1	4.9:1	8%	74%	89%	89%
27	Kalay	312217	234	249	1067	106%	47%	0.3:1	0.7:1	21%	87%	64%	73%
28	Kalewa	71384	54	50	100	93%	80%	1.3:1	3.3:1	10%	96%	88%	88%
29	Minkin	126580	95	74	152	78%	81%	1.1:1	3.7:1	7%	86%	85%	88%
30	Tamu	95089	71	225	760	315%	54%	0.5:1	0.9:1	17%	94%	79%	87%
31	Mawlaik	60537	45	70	146	154%	79%	1:1	3.5:1	19%	96%	75%	83%
32	Phaungbyin	119927	90	129	218	143%	84%	1.6:1	5:1	19%	93%	56%	85%
33	Khamti	40033	30	80	414	266%	37%	0.3:1	0.4:1	14%	86%	46%	65%
34	Homalin	184022	138	101	382	73%	42%	0.4:1	0.6:1	14%	83%	47%	68%
35	Layshi	19937	15	14	33	94%	71%	0.9:1	2:1	24%	64%	60%	90%
36	Lahel	53867	40	43	59	106%	80%	3.3:1	3.9:1	37%	100%	53%	100%
37	Nanyun	74540	56	8	78	14%	75%	0.1:1	2:1	21%	50%	0%	0%
	Total	6200596	4650	3662	9702	79%	65%	0.7:1	1.7:1	11%	89%	74%	82%

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MAGWE DIVISION													
1	Magway	379022	284	322	1366	113%	54%	0.3:1	1:1	23%	82%	75%	81%
2	Chauk	309694	232	129	646	56%	30%	0.3:1	0.4:1	18%	88%	62%	86%
3	Taundwingyi	316581	237	113	422	48%	45%	0.4:1	0.8:1	13%	94%	87%	87%
4	Myothit	203658	153	110	229	72%	53%	1:1	1.1:1	36%	100%	98%	98%
5	Natmauk	306813	230	89	166	39%	74%	1.3:1	2.6:1	28%	93%	49%	85%
6	Yenanchaung	246774	185	143	555	77%	43%	0.4:1	0.7:1	18%	92%	88%	89%
7	Pakokku	423338	318	127	548	40%	48%	0.3:1	0.9:1	17%	87%	80%	85%
8	Yesago	347568	261	61	253	23%	46%	0.3:1	0.8:1	13%	100%	95%	95%
9	Pauk	210310	158	110	831	70%	64%	0.2:1	1.7:1	20%	98%	96%	98%
10	Myaing	344613	258	127	291	49%	90%	0.8:1	8.5:1	34%	83%	85%	98%
11	Seikphyu	127055	95	60	111	63%	93%	1.4:1	12:1	55%	100%	98%	98%
12	Gantgaw	150616	113	54	146	48%	58%	0.6:1	1.4:1	16%	94%	74%	88%
13	Saw	91701	69	16	37	23%	68%	1:1	1.8:1	19%	100%	79%	79%
14	Htinlin	78692	59	5	21	8%	55%	0.3:1	1:1	46%	80%	100%	100%
15	Minbu	223577	168	88	559	52%	43%	0.2:1	0.7:1	12%	81%	70%	72%
16	Ngape	54443	41	27	92	66%	59%	0.4:1	1.4:1	17%	89%	78%	96%
17	Pwintphyu	217513	163	38	197	23%	50%	0.2:1	1:1	8%	95%	78%	98%
18	Saytoketaya	58030	44	29	89	67%	40%	0.5:1	0.6:1	22%	83%	46%	85%
19	Salin	314753	236	126	410	53%	50%	0.5:1	1:1	6%	80%	72%	94%
20	Thayet	152582	114	112	341	98%	48%	0.5:1	0.8:1	28%	79%	76%	85%
21	Minhla	152549	114	44	204	38%	62%	0.3:1	1.3:1	31%	100%	98%	98%
22	Kanna	110129	83	82	232	99%	55%	0.6:1	1.2:1	42%	95%	81%	87%
23	Sinpaungwae	142603	107	36	135	34%	53%	0.4:1	1:1	18%	92%	92%	95%
24	Mindon	88671	67	34	177	51%	38%	0.3:1	0.6:1	26%	88%	98%	98%
25	Aunglan	285622	214	148	488	69%	47%	0.5:1	0.9:1	25%	89%	91%	92%
	Total	5336907	4003	2230	8546	56%	50%	0.4:1	0.9:1	18%	89%	81%	89%

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MANDALAY DIVISION													
1	Amarapura	189309	142	88	318	62%	53%	0.4:1	1:1	26%	94%	63%	81%
2	Aungmyaytharzan	244603	183	197	770	107%	57%	0.4:1	1.1:1	23%	91%	88%	88%
3	Chanayetharzan	232817	175	140	540	80%	54%	0.4:1	1:1	15%	86%	82%	86%
4	Chanmyatharzi	163858	123	241	749	196%	62%	0.6:1	1.4:1	21%	91%	89%	91%
5	Maharaungmyae	212897	160	186	668	116%	53%	0.4:1	1:1	23%	95%	87%	90%
6	Pyigyitagonn	54651	41	139	502	339%	52%	0.4:1	1:1	26%	88%	67%	84%
7	Patheingyi	169637	127	107	360	84%	63%	0.5:1	1.3:1	23%	89%	91%	91%
8	Meiktilar	466250	350	100	637	29%	41%	0.2:1	0.4:1	17%	88%	64%	76%
9	Mahlaing	249499	187	59	223	32%	48%	0.4:1	0.8:1	19%	80%	86%	95%
10	Tharzi	246115	185	92	301	50%	62%	0.5:1	1.5:1	19%	88%	41%	96%
11	Wundwin	297522	223	111	229	50%	71%	1:1	2.2:1	14%	91%	77%	77%
12	Myingan	433558	325	190	531	58%	57%	0.6:1	1.1:1	17%	88%	86%	86%
13	Kyaukpadaung	392232	294	232	507	79%	61%	0.9:1	1.4:1	18%	90%	85%	85%
14	Natogyi	283408	213	61	153	29%	67%	0.9:1	1.7:1	21%	89%	78%	84%
15	Ngazun	230782	173	43	142	25%	62%	0.5:1	1.3:1	7%	100%	97%	97%
16	Taungtha	347310	260	97	283	37%	64%	0.6:1	1.6:1	29%	86%	72%	94%
17	NyaungU	338703	254	131	478	52%	45%	0.4:1	0.7:1	23%	90%	86%	89%
18	Pyin oo Lwin	202600	152	65	373	43%	49%	0.2:1	0.8:1	13%	85%	73%	74%
19	Madayar	253539	190	150	570	79%	64%	0.4:1	1.6:1	32%	79%	50%	76%
20	Mogok	187327	140	86	290	61%	49%	0.5:1	0.9:1	15%	90%	88%	89%
21	Sintgu	138131	104	121	359	117%	57%	0.6:1	1:1	27%	93%	82%	94%
22	Thabeikkyin	72714	55	98	212	180%	85%	1.1:1	4.7:1	32%	80%	47%	76%
23	Yamethin	303329	227	100	293	44%	59%	0.6:1	1.2:1	33%	96%	95%	95%
24	Lewei	311553	234	148	270	63%	78%	1.5:1	3.2:1	33%	95%	68%	81%
25	Pyawbwei	344022	258	102	384	40%	55%	0.4:1	1.1:1	29%	93%	75%	99%
26	Pyinmana	366666	275	272	763	99%	59%	0.6:1	1.3:1	29%	83%	86%	86%
27	Tatkone	280819	211	90	205	43%	66%	0.9:1	1.8:1	21%	83%	83%	83%
28	Kyaukse	248086	186	195	690	105%	52%	0.4:1	1:1	28%	75%	82%	85%
29	Myittha	224851	169	106	202	63%	70%	1.2:1	2.2:1	24%	94%	78%	84%
30	Sintgine	166238	125	53	200	43%	47%	0.4:1	0.8:1	12%	100%	86%	86%
31	TadaOo	208408	156	71	153	45%	78%	1.1:1	3:1	6%	79%	81%	84%
	Total	7861434	5896	3871	12355	66%	58%	0.5:1	1.2:1	21%	88%	79%	86%

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SHAN (SOUTH) STATE													
1	Linkhay	60370	45	18	84	40%	35%	0.3:1	0.5:1	19%	94%	88%	88%
2	Maukme	29422	22	3	7	14%	100%	1:1	1:0	7%	67%	0%	0%
3	Monai	52332	39	18	40	46%	72%	1.1:1	2.3:1	13%	100%	92%	100%
4	Mangpang	36284	27	4	12	15%	50%	0.5:1	1:1		50%	0%	0%
5	Loilem	146315	110	24	86	22%	70%	0.5:1	1.8:1	17%	67%	75%	75%
6	Kunhein	71757	54	56	204	104%	52%	0.4:1	0.9:1	18%	93%	49%	74%
7	Kyeethi	102415	77	4	14	5%	73%	0.7:1	1.3:1	53%	50%	75%	83%
8	Laikha	64125	48	28	64	58%	75%	0.8:1	2.8:1	13%	100%	100%	100%
9	Mongaking	118905	89	28	66	31%	58%	0.8:1	1.3:1	15%	46%	67%	87%
10	Mongshu	62394	47	35	95	75%	55%	0.6:1	1.2:1	19%	100%	100%	100%
11	Namsan	89281	67	26	167	39%	44%	0.2:1	0.7:1	20%	100%	52%	70%
12	Taunggyi	338675	254	204	703	80%	50%	0.5:1	0.8:1	12%	84%	68%	73%
13	Hopone	98528	74	20	53	27%	59%	0.6:1	1.3:1	23%	100%	90%	90%
14	Hpekon	75809	57	30	204	53%	42%	0.2:1	0.7:1	19%	90%	95%	100%
15	Hsiseng	103755	78	29	95	37%	60%	0.5:1	1.3:1	13%	76%	66%	66%
16	Kalaw	149864	112	78	210	69%	61%	0.7:1	1.4:1	18%	77%	70%	71%
17	Lauksauk	128931	97	44	124	46%	62%	0.6:1	1.3:1	17%	82%	48%	65%
18	Pindaya	77342	58	13	44	22%	41%	0.4:1	0.7:1	14%	92%	100%	100%
19	Pinlaung	153632	115	56	158	49%	83%	0.6:1	4.7:1	24%	95%	90%	90%
20	Nyaungshwe	177433	133	69	230	52%	63%	0.5:1	1.5:1	11%	94%	83%	83%
21	Ywangan	73164	55	10	111	18%	41%	0.1:1	0.6:1	5%	90%	100%	100%
Total		2210733	1658	797	2771	48%	56%	0.4:1	1.1:1	15%	86%	73%	79%
SHAN (EAST) STATE													
1	Kengtong	184379	138	157	578	114%	51%	0.4:1	0.9:1	25%	77%	49%	80%
2	Mongkhat	49251	37	3	13	8%	67%	0.3:1	1.5:1	13%	100%	50%	50%
3	Mongyan	96295	72	17	76	24%	74%	0.4:1	1.7:1		76%	30%	97%
4	Monghsat	77793	58	72	170	123%	63%	0.8:1	1.6:1	30%	90%	76%	85%
5	Mongpying	53147	40	50	140	125%	59%	0.6:1	1.2:1	30%	80%	60%	82%
6	Mongton	33117	25	58	134	234%	79%	1:1	2.9:1	32%	69%	60%	60%
7	Monpyak	38740	29	29	75	100%	61%	0.8:1	1.3:1	26%	90%	83%	83%
8	Mongyaung	68725	52	26	80	50%	53%	0.5:1	1:1	17%	69%	63%	63%
9	Tachileik	111951	84	133	364	158%	57%	0.6:1	1.3:1	17%	86%	78%	84%
10	Matman			0									
Total		713398	535	545	1630	102%	58%	0.6:1	1.2:1	23%	81%	62%	80%

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SHAN (NORTH) STATE													
1	Kunlon	146968	110	64	115	58%	73%	1.4:1	2.5:1	51%	91%	92%	92%
2	Hopan	91817	69	73	109	106%	97%	3.2:1	24.3:1	37%	55%	48%	100%
3	Kyaukme	207475	156	115	412	74%	55%	0.4:1	1:1	27%	83%	49%	76%
4	Hsipaw	170236	128	106	291	83%	53%	0.6:1	1:1	30%	99%	97%	97%
5	Mabein	35324	26	13	62	49%	61%	0.3:1	1.2:1	15%	100%	88%	88%
6	Manton	42703	32	7	18	22%	44%	0.6:1	0.8:1	26%	100%	0%	0%
7	Mongmeik	73884	55	36	118	65%	40%	0.5:1	0.6:1	16%	92%	62%	64%
8	Namtu	106707	80	22	90	27%	50%	0.3:1	0.8:1	13%	86%	58%	88%
9	Nyaungcho	135415	102	26	133	26%	34%	0.3:1	0.4:1	13%	100%	95%	95%
10	Lashio	278751	209	179	612	86%	49%	0.5:1	0.8:1	21%	84%	71%	71%
11	Namsam	89651	67	24	124	36%	44%	0.2:1	0.8:1	33%	63%	43%	71%
12	Mongmaw	15571	12	Nr.									
13	Theinni	75964	57	70	143	123%	69%	1:1	2.1:1	37%	84%	50%	72%
14	Mongreh	73204	55	13	151	24%	54%	0.1:1	1.1:1	54%	54%	20%	80%
15	Manphant	59253	44	Nr.									
16	Pangyan	86981	65	15	54	23%	35%	0.4:1	0.5:1	23%	40%	14%	86%
17	Narphant	37761	28									50%	75%
18	Panwaing	14793	11	Nr.									
19	Tanyan	197534	148	34	344	23%	17%	0.1:1	0.2:1	33%	94%	86%	95%
20	Laukkai	73110	55	25	143	46%	32%	0.2:1	0.4:1	20%	68%	45%	62%
21	Kongyan	47162	35	Nr.									
22	Muse	155191	116	26	607	22%	10%	0.0:1	0.1:1	7%	85%	88%	88%
23	Kuitai	198194	149	49	226	33%	46%	0.3:1	0.8:1	18%	86%	21%	73%
24	Namkham	126481	95	42	107	44%	57%	0.7:1	1.3:1	28%	74%	44%	52%
Total		2540130	1905	939	3859	49%	44%	0.3:1	0.7:1	24%	83%	65%	81%

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

Nr. 4 Tsp: Manphant Manphant Panwaing Mongmaw Kongyan

Sr.No	TOWNSHIPS	Population	Estimated NewS(+) cases	Total New Smear Positive detected	Total notified TB cases	CDR	Prop: of SS(+) pul:TB cases out of all pul: TB cases	Ratio of NSS+ to NSS (-)cases and EP cases	Ratio of NSS+ to NSS (-)cases	Sputum Positivity Rate	Sputum Conversion Rate	Cure Rate	Treatment Success Rate
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KAYIN STATE

1	Kawkareik	319404	240	150	522	63%	65%	0.4:1	1.5:1	24%	97%	85%	88%
2	Kyainseikkyi	266402	200	45	114	23%	53%	0.7:1	1.1:1	30%	91%	77%	88%
3	Myawady	55003	41	110	195	267%	64%	1.4:1	1.7:1	48%	88%	52%	66%
4	Hpa-an	509134	382	456	2119	119%	31%	0.3:1	0.4:1	15%	86%	73%	81%
5	Hlaingbwe	352352	264	119	333	45%	59%	0.6:1	1.2:1	20%	93%	84%	87%
6	Papun(Kamamaung	94325	71	103	556	146%	44%	0.2:1	0.7:1	22%	91%	73%	85%
7	Thandaung	106737	80	29	81	36%	60%	0.6:1	1.3:1	31%	90%	61%	74%
	Total	1703357	1278	1012	3920	79%	42%	0.4:1	0.7:1	19%	90%	75%	82%

TANINTHARYI DIVISION

1	Dawei	206161	155	169	854	109%	42%	0.3:1	0.7:1	28%	79%	88%	88%
2	Launglon	200078	150	25	48	17%	85%	1.9:1	4.2:1	27%	92%	91%	91%
3	Thayetchaung	165462	124	32	76	26%	76%	0.8:1	2.7:1	44%	72%	52%	91%
4	Yebyu	148636	111	32	72	29%	66%	1:1	1.5:1	26%	100%	93%	93%
5	Kawthaung	73223	55	144	497	262%	42%	0.4:1	0.7:1	21%	92%	69%	76%
6	Bokpyin	64028	48	21	126	44%	57%	0.2:1	1:1	17%	95%	57%	91%
7	Myeik	292021	219	304	2902	139%	28%	0.1:1	0.3:1	18%	82%	61%	66%
8	Kyunsu	148223	111	6	140	5%	24%	0.0:1	0.2:1	10%	100%	53%	63%
9	Tanintharyi	101462	76	29	178	38%	38%	0.2:1	0.5:1	15%	93%	81%	81%
10	Palaw	159574	120	80	419	67%	52%	0.3:1	0.9:1	25%	78%	16%	60%
	Total	1558868	1169	842	5312	72%	38%	0.2:1	0.5:1	21%	84%	67%	76%

Sr.No	TOWNSHIPS	Population	Estimated NewSI (+) cases	Total New Smear Positive detected	Total notified TB cases	CDR	Prop: of SS(+) pul:TB cases out of all pul: TB cases	Ratio of NSS+ to NSS (-)cases and EP cases	Ratio of NSS+ to NSS (-)cases	Sputum Positivity Rate	Sputum Conversion Rate	Cure Rate	Treatment Success Rate
BAGO (EAST) DIVISION													
1	Bago	495448	372	443	1230	119%	60%	0.7:1	1.2:1	25%	94%	84%	90%
2	Daik-U	226180	170	135	417	80%	43%	0.5:1	0.7:1	22%	96%	88%	88%
3	Kawa	252884	190	114	285	60%	62%	0.7:1	1.4:1	26%	92%	76%	83%
4	Kyauktaga	260496	195	157	423	80%	61%	0.6:1	1.4:1	29%	95%	94%	95%
5	Nyaunglaybin	258168	194	148	488	76%	44%	0.5:1	0.7:1	20%	95%	86%	93%
6	Shwekyin	88625	66	60	156	90%	53%	0.6:1	1.1:1	20%	88%	97%	98%
7	Thanatpin	191038	143	102	332	71%	44%	0.5:1	0.7:1	37%	91%	85%	85%
8	Waw	232689	175	171	507	98%	46%	0.5:1	0.8:1	25%	88%	85%	89%
9	Taunggoo	272797	205	152	492	74%	55%	0.5:1	1:1	22%	90%	88%	90%
10	Kyaukyvi	122059	92	37	207	40%	40%	0.2:1	0.5:1	23%	51%	39%	95%
11	Oktwin	168456	126	81	290	64%	62%	0.4:1	1.2:1	33%	88%	72%	80%
12	Phyu	281944	211	188	668	89%	47%	0.4:1	0.8:1	39%	95%	83%	88%
13	Htantabin	126527	95	73	247	77%	86%	0.4:1	5.6:1	33%	100%	99%	99%
14	Yedashe	216357	162	131	258	81%	64%	1.2:1	1.6:1	22%	97%	81%	86%
	Total	3193668	2395	1992	6000	83%	54%	0.5:1	1:1	26%	93%	84%	90%
BAGO (WEST) DIVISION													
1	Pyay	227892	171	336	938	197%	51%	0.6:1	0.9:1	21%	83%	80%	81%
2	Paukhaung	138502	104	85	287	82%	54%	0.4:1	1:1	20%	96%	91%	91%
3	Paungde	139418	105	72	289	69%	38%	0.3:1	0.6:1	23%	100%	94%	94%
4	Padaung	132309	99	102	322	103%	45%	0.5:1	0.8:1	21%	82%	70%	84%
5	Shwedaung	141246	106	88	341	83%	38%	0.4:1	0.5:1	23%	89%	82%	90%
6	Thegon	130793	98	76	469	77%	27%	0.2:1	0.3:1	20%	87%	80%	80%
7	Tharyarwady	169931	127	168	395	132%	53%	0.8:1	1.1:1	23%	90%	82%	82%
8	Zigon	72937	55	77	171	141%	53%	0.9:1	1.1:1	29%	100%	99%	99%
9	Minhla	170430	128	92	215	72%	65%	0.9:1	1.6:1	27%	89%	81%	85%
10	Moenyo	137841	103	93	188	90%	62%	1:1	1.6:1	143%	86%	76%	88%
11	Okpo	135784	102	127	290	125%	60%	0.8:1	1.4:1	28%	93%	93%	93%
12	Gyobingauk	135321	101	100	307	99%	49%	0.5:1	0.9:1	36%	92%	82%	87%
13	Nattalin	217592	163	105	286	64%	53%	0.6:1	1:1	29%	89%	73%	85%
14	Latpadan	218788	164	121	475	74%	33%	0.3:1	0.5:1	30%	86%	76%	90%
	Total	2168784	1627	1642	4973	101%	47%	0.5:1	0.8:1	28%	89%	82%	86%

Sr.No	TOWNSHIPS	Population	Estimated NewSI (+) cases	Total New Smear Positive detected	Total notified TB cases	CDR	Prop: of SS(+) pul:TB cases out of all pul: TB cases	Ratio of NSS+ to NSS (-)cases and EP cases	Ratio of NSS+ to NSS (-)cases	Sputum Positivity Rate	Sputum Conversion Rate	Cure Rate	Treatment Success Rate
MON STATE													
1	Mawlamyaing	344800	259	334	1562	129%	36%	0.3:1	0.4:1	14%	90%	71%	87%
2	Chanungzon	163372	123	78	305	64%	38%	0.4:1	0.5:1	21%	94%	92%	92%
3	Kyaikmaraw	252670	190	146	562	77%	49%	0.4:1	0.9:1	28%	82%	61%	89%
4	Mudon	282470	212	131	510	62%	46%	0.4:1	0.7:1	12%	85%	84%	85%
5	Thanbyuzayat	181180	136	114	488	84%	52%	0.3:1	1:1	16%	92%	84%	90%
6	Ye	182563	137	130	319	95%	56%	0.7:1	1.2:1	24%	88%	61%	80%
7	Thaton	282647	212	260	518	123%	69%	1.2:1	2:1	22%	90%	83%	85%
8	Belin	235836	177	167	314	94%	66%	1.3:1	1.8:1	21%	96%	89%	91%
9	Kyaikto	231983	174	114	296	66%	60%	0.7:1	1.3:1	23%	90%	82%	89%
10	Paung	323075	242	186	881	77%	29%	0.3:1	0.4:1	13%	87%	87%	87%
	Total	2480596	1860	1660	5755	89%	46%	0.4:1	0.7:1	17%	89%	79%	87%
RAKHINE STATE													
1	Kyaukphyu	197939	148	117	231	79%	67%	1.1:1	1.9:1	19%	89%	86%	92%
2	Ann	119936	90	44	591	49%	18%	0.1:1	0.2:1	10%	77%	69%	75%
3	Manaung	100509	75	28	72	37%	88%	0.7:1	7:1	31%	96%	100%	100%
4	Yambye	149186	112	44	89	39%	67%	1.1:1	1.8:1	26%	89%	93%	93%
5	Maungdaw	441349	331	147	1945	44%	12%	0.1:1	0.1:1	9%	95%	93%	95%
6	Buthidaung	292486	219	137	238	62%	75%	1.6:1	2.7:1	14%	96%	97%	98%
7	Yathedaung	169713	127	125	169	98%	86%	3.7:1	5.7:1	21%	89%	88%	88%
8	Sittwe	276914	208	240	745	116%	54%	0.5:1	1:1	15%	87%	60%	87%
9	Kyauktaw	243633	183	178	354	97%	70%	1.2:1	2.1:1	43%	98%	91%	91%
10	Minbya	199559	150	171	224	114%	89%	4.2:1	7.4:1	20%	82%	91%	91%
11	Myaukoo	228455	171	155	309	90%	64%	1.1:1	1.6:1	18%	96%	95%	95%
12	Myebon	124913	94	64	106	68%	69%	1.6:1	2.1:1	21%	81%	78%	83%
13	Pauktaw	164122	123	58	105	47%	63%	1.3:1	1.7:1	43%	86%	63%	80%
14	Ponnagyun	134347	101	63	156	63%	58%	0.8:1	1.1:1	19%	94%	77%	90%
15	Thandwe	154075	116	101	225	87%	69%	0.9:1	2:1	21%	87%	93%	94%
16	Gwa	80148	60	50	99	83%	68%	1.1:1	2:1	18%	98%	92%	92%
17	Taunggyup	147076	110	94	304	85%	52%	0.5:1	1:1	12%	94%	83%	95%
	Total	3224360	2418	1816	5962	75%	47%	0.5:1	0.8:1	17%	91%	85%	91%

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YANGON DIVISION													
	East District	0	0	5	15		70%	1.3:1	1.7:1	19%	88%	100%	100%
1	Bolataung	63319	107	52	192	48%	45%	0.4:1	0.6:1	18%	98%	83%	89%
2	Dawbon	95552	162	150	435	93%	55%	0.6:1	1:1	23%	97%	82%	82%
3	Dagon(N)	122753	208	293	761	141%	60%	0.8:1	1.2:1	11%	92%	84%	88%
4	Dagon(S)	168664	286	680	1690	238%	60%	0.8:1	1.3:1	38%	82%	81%	82%
5	MingalarTN	132061	224	149	638	67%	48%	0.4:1	0.7:1	20%	92%	83%	83%
6	Okkala(N)	347357	589	413	1378	70%	51%	0.5:1	0.9:1	27%	90%	84%	85%
7	Okkala(S)	264552	448	255	897	57%	54%	0.5:1	0.9:1	25%	88%	68%	78%
8	Thaketa	336001	570	445	1207	78%	57%	0.7:1	1.1:1	27%	97%	79%	87%
9	Thingangyun	288706	489	299	985	61%	58%	0.5:1	1.1:1	29%	91%	78%	86%
10	Yankin	128866	218	145	481	66%	49%	0.5:1	0.8:1	30%	98%	91%	92%
11	Tarmwe	154620	262	119	408	45%	52%	0.5:1	0.8:1		97%	87%	88%
12	Pazundaung	46167	78	52	189	66%	45%	0.4:1	0.7:1		98%	87%	87%
13	Dagon(E)	66476	113	178	365	158%	73%	1.3:1	2.3:1	27%	90%	82%	89%
14	Dagon Seikkan	22450	38	96	312	252%	50%	0.5:1	0.8:1	10%	92%	83%	86%
	Total	2237544	3793	3331	9953	88%	56%	0.6:1	1:1	23%	91%	81%	85%
West District													
1	Kamayut	100018	170	93	279	55%	54%	0.6:1	0.9:1		95%	97%	97%
2	Kyauktada	52984	90	40	122	45%	60%	0.6:1	1.1:1		98%	86%	89%
3	Kyinmyindine	105235	178	133	466	75%	53%	0.5:1	0.9:1	30%	79%	85%	85%
4	Sanchaung	94850	161	118	366	73%	55%	0.6:1	1:1		83%	74%	85%
5	Seikkan	1677	3	6	14	211%	50%	0.8:1	1:1	25%	100%	100%	100%
6	Dagon	48077	81	34	127	42%	43%	0.4:1	0.6:1	100%	100%	78%	80%
7	Pabadan	57074	97	24	89	25%	60%	0.4:1	1:1		92%	90%	90%
8	Hahan	114492	194	80	266	41%	49%	0.5:1	0.8:1		89%	74%	84%
9	Mayangon	220003	373	298	831	80%	61%	0.7:1	1.3:1	26%	88%	76%	80%
10	Latha	28704	49	38	88	78%	63%	0.9:1	1.5:1		95%	83%	83%
11	Lanmadaw	43659	74	34	120	46%	52%	0.5:1	0.8:1		82%	83%	86%
12	Hlaing	201978	342	223	664	65%	52%	0.6:1	0.9:1		92%	83%	91%
13	Ahlon	52477	89	77	276	87%	47%	0.5:1	0.7:1		88%	80%	84%
	Total	1121228	1900	1198	3708	63%	54%	0.6:1	1:1	39%	89%	81%	86%

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South District													
1	Seikkikanaungto	30778	52	45	163	86%	54%	0.5:1	0.9:1	8%	100%	96%	96%
2	Dallah	92800	157	176	690	112%	48%	0.4:1	0.7:1	19%	90%	74%	85%
3	CoCogyun	1578	3	0	4	0%	0%	0.0:1	0.0:1		0%	0%	0%
4	Kawhmu	157292	267	90	244	34%	51%	0.6:1	0.9:1	20%	97%	84%	85%
5	Kyauktan	188356	319	124	322	39%	57%	0.7:1	1.1:1	21%	90%	84%	91%
6	Kunggyangone	144043	244	97	248	40%	53%	0.7:1	1.1:1	14%	94%	91%	93%
7	Kayan	214992	364	155	338	43%	68%	1:1	1.9:1	25%	97%	88%	91%
8	Twantay	298424	506	197	521	39%	55%	0.7:1	1.1:1	26%	92%	86%	89%
9	Thonegwa	206162	349	117	302	33%	58%	0.7:1	1.3:1	21%	95%	75%	83%
10	Thanlyin	193380	328	264	778	81%	53%	0.6:1	0.9:1	26%	92%	75%	88%
	Total	1527805	1146	1265	3610	110%	54%	0.6:1	1:1	22%	93%	81%	88%
North District													
1	Mingalardon	205861	349	587	1618	168%	58%	0.7:1	1.2:1	19%	76%	63%	71%
2	Shwepyithar	227787	386	395	962	102%	64%	0.8:1	1.5:1	23%	89%	55%	81%
3	Hlaingtharyar	242617	411	956	2233	232%	62%	0.8:1	1.5:1	26%	95%	89%	89%
4	Insein	289070	490	549	1518	112%	59%	0.7:1	1.2:1	22%	87%	67%	85%
5	Taikkyi	291837	495	266	549	54%	68%	1::1	2:1	30%	92%	90%	91%
6	Htantabin	161317	273	92	162	34%	85%	1.6:1	5.1:1	65%	95%	83%	89%
7	Hmawbi	179899	305	273	686	90%	58%	0.8:1	1.2:1	27%	92%	80%	84%
8	Hlegu	202658	344	181	586	53%	44%	0.5:1	0.7:1	22%	96%	93%	93%
	U.T.I	0	0	57	160		58%	0.8:1	1:1	24%	86%	59%	62%
	NTP(Diagnostic C)	0	0	14	109			0.2:1	0.4:1	41%	57%	55%	75%
	Total	1801046	3053	3370	8583	110%	60%	0.8:1	1.3:1	30%	89%	72%	81%
	Yangon Division	6687623	11336	9164	25854	81%	57%	0.6:1	1.1:1	26%	90%	78%	85%

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AYEYARWADY DIVISION													
1	Patheingyi	365914	274	459	1647	167%	48%	0.4:1	0.8:1	21%	90%	73%	89%
2	Kanyidaung	242521	182	47	130	26%	44%	0.6:1	0.8:1	121%	89%	83%	90%
3	Yekyi	280369	210	143	449	68%	52%	0.5:1	1:1	24%	93%	72%	89%
4	Kyaunggon	191446	144	88	297	61%	48%	0.5:1	0.8:1	15%	100%	84%	94%
5	Kyongpyaw	313811	235	159	345	68%	64%	1:1	1.6:1	29%	97%	94%	94%
6	Ngaputaw	348362	261	167	351	64%	65%	1.1:1	1.6:1	33%	93%	72%	86%
7	Thabaung	197108	148	130	236	88%	75%	1.5:1	2.5:1	19%	97%	63%	89%
8	Hinhada	481917	361	541	1192	150%	57%	0.9:1	1.3:1	28%	96%	91%	94%
9	Kyankin	138665	104	106	260	102%	56%	0.8:1	1.1:1	16%	95%	91%	96%
10	Myanaung	320120	240	174	647	72%	44%	0.4:1	0.7:1	17%	96%	86%	86%
11	Ingapu	322928	242	183	750	76%	41%	0.3:1	0.6:1	25%	96%	93%	95%
12	Zalun	262486	197	277	470	141%	73%	1.6:1	2.6:1	53%	85%	78%	88%
13	Laymethna	154886	116	87	206	75%	59%	0.8:1	1.4:1	25%	89%	82%	87%
14	Myaungmya	418043	314	273	1096	87%	38%	0.3:1	0.6:1	27%	96%	79%	90%
15	Laputta	369158	277	270	546	98%	64%	1.1:1	1.6:1	15%	98%	96%	97%
16	Mawgyun	345723	259	210	343	81%	71%	1.7:1	2.3:1	24%	95%	72%	94%
17	Wakema	377457	283	265	749	94%	55%	0.6:1	1.1:1	22%	98%	85%	96%
18	Einme	221663	166	150	286	90%	70%	1.4:1	2.1:1	16%	91%	82%	84%
19	Pyapon	259654	195	301	657	155%	59%	0.9:1	1.4:1	26%	84%	83%	83%
20	Bogalay	455387	342	275	549	81%	70%	1.2:1	2.1:1	34%	90%	80%	86%
21	Dedaye	257470	193	98	190	51%	69%	1.2:1	2:1	26%	91%	61%	81%
22	Kyaiklatt	225748	169	130	291	77%	57%	0.9:1	1.3:1	33%	95%	65%	92%
23	Maubin	390489	293	245	658	84%	62%	0.7:1	1.5:1	28%	90%	79%	87%
24	Nyaungdon	253112	190	142	295	75%	64%	1:1	1.7:1	15%	98%	95%	95%
25	Pantanaw	289787	217	174	369	80%	68%	1:1	1.9:1	32%	95%	92%	92%
26	Danuphyu	245656	184	233	518	126%	51%	0.9:1	0.9:1	39%	97%	93%	93%
Total			5797	5327	13527	92%	56%	0.7:1	1.2:1	24%	93%	82%	91%

Annex- 21

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State & Division	Low CR ≤ 50% Low CDR ≤ 40%	Low CR ≤ 50%	Low CDR ≤ 40%	Low CDR ≤ 40%	CDR ≥ 100% LowCR	CR 100% LowCDR	CDR ≥ 100%	CR100%	CR ≥ 85% CDR ≥ 70%	Average Townships
Mandalay	31	0	2	6	1	0	3	0	6	13
					Thabeikkyin					
		Tharzi	Madayar	Meiktilar Mahlaing Natogyi Ngazun Taungtha Pyawbwei					Aungmyaytharzan Chanmyatharzi Maharaungmyae Patheingyi Kyaukpadaung Pyinmana	Amarapura, Lewei Chanayetharzan, Myingon Wundwin, Mogoke Yamethin, Tatone, Myittha Sintgaing, NyaungU Pyinoolwin, TadaOo
Shan(S)	21	2	1	7	1	2	0	1	1	6
		Maukme Mangpang	Lauksauk	Linhkay Loilem Kyeethi Mongking Namsan Hopone Hsiseng	Kunhein	Pindaya Ywangan		Laikha	Mongshu	Monai Taunggyi Hpekon Kalaw Pinlaung, Nyaungshwe
Shan(E)	9	2	0	0	1	0	5	0	0	1
No report from 1 township	Mongyan Mongkhat				Kengtong		Monghsat Mongping Mongton Mongpyak Tachileik			Mongyaung
Shan(N)	20	5	4	4	2	0	0	0	1	4
No report from 4 townships	Manton, Kuitai Namsam Mongreh Pangyan	Narphant Laukkai Namkham Kyaukme	Namtu Nyaungcho Tanyan Muse	Hopan Theinni				Hsipaw		Kunlon Lashio Mabein Mongmeik
Kayin	7	0	0	2	0	0	3	0	0	2
				Kyainseikkayi Thandaung			Myawady Hpa-an, Papun			Kawkaik Hlaingbwe

State & Division	Low CR ≤ 50% Low CDR ≤ 40%	Low CR ≤ 50%	LowCDR ≤ 40%	CDR ≥ 100% LowCR	CR 100% LowCDR	CDR ≥ 100%	CR100%	CR ≥ 85% CDR ≥ 70%	Average Townships	
Yangon	CoCo Gyun		Pabadan Kawhmu Kyauktan Kunggangone Twantay Thongwa Htantabin			Dagon(N) Dagon(S) Dagon(E) Dagon (Seikkan) Dallah Mingaladon Shwepyithar Insein		Kyinmyindine Seikkan Seikkyikanaungto Hlaingtharyar	Botataung, Hmawbi Dawbon, Thaketa MingalarTN, Thalyin Okkala(N), Okkala(S) Kyauktada, Sanchaung Tarmwe, Kamayut Thingangyun, Taikkyi Yankin, Pazundaung Dagon, Bahan , Hlegu Mayangon, Latha Lanmadaw, Hlaing Ahlone, Kayan	25
Ayeyarwady			Kanyidaung			Pathein Zalun Pyapon		Hinhada Kyankin Myanaung Ingapu, Danuphyu Laputta, Pantanaw Wakema Nyaungdon	Yekyi Kyaunggon, Einme Kyonpyaw Ngaputaw Thabaung Laymtethna Myaungmya Mawgyun Bogalay, Dedaye Kyaiklatt, Maubin	13

Evaluation of treatment outcome of new smear positive TB patients (2006 cohort)

Annex- 22

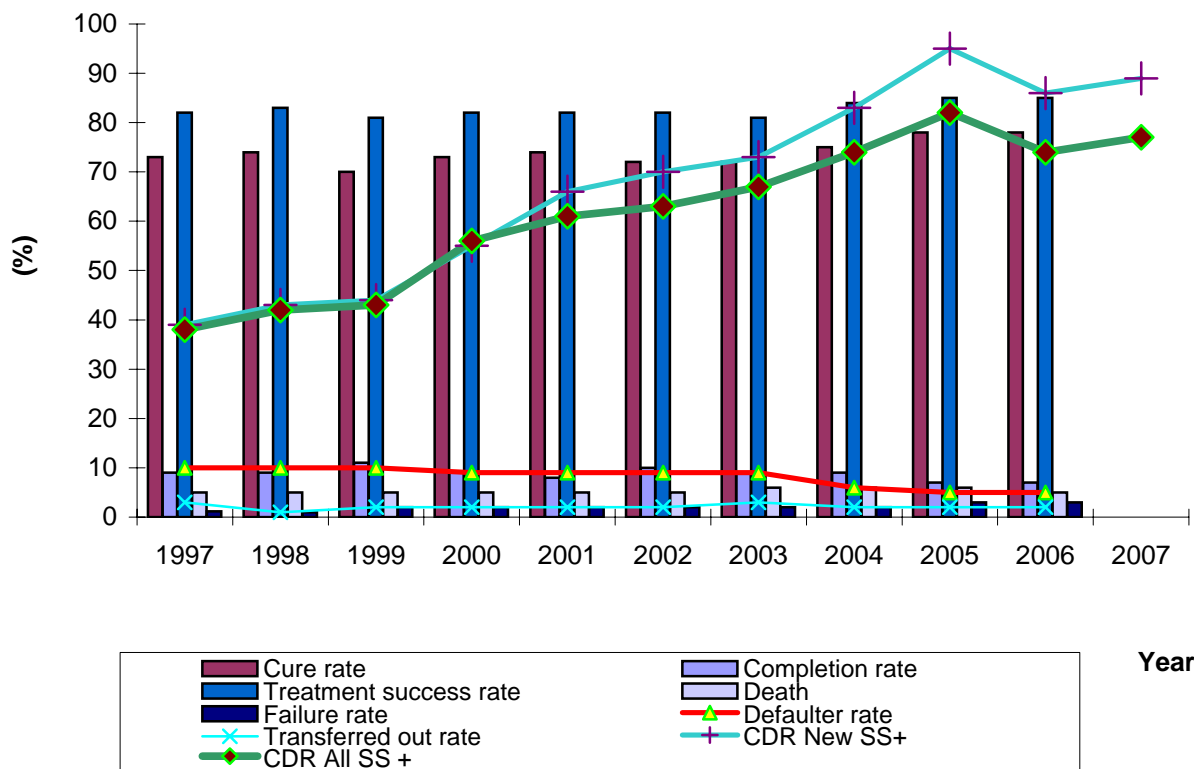
States & Divisions	DOTS TOWNSHIPS			Sputum Conversion Rate < 80%
	High Defaulter Rate ≥ 10% *means ≥ 20%	Low CR ≤ 50% with TSR ≥ 70%		
Kachin	Mohynin ,Waingmaw	Waingmaw	Putao	
Kayah	Nil	Bawlake, Phruhso	Masai, Loikaw	
Chin	* Falam, * Matupi, * Paletwa	Nil	Mindat, Kanpetlet	
Sagaing	Monywa, Pale, Kawlin * Khamti, Homalin, Layshi	Nil	Kyunhla, Monywa, Budalin Htigyaing, Wuntho, Layshi	
Magwe	Magwe, Saw	Natmauk, Saytoketaya	Thayet	
Mandalay	Amarapura	Tharzi, Madayar, Thabeikkyin	Madayar, Kyaukse, TadaOo	
Shan(S)	Loilem, Lauksauk Namsan, Hsiseng	Kunhein	Maukme, Kalaw, Hsiseng, Loilem Mangpang, Mongaking, Kyeethi	
Shan(E)	Kengtong, *Mongton *Mongkhat, *Mongyaung	Mongyan Kengtong	Kengtong, Monghsat Mongton, Mongyaung	
Shan(N)	Mabein, Pangyan, Kuitai Mongmeik, Namkham, *Theinni *Lashio, *Laukkai, *Mongreh	Hopan, Kuitai, Narphant Kyaukme, Pangyan Namsam, Mongreh, Theinni	Hopan, Namkham Namsam, Laukkai Mongreh, Pangyan	
Kayin	* Myawady, Hpa-an	Nil	Nil	
Tanintharyi	* Kyunsu, *Palaw, Kawthaung, Myeik	Nil	Dawei, Palaw, Thayetchaung	
Bago(E)	Kawa, Oktwin	Kyaukkyi	Kyaukkyi	
Bago(W)	Nil	Nil	Nil	
Mon	Nil	Nil	Nil	
Rakhine	Myebon, Pauktaw	Nil	Ann	
Yangon	Mingalardon	Nil	Kyinmyindine, Mingaladon	
Ayeyarwady	Nil	Nil	Nil	

Progress of NTP (1994-2007)

Annex- 23

Indicator\Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
CDR (New SS+)	33%	35%	39%	39%	43%	44%	55%	66%	70%	73%	83%	95%	86%	89%
CR	61%	54%	75%	73%	74%	70%	73%	74%	72%	72%	75%	78%	78%	
TSR	78%	66%	82%	82%	83%	81%	82%	82%	82%	81%	84%	85%	85%	

**Case detection rates with estimated cases as 2006 and treatment outcome
(1997-2007)**



National Tuberculosis Programme

Annex - 25

Case Detection Rate (new smear positive) in States/Divisions (1997 - 2007)

State / Division	CDR										
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Kachin	60	51	54	79	120	127	118	90	116	131	129
Kayah	85	104	106	81	88	76	71	70	83	79	69
Chin	63	72	37	42	37	45	42	38	42	52	39
Sagaing	14	28	27	41	45	42	45	45	53	60	79
Magway	19	21	26	35	38	48	49	57	65	55	56
Mandalay	33	43	38	45	50	52	60	65	67	65	69
Shan(S)	34	22	30	34	34	34	32	38	40	43	48
Shan (E)					106	134	87	99	103	102	102
Shan (N)					23	27	31	34	42	46	49
Kayin	52	38	38	47	55	57	68	72	86	65	79
Tanintharyi	68	86	83	59	54	66	72	76	75	71	72
Bago(E)	43	49	43	59	79	78	81	73	87	82	83
Bago(W)					73	85	81	87	77	91	101
Mon	47	57	54	57	68	71	74	95	108	93	89
Rakhine	76	72	49	73	67	54	64	84	83	81	75
Yangon	47	47	65	81	114	131	148	156	158	70	81
Ayeyarwady	39	45	41	56	66	63	67	78	86	96	92
Union	39	43	44	55	66	70	73	83	95	86	89

Treatment outcomes of new smear positive in States / Divisions (1997 - 2006)

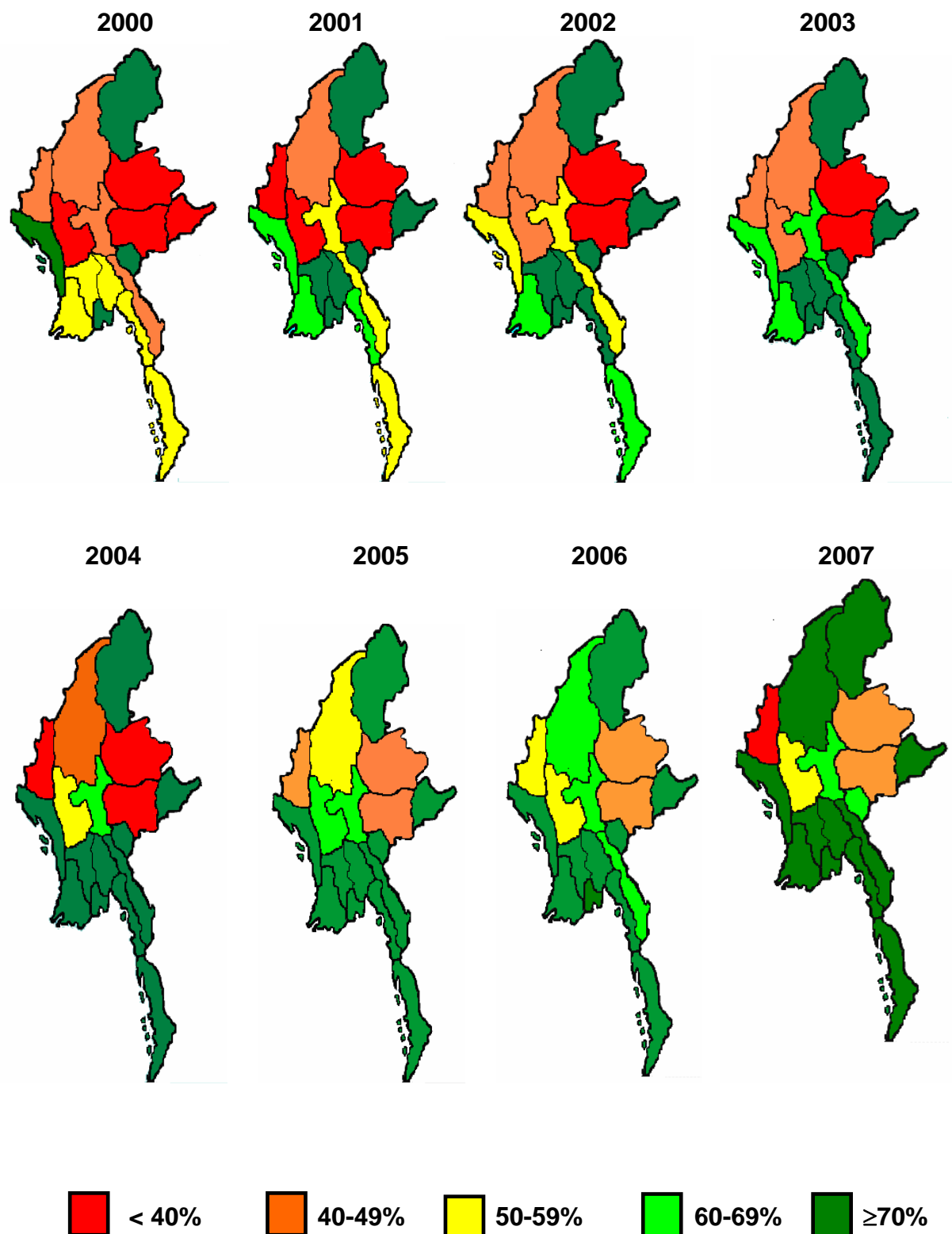
State / Division	1997		1998		1999		2000		2001		2002		2003		2004		2005		2006	
	CR	TSR	CR	TSR	CR	TSR	CR	TSR	CR	TSR	CR	TSR	CR	TSR	CR	TSR	CR	TSR	CR	TSR
Kachin	59	65	68	79	69	77	77	78	71	74	69	75	67	73	74	78	75	78	73	81
Kayah	71	86	90	90	94	95	95	95	94	95	95	95	92	92	93	94	83	88	76	83
Chin	60	92	85	96	83	95	42	85	66	86	75	85	50	82	68	84	73	84	65	78
Sagaing	68	81	61	77	63	85	60	82	65	87	55	86	56	80	72	80	74	82	74	82
Magway	80	85	75	79	71	84	74	89	84	90	79	91	73	88	77	90	80	89	81	89
Mandalay	69	79	66	76	66	81	79	87	84	88	84	89	83	89	77	87	75	86	79	86
Shan(S)	51	70	63	76	73	79	76	11	86	88	83	85	76	80	79	83	72	83	73	79
Shan (E)							79	81	74	84	64	78	56	68	64	74	64	78	62	80
Shan (N)							84	89	66	73	63	71	65	78	69	79	68	81	65	81
Kayin	91	93	87	87	82	87	71	85	66	83	70	78	67	78	68	83	74	83	75	82
Tanintharyi	67	77	62	76	67	74	68	76	72	75	70	76	68	72	56	73	64	73	67	76
Bago(E)	75	83	74	83	76	83	81	86	76	82	74	84	80	84	86	88	89	91	84	90
Bago(W)							76	90	75	86	69	81	67	78	74	81	74	84	82	86
Mon	79	85	80	90	61	78	69	76	74	80	76	83	76	84	77	87	80	88	79	87
Rakhine	79	84	83	86	71	81	71	82	72	81	70	84	72	83	74	87	81	87	85	91
Yangon	61	76	68	80	62	75	66	75	67	74	66	73	67	76	73	82	78	84	78	85
Ayeyarwady	90	92	88	90	82	87	78	86	82	88	80	87	81	85	83	87	82	88	82	91
Union	73	82	74	83	70	81	73	82	74	82	72	82	72	81	75	84	78	85	78	85

No.	Designation	Pay	Sanction	Posted	Vacant	Remark
1.	Deputy Director (TB)	120000-2000-130000	1	1	0	
2.	Medical Superintendent	120000-2000-130000	1	1	0	
3.	Lecture/TB specialist	120000-2000-130000	1	0	1	
4.	Senior Microbiologist	120000-2000-130000	0	0+1*	0	
5.	Assistant Director (TB)	100000-2000-120000	1	1+3*	0	
6.	Microbiologist	100000-2000-120000	2	0	2	Ygn,Mdy
7.	State/Divisional TB Officer	100000-2000-120000	6	5+8*	1	Mdy
8.	Medical Officer	80000-2000-90000	56	46+2*	10	
9.	Administrative Officer	80000-2000-90000	1	1	0	
10.	Superintendent	45000-1000-50000	1	1	0	
11.	District Community Health Nurse	45000-1000-50000	2	1	1	
12.	Assistant Statistical Officer	39000-1000-44000	2	0	2	
13.	Health Assistant	39000-1000-44000	80	75	5	
14.	Sister	39000-1000-44000	1	0	1	
15.	Public Health Sister	39000-1000-44000	1	1	0	
16.	Medical technician	39000-1000-44000	1	1+1*	0	
17.	Radiology technician	39000-1000-44000	9	6	3	
18.	Radiographer	39000-1000-44000	2	0	2	
19.	BC (Budget/Admin)	39000-1000-44000	4	3+1*	1	
20.	BCG supervisor	39000-1000-44000	14	12	2	
21.	Blue staff	33000-1000-38000	4	4	0	
22.	LHV	33000-1000-38000	12	11+1*	1	
23.	Trained nurse	33000-1000-38000	122	107	15	
24.	Grade 1 lab: technician	33000-1000-38000	11	11	0	
25.	Grade 1 X-ray technician	33000-1000-38000	8	8	0	
26.	Assistant statistician (Budget)	33000-1000-38000	3	3	0	
27.	BCG technician	33000-1000-38000	60	27	33	
28.	UD (Budget/Admin)	33000-1000-38000	11	11+1*	0	
29.	Assistant statistician	33000-1000-38000	2	2	0	
30.	Grade 2 lab technician	27000-1000-32000	200	160+1*	40	
31.	LD (Budget/Admin)	27000-1000-32000	35	29	6	
32.	Compounder	27000-1000-32000	4	4	0	
33.	Grade 2 X-ray technician	27000-1000-32000	3	3	0	
34.	Steward	27000-1000-32000	1	1	0	
35.	Typist	27000-1000-32000	7	7	0	
36.	Jr. TB worker	27000-1000-32000	123	91	32	
37.	Statistical clerk	27000-1000-32000	100	91	9	
38.	Driver	21000-1000-26000	48	8	40	
39.	Clinic assistant	15000-1000-20000	2	1	1	
40.	Lab. boy and Lab: assistant	15000-1000-20000	7	4	3	
41.	Peon	15000-1000-20000	15	12	3	
42.	X-ray van assistant	15000-1000-20000	2	2	0	
43.	X-ray department assistant	15000-1000-20000	3	2	1	
44.	Gardener and Plumber	15000-1000-20000	2	1	1	
45.	Night Watch	15000-1000-20000	14	9	5	
46.	Sweeper and Manual worker	15000-1000-20000	43	26	17	
Total			1028	790+19*	238	

* Attached posts from other unit

- | | |
|------------------------------|--|
| 1. Senior Microbiologist | 1 (central) |
| 2. Assistant Director | 3 (central) |
| 3. State/Division TB Officer | 8 (Taunggyi, Lashio, Kengtong, Sagaing, Magway, Tanintharyi, Myitkyina, Kayah) |
| 4. Medical Officer | 2 (Tarchilake, central) |
| 5. Medical Technician | 1 (central) |
| 6. BC | 1 (central) |
| 7. Grade 1 Lab: Technician | 1 (central) |
| 8. Grade 2 Lab: Technician | 1 (central) |
| 9. UD | 1 (central) |

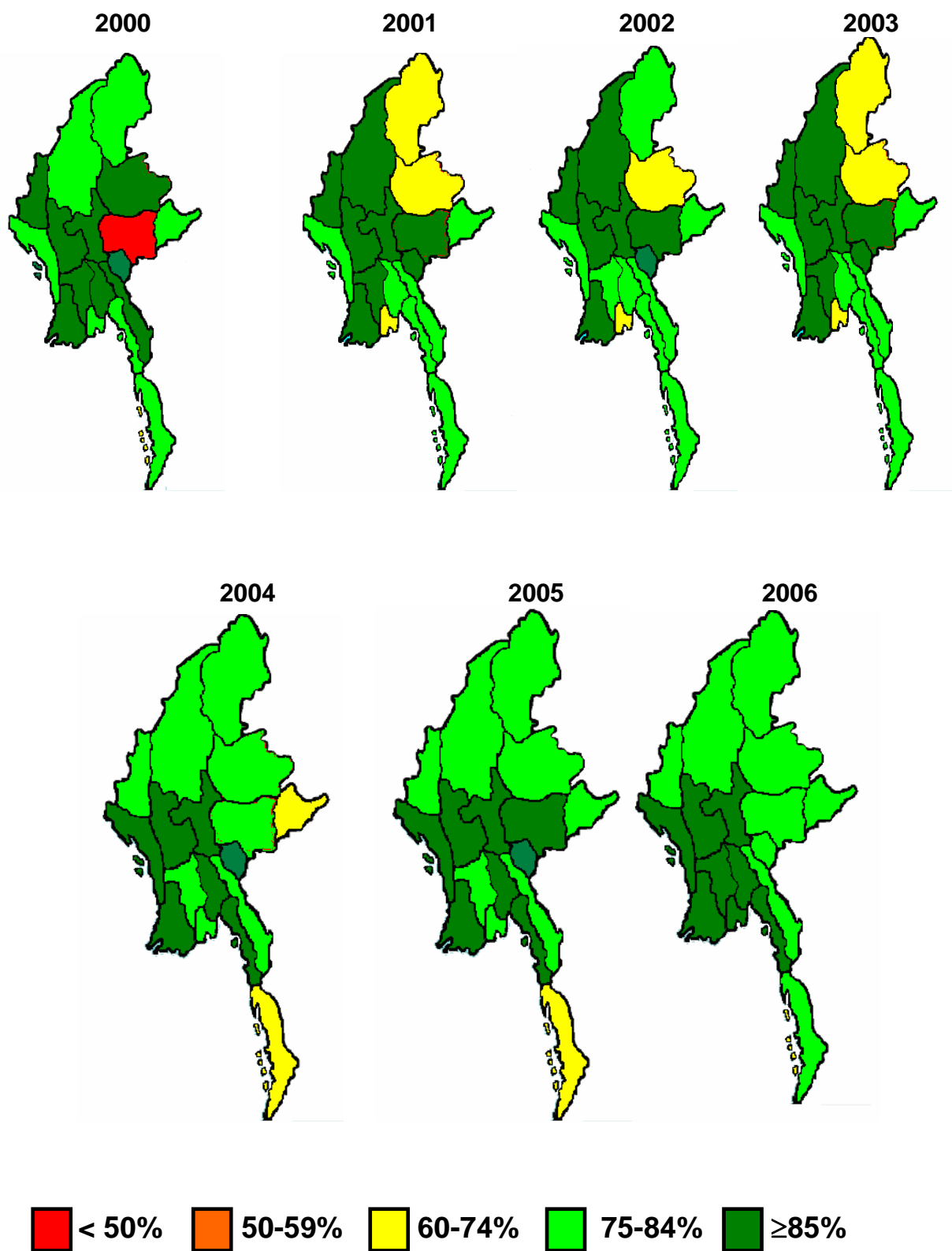
**Categories of Case Detection Rate according to States and Divisions
(2000-2007)**



National Tuberculosis Programme

Annex - 28

Categories of Treatment Success Rate according to States and Divisions (2000-2006)



**National Tuberculosis Programme
Case finding activities (1994 - 2007)**

Annex - 29

YEAR	Total Population	DOTS Population	No. of Estimate S(+) cases	CDR All S(+)	CDR NS(+)	PULMONARY TUBERCULOSIS																		EXTRA PULMONARY TB			OTHER			TOTAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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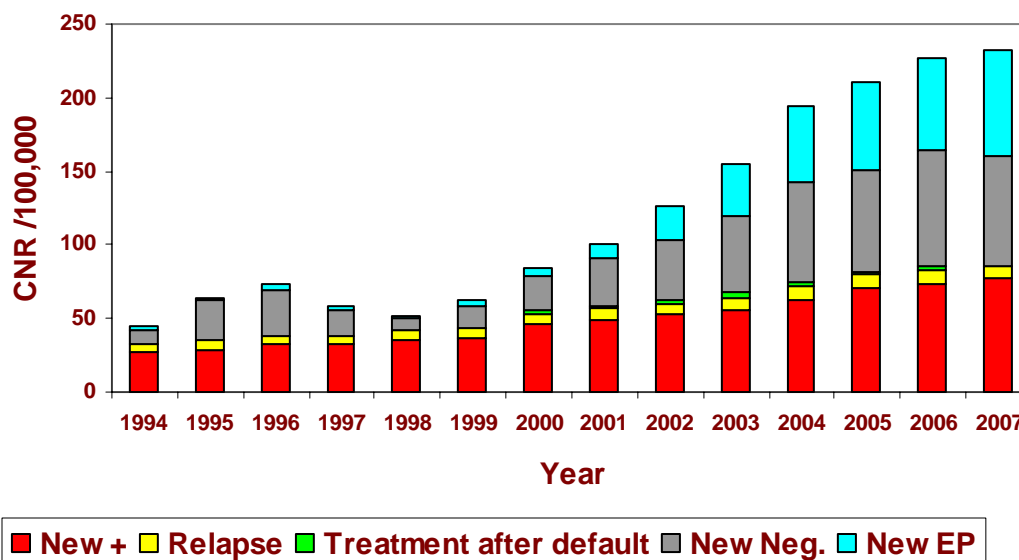
TAD = Treatment after Default
TAF = Treatment after failure

Treatment Outcome (1994 - 2006), National Tuberculosis Programme

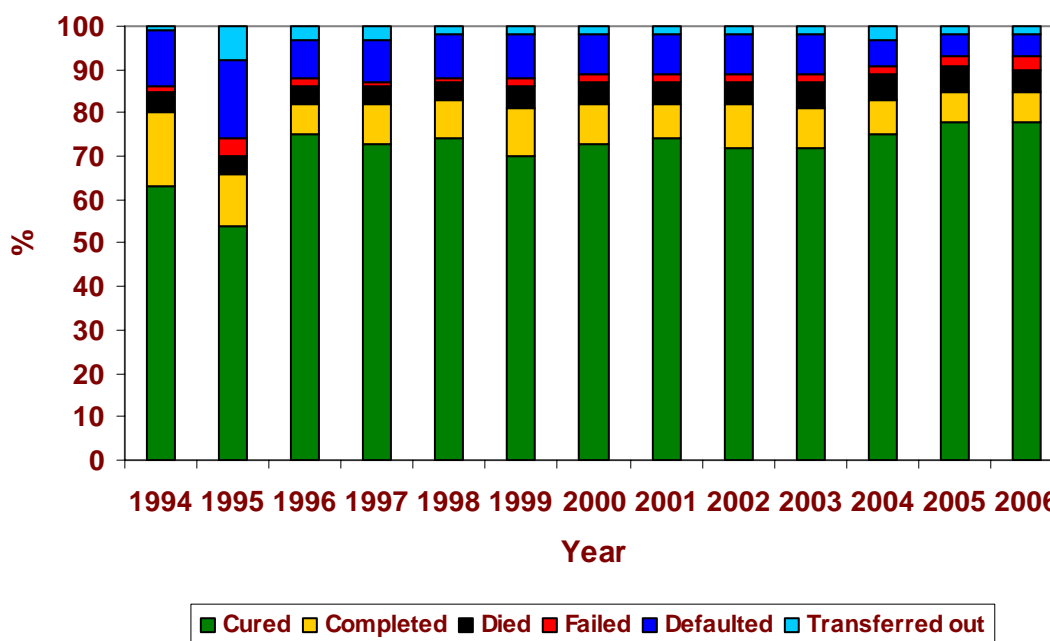
Annex - 30

YEAR	Type of TB patients	Total registered No. of Pul pts:	CURED		COMPLETED		TSR	DIED		FAILURE		DEFAULTER		TRANSFER OUT		TOTAL Evaluated
			No	CR	No	%		No	%	No	%	No	%	No	%	
1994	NS(+)	1473	899	61%	248	17%	78%	68	5%	16	1%	185	13%	18	1%	1434
	Relapse	536	157	29%	160	30%		10	2%	60	11%	53	10%	96	18%	536
	NS(-)	1440	0		1114	77%		28	2%	4	0%	212	15%	82	6%	1440
1995	NS(+)	6995	3781	54%	837	12%	66%	284	4%	267	4%	1290	18%	536	8%	6995
	Relapse	1443	800	55%	122	8%		57	4%	57	4%	273	19%	134	9%	1443
	NS(-)	6084	0		4662	77%		120	2%	28	0%	974	16%	200	3%	6084
1996	NS(+)	8496	6410	75%	550	6%	81%	364	4%	149	2%	805	9%	218	3%	8496
	Relapse	1697	1236	73%	81	5%		104	6%	58	3%	160	9%	58	3%	1697
	NS(-)	8502	0		7187	85%		318	4%	24	0%	760	9%	213	3%	8502
1997	NS(+)	9232	6732	73%	820	9%	82%	422	5%	114	1%	904	10%	290	3%	9232
	Relapse	1745	1059	61%	236	14%		109	6%	65	4%	198	11%	78	4%	1745
	NS(-)	5609	0		4592	82%		165	3%	14	0%	571	10%	267	5%	5609
1998	NS(+)	10313	7622	74%	879	9%	83%	486	5%	99	1%	1033	10%	194	2%	10313
	Relapse	1791	1201	67%	183	10%		103	6%	53	3%	189	11%	62	3%	1791
	NS(-)	2499	0		1982	79%		130	5%	15	1%	328	13%	44	2%	2499
1999	NS(+)	11641	8153	70%	1240	11%	81%	624	5%	194	2%	1205	10%	225	2%	11641
	Relapse	2041	1281	63%	201	10%		142	7%	77	4%	273	13%	67	3%	2041
	NS(-)	4998	0		4080	82%		230	5%	25	1%	533	11%	130	3%	4998
2000	NS(+)	16792	12214	73%	1581	9%	82%	892	5%	283	2%	1556	9%	266	2%	16792
	Relapse	2704	1795	66%	262	10%		194	7%	88	3%	294	11%	71	3%	2704
	NS(-)	9097	0		7566	83%		431	5%	47	1%	883	10%	170	2%	9097
2001	NS(+)	20922	15394	74%	1622	8%	82%	1094	5%	358	2%	1985	9%	469	2%	20922
	Relapse	3294	2169	66%	337	10%		257	8%	132	4%	283	9%	116	4%	3294
	NS(-)	14539	0		11933	82%		662	5%	53	0%	1511	10%	380	3%	14539
2002	NS(+)	23466	16829	72%	2284	10%	82%	1253	5%	445	2%	2135	9%	520	2%	23466
	Relapse	3648	2476	68%	325	9%		289	8%	126	3%	325	9%	107	3%	3648
	NS(-)	16990	0		14114	83%		907	5%	121	1%	1530	9%	318	2%	16990
2003	NS(+)	27419	19616	72%	2486	9%	81%	1562	6%	564	2%	2480	9%	711	3%	27419
	Relapse	4621	2880	62%	580	13%		402	9%	169	4%	414	9%	176	4%	4621
	NS(-)	26607	0		21445	81%		1356	5%	160	1%	2786	10%	860	3%	26607
2004	NS(+)	31413	23634	75%	2617	8%	84%	1731	6%	697	2%	1961	6%	773	2%	31413
	Relapse	4682	3061	65%	538	11%		407	9%	186	4%	335	7%	155	3%	4682
	NS(-)	34385			27821	81%		2045	6%	188	1%	3048	9%	1283	4%	34385
2005	NS(+)*	34859	27039	78%	2579	7%	85%	1898	5%	825	2%	1787	5%	731	2%	34859
	TB/HIV, NS (+)	1793	1161	65%	41	2%	67%	192	11%	219	12%	139	8%	41	2%	1793
	Relapse*	4458	2897	65%	477	11%	76%	401	9%	202	5%	285	6%	196	4%	4458
2006	TB/HIV, Relapse	370	117	32%	67	18%	50%	111	30%	30	8%	23	6%	22	6%	370
	NS(-)*	34281			28184	82%	82%	2275	7%	149	0.4%	2691	8%	982	3%	34281
	TB/HIV, NS(-)	1615			964	60%	60%	406	25%	46	3%	131	8%	68	4%	1615
2006	NS(+)	39009	30367	78%	2875	7%	85%	1883	5%	1211	3%	1937	5%	736	2%	39009
	TB/HIV, NS (+)	1341	700	52%	89	7%	59%	344	26%	79	6%	82	6%	47	4%	1341
	Relapse	4613	2965	64%	512	11%	75%	418	9%	285	6%	280	6%	153	3%	4613
	TB/HIV, Relapse	296	92	31%	66	22%	50%	106	36%	13	4%	8	3%	11	4%	296
	NS(-)	40430			33830	84%	84%	2253	6%	320	1%	3093	8%	934	2%	40430
	TB/HIV, NS(-)	3030			1942	64%	64%	723	24%	56	2%	216	8%	93	3%	3030

Case notification rate by type of TB patients
(1994 -2007)

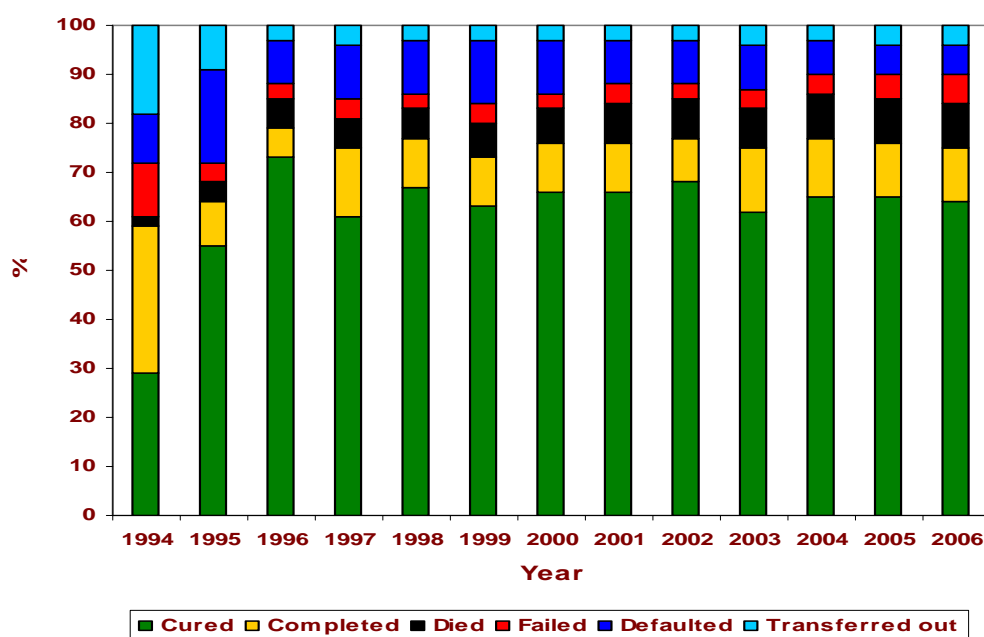


Treatment outcomes of new smear positive TB patients
(1994 to 2006 cohorts)

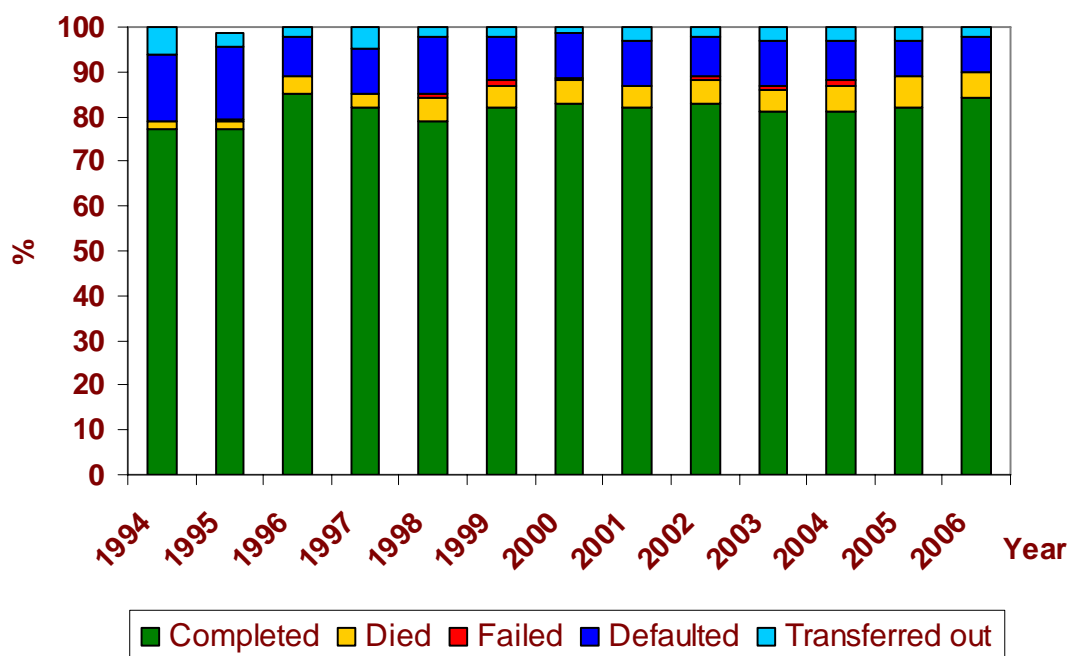


National Tuberculosis Programme

**Treatment outcomes of relapse cases
(1994 to 2006 cohorts)**



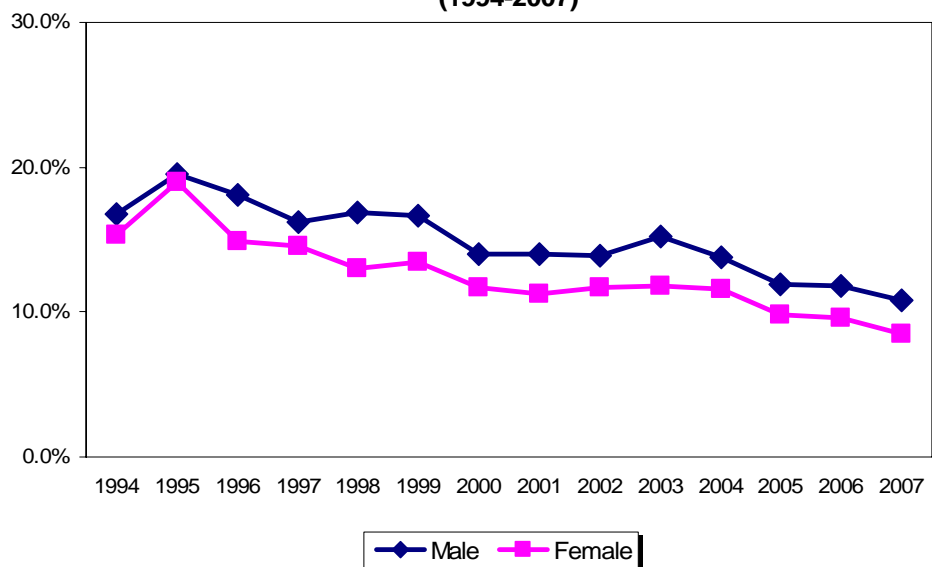
**Treatment outcomes of new smear negative TB patients
(1994-2006 cohorts)**



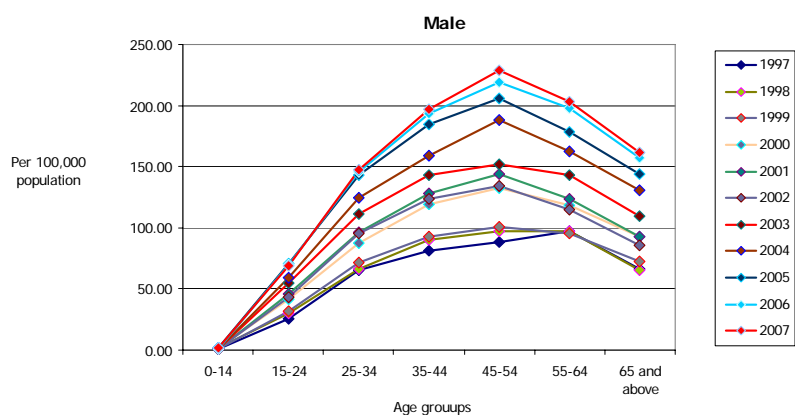
National Tuberculosis Programme

Annex-32

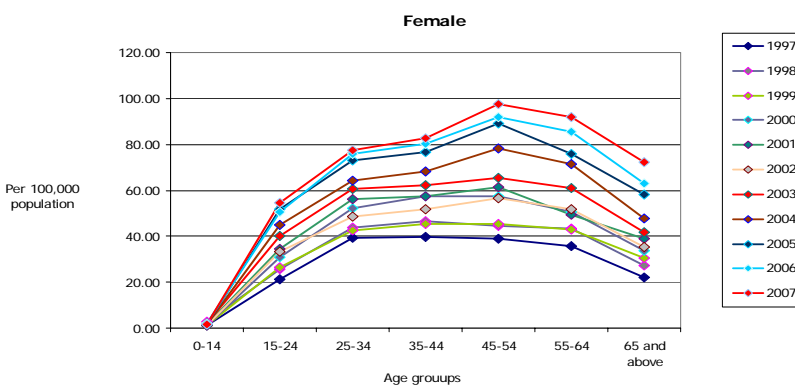
Proportion of Relapses among New Smear (+) Cases + Relapse Cases (1994-2007)



Age specific notification rate of new smear positive TB patients (1997-2007)(Union)



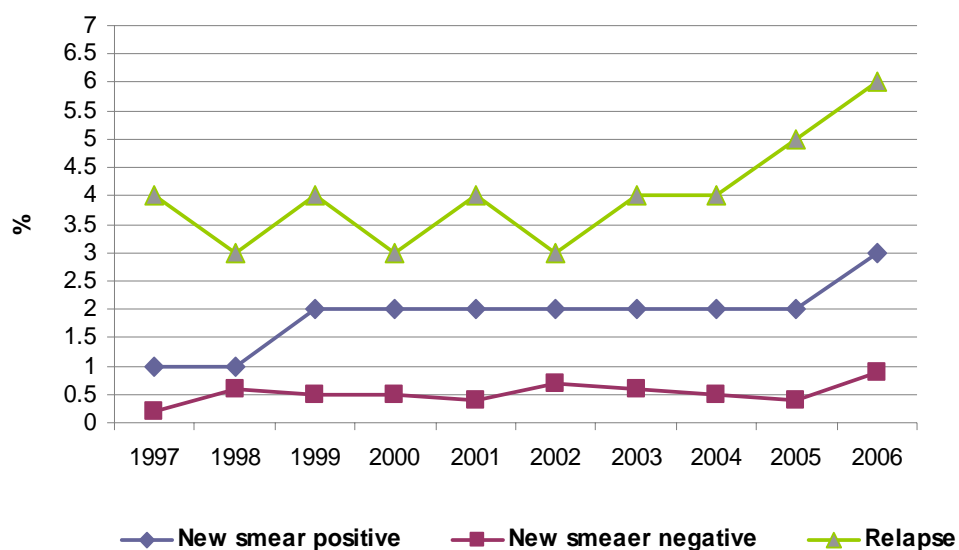
Age specific notification rate of new smear positive TB patients (1997-2007) (Union)



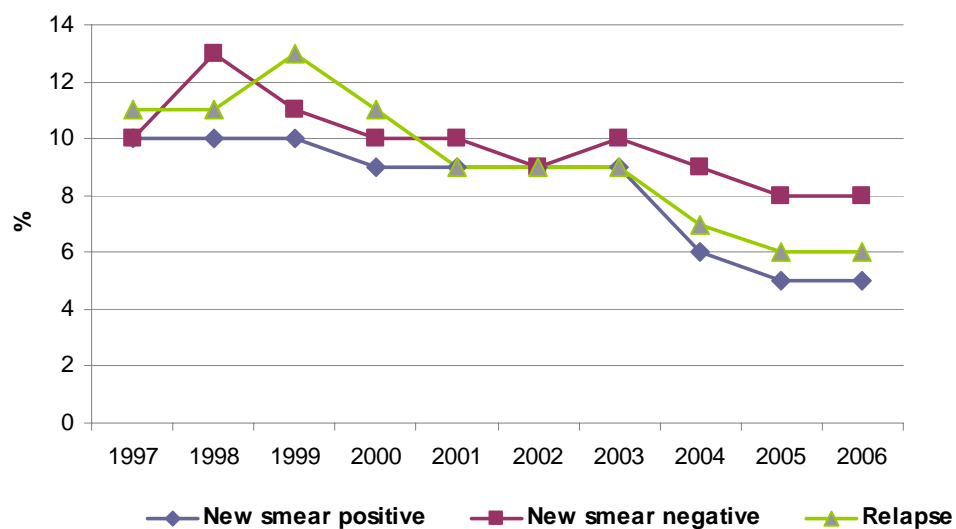
National Tuberculosis Programme

Annex-33

Failure rates of new smear positive, new smear negative and relapse TB patients (1997-2006)



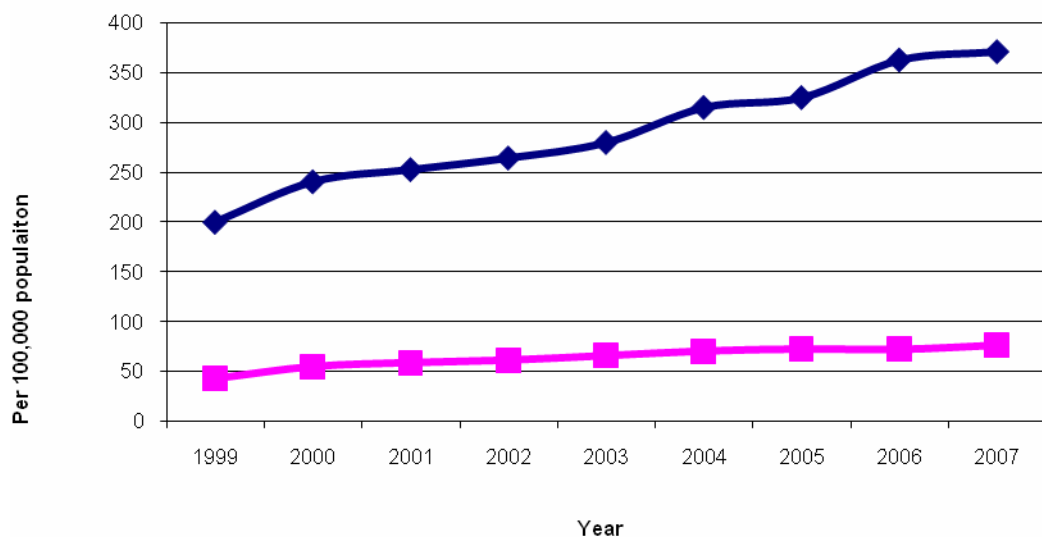
Defaulter rate of new smear positive, new smear negative and relapse TB patients (1997-2006)



National Tuberculosis Programme

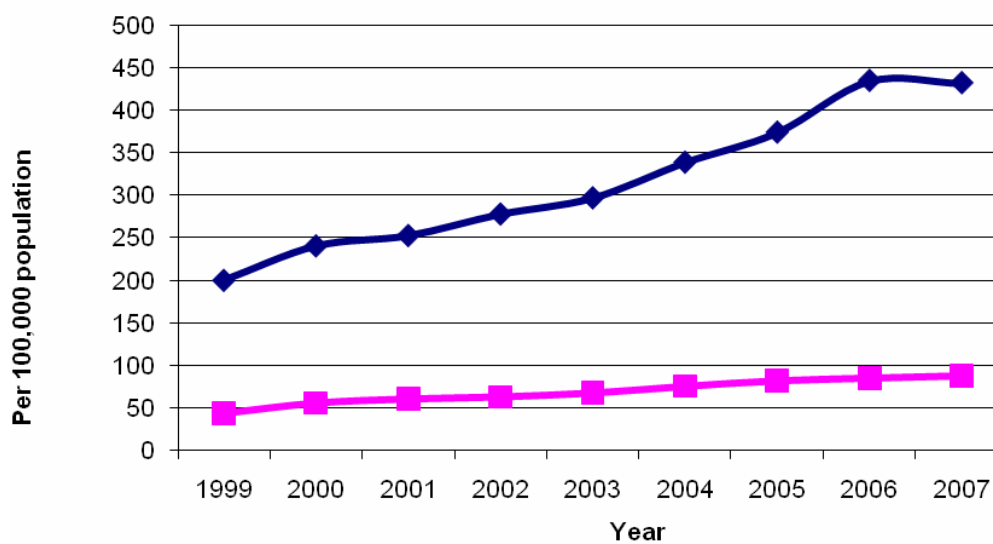
Annex-34

NTP:TB suspect' examination rate & S (+) notification rate



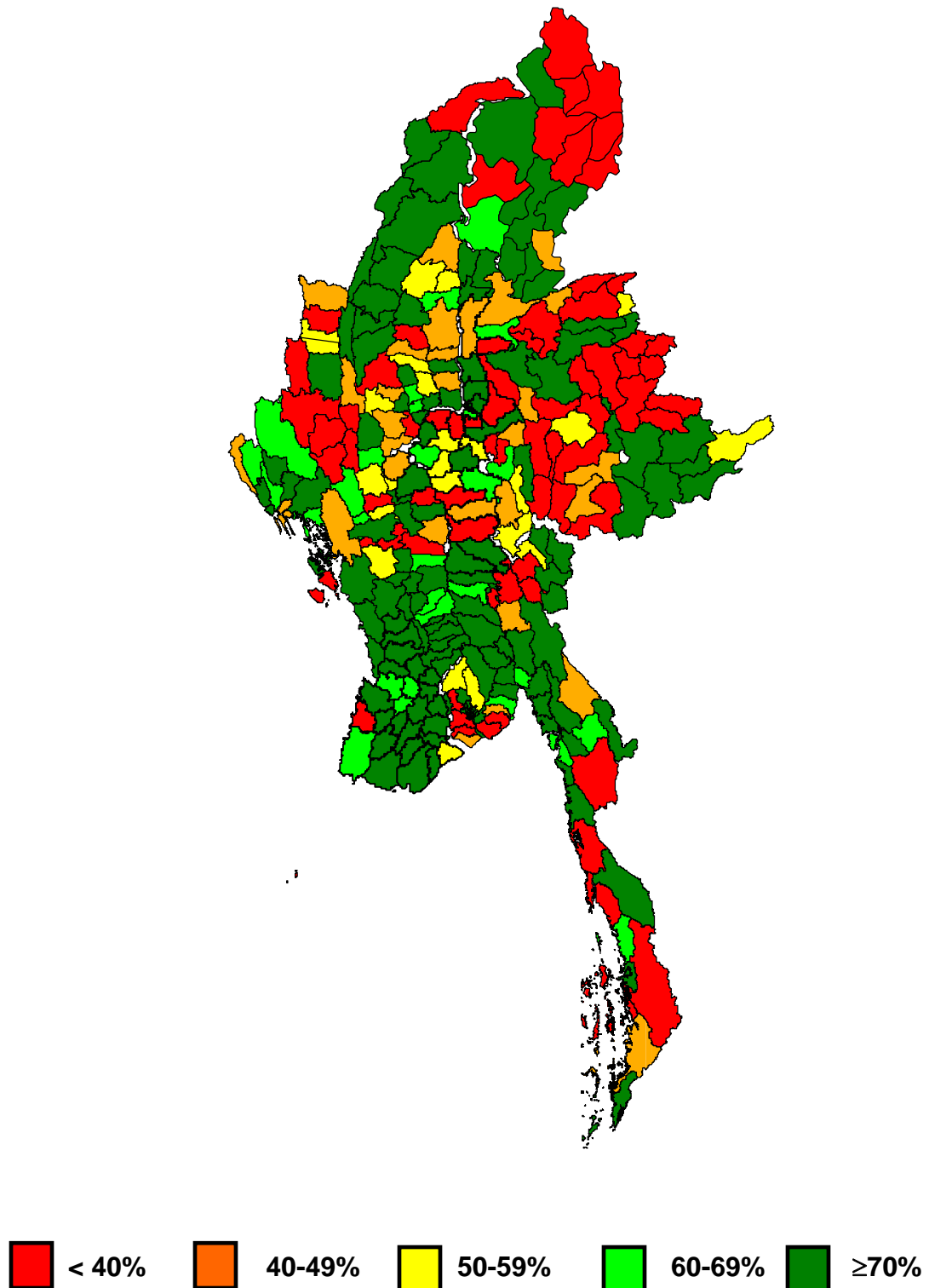
◆ TB suspect's examination rate ■ Smear positive notification rate

NTP + Other Unit: TB suspect' examination rate & S (+) notification rate

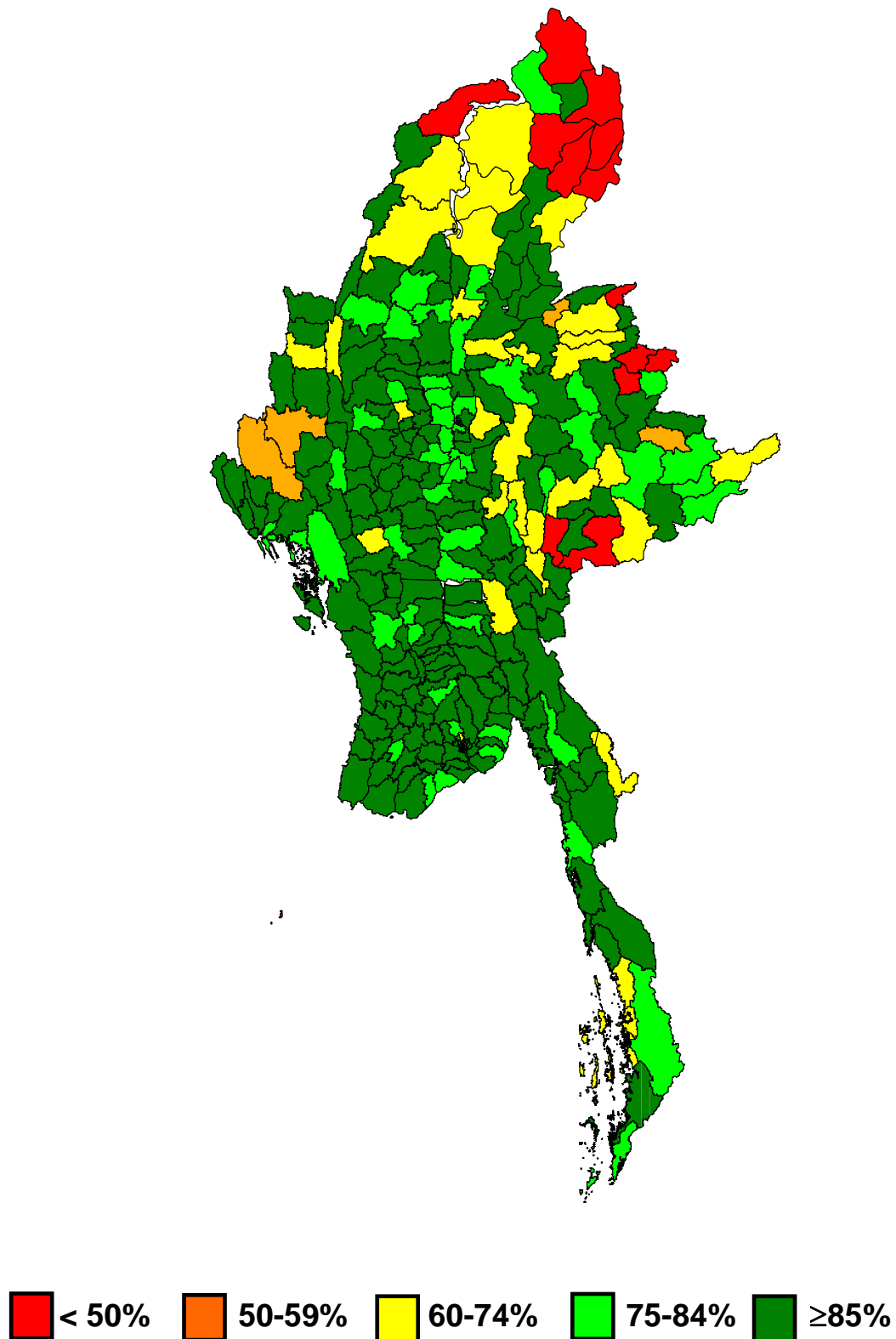


◆ TB suspect's examination rate ■ Smear positive notification rate

Categories of case detection rates by townships



Categories of treatment success rates by townships



**National Tuberculosis Programme
Yangon Divisional TB Center**

Annex-37

Registered Chronic TB Cases by townships

Yangon Division (Eastern District)

SN	Township	UTI (Aung San)	Aung San TB Hospital	Latha Diag.Centre	Total
1	North-Okkala	9	5	1	15
2	South-Okkala	5	3		8
3	Thingangyun	7	1	5	13
4	Yankin		1	1	2
5	Tarmwe	5		4	9
6	Mingalar T/N	6	1	7	14
7	Pazundung		1		1
8	Thakata	9	1	8	18
9	North-Dagon	2	1	3	6
10	Botataung		1	1	2
11	South-Dagon	5		4	9
12	Dawbon	3		1	4
13	East Dagon	1			1
14	Dagon Seikkan	1			1
	Total	53	15	35	103

Yangon Division (Western District)

SN	Township	UTI (Aung San)	Aung San TB Hospital	Latha Diag.Centre	Total
1	Kyimyindine	3		1	4
2	Sanchaung	4	4	1	9
3	Hlaing	4	5	1	10
4	Kamayut	2	2		4
5	Mayangone		2	1	3
6	Ahlone	2			2
7	Dagon				0
8	Bahan	2			2
9	Kyauktada	1		1	2
10	Pabedan	1		1	2
11	Latha	2			2
12	Lanmadaw				0
13	Seikkan				0
	Total	21	13	6	40

Yangon Division (Southern District)

SN	Township	UTI (Aung San)	Aung San TB Hospital	Latha Diag.Centre	Total
1	Thanlin				
2	Kyauktan				
3	Kayan			1	1
4	Thoungwa				0
5	Dalla	2	2		4
6	Kawhmu				0
7	Kungyangone				0
8	Twantay			1	1
9	Khanaungto	1			1
10	Co Co Gyun				0
	Total	3	2	2	7

Yangon Division (Northern District)

SN	Township	UTI (Aung San)	Aung San TB Hospital	Latha Diag.Centre	Total
1	Insein	7	8		15
2	Shwepyithar	3	5		8
3	Hlaingtharyar	8	8		16
4	Mingaladone	10	6		16
5	Hlegu	1			1
6	Hmawbi	2	3		5
7	Taikkyee				0
8	Htantabin				0
	Total	31	30	0	61

Other State and Divisions

SN	Township	UTI (Aung San)	Aung San TB Hospital	Latha Diag.Centre	Total
1	Bago	2	2	1	5
2	Hakha	1			1
3	Rakhine	1			1
4	Mawlamyaing	1			1
5	Myanaung	1			1
6	Maubin	1			1
7	Nyaungdon		1		1
8	Paunde			1	1
	Total	7	3	2	12
	Grand Total	115	63	45	223