TB INDIA 2009

RNTCP Status Report

I am stopping TB

सत्यमेव जयते

Central TB Division
Directorate General of Health Services
Ministry of Health and Family Welfare

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Nirman Bhawan, New Delhi-110011
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डॉ अन्बुमणि रामदास
Dr. ANBUMANI RAMADOSS

FOREWORD

India is the highest TB burden country in the world, accounting for one fifth of the global incidence - an estimated 1.9 million cases annually. The Revised National Tuberculosis Control Programme (RNTCP) has now completed over ten years of its implementation, TB mortality in the country has reduced from an estimated 42/lakh population in 1990 to 28/lakh population in 2006, and the prevalence of TB in the country has reduced from 568/lakh population in 1990 to 299/lakh population by the year 2006 as per the WHO 2008 Global TB Report. These are encouraging trends pointing that the RNTCP is on the right path and steadily working towards achieving by 2015 the United Nations' Millennium Development Goals relating to TB.

Since its inception, the Programme has initiated over 9.5 million patients on treatment, thus saving nearly 1.7 million additional lives. Treatment success rates have tripled from 25% to 86% and TB death rates have been cut 7-fold from 29% to 4% in comparison to the pre-RNTCP era.

As the programme strives to achieve the objective of TB control, it is faced with several challenges, foremost being the threat of drug resistance TB. RNTCP has developed a multi-faced strategy to address this issue. While the key focus of the programme is the prevention of emergence of drug resistance by provision of quality DOTS Services, the management of the patients suffering from Multi-drug resistant TB (MDR-TB) is being undertaken under DOTS Plus. The programme is in the process of establishing a network of accredited Culture and Drug Sensitivity Testing (DST) laboratories to provide diagnostic and follow up services and DOTS Plus sites for initiating and monitoring the treatment of MDR-TB patients. The DOTS Plus services which were initiated in 2007 in Gujarat and Maharashtra have been scaled up to the States of Andhra Pradesh, Delhi, Kerala, Haryana and West Bengal in 2008. The programme is making intensive efforts to make these services available in all States by 2010.

The problem of drug resistance has been further compounded with the emergence of Extensively drug-resistant TB (XDR-TB), which is a subset of MDR cases with additional resistance to key second line drugs leading to extremely poor outcomes. XDR-TB has been reported in all regions of the world and has been classified by WHO as a serious emerging threat to public health. In India though the prevalence of XDR-TB, as indicated by some preliminary data, is presently low but the potential threat is of real concern.

Unregulated availability and injudicious use of the first and second line anti-TB drugs outside of RNTCP, along with non-existent systems to ensure standardized regimens and treatment adherence have been attributed for emergence of drug resistance TB. To address this issue RNTCP, in collaboration with Tuberculosis Research Centre, Chennai and through involvement of a wide range of public and private stake-holders, has developed a guidance document on the prevention of drug resistance TB, called the "Chennai Consensus Statement". This has been widely disseminated amongst health care providers in the country.

We have come a long way over the last 11 years and the achievements of RNTCP make us, quite correctly, very proud. But I would like to emphasize again that the irrational and unsupervised use of first and second line anti-TB drugs for the treatment of TB patients is threatening the progress made by the programme and needs to be actively discouraged. Further, availability of quality DOTS services need to be ensured for every TB patient in the country to provide lasting cure and prevent drug resistant TB from developing.

On the occasion of publication of the ninth annual report of RNTCP, I would like to congratulate all those involved in TB control efforts across the country for all their hard work and commitment to achieve the goal of a TB-free India. Everyone of us has to make a contribution to "Stop TB". I, in my personal capacity, and my Ministry are fully committed to support the required intensified TB control efforts and urge all to continue your efforts with same vigour and zeal to achieve a TB-free India.

(Dr. Anbumani Ramadoss)
Union Minister for Health & Family Welfare

March 2009

ABBREVIATIONS

ACSM	Advocacy, Communication and Social Mobilisation
AIDS	Acquired Immune Deficiency Syndrome
AIIMS	All India Institute of Medical Sciences
ANSV	Annual Negative Slide Volume
ART	Anti Retroviral Therapy
ARTI	Annual Risk of Tuberculosis Infection
ASHA	Accredited Social Health Activist
CDC	Centre for Disease Control and Prevention
CGHS	Central Government Health Scheme
CHAI	Catholic Health Association of India
CHC	Community Health Centre
CII	Confederation of Indian Industries
CMAI	Christian Medical Association of India
CTD	Central TB Division
DALYs	Disability Adjusted Life Years
DDG	Deputy Director General
DFID	Department For International Development
DGHS	Director General of Health Services
DMC	Designated Microscopy Centre
DOTS	Directly Observed Treatment Short-course
DRS	Drug Resistance Surveillance
DST	Drug Susceptibility Testing
DTC	District Tuberculosis Centre
DTCS	District TB Control Society
DTO	District Tuberculosis Officer
E	Ethambutol
EQA	External Quality Assessment
GMSD	Government Medical Store Depot
GOI	Government of India
HBCs	High Burden Countries
HRD	Human Resource Development
ICB	International Competitive Bidding
ICMR	Indian Council of Medical Research
ICTC	Integrated Counselling and Testing Centre
IEC	Information, Education and Communication
IMA	Indian Medical Association
IRL	Intermediate Reference Laboratory
ISTC	International Standards for Tuberculosis Care
KAP	Knowledge, Attitude and Practices
LT	Laboratory Technician
MDGs	Millennium Development Goals

MDR-TB	Multi Drug Resistant TB
MIFA	Management of Information For Action
MIS	Management Information System
MO	Medical Officer
MoHFW	Ministry of Health and Family Welfare
MOTC	Medical Officer-Tuberculosis Control
MoU	Memorandum of Understanding
NACO	National AIDS Control Organisation
NACP	National AIDS Control Programme
NGO	Non Governmental Organisation
NRHM	National Rural Health Mission
NRL	National Reference Laboratory
NTF	National Task Force
NTI	National Tuberculosis Institute
NTP	National Tuberculosis Programme
NUHM	National Urban Health Mission
OR	Operational Research
OSE	On-Site Evaluation
PHC	Primary Health Centre
PP	Private Practitioner
PPM	Public-Private Mix
PSU	Public Sector Unit
PTB	Pulmonary Tuberculosis
PWB	Patient-Wise Box
QA	Quality Assurance
RBRC	Random Blinded Re-Checking
RNTCP	Revised National Tuberculosis Control Programme
SDS	State Drug Store
SPR	Slide Positivity Rate
STC	State TB Cell
STDC	State Tuberculosis Training & Demonstration Centre
STF	State Task Force
STLS	Senior TB Laboratory Supervisor
STO	State TB Officer
STS	Senior Treatment Supervisor
TB	Tuberculosis
TRC	Tuberculosis Research Centre
TU	Tuberculosis Unit
UHC	Urban Health Centre
USAID	United States Agency for International Development
WHO	World Health Organization
XDR-TB	Extensively Drug Resistant TB
Z	Pyrazinamide
ZTF	Zonal Task Force

CONTENTS

RNTCP OVERVIEW–2008

- India is the highest TB burden country accounting for one fifth of the global incidence (Global annual incidence estimate is 9.1 million cases out of which it is estimated that 1.9 million cases are from India). India is 17th among 22 High Burden Countries in terms of TB incidence rate (Source: WHO global TB report 2008).
- The Revised National TB Control Programme (RNTCP), based on the internationally recommended Directly Observed Treatment Short-course (DOTS) strategy, was launched in 1997 expanded across the country in a phased manner with support from the World Bank and other development partners. The objectives of the programme are to
  a. To achieve and maintain cure rate of at least 85% among New Sputum Positive (NSP) patients
  b. To achieve and maintain case detection of at least 70% of the estimated NSP cases in the community
- Full nation wide coverage was achieved in March 2006 covering over a billion populations (1114 million) in 632 districts / reporting units. In terms of treatment of patients, RNTCP is the largest and the fastest expanding programme in the world. In 2005 alone, 1.29 million TB patients, in 2006, 1.39 million and in 2007, 1.48 million patients have been enrolled for treatment. In 2008 1.51 million patients have already been placed on treatment.
- Treatment success rates have tripled from 25% to 86% & TB death rates have been cut 7-fold from 29% to 4% in comparison to the pre-RNTCP era
- Since its inception, the Programme has initiated nearly 10 million patients on treatment, thus saving nearly 1.8 million additional lives
- The programme has consistently maintained the treatment success rate >85% and NSP case detection rate (CDR) close to the global target of 70%. In 2007, RNTCP has achieved the NSP CDR of 70% and treatment success rate of 86% which is in line with the global targets for TB control. In the year 2008, the NSP CDR is 72% and NSP treatment success rate is 86%.
- Monitoring, supervision and evaluation: All states are currently implementing the 'Supervision and Monitoring strategy' – detailing guidelines, tools and indicators for monitoring the performance from the PHI level to the national level. The programme is focusing on the reduction in the default rates amongst all new and re-treatment cases and is undertaking steps for the same.
- Quality assured diagnostic facilities are available through more than 12,000 sputum microscopy laboratories in the health system across the country. As a result, the proportions of sputum positive cases confirmed in the laboratory are double to that of the previous programme and are on par with international standards.
- Quality assured, anti-TB drugs for the full course of treatment is provided to the patients through patient wise boxes. Decentralized treatment is provided through a network of more than 300,000 DOT providers to provide treatment to the patients as near to their home as possible.

- Pediatric patient wise boxes have been introduced under the programme for the treatment of pediatric patients suffering from TB since 2006. These boxes are designed according to the dosages used for different weight bands. All the key RNTCP staff has been trained in the use of these boxes
- Sound training materials have been developed for all categories of staff. The training materials are modular in content and a number of them have been recently revised keeping in view the new developments in RNTCP. Modular trainings ensures uniform standard and avoids possible subjectivity and bias of the trainers.
- To improve access to tribal and other marginalized groups the programme has developed a Tribal action plan which is being implemented with the following provisions:
  a. Provision of additional TB Units and DMCs in tribal/difficult areas
  b. Provision of TBHVs for urban areas
  c. Compensation for transportation of patient & attendant in tribal areas
  d. Higher rate of salary to contractual staff posted in tribal areas
  e. Enhanced vehicle maintenance and travel allowance in tribal areas
  f. Studies to document utilization by marginalized groups
- To know the prevalence of drug resistance amongst new cases and re-treatment cases, state wide community based surveys have been carried out in the states of Gujarat and Maharashtra. These surveys estimate the prevalence of Multidrug Resistant TB (MDR-TB) to be about 3% in new cases and 12-17% in retreatment cases. These surveys also indicate that the prevalence of MDR-TB is not increasing in the country. Two more surveys are underway in the states of Andhra Pradesh and Uttar Pradesh and there is a plan to undertake a survey in Orissa in the near future.
- The programme is in the process of establishing a network of 27 accredited Culture and Drug Susceptibility testing Intermediate Reference Laboratories (IRLs) across the country in a phased manner for diagnosis and follow up of MDR TB patients. Six culture and DST Labs including 6 IRLs (Andhra Pradesh, Delhi, Gujarat, Kerala, Maharashtra and Tamil Nadu) and 2 private sector labs (BPRC Andhra Pradesh and CMC Vellore) have been accredited in 2008. Another 8 IRLs (Chattisgarh, Haryana, Jharkhand, Orissa, Rajasthan, Uttarakhand, Uttar Pradesh, West Bengal) and 5 medical college labs are presently under the accreditation process and are expected to be accredited in 2008-09. The remaining IRLs will be accredited in 2009-10.
- DOTS plus for management of MDR TB has been rolled out in the states of Gujarat and Maharashtra in March, 2007 and in Andhra Pradesh in Oct, 2008. Currently 220 MDR-TB patients are on treatment in these states. Delhi, Haryana, Kerala and West Bengal have initiated the identification of MDR suspects and will roll out the treatment services shortly. Rajasthan and Tamil Nadu are in the advanced stage of preparation and likely to initiate DOTS Plus services in end 2008. Remaining states will be covered under DOTS Plus in 2009-10.
- TB HIV coordination: The collaborative activities which were being undertaken in 14 states earlier have been scaled up to involve all the states in 2008. NACP & RNTCP have developed "National framework of joint TB/HIV Collaborative activities" in 2007, and then revised in 2008, which redefines the scopes of TB/HIV collaborative activities being implemented in the country in Fiscal 2008.

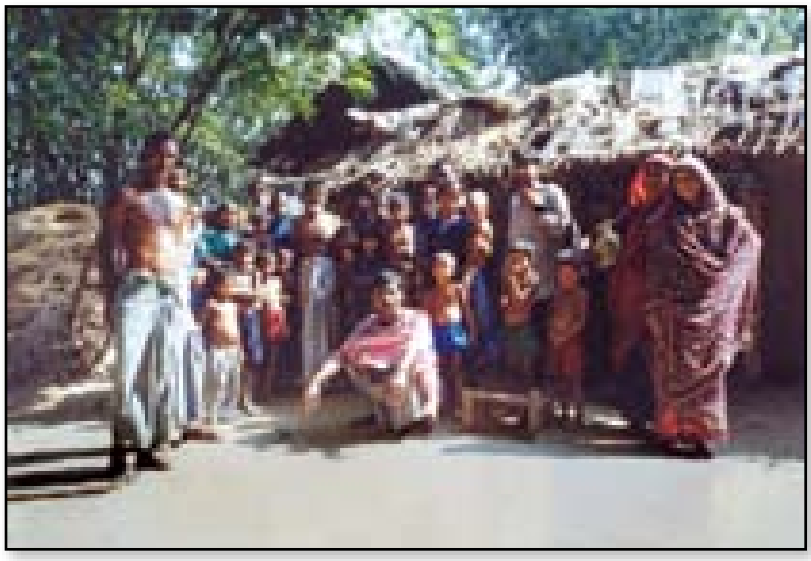
Year 2008 saw continued increase in the quantum of referrals between the programme. In the year 2008 more than 0.16 million ICTC clients were referred to RNTCP for TB diagnostic evaluation. 0.13 million TB patients were tested for HIV and more than 20,000 patients were detected to also be HIV-infected.

- Public Private Mix (PPM) activities: More than 2500 NGOs, 19,000 Private Practitioners, 150 corporate hospitals and 267 Medical Colleges are implementing RNTCP.
- Intensified IMA-PPM project is being undertaken in 167 districts of 6 states under Global Fund Project (Round 6) seeking to involve 536 IMA branches, sensitize around 40,000 PPs and circulate RNTCP newsletter quarterly to around 55,000 IMA members.
- Catholic Bishops Conference of India (CBCI) is implementing RNTCP in 11 states of India under the Global Fund Project (Round 4). It is expected that all dispensaries, major hospitals, Community Care Centres and Medical Colleges under the aegis of the CBCI would participate in RNTCP as per national policy. State level workshops have been conducted. Training and sensitization at institutional level is under process.
- Operational research (OR): Revised OR agenda based on the RNTCP priority research areas has been developed and disseminated. Special financial provisions and simplification of processes and procedures made for encouraging research in TB. National level ARTI surveys, disease prevalence surveys, besides Drug Resistance Surveillance (DRS) and Knowledge Attitude & Practices (KAP) have been undertaken to monitor the impact of RNTCP and progress towards MDG.
- Impact of the programme:
  a. TB mortality in the country has reduced from over 42/100,000 population in 1990 to 28/100,000 population in 2006 as per the WHO Global TB Report 2008.
  b. The prevalence of TB in the country has reduced from 568/100,000 population in 1990 to 299/100,000 population by the year 2006 as per the WHO Global TB Report, 2008
  c. Repeat population surveys conducted by TRC indicate an annual decline in prevalence of disease by 12%.
- The programme is currently undertaking repeat Zonal ARTI survey (2008-10) and disease prevalence surveys at seven sites (2007-09) to assess the impact of the programme on TB control and additionally monitor the progress towards MDGs.
- ACSM:
  a. An effective advocacy, communication & social mobilization (ACSM) strategy is in place, in order to maintain high visibility of TB and RNTCP amongst policy makers, opinion leaders and community.
  b. Four national level ACSM capacity building training workshops held with the support of National Institute of Health and Family Welfare for the key functionaries in the field (state TB officers, IEC officers & communication facilitators).
  c. Mass Media Agency developed new TV & radio spots and also conducted capacity building workshops in a few selected states.

TB: Burden of the Disease in India

Global Burden of TB

Tuberculosis (TB), a disease caused by the bacterium Mycobacterium tuberculosis, has affected mankind for over 5000 years and the disease continues to be a major cause of morbidity and mortality. Although the bacilli has been discovered over a century back (1882, Robert Koch), and drugs have been available for more than 70 years, nearly a third of the world's population is infected with TB bacilli, i.e. have latent TB, of these 10% have a life time risk of developing to active disease. Poor living conditions, debility and malnutrition predisposes population to disease. In 2006, nearly 9.2 million new cases and 1.7 million deaths were reported due to TB, and over 90% of these occurred in the low and middle income countries.[1] In these regions, TB is the one of the leading cause of adult mortality, ranking third after HIV/AIDS and ischemic heart disease as a cause of death among those aged 15-59 years (and 7th globally among all age groups).[2,3]



TB affects the most productive age group (15-54 years)

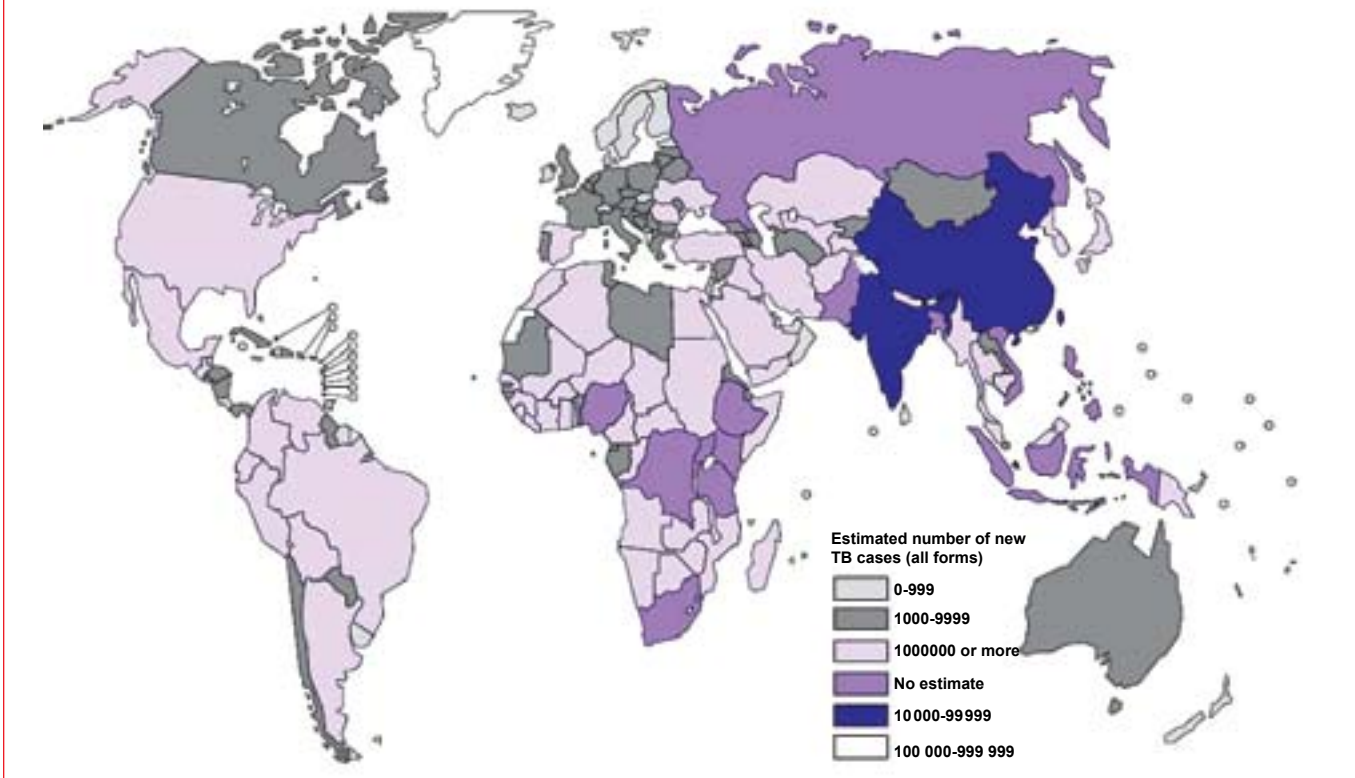
The South-East Asia region, with 25% of the world's population accounts for 34% of the TB burden. Of the 22 high-burden countries (accounting for 80% of the global TB burden), five are in the region, including India-the highest TB burden country in the world (Figures 1 and 2).

The global TB epidemic situation is further aggravated by the emergence of HIV infection and strains of drug-resistant TB. The interaction of TB with HIV is two-folded, with TB being the leading cause of death among HIV infected, and HIV infection being the most potent risk factor for a latent TB infection to convert to active disease. Globally in 2006, 8% of incident TB cases (0.7 million) and 12% of TB deaths (0.2 million) were in HIV-positive people.

Multi drug-resistant TB (MDR-TB)[4] has been reported in almost all parts of the world, primarily as a consequence of poor treatment services, which have not only increased the costs towards treatment, but also increased the

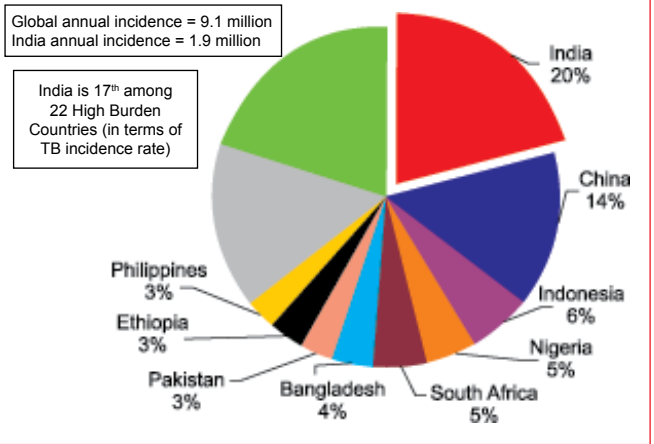
[1] World Health Organization. Global tuberculosis control: surveillance, planning, financing: WHO report 2008. Geneva: World Health Organization (WHO/HTM/TB/2008.393).
[2] The World Health Report 2003: Shaping the Future. Geneva: World Health organization.
[3] World Health Organization. World Health Statistics 2008. Geneva; 2008.
[4] MDR-TB defined as resistance to the 2 main first line anti-TB drugs – Rifampicin and Isoniazid (INH)

Fig. 1: Estimated number of new TB cases, by country, 2006



Source: WHO Global TB Report 2008

Fig. 2: India is the largest TB burden country accounting for one fifth of the global incidence



Source: Reproduced from WHO Global TB Report 2008

risk of transmission of these resistant strains of the bacilli. In 2006, following the identification and reporting of the extensively drug-resistant TB (XDR-TB),[5] WHO has classified it as a serious emerging threat to global public health, especially in countries with high HIV prevalence.[6]

The potentially destructive effect of the disease has been demonstrated in 2006, following a deadly outbreak of XDR–TB in the small town of Tugela Ferry in KwaZulu-Natal province of South Africa. Of 536 TB patients at the Church of Scotland Hospital, which serves a rural area with high HIV rates, 221 patients were found to have MDR-TB and of these, 53 were diagnosed with XDR-TB. Fifty-two of these patients died within days of detection.

The disease so easily curable with drugs, which cost as little as USD 14-18, has an overwhelming negative economic impact on the patients and their families as it primarily affects the economically productive years of life. The adverse impact is compounded by poor access to adequate and quality treatment services, leading to a vicious cycle of disease and poverty.

[5] XDR-TB defined as resistance to at least INH and Rifampicin (i.e. MDR-TB), and 2 more classes of second line anti-TB drugs viz., any fluoroquinolone, and to at least one of the three injectable drugs (capreomycin, kanamycin and amikacin)

[6] The Global MDR-TB and XDR-TB response plan: 2007-08. Geneva: World Health Organization. (WHO/HTM/TB/2007.387).

TB Burden in India

India is the highest TB burden country globally, accounting for one fifth of the global incidence and 2/3rd of the cases in south East Asia. Nearly 40% of the Indian population is infected with the TB bacillus. Each year, 1.9 million new cases of TB occur in the country, of which about 0.8 million are infectious new smear positive pulmonary TB cases.[7] The estimate of TB incidence in India is based on findings of the nationwide annual risk of TB infection (ARTI) study conducted in 2000-03. The national ARTI was estimated at 1.5% i.e. 75 new smear positive pulmonary TB cases are expected per 100,000 population annually. The prevalence of TB has been estimated at 3.8 million bacillary cases for the year 2000, by the expert group of Govt. of India.[8,9]

By any measure the burden of TB in India is staggering. More than 80% of the burden of tuberculosis is due to premature death, as measured in terms of disability-adjusted life years (DALYs) lost. Every day, more than 5,000 people develop TB disease, and nearly 1,000 people die of TB, i.e. 2 deaths every 3 minutes. As per WHO estimates in 2006, nearly 322,000 persons in India died of tuberculosis (mortality rate 28 per 100,000 persons), which was estimated at over 500,000 annually at the beginning of the revised national TB control programme (RNTCP).[10] Data from specific surveys, however, suggest that case fatality rates prior to RNTCP were generally greater than 25%. In the RNTCP era, case fatality has remained below 5% for new cases registered for treatment under the Programme. Deaths due to TB exceed the combined deaths from all other communicable diseases and account for 26% of all avoidable adult deaths. TB is also the leading killer of women, causing more orphans than those produced by all causes of maternal mortality combined.

One of the TB centres

TB/HIV Co-infection: The emergence and spread of HIV and drug-resistant tuberculosis further threaten to complicate the tuberculosis situation in the country. India, the third highest HIV burdened country, had an estimated 2.31 million (0.36% of adult population in the country) people living with HIV/AIDS (PLHAs) in 2006, emphasizing the enormous challenge ahead.[11] All States and Union Territories of the country have reported HIV/AIDS cases. However, the HIV epidemic pattern shows great variance across the country. The worst affected states are Andhra Pradesh, Karnataka, Maharashtra, Manipur, Nagaland and Tamil Nadu. These six states have reported more than 75% of all the AIDS cases in India and are classified as High Prevalence States. Three other states namely Goa, Gujarat and Pondicherry, have been classified as Moderate HIV prevalence states. Even within the high prevalence states, there are districts which have ante-natal HIV levels below 1%.

[7] TB India 2008. RNTCP Status Report.

[8] Minutes of the Expert committee meeting to estimate TB burden in India. March 2005. Directorate of Health and Family Welfare, Central TB Division, Government of India, 2005. Available at http://www.tbcindia.org. Accessed on December 12, 2006.

[9] Gopi PG, Subramani R, Santha T, Chandrasekaran V, Kolappan C, Selvakumar N, et al. Estimation of burden of tuberculosis in India for the year 2000. Indian J Med Res. 2005 Sep;122(3):243-8.

[10] WHO Report 2006: Global Tuberculosis Control - Surveillance, Planning Financing. Geneva: World Health Organization; 2006.

[11] National AIDS Control Organization. http://www.nacoindia.org. Accessed on December 12, 2008.

People gathered at TB centre for community meeting, West Bengal

Tuberculosis is one of the earliest opportunistic diseases to develop amongst persons infected with HIV. HIV infection is the most powerful risk factor for the progression of TB infection to TB disease, of those infected with TB bacilli. An HIV positive person also infected with TB bacilli has 50-60% life time risk of developing TB disease, as compared to an HIV negative person who has a 10% life-time risk of developing TB disease.[12]

In India, the TB epidemic in the country is predominantly driven by the non-HIV positive TB cases. It is estimated that nearly 5% of the TB patients are HIV infected. The periodic HIV survey in TB patients, which was carried out in 4 districts in 2005-06, was scaled up to 15 districts in 2006-07. The 2007 survey represents the most detailed evaluation to date of HIV epidemiology among TB patients in India. The survey demonstrated that the prevalence of HIV among TB patients varied substantially across the geographic regions between 1% and 13.8% across the 15 surveyed districts.

MDR and XDR-TB: The emergence of resistance to drugs used to treat TB, and particularly MDR-TB, has become a significant public health problem in a number of countries and an obstacle to effective TB control. Several small surveys conducted across the country have shown the prevalence rates of MDR-TB in the country at around 3% among new cases, and 12% among retreatment cases.[13,14] A large scale population based survey in the states of Gujarat and Maharashtra has also indicated similar resistance levels (new-3% and retreatment-12-17%). Available information suggests that the proportion of MDR-TB is relatively low in India. However, this translates into a large absolute number of cases, with an estimated annual incidence of 110,000 cases of MDR-TB.

XDR-TB has been reported in India by isolated studies with non-representative and highly selected clinical samples. The magnitude of the problem remains to be determined due to the absence of laboratories capable of conducting quality assured second line Drug Susceptibility

[12] World Health Organization. TB/HIV, A Clinical Manual. 2004.

[13] Paramsivan CN. Anti-tuberculosis Drug Resistance Surveillance. In Tuberculosis. Editors S K Sharma and A Mohan, Jaypee Medical Publishers Pvt Ltd, New Delhi, 2001, p463-476.

[14] Tuberculosis Research Centre. Trends in initial drug resistance over three decades in a rural community in South India. Indian J Tuberc 2003;50:75-86.

Testing (DST). However, what is frightening is the potential threat of XDR-TB in India, with unregulated availability and injudicious use of the second line drugs along with non-existence of systems to ensure standardized regimens and treatment adherence for MDR-TB outside the national programme. The problem of MDR and XDR-TB in India and across the world raises the possibility that the current TB epidemic of mostly drug susceptible TB will be replaced with a form of TB with severely restricted treatment options. If this happens it would jeopardize the progress made in recent years to control TB globally as well as in India and would also put at risk the plans to progress towards a world where TB ceases to be a public health problem.

Socio-economic impact: Besides the disease burden, TB also causes an enormous socio-economic burden to India. TB primarily affects people in their most productive years with important socio-economic consequences for the household when an individual falls sick with TB. The disease is even more common among the poorest and marginalized sections of the community. Almost 70% of TB patients are aged between the ages of 15 and 54 years. While two thirds of the cases are male, TB takes a disproportionately larger toll among young females, with more than 50% of female cases occurring before 34 years of age. In addition there is a devastating social cost – more than 300,000 children are forced to leave school because their parents have TB, and more than 100,000 women with TB are rejected by their families. The direct and indirect cost of TB to India for morbidity alone amounts to an estimated $3 billion annually (in 2000). Studies suggest that on an average, 3 to 4 months of work time is lost as a result of TB, resulting in an average potential loss of 20-30% of the annual household income. This leads to increased debt burden, particularly for the poor and marginalized sections of the population.[15]

Community meeting of Self-Help Group in district Karim Nagar (Andhra Pradesh)

[15] Ramachandran R, Balasubramaniam R et al, Tuberculosis Research Centre, Chennai. Socio-economic impact of TB on patients and family in India, Int J Tub Lung Dis 1999; 3: 869-877

New Stop TB Strategy

"In recent years India has taken major strides towards controlling TB. The Stop TB Partnership is confident that India will continue the momentum and contribute significantly towards the implementation of the Global Plan to Stop TB, 2006-2015."

Dr. Marcos Espinal, Executive Secretary, Stop TB Partnership Secretariat, Geneva

WHO Stop TB Strategy

Global TB control has made great progress in the past decade. The widespread implementation of the internationally recommended Directly Observed Treatment, Short-course (DOTS) strategy has proved to be an effective tool in controlling TB on a mass basis and is being practised in over 180 countries.

While maintaining the current status, the prime task for the next decade is to achieve the Millennium Development Goals (MDGs) and related Stop TB Partnership targets for TB control. Meeting these targets requires a coherent strategy that enables existing achievements to be sustained, effectively addresses the remaining constraints and challenges, and underpins efforts to strengthen health systems, alleviate poverty and advance human rights.

The new WHO Stop TB Strategy, released in 2006, has identified six principal components to realise the global TB-related MDGs by 2015. They are:

- Pursuing high quality DOTS expansion and enhancement
- Addressing TB/HIV, MDR-TB and other challenges
- Contributing to health system strengthening
- Engaging all care providers
- Empowering patients and communities
- Enabling and promoting research

The twin objectives of RNTCP are the curing of at least 85% of the new sputum positive TB patients and detecting at least 70% of

Joint Review Meeting on HIV/TB collaborative activities: North-Eastern states

such patients in India, following the internationally recommended DOTS strategy and the Stop TB strategy.

After a successful pilot from 1993-1996, which established the technical and operational feasibility of the strategy, expansion of DOTS services took place on a larger scale in India from 1997. The past 12 years have witnessed a rapid expansion of RNTCP, which covered the whole nation by March 2006.

The core element of RNTCP in Phase I (1997-2006) was to ensure high quality DOTS expansion in the country, addressing the five primary components of the DOTS strategy.

Political and Administrative Commitment

The Government of India has given TB control programme top priority. The government's continuous financial commitment, human resources and administrative support speak of its commitment to control and eliminate TB and the success of the programme, to date, bears testimony to this commitment.

Good Quality Diagnosis through Sputum Microscopy

Sputum microscopy continues to be the primary tool for detection of infectious TB, as it provides information on the extent of infection of the patient, helps in categorisation of the patient for treatment and is an objective method to monitor the patient's progress. Moreover, the result is available within two days and the correct


Sputum Microscopy

treatment can be started immediately. Apart from sputum microscopy, RNTCP also uses standardised diagnostic algorithms to diagnose and treat all forms of TB wherein X-ray plays a supporting role.

Uninterrupted Supply of Good Quality Drugs

RNTCP uses intermittent short-course chemotherapy (SCC) regimens to facilitate the direct observation of treatment. This is consistent with the World Health Organization guidelines. RNTCP ensures that there is no interruption in treatment and drugs once a person is diagnosed with TB. Sufficient anti-TB drugs in patient wise boxes are made available at all the appropriate levels (Peripheral Health Institution/TB unit/District/ State/National) to make sure that the treatment does not stop mid-way due to lack of drugs.

The uninterrupted supply of drugs to each patient is made possible through the "patient-wise box." Patient-wise drug boxes (both adult and paediatric) are an innovation of RNTCP wherein a box of medications for the entire duration of the treatment is earmarked for every patient registered. This ensures the availability of the full course of medication to the patient the moment s/he is registered for treatment. Patient-wise drug boxes have helped to improve patient care, adherence, drug supply and drug stock management.

Drug boxes stored in one of the centres in a Delhi slum

Under RNTCP, all sub-centres, primary health centres, community health centres, and other health facilities provide DOTS services to patients. Since TB patients may also seek treatment from private physicians, the government has taken initiatives to provide DOTS services through the private sector and through community volunteers.

Directly Observed Treatment

Directly observed treatment (DOT) is one of the key elements of the DOTS strategy. In DOT, an observer (health worker or trained community volunteer who is not a family member) watches and supports the patient in taking drugs. It is this DOT provider who ensures that the patient takes the right drugs, in the right doses, at the right intervals, for the right duration.

Under optimal programme conditions, treatment without observation achieves a success rate of 30-60%, whereas, direct observation results in a much higher success rate of 85-95%.

DOT helps to reduce development of drug resistance, because direct observation ensures adherence and hence reduces the probability of emergence of drug-resistant organisms. Further, following a correct treatment regimen reduces the spread of infection in the community and helps in controlling the development of new cases.

Systematic Monitoring and Accountability

RNTCP has a systematic monitoring mechanism which accounts for/tracks the outcome of every patient put on treatment. There is a standardised recording and reporting structure in place. The cure rate and other key indicators are monitored

DOT Providers

regularly at every level of the health system and supervision is intensified if an area is not meeting the desired expectations. The uniqueness of RNTCP is that it shifts the responsibility for cure from the patient to the health system.

Addressing Stop TB Strategy under RNTCP

RNTCP Phase II (2006-11) is in line with the new WHO Stop TB Strategy for TB control and covers all the activities proposed under the strategy. The RNTCP is collaborating with the National AIDS Control Programme (NACP) to address challenges of TB-HIV co-infection. It has developed guidelines for management of MDR-TB and has rolled out DOTS Plus services in the states of Gujarat and Maharashtra and is being extended to other states in a phased manner. By strengthening laboratories and drug delivery systems, and by providing additional contractual staff, RNTCP continues to strengthen the general health system in the country. In the area of involvement of all care providers, public as well as private, RNTCP has been a global leader.

Table 1: Categorisation and treatment regimens under RNTCP

Category of treatment	Type of patient	Regimen*
Category I	New sputum smear-positive Seriously ill** new sputum smear-negative Seriously ill** new extra-pulmonary	$2H_3R_3Z_3E_3 + 4H_3R_3$
Category II	Sputum smear-positive relapse Sputum smear-positive failure Sputum smear-positive Treatment after default Others***	$2H_3R_3Z_3E_3S_3 + 1H_3R_3Z_3E_3 + 5H_3R_3E_3$
Category III	New sputum smear-negative, not seriously ill New extra-pulmonary, not seriously ill	$2H_3R_3Z_3 + 4H_3R_3$

*The number before the letters refers to the number of months of treatment. The subscript after the letters refers to the number of doses per week. The dosage strengths are as follows: H: Isoniazid (600 mg), R: Rifampicin (450 mg), Z: Pyrazinamide (1500 mg), E: Ethambutol (1200 mg), S: Streptomycin (750 mg). Patients who weigh 60 kg or more receive additional Rifampicin (150 mg). Patients who are more than 50 years old receive Streptomycin (500 mg). Patients who weigh less than 30 kg receive drugs as per body weight. Patients in Categories I and II who have a positive sputum smear at the end of the initial intensive phase receive an additional month of intensive phase treatment.

**Seriously ill also includes any patient, pulmonary or extra-pulmonary who is HIV-positive and declares his/her sero-status to the categorising/treating medical officer (MO). For the purpose of categorisation, HIV testing should not be done.

***In rare and exceptional cases, patients who are sputum smear-negative or who have extra-pulmonary disease can have Relapse or Failure. This diagnosis in all such cases should always be made by an MO and should be supported by culture or histo-pathological evidence of current, active TB. In these cases, the patient should be categorised as 'Others' and given Category II treatment.

Showcasing India at international forum: Indonesia

An effective advocacy, communication and social mobilisation (ACSM) strategy is in place, in order to maintain high visibility of TB and RNTCP amongst policy makers, opinion leaders and the community to sustain long-term political and administrative commitment and greater community involvement.

With the active support of the TB Research Centre, Chennai, National TB Institute, Bangalore, Lala Ram Swarup Institute of TB and Respiratory Diseases, Delhi, JALMA Institute, Agra and other academicians in Medical Colleges and research institutes, the programme has been undertaking operational research to generate evidence to inform policy decisions and assess the magnitude of disease burden and impact of RNTCP DOTS programme.

The Future

RNTCP is essential in order to maintain the international standards for the management of TB cases. It is necessary that professional bodies endorse the International Standards for TB Care (ISTC) and pledge that all health care providers shall give care to their TB patients as per these Standards.

In its meeting held in October 2007, the National Task Force (NTF) on involvement of Medical Colleges in RNTCP endorsed the Chennai Consensus Statement on the problem, prevention, management and control of MDR and XDR-TB in India.

The Indian medical practitioner community should commit to provide the best possible care in managing patients with tuberculosis, in accordance with international guidelines and standards and ensure rational use of first and second line anti-TB drugs.

RNTCP is building partnerships with civil society organisations and other sectors to reach out to larger sections of society through them.

In addition, the MDR-TB management needs to be scaled up under the RNTCP DOTS Plus strategy while promoting rational use of second line anti-TB drugs in the country. An important component of this is the scaling up of laboratory capacity to diagnose MDR-TB. In the longer term, the success of new diagnostics, drugs and vaccine, currently under research and development, will determine the pace of TB control efforts globally and in India.

RNTCP: Implementation Status and Activities in 2008

The Indian TB Control Programme has successfully completed the largest and most rapid expansion of DOTS in history to cover the entire country in 2006. Phase II (2006-2011) of RNTCP is a step towards achieving the TB-related UN Millennium Development Goals.

The programme has developed a 'Strategic Vision for TB Control for the Country up to 2015', under which it aims to achieve and maintain a cure rate of at least 85% in new sputum positive pulmonary TB patients, and detection of at least 70% of such cases. It aims to further increase the access of services to marginalised groups in hard-to-reach areas through continuation of all activities of Phase I and with intensive monitoring, supervision and evaluation. The Government of India stands fully committed towards the sustained implementation of RNTCP as a high quality programme, at least for the next few decades until tuberculosis ceases to be a public health problem in the country.

RNTCP Phase II is making efforts to strengthen the quality of DOTS through implementation of the RNTCP quality assurance protocol for sputum microscopy; decentralised accessible and patient friendly DOT services; pro-active Public-Private Mix (PPM) activities to increase the reach of DOT services; rational use of standardised first and second line anti-TB drugs; and need based advocacy, communication and social mobilisation to generate awareness and demand for quality services.

Dr Irene Coek, Chairperson, STOP TB Partnership Coordinating Board and Dr Mario Raviglione, Director Stop TB, WHO, Geneva, interacting with professional association members

TB-related Millennium Development Goals

Goal 6
To combat HIV/AIDS, malaria and other diseases

Target 8
To have halted by 2015 and reverse the incidence of malaria and other major diseases, including tuberculosis

Indicators for target 8 to be used to evaluate the implementation and impact of TB control:

Indicator 23
Between 1990 and 2015, to halve the prevalence and death rates associated with tuberculosis

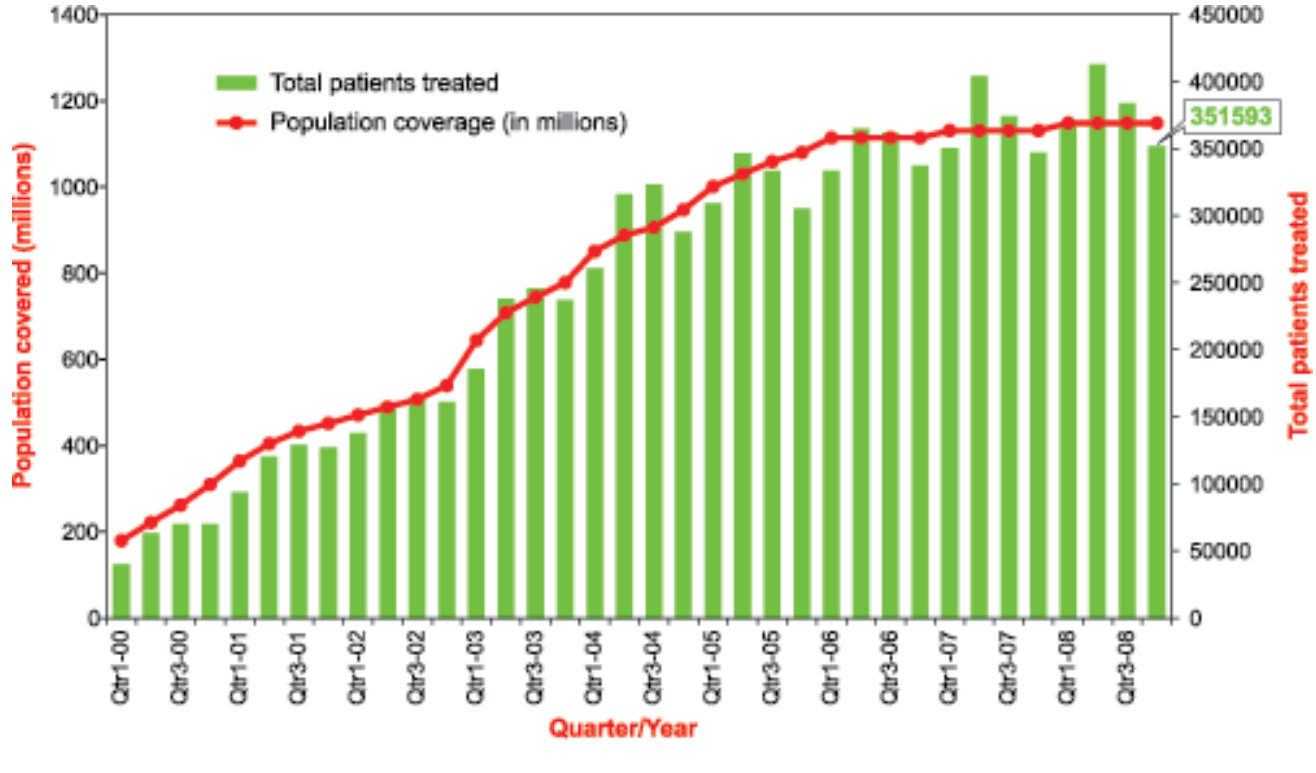
Indicator 24
By 2005, to detect 70% of new smear positive TB cases arising annually, and to successfully treat 85% of these cases

New activities have been proposed in RNTCP Phase II to provide care and management for MDR-TB cases throughout the country in a phased manner. The vision is to have a network of RNTCP accredited quality assured state level Intermediate Reference Laboratories (IRLs), at least one in each large state, providing culture and Drug Sensitivity Testing (DST) services for RNTCP and to have DOTS Plus sites, for the case management of MDR-TB patients as per guidelines by the year 2010.

RNTCP Activities 2008

The Revised National Tuberculosis Control Programme, since its inception in 1997 has trained over half a million staff in the health system, evaluated more than 30 million people with suspected TB, examined more than 100 million

Population in India Covered under DOTS and Total Tuberculosis Patients put on retreatment each quarter



sputum slides and treated more than 8.2 million patients, thereby saving 1.4 million additional lives. This rapid expansion has not compromised on the quality of services. The results meet the internationally set benchmark of a treatment success rate of >85% among new sputum positive pulmonary TB cases. Case detection rate as per global target of 70% has been achieved.

RNTCP is committed to implementing the 2006 Global Strategy to Stop TB and reaching the TB related targets of the Millennium Development Goals by 2015. The RNTCP II aims to provide a road map for TB control to achieve the long term goal, by 2015, of reducing the prevalence of TB by 50%.

Pursue Quality DOTS Expansion and Enhancement

Consolidation and Scale up of RNTCP

The first phase of the project saw the establishment of over 600 state and district TB control societies to facilitate decentralized programme planning and implementation, and over 11,800 microscopy centres have been upgraded to provide quality sputum microscopy services. Over 5.8 million patients have been initiated on treatment during Phase I of the project, and the programme has achieved all the proposed goals in terms of expansion of DOTS services, case finding and treatment success during the 10th Five Year Plan Period (2002-2007).

Year wise allocation for the 11th Five Year Plan

Sl. No.	Year	Actual allocation as per Planning Commission
1	2007-08	267.00
2	2008-09	275.00
3	2009-10	285.00
4	2010-11	300.00
5	2011-12	320.00
		1447.00

However, to achieve the desired epidemiological impact where TB ceases to be a major public health problem, it was essential to support the programme for the next 15-20 years.[1] *In view of the above fact, the government had expressed its due commitment to support the programme as a 100% centrally sponsored programme for the coming 15-20 years, and sustainability of all activities of the programme has been ensured through continued financing of the Phase II of RNTCP till Sept 2012*, which has been approved by the 'Cabinet Committee on Economic Afairs'. This will consolidate, maintain and further improve the achievements of the first phase and enable India's progress towards achieving the TB-related Millennium Development Goal (MDG) targets.

The **RNTCP Phase II** of the World Bank project has been approved for the period Oct. 2006 to Sep. 2011 for a total outlay of USD 256.9 million which includes credit from World Bank of USD 170 million and commodity assistance of anti-TB drugs from DFID through WHO for USD 62.5 million, and the balance by GoI.

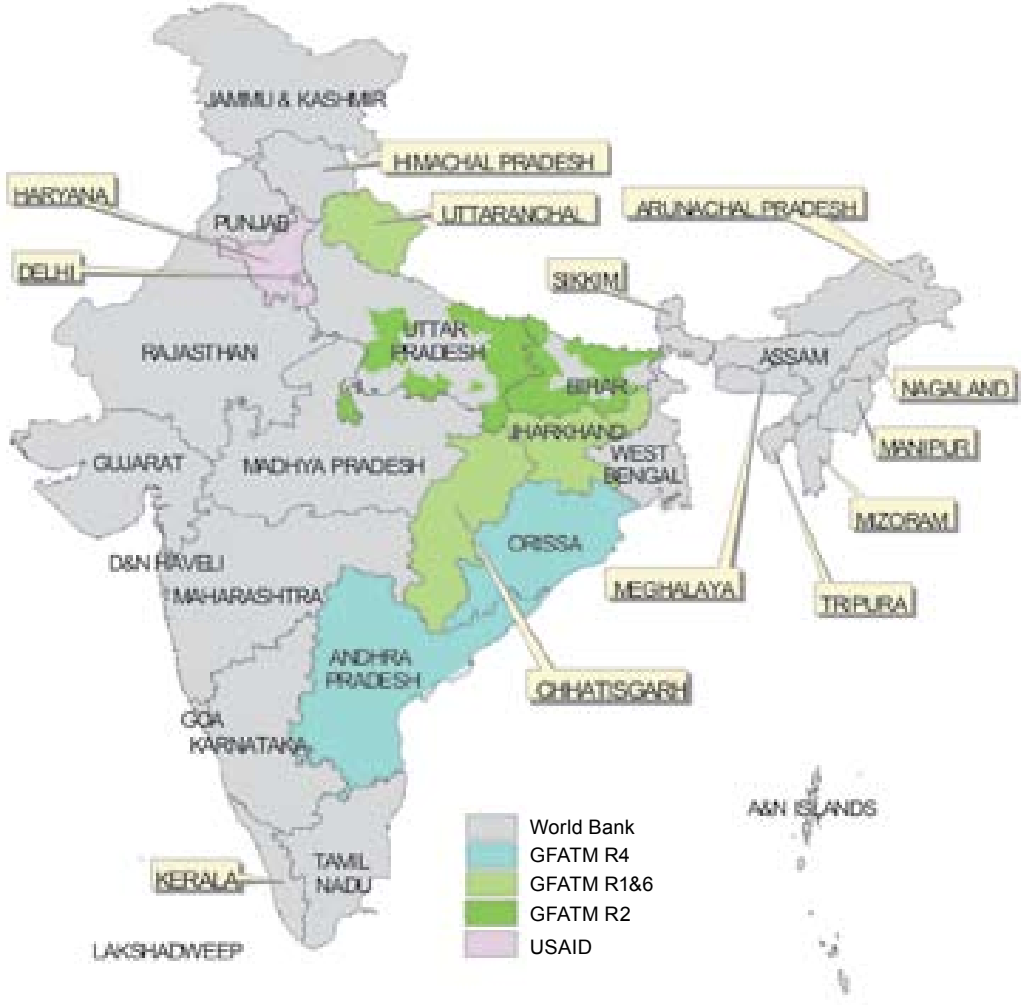
GFATM Funding for RNTCP Programme

The Global Fund is a unique global public/private partnership dedicated to attracting and disbursing additional resources to prevent and treat HIV/AIDS, tuberculosis and malaria. Since its creation in 2002, the Global Fund has become an important source of finance for programmes to fight AIDS, tuberculosis and malaria, and it gives priority to financing programmes from countries with high disease burden.

The Global Fund represents an innovative approach to international health financing and is a partnership between governments, civil society, the private sector and affected communities.

[1] *The Government of India provides 100% grants-in-aid to the implementing agencies i.e. States/ UTs, besides free drugs. The programme is implemented through the general health infrastructure of the states. The States also provide some manpower resources.*

Fig. 1: Current Financial Support to RNTCP



Proposals for the funding grants are invited once/twice a year and funds are disbursed only after thorough screening and examination of proposals by the Technical Review Panel. RNTCP has been successful in obtaining GFATM funding in Rounds 1, 2, 4 and 6.

Global Fund Support: The Global Fund has supported (by grants) DOTS expansion in India under different rounds. DOTS expansion in the 3 States of Chhattisgarh, Jharkhand, and Uttarakhand (56 million populations) was supported by grants for USD 8.78 million under Round 1 of GFATM from April 2003-September 2006. In addition, the Round 2 of GFATM supported DOTS expansion in 56 districts of Bihar and Uttar Pradesh with a population of 110 million for USD 29.10 million (April 2004 to March 2009). Round 4 of GFATM is supporting strengthening of RNTCP implementation in the states of Andhra Pradesh and Orissa w.e.f. November 05 and January 2006 respectively for USD 26.63 million till March 2010. The programme has successfully obtained GFATM Round 6 grant proposal for USD 24.3 million to continue support for strengthening RNTCP services in the 3 Round 1 project states (Chhattisgarh, Jharkhand, and Uttarakhand).

Rolling Continuation Channel (RCC) proposal under GFATM

In November 2006 the Global Fund Board created a new mechanism for strong performing GFATM grants/projects to apply for continued funding for up to an additional six years beyond the

Table 1: RCC–Consolidation of grant proposals											
TB proposals	**April 04-Mar 05**	**April 05-Mar 06**	**April 06-Mar 07**	**April 07-Mar 08**	**April 08-Mar 09**	**April 09-Mar 10**	**April 10-Mar 11**	**April 11-Mar 12**	**April 12-Mar 13**	**April 13-Mar 14**	**April 14-Mar 15**
RCC						Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6
Budget											
Rd 2	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	RCC	RCC	RCC	RCC	RCC	RCC
Budget											
Rd 4		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	RCC	RCC	RCC	RCC	RCC
Budget						28.49					
Rd 6				Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	RCC	RCC	RCC
Budget						22.5	22.3	23.6			
Haryana-USAID					Till March 08	RCC	RCC	RCC	RCC	RCC	RCC
Budget											
World Bank			Yr 1 (Oct)	Yr 2	Yr 3	Yr 4	Yr 5 (Sept)				
Budget											

original term of the grant that is expiring. The Rolling Continuation Channel (RCC) facilitates continuation of the strategy of strong performing grants, together with the flexibility to broaden the scope of the existing interventions. The Rolling Continuation Channel is specifically offered to applicants who have performing grants that have demonstrated impact or potential for impact on the relevant epidemic and show sustainability. Recently the RNTCP Rolling Continuation Channel project proposal has been approved which seeks to extend Global Fund support till 2014-15 to the 125 million population (projected 2008) of Bihar and Uttar Pradesh (expiring Round 2 grant proposal). It is also proposed to scale up RNTCP services to cover 52 million additional population and consolidate other global fund grants (Round 4 and Round 6 covering 185 million population) under the current project and extend support to the state of Haryana (24 million).

Thus, the RCC proposal will cover a population of 362 million across 191 districts in 8 states of India with additional PPM activities in 19 states through CBCI and IMA.

The goal of the project is to "To reduce the burden (morbidity and mortality) of TB in India by 2015, in line with the Millennium Development Goals, and eliminate TB as a public health problem in the country by 2050".

The key components of the proposal are:

- To consolidate RNTCP DOT services across the project states
- Scaling up of DOTS Plus services to these states to manage and treat MDR-TB patients
- Implement revised 'National Framework for joint TB-HIV collaborative activities – Feb. 2008'. Implement intensified TB-HIV package in Andhra Pradesh
- Strengthen and expand RNTCP PPM projects and introduce the revised RNTCP PPM schemes
- Expand IMA-PPM project from 6 States/UTs to 16 States/UTs
- Expand CBCI-PPM project from 11 States to 19 States

With GFATM funding support, the country has established more than 3997 Designated

Dr. L. S. Chauhan talking with MDR-TB patient at DOTS-Plus site

Microscopy Centres, 684 TUs, diagnosed and treated 4.16 lakh NSP patients and a total of more than 10 lakh patients have been registered for treatment under DOTS. The Global Fund support has made a significant contribution to the programme.

Case Detection through Quality Assured Microscopy

A nation-wide network of RNTCP quality assured designated sputum smear microscopy laboratories has been established, which provides appropriate, affordable and accessible quality assured diagnostic services for TB suspects and cases. To meet the standards of internationally recommended diagnostic practices for TB, the programme provides the supply of quality reagents and equipment to the laboratory network. An in-built routine system has been designed for sputum microscopy External Quality Assessment (EQA) and for supervision and monitoring of the diagnostic systems by the RNTCP Senior TB Laboratory Supervisor (STLS) locally and by the intermediate (state level) and national laboratory network for RNTCP at the higher levels.

Quality Assured Laboratory Services

RNTCP has established a nation wide laboratory network, encompassing over 12,000 designated sputum Microscopy Centres (DMCs), which are being supervised by Intermediate Reference Laboratories (IRL) at state level, and National Reference Laboratories (NRL) & Central TB division at the national level. Efforts have been made to consolidate the laboratory network into a well organized one, with a defined hierarchy for carrying out sputum microscopy with external quality assessment (EQA), mycobacterium culture and Drug susceptibility testing (DST), DOTS Plus related activities and Drug resistance surveillance (DRS).

National Reference Laboratories (NRL)

The four NRLs under the programme are Tuberculosis Research Centre [TRC], Chennai, National Tuberculosis Institute [NTI], Bangalore, Lala Ram Sarup Institute of Tuberculosis and Allied Sciences [LRS], Delhi and JALMA Institute, Agra. The NRLs work closely with the IRLs, supervise and monitor the IRLs' activities and also undertake periodic training for the IRL staff in EQA , culture &DST activities.

Two microbiologists and three laboratory technicians have been provided by the RNTCP on a contractual basis to each NRL for supervision and monitoring of laboratory activities. The NRL microbiologist and laboratory supervisor/ technician visits each assigned state (Table 2) at

Tuberculosis Research Centre, Chennai

Table 2: States assigned to NRLs for monitoring of laboratory activities				
NRL	**States and Union Territories (UTs) assigned for EQA**	**Total nos. of IRLs assigned**	**Total nos. of states/UTs assigned**	**Nos. of districts in the states**
NTI	Bihar, Jammu and Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Pondicherry, Rajasthan, West Bengal (& Andaman Nicobar)	11	11	281
TRC	Andhra Pradesh, Chattisgarh, Goa, Gujarat (& Dadra Nagar Haveli, Daman & Diu), Kerala (& Lakshadweep), Punjab (& Chandigarh), Sikkim, Tamil Nadu	8	12	144
LRS	Arunachal Pradesh, Delhi, Haryana, Manipur, Meghalaya, Mizoram, Nagaland, Tripura	4	8	93
JALMA	Assam, Himachal Pradesh, Uttarakhand, Uttar Pradesh	4	4	118

least once a year for 2 to 3 days as a part of on-site evaluation under the RNTCP EQA protocol. Regular supervisory visits are undertaken by the NRL microbiologists to the IRLs to provide technical support for establishing quality assured C&DST services. NRLs also undertake periodic proficiency testing of the IRLs as part of the accreditation process under RNTCP.

The Central RNTCP Laboratory Committee, constituted with microbiologists of the NRLs, CTD and WHO India representatives as members, works as a task force to guide laboratory related activities of the programme.

Lab staff performing C&DST at IRL Kerala

Intermediate Reference Laboratory (IRL)

The states have designated one IRL in the STDC/ Public Health Laboratory/Medical College of the respective state. The functions of IRL are supervision and monitoring of EQA activities, mycobacterial culture and DST and also drug resistance surveillance (DRS) in selected states. The IRL ensures the proficiency of staff in performing smear microscopy activities by providing technical training to district and sub-district laboratory technicians and STLSs. The IRLs undertake on-site evaluation and panel testing to each district in the state, at least once a year. Currently, 27 IRLs are being strengthened to undertake C&DST activities for the diagnosis and follow up of MDR-TB patients. These IRLs would be accredited after satisfactorily fulfilling the criteria of accreditation as per RNTCP guidelines. Till now, IRLs of Gujarat, Maharashtra, Delhi, Andhra Pradesh, Kerala and Tamil Nadu have been accredited and are undertaking C&DST for the MDRTB patients from the respective states.

Table 3: List of designated IRLs and status of EQA activities				
State	**Name of institution where IRL identified/functional**	**OSE**	**EQA RBRC**	**Panel Testing**
Andhra Pradesh	STDC, Hyderabad	Yes	Yes	Yes
Arunachal Pradesh	STDC, Naharlagun	Yes	Yes	No
Assam	Guwahati Medical College	Yes	Yes	No
Bihar	STDC, Patna	Yes	Yes	Yes
Chhattisgarh	Regional Leprosy Training and Research Institute, Raipur	Yes	Yes	No
Delhi	New Delhi TB Centre	Yes	Yes	Yes
Gujarat	STDC, Ahmedabad	Yes	Yes	Yes
Goa	GMC, Bambolim	Yes	Yes	No
Haryana	PHL, Karnal	Yes	Yes	Yes
Himachal Pradesh	TB Hospital, Dharampur	Yes	Yes	Yes
Jammu	Jammu Medical College	Yes	Yes	No
Kashmir	STDC, Srinagar	Yes	Yes	Yes
Jharkhand	Itki TB sanatorium	Yes	Yes	Yes
Karnataka	STDC, Bangalore	Yes	Yes	Yes
Kerala	STDC, Thiruvanathapuram	Yes	Yes	Yes
Madhya Pradesh	STDC, Bhopal	Yes	Yes	No
Maharashtra	STDC, Nagpur	Yes	Yes	Yes
Manipur	STDC, Imphal	Yes	Yes	Yes
Orissa	STDC, Cuttack	Yes	Yes	Yes
Pondicherry	STDC, Pondicherry	Yes	Yes	Yes
Punjab	STDC, Patiala Government Medical College	Yes	Yes	Yes
Rajasthan	STDC, Ajmer	Yes	Yes	Yes
Sikkim	STDC, Gangtok	Yes	Yes	No
Tamil Nadu	Institute of Thoracic Medicine, Chennai	Yes	Yes	Yes
Uttar Pradesh	STDC, Agra, and KGMU, Lucknow	Yes	Yes	Yes
Uttarakhand	STDC, Dehradun	Yes	Yes	No
West Bengal	STDC, Kolkata	Yes	Yes	Yes

Designated Microscopy Centre (DMC)

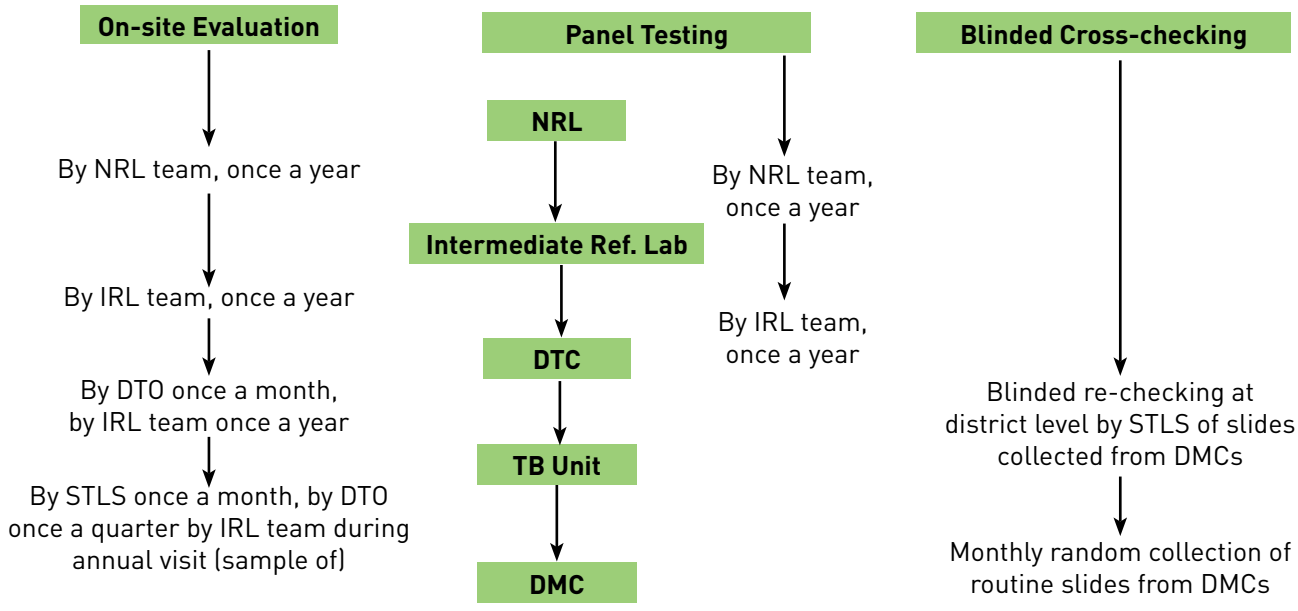
The most peripheral laboratory under the RNTCP network is the DMC which serves a population of around 100,000 (50,000 in tribal and hilly areas). At present, more than 12,000 DMCs are available for conducting quality assured sputum smear microscopy.

External Quality Assessment for Smear Microscopy

A process has been established under RNTCP to assess the laboratory performance utilizing the RNTCP External Quality Assessment (EQA) guidelines and currently 95% of the districts in the country are implementing quality assurance protocol.

Recommendations of the annual supervisory visits to the states by the NRLs have focused on operational and technical problems of the laboratories and staff in conducting effective OSE visits to districts/diagnostic centres, quality of staining reagents, panel testing of STLSs and operationalization of blinded rechecking

Fig. 2: External quality assessment activities of RNTCP



procedures and identifying and correcting DMCs with errors.

For capacity building of state level programme managers (STOs and STDC/IRL directors) in EQA, training is imparted to make them aware of their roles and responsibilities with regard to issues such as setting up of IRLs, human resources, conducting effective on site evaluations by

Fig. 3: Reporting procedure

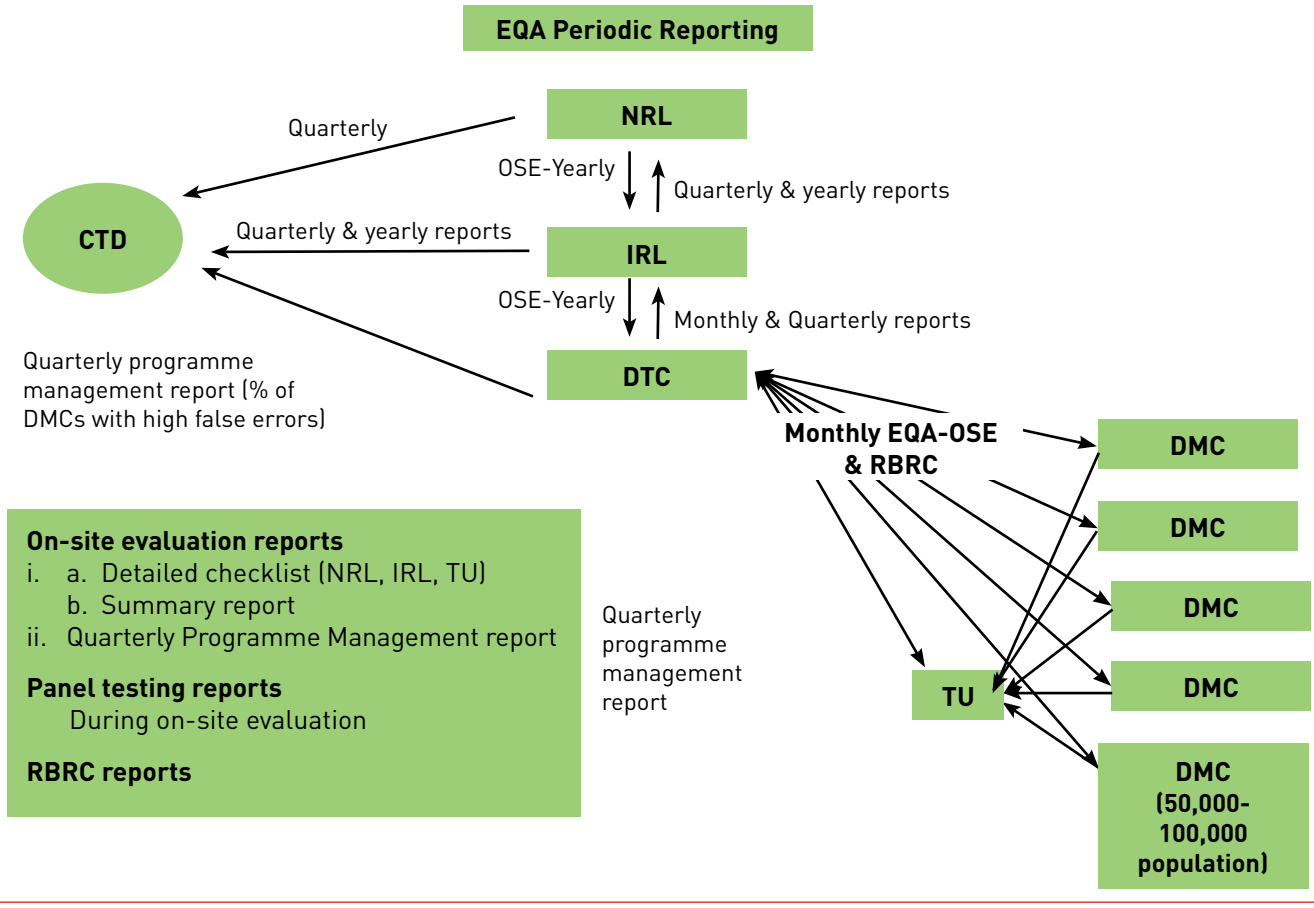


Table 3: Annual Negative Slide Volumes (ANSV) and Slide Positivity Rates (SPR) in the DMCs*					
ANSV Range		**Slide positivity rate (%)**			**Total**
		<5	**5-15**	**>15**	
<301	DMCs % of Total	429 4.20%	386 3.80%	163 1.60%	**978** **9.50%**
301-500	DMCs % of Total	191 1.90%	600 5.80%	144 1.40%	**935** **9.10%**
501-1000	DMCs % of Total	429 4.20%	1755 17.10%	410 4%	**2594** **25.30%**
>1000	DMCs % of Total	372 3.60%	4406 42.90%	981 9.60%	**5759** **56.10%**
Total	**DMCs** **% of Total**	**1421** **13.80%**	**7147** **69.60%**	**1698** **16.50%**	**10266** **100%**

* The compiled date was from the DMCs reported in the year 2007. Data from DMCs which reported for the full year was taken for analysis

the IRL staff to DMC level, bio-medical waste disposal, infection control measures and other operational and technical issues. A separate training, which focuses mainly on technical aspects of EQA protocol, is also provided to all the microbiologists and lab technicians of IRLs by the NRLs.

Establishment of C & DST Labs for Diagnosis of MDR-TB

RNTCP has adopted a rigorous C & DST Laboratory accreditation procedure (see Figure 4) to provide accurate and reliable services for MDR-TB diagnosis and follow-up of treatment. In order to meet demands of the programme, accreditation of C &DST laboratories both in Public and Private sectors is being pursued vigorously. Overall supervision is entrusted with the NRLs.

To maintain uniformity in testing procedures NRLs are conducting 2-4 week Culture and DST trainings to the Microbiologists and Laboratory technicians of laboratories undergoing accreditation.

The accreditation process has three main stages.

1. A pre-assessment visit of 1-2 days to the laboratories by the NRL/CTD team during which a laboratory is assessed for infrastructure facilities, qualified trained personnel, work-load requirements, SOPs, technical procedures, bio-safety and infection control measures. Corrective actions recommended in case of deficiencies.
2. Laboratories are assessed for performance based on first 100 patient samples processed for Culture and DST. The indicators are - mainly - (a) rate of smear positive and culture negatives, and (b) rate of contamination (c) proficiency for setting-up correctly interpretable DST tests.
3. NRLs provide external blinded proficiency testing panel of 20 cultures for susceptibility testing for anti-TB drugs—H,R,E and S. NRLs, would also retest 10 selected cultures provided by the IRLs. Accuracy of results is assessed based on sensitivity, specificity, and positive and negative predictive values for resistance and susceptibility. If the concordance levels between the laboratories are at least 90% for H and R, the national team will make a second visit to the IRL and, if conditions and processes are satisfactory, accreditation is awarded.

The accreditation is initially granted for a period of two years and shall be subjected to an on-site evaluation within one year of grant of accreditation and a re-assessment before the end of two years. Thereafter, re-assessment is carried out every two years. Accredited labs carry out testing activities within the scope of accreditation to meet the needs of RNTCP. The accredited laboratory shall regularly and satisfactorily participate in

Table 4: Status of Establishment of C & DST Labs				
IRLs accredited	IRLs in the process	Govt. Medical Colleges (in the process)	NGOs (both accredited)	Private sector (in the process)
Andhra Pradesh Delhi Gujarat Kerala Maharashtra Tamil Nadu	Haryana Jharkhand Orissa Rajasthan Uttarakhand West Bengal	PGI, Chandigarh AIIMS, Delhi SMS, Jaipur KGMU, Lucknow J.J. Hospital, Mumbai	BPRC, Hyderabad CMC, Vellore	Ranbaxy Lab, Mumbai & Goregaon Metropolis, Mumbai Hinduja Hospital, Mumbai

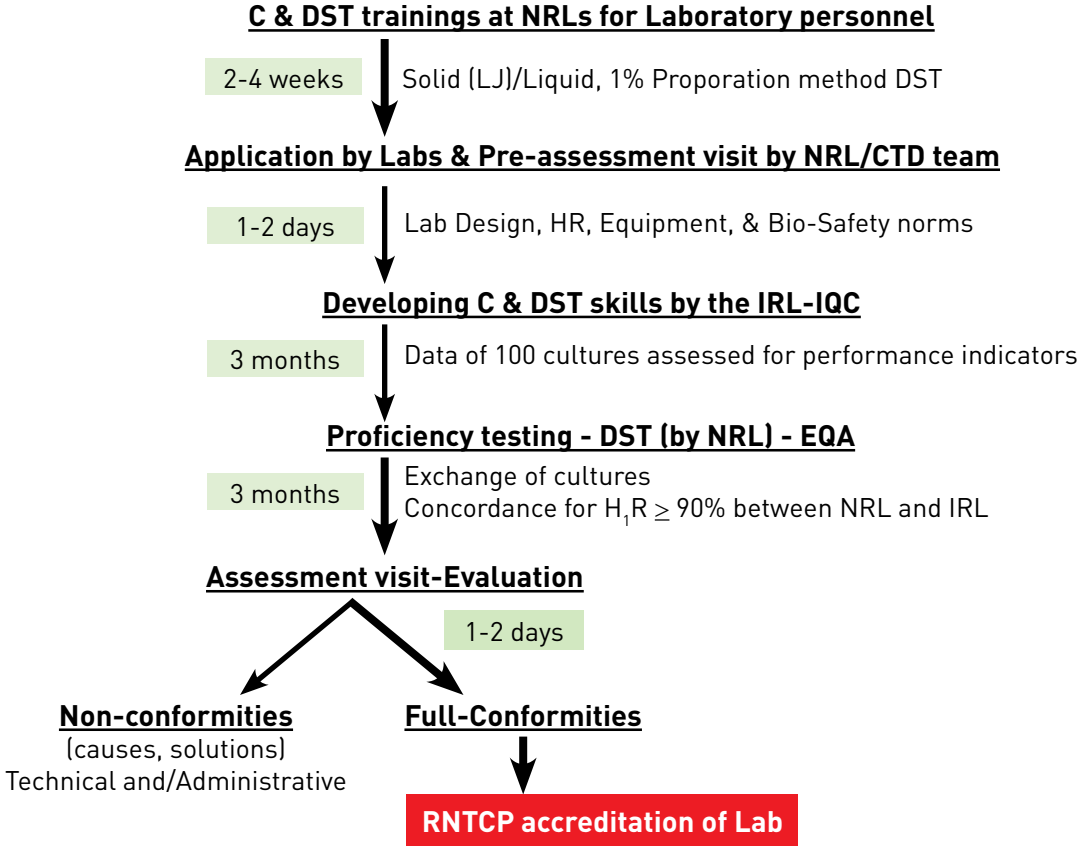
the Proficiency Testing programmes/rounds conducted by NRLs.

C & DST equipment was supplied and installed by Central TB division in 13 states in the year 2007. Subsequently, following the accreditation procedure, till now, six IRLs (Andhra Pradesh, Delhi, Gujarat, Kerala, Maharastra and Tamil Nadu) and two private sector laboratories (BPRC Hyderabad, and CMC Vellore) are accredited by the RNTCP for Solid media based culture and DST procedures. The status of other C & DST laboratories is listed in Table 4.

Drug Resistance Surveillance (DRS)

The prevalence of anti-TB drug resistance in the community can be taken as an indicator of the effectiveness of the TB control activities in the community over a period of time. RNTCP has taken steps to measure this important

Fig. 4: RNTCP accreditation process for culture & DST laboratories



Approx Time *(Minimum) for accreditation of a Conventional Lab: 6-7 months for new laboratories , and 4-5 months for already functioning laboratories after the submission of application.

indicator across the country. For determining the prevalence of anti-TB drug resistance among new and previously treated patients, state-wide DRS surveys are being conducted periodically by the programme. The state wide DRS surveys of Gujarat and Maharashtra were completed in 2007. The reports from these states showed the level of multi drug resistance TB amongst new cases is 2-3% and amongst re-treatment cases 12-17%. Currently, DRS surveys are ongoing in Andhra Pradesh and Uttar Pradesh.

A second round of DRS surveys will be carried out in the same states, using the same methodology, after a period of 5 years.

Validation and Demonstration of Newer Technologies for Diagnosis of Tuberculosis and MDR-TB

Rapid and newer technologies would enhance the accurate diagnosis and cut short the times of laboratory diagnosis. Realising these needs as well as to meet the increased threat of MDR-TB, RNTCP has initiated steps to validate and demonstrate large scale studies of newer technologies in collaboration with Foundation for Innovate and New Diagnostics (FIND), India. Under this collaboration newer technologies- Line probe assay (LPA), Automated Liquid culture systems for C & DST, and LED Fluorescence microscopy are validated in various IRLs and NRLs. IRLs of Gujarat and Andhra Pradesh, and JALMA Institute are validating Line probe assay for detection of Isonizid and Rifampicin resistance. Liquid culture systems are validated in Gujarat and LRS Institute. LED Fluorescence Microscopy is being validated at New Delhi TB centre JALMA Institute and CMC Vellore.

It is anticipated that validation and demonstration studies would provide enhanced reach to programme for diagnosis and follow-up of the MDR-TB.

Procurement Issues

Central Procurement

The Procurement of 1st Line Anti TB Drugs (for World Bank & GFATM funded States), 2nd Line Anti TB Drugs (for World Bank funded states), Binocular Microscopes, Laboratory Equipment for Culture & Drug Sensitivity Testing (DST) for establishing 14 more Intermediate Reference Laboratories (IRLs) in the country is presently being undertaken by the procurement agency - UNOPS.

(i) Anti TB Drugs

(a) **First Line Anti TB Drugs:** For the 3rd consecutive year (2008), procurement of drugs for 500 million population of the country was continued to be done by the Global Drug Facility (GDF) through financial support by DFID. For the rest of the population, the procurement of these drugs is being done through International Bidding (ICB/LIB) by UNOPS following the World Bank guidelines. Measures taken by the Programme to procure good quality drugs include: ensuring WHO-GMP certification, careful supplier selection, pre-dispatch inspection, batch certification, product defect reporting mechanism, etc.

Paediatric drug boxes

(b) **Second Line Anti TB Drugs:** For the year 2007-08, the 2nd Line Anti TB Drugs under DOTS Plus, procured by UNOPS for World Bank funded states (Delhi, Gujarat, Kerala, Maharashtra, Rajasthan, Tamil Nadu & West Bengal) have been supplied to all the consignees. For the year 2008-09, the procurement of the drugs for all these states (as above) and Haryana through International Competitive Bidding (ICB) by UNOPS is currently underway. The RNTCP has taken the same measures, as described above for 1st Line Anti TB Drugs, to procure good quality 2nd Line Drugs. During 2007-08, these drugs for Andhra Pradesh (AP) and Haryana (funded by GFATM and USAID respectively) have been procured through Green Light Committee (GLC) of Stop TB Partnership. During 2008-09, besides AP, the 2nd Line Anti TB Drugs shall also be procured for other GFATM funded states i.e. Chattisgarh, Jharkhand, Orissa and Uttrakhand through GLC.

(ii) Binocular Microscopes

Procurement of Binocular Microscopes (BMs) required for new DMCs and also for replacement of unserviceable BMs in many states is currently underway through National Competitive Bidding by UNOPS.

(iii) Laboratory Equipment for Culture & DST for IRLs

The process of procurement of lab. equipment for establishing 14 more IRLs at Arunachal Pradesh, Assam, Bihar, Goa, Himachal Pradesh, J&K (Jammu), J&K (Srinagar), Karnataka, Madhya Pradesh, Maharashtra, Manipur, Punjab, Sikkim and Uttar Pradesh is presently going on through UNOPS. The states where these IRLs are being established are expected to complete the required civil works and get the work for electrical fittings, etc. completed before the equipment reaches the IRL sites.

(iv) Purified Protein Derivative (PPD)

RNTCP is planning to restart the process for procurement of PPD required for diagnosis of pediatric TB. The detailed process is being worked out.

(v) Lab. consumables for DMCs and IRLs

As per the Joint Action Plan of the World Bank and the Ministry of Health & Family Welfare (MoHFW), a mechanism for establishing rate contract at Central level has been proposed for procurement of lab. consumables for DMCs & IRLs.

Decentralized procurement

As a part of strengthening decentralized procurement, states have been communicated to follow World Bank procurement guidelines strictly. An abbreviated document on state level procurement was sent to all the states for wide circulation to the districts. A procurement reporting format was also circulated to all the states and they have been asked to report the procurements done in their respective states to the Central TB Division (CTD) at the end of every quarter through the newly created email ID i.e. distprocurement@rntcp.org.

Procurement Capacity Building of States

The state level officials (STOs & State TB Cell Staff) of almost all the states were imparted training during the workshops conducted by CTD between August to December, 2007. After the workshops, trainings of the district level officials (DTOs & DTC staff) have been conducted by the respective states.

Disclosure of Procurement Information

As per the Governance & Accountability Action Plan (GAAP) agreed between the World Bank and the Govt. of India, Annual Procurement Plans for the Central level procurements are made available on RNTCP website i.e.

'Procurement & Drug Logistics Workshop' held at Raipur (Chhattisgarh) in May, 2008

www.tbcindia.org, which is linked to the website of Ministry of Health & Family Welfare i.e. www.mohfw.nic.in. The bid documents, information regarding contracts awarded, reasons for rejection of bids and other related information are also uploaded on RNTCP website, which is updated regularly. Central TB Division has uploaded the Technical Specifications of all the Laboratory Consumables for Designated Microscopy Centres (DMCs) and Intermediate Reference Laboratories (IRLs) on the RNTCP website i.e. http://www.tbcindia.org/documents.asp and has sent letters to all STOs to refer to these Technical Specifications, whenever required.

Post Procurement Review

Post Procurement Review of all Contracts "below prior review threshold levels" at the Centre and in the states is being done by an independent Consultant appointed by the World Bank i.e. SGS Nederland, B.V. During the year 2008, 3rd and 4th Reviews were conducted in a total of nine states. The 3rd Post Procurement Review was conducted in February, 2008 in Assam, Gujarat, Rajasthan & MP to review contracts awarded between July to December, 2007. The 4th Post Procurement Review for the contracts awarded between January to March, 2008 was carried out in the states of Gujarat, Kerala, Manipur, Meghalaya, Punjab and West Bengal in June, 2008. Letters were sent by CTD to all the nine states asking for the detailed clarifications along with actions taken in the matter by the states and reply from all the states has been received. Post Procurement Review of State/District level procurements is also being done through regular visits undertaken by CTD officials and during Central Internal Evaluation.

Procurement Management Information System (ProMIS) Software

Empowered Procurement Wing (EPW) of the MoHFW has developed a web based software (ProMIS) to streamline procurement systems and it has addressed all the key components of International best practices in procurement and logistics. The various modules of the software include Forecasting, Planning, Bid Processing, Bid Evaluation, Supply Orders, Quality Assurance, Stocks, Inter warehouse transfers, Bills & Invoices, etc. RNTCP has been selected for pilot testing of the software and the commencement of live data entry shall start from April, 2009.

Drug Logistics Management

Uninterrupted supply of good quality Anti TB Drugs is one of the components of DOTS strategy. RNTCP has ensured this by making available sufficient quantity of Anti TB Drugs in Patient Wise Boxes (PWBs) and other required loose drugs like Inj. Streptomycin (0.75 gm), Tab INH (100 mg.) etc. at all the appropriate levels (Peripheral Health Institutions, TB Units, District TB Centres, State Drug Stores and National level warehouses).

RNTCP State Drug Store

The area of drug logistics management has been decentralized to the states for which trainings at the Central level had been undertaken in 2007. To assess the impact of these trainings, Assam, Chandigarh, Chattisgarh, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra (Nagpur), Punjab & West Bengal were visited in the year 2008 and the Drug Stores in these states have shown a substantial improvement resulting in better logistics management, thus ensuring no stock-outs of drugs in the country. Central TB Division has now resumed the training on Drug Stock Management at the State level for key staff of the State Drug Stores, STOs, DTOs & DTC Pharmacists. Workshops have already been conducted in Chattisgarh, Orissa & Uttar Pradesh during the year. The States of Bihar, Jharkhand, Uttrakhand and West Bengal are also expected to be covered in the next few months. After these workshops, the District TB Officers are expected to further train the sub-district level staff involved in drug logistics in their respective districts. Trainings on drug logistics need to be made a regular feature in RNTCP to ensure capacity building of the concerned staff in this area.

As in the past, drugs procured centrally continue to be stored at the six Government Medical Store Depots (GMSDs) located at Chennai, Guwahati, Hyderabad, Karnal, Kolkata and Mumbai. Improve- ment in storage conditions at the six GMSDs is presently underway, utilizing the funds from GFATM. Drug requirements, consumption and stock positions, both at state and district levels are monitored at the Central TB Division through the Quarterly Programme Management Reports submitted by the districts/ states. The drugs are issued to the states to replenish their stocks which includes the buffer stocks required to be maintained at various levels of Drug Stores under RNTCP.

Table 5: Reserve Drug Stocking Norms and Calculation of Drug Requirements for adult PWBs

Level	Stock for utilization	Reserve stock	Drug requirements
PHI	1 month	1 month	(Monthly consumption X 2) – (existing stock in PHI at end of the month)
TU Drugstore	0 month	2 months	(Quarterly consumption / 3) X 4 – (existing stock in TU including PHI drug stores at end of the quarter)
DTC Drugstore	0 month	3 months	(Quarterly consumption / 3) X 7 – (existing stock in DTC drug store including TU & PHI drug stores at end of the quarter)
SDS	0 month	3 months	(Quarterly consumption / 3) X 10 – (existing stock in SDS including stocks at all districts at end of the quarter)

Logistics management of 2nd Line drugs has emerged as the new challenge under DOTS Plus in RNTCP, considering that the influx of patients into the programme is slow, treatment is spread over 24 months and there is shorter shelf-life of 2nd Line Anti TB Drugs. The management cycle of second-line anti-TB drugs comprises six elements: drug selection; quantitative assessment of drug requirements; management of procurement and distribution; assurance of drug quality; and ensuring rational drug use. Accurate demand forecasting of second-line anti-TB drugs, i.e. correct quantification of the drug needs for a specific period of time, is one of the elements that guarantees an uninterrupted drug supply. Currently, nine states viz. Andhra Pradesh, Delhi, Gujarat, Haryana, Kerala, Maharashtra, Rajasthan, Tamil Nadu and West Bengal are implementing or are in the process of starting implemention of the DOTS Plus programme in their respective areas and the detailed guidelines for logistics management of 2nd line drugs have already been circulated to these states.

Drug Quality Assurance

The quality assurance component of the RNTCP drug supply system makes certain that each drug used by a patient is safe, efficacious, and has appropriate standards of quality. Maintaining quality of drugs remains a critical Programme requirement. This is enabled through pre-dispatch testing of drugs and monitoring of the quality throughout their shelf-life up to consumption by the patients. CTD hires an independent drug testing laboratory, which regularly tests samples, taken on a random basis from DTCs, SDS and GMSDs. Random sampling of drugs for testing also takes place by GMSDs. In addition, the samples are also taken by State and Central Drug Inspectors and tested to ensure quality. The other measures taken by the Programme for Quality Assurance include careful supplier selection, ensuring WHO-GMP certification, pre-dispatch inspection, batch certification, product defect reporting mechanism, etc.

Monitoring and Evaluation System

The RNTCP derives its success from its inherent ability to conduct regular supervision and monitoring at all levels – national, state, district and sub district. In addition, a robust recording and reporting system and a series of review meetings enables early corrections.

RNTCP is a programme that is managed both from the technical as well as programmatic point of view. Since it has a set of complex diagnostic, treatment and follow-up modalities, the programme has an intensive and dynamic

Drug Logistics Workshop, Varanasi

supervision and monitoring strategy. Dedicated supervisory staff, an intrinsic recording and reporting system and a set of monitoring indicators to cover all the related activities ensures that the programme has an inherent capacity to identify issues and proactively consider remedial measures.

The activities extensively monitored by RNTCP are:

1. **Programme indicators:** These are monitored on the basis of quarterly reports of programme performance. Suitable feedback is sent to concerned states/districts.
2. **Logistics and quality control:** This is monitored through the information received from the procuring agency, suppliers, reports of Government Medical Store Depots (GMSD) and the quarterly reports from the States/Districts.
3. **Progress of training:** Information is received from the quarterly reports on training and the compiled reports from training institutions.
4. **Progress in filling up of key posts:** Information is received from quarterly reports and reports of supervisory visits.
5. **Expenditure and budget utilization:** This information is obtained from Statement of Expenditure (SOE), Utilization Certificate (UC), Audit Report (AR) and from reports of state and central level evaluations.
6. **ACSM activities:** It is ensured that the action plan on ACSM submitted by all the States/districts is accordingly put into practice locally.

The process of monitoring broadly covers supervisory visits, review meetings at various levels and programme evaluation by different levels of health personnel. Measurable indicators for quality control, programme outcomes and operational effectiveness are the basis for programme monitoring.

1. **Analysis and Feedback on Routine Surveillance Data:** Surveillance data are received through the quarterly reports. An accurately compiled quarterly report provides base level information about the performance of the programme. CTD analyzes these quarterly reports received from the States/Districts. Monitoring capacity at State level has been enhanced so that State TB Officers/Medical Officers-STC analyzes the quarterly reports and provides feedback to the districts within the state.
2. **Supervisory visits and feedback:** Monitoring of the performance of the programme is mainly done by supervisory visits. Good supervision helps to increase the efficiency of the staff by updating their knowledge, perfecting their skills and improving their attitudes towards work.

RNTCP lays out clear responsibilities to the respective staff at all levels in relation to supervisory visits. Schedules of supervisory visits by the managers at different levels are as given below:

STS/STLS	STS to visit all the PHIs/DMC at least once in each month and STLS to visit all DMCs at least once a month.
MO-TC	To travel 7 days in a month on supervisory visits.
DTO	To travel about 20 days in a month and visit all the DMCs at least once in a month and all the PHIs at least once in a quarter.
STO	To visit each district at least twice a year.

STS/STLS, MO-TC and DTO record their obser-vations in a tour diary, a supervisory check list and a supervision register placed in all RNTCP facilities. Supervisory visits encourage good practices of RNTCP as well as identify and correct inadequate performances. The contact details of the STS, STLS, MOTCs, DTOs and STOs of the country are available on the TB India website.

Table 6: Review Meetings	
Level	**Frequency of review**
Peripheral Health Institutions (PHIs) & Designated Microscopy Centres (DMCs)	MO i/c PHI/DMC conducts a meeting of all the staff involved in RNTCP and reviews their activities weekly.
Tuberculosis Unit (TU)	MO-TC reviews the activities of STS/STLS at least fortnightly.
District Level	• DTO reviews the monthly activity reports of all MOTCs, STS and STLS within the district during monthly district level review meetings. • CMO and DM also review the programme on a regular basis.
State Level	• State level review meetings are held every quarter and chaired by Secretary (Health)/DHS • STO also reviews the monthly activity reports of DTOs within the state. • Recommendations of all the evaluations and the actions taken are discussed at the meeting.
National Level	CTD conducts review meetings of STOs twice in a year. All important issues covering technical performance, administrative and managerial issues, manpower resources, logistics and financial issues, are discussed.

3. **Regular review meetings:** RNTCP has a system for periodic review of the programme implementation activities at all levels. The level and the frequency of these meetings are as given in Table 6.

4. **Periodic in-depth evaluations:** Information and action points generated through periodic evaluations are an important tool for evaluation of the programme. States are conducting internal evaluation of 2 districts per quarter. In addition, internal evaluations are conducted by the central level with active participation of personnel from the states, Medical Colleges and NGOs.

During the year, the states have evaluated about 85 districts using a standardized format which covers the entire gamut of RNTCP services. The reports are disseminated amongst the DTOs to enable corrective actions to similar issues in their districts. Actions taken on the recommendations are regularly reviewed by the state. The central level has visited and intensively evaluated 5 states – evaluated 8 districts in addition to reviewing state level issues. The findings of the central level evaluations were discussed with the highest authorities of health and administration of

Chhatisgarh: Team members interacting with patient

Gujarat: Review of records

Central Internal Evaluation (CIE)

Table 7: Supervision and monitoring activities and tools under RNTCP for each level of programme implementation		
Unit responsible (persons)	**S & M activities**	**Tools**
Central Unit [Deputy Director General (DDG)/ Chief Medical Officers (CMOs)/ WHO India team/ NRL/CTD RNTCP-WHO Consultants]	• Undertake programme reviews with State TB officers at national level twice a year • Conduct periodic review of RNTCP in the states with the DTOs during state level review meetings • Conduct Central level internal evaluations of at least 2 districts every month • NRL team to visit IRL (for On-site evaluation and Panel testing) at least once every year	Programme reviews Annual programme report (National) 6-monthly programme review with State TB Officers (STOs) Quarterly and annual State reports District evaluation reports Monthly activity reports of STOs Monthly reports of RNTCP-WHO Consultants Report from medical college ZTFs
State TB Cell (STO/MO/STDC Director/IRL Microbiologists/ RNTCP-WHO Consultants)	• Visit all districts in the state at least once every 6 months • Undertake state level internal evaluations of at least 2 districts every quarter • IRL team to visit DTC at least once a year • Conduct quarterly review meetings with the district TB officers at state level.	Annual programme report (State and districts) Quarterly programme review with District TB Officers (DTOs) Quarterly District/TU reports District evaluation reports Monthly activity reports/tour diaries of DTOs Tour diary of STO/supervision checklist Report from medical college STF
District TB Centre (District TB Officer/2nd MO DTC)	• Reserve 3-5 days in a week for field visits (between DTO and 2nd MO) • Visit all TB units every month • Visit all microscopy centres every quarter • Visit the homes of at least 3 randomly selected NSP patients and their DOTS providers on every field visit day • Visit to medical college if any, every month • Conduct DTCS review meetings every quarter-to be chaired by DM • Conduct monthly review meeting at the DTC-to be chaired by DM/CMO	Annual district report Quarterly TU reports Monthly programme review Monthly PHI reports Quality assurance report Tour diary of DTO/supervision checklist Monthly activity reports of MOTCs, STS and STLS RNTCP TB register Supervision register Referral for treatment register Supervisory checklist
Medical Officers (TB Control)	• Reserve at least 7 days in a month for field visits • Visit all microscopy centres every month • Visit most of the participating private as well as public Peripheral Health Institutions (PHIs) every quarter • Visit the homes of at least 3 randomly selected NSP patients along with their DOT providers on every field visit day • Conduct fortnightly review meeting with STS/STLS	RNTCP TB register RNTCP Laboratory register Supervision register PHI monthly reports OSE QA reports of STLS Supervisory checklist
STLS	• Visit all the microscopy centres at least once every month. • Conduct OSE at the DMC	Laboratory register OSE checklist
STS	• STS should visit all DMCs and PHIs at least once every month. The STS should visit all the smear positive patients within one month of starting treatment	TB register Laboratory register Treatment cards Referral for treatment register Supervisory checklist

the state to enlist their active support for TB control activities in the state. The findings of the internal evaluations were analyzed and appropriate corrective actions have also been communicated during the bi-annual STO-Consultants meetings that were held during the months of April and November, 2008.

The World Bank conducted two reviews during the year visiting 6 states. These evaluations strengthen the supervision and monitoring activities of the states and districts.

Address TB-HIV, MDR-TB and Other Challenges

Address TB-HIV, MDR-TB and other challenges, by scaling up TB-HIV joint activities, DOTS Plus, and other relevant approaches.

Implement TB-HIV Collaborative Activities

India also has the world's third highest HIV burden, the prevalence of HIV infection is estimated to be 0.36% of the population, which translate to 2.31 million people living with HIV/AIDS (PLHA). The interaction between HIV infection and tuberculosis (TB) is well documented. HIV infection is among the strongest risk factors for progression of latent TB infection to active disease. TB disease is the most common opportunistic infection amongst HIV infected individuals. HIV infected persons are many times more likely to develop TB than patients without HIV infections.

Central TB Division (CTD) and National AIDS Control Organization (NACO) have revised the "National framework for joint TB-HIV collaborative activities" in Feb. 2008. The National framework describes the various TB-HIV activities that are to be undertaken at the national, state and district levels. Under the National Framework, access to HIV care for HIV infected TB patients has been prioritized. The activities that are to be undertaken under the plan are:

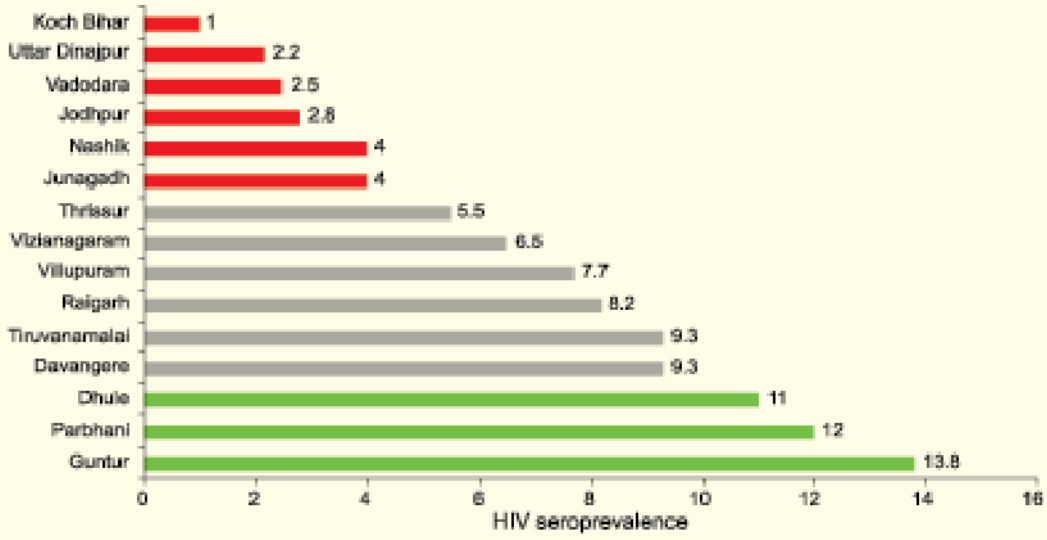
- Establishment of coordination mechanisms at the National, State and District level and joint planning and review at all levels.
- Service delivery linkages, with special emphasis on access to HIV care.
- Involvement of NGOs working in NACP and RNTCP in TB-HIV collaborative activities.
- Conduct and promote operational research to decrease the dual burden of TB and HIV.
- Pursue airborne infection control measures to reduce the risk of TB transmission in HIV care settings.

Service delivery coordination and cross referral which are done nationwide include:

- Training of programme officials and field staff on TB-HIV
- Intensified TB case findings at ICTCs, ART Centres, and Care and support Centres.
- Risk based referral of TB patients for voluntary HIV counseling and testing.
- Referral of HIV-infected TB patients to NACP for additional care and support, including antiretroviral treatment.

Sentinel surveillance for HIV infection among TB patients in 2007 demonstrated a wide distribution of HIV prevalence across the 15 districts surveyed (Fig. 5). CTD and NACO in response have developed an "Intensified TB-HIV package" of services for states with the highest estimated burden of HIV infection. These enhanced services include routine referral of all TB patients with unknown HIV status to ICTC for voluntary HIV counseling and testing by NACO, provision of cotrimoxazole prophylactic treatment to HIV-infected TB patients from their local primary health centres, and enhanced monitoring of TB-HIV activities. During 2008, Intensified TB-HIV packages of service have been started in 9 HIV high prevalence states (Andhra Pradesh, Goa, Karnataka, Maharashtra, Manipur, Mizoram, Nagaland, Pondicherry and

Fig. 5: HIV Seroprevalence in TB patients

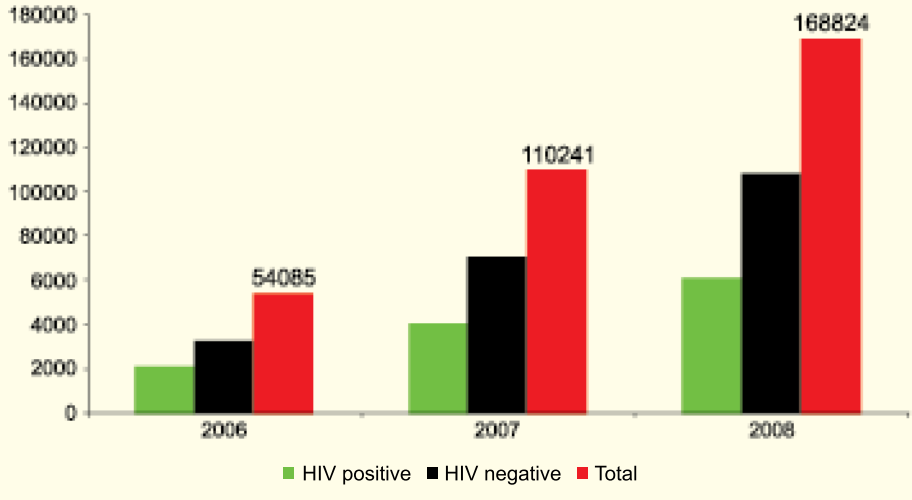


Tamil Nadu). Joint Training Modules for Intensified TB-HIV Package have been developed for various categories of staff of RNTCP and NACP and training activities are being scaled up. The expansion of the Intensified TB-HIV package to additional states would be undertaken in a phased manner, jointly determined by the both the National Programmes.

TOTs have been conducted for State and District level trainers and the training of field staff is on-going and is at various stages in different States. IEC materials regarding TB are being made available at National AIDS Control Programme (NACP) facilities. Selective AIDS material on HIV is displayed at RNTCP facilities. As a new initiative, RNTCP in coordination with NACP, has developed a "Healthcare Provider Tool" to suspect, assess, and refer for HIV counseling and testing. This tool will help in reviewing the patients coming for medical consultation for any of these: history, symptoms and signs for referral to the ICTCs (Fig. 6).

Year 2008 saw continued increases in the quantum of referrals between the two programmes. More than 1.68 lakh ICTC clients were referred to RNTCP for TB diagnostic evaluation.

Fig. 6: Progress in Cross-referral (1)
Number of clients referred from ICTCs to RNTCP services 2006 to 2008



1.3 lakh TB patients were tested for HIV and more than 20,000 patients were detected to also be HIV-infected.

Key operational research on TB-HIV was completed in two districts. Routine referral of TB patients for HIV counseling and testing under field conditions was undertaken in two HIV high prevalence districts in 2008, to evaluate the feasibility, acceptability and impact on the national programme. Preliminary findings suggest that routine referral of TB patients for HIV testing can be successfully and efficiently implemented under the programme conditions in high HIV prevalent district without any significant changes in TB case notification. Barriers for HIV-infected TB patients to access HIV care, including anti-retroviral treatment were assessed. These studies highlighted the importance of high-quality counseling in helping patients receive all the necessary free care and treatment available for their continued well-being.

The involvement of NGOs working with NACP in special populations with high burden of HIV in TB-HIV collaborative activities has been prioritized. To develop these approaches, RNTCP partnered with the Avahan India AIDS Initiative, a foundation funded by the Bill and Melinda Gates Foundation, which promotes HIV prevention services through a large network of partner NGOs. A detailed evaluation of these linkages was conducted in April, 08. Based on the findings of the evaluation, Central TB division has finalized a "TB-HIV scheme" to promote improved TB care for persons from marginalized, high-risk populations served by NGOs providing HIV prevention targeted interventions.

Transmission of TB in healthcare facilities poses a special risk for HIV-infected persons, as they are particularly vulnerable to TB. The RNTCP has taken an initiative to formulate the Airborne Infection Control guidelines specially to control the transmission of tuberculosis at HIV care facilities. Needs assessment for airborne infection control measures were undertaken and National Airborne Infection Control Committee has been constituted. The first meeting of the National Airborne Infection Control Committee (NAICC) was held at LRS Institute, New Delhi in September, 2008. The first challenge will be to develop and pilot test national guidelines, and prioritize implementation in HIV care settings.

Achievements

- Intensified TB-HIV packages of services have been started in 9 HIV high prevalence states.
- Joint Training Modules for Intensified Package has been developed for various categories of staff of RNTCP & NACP and Training Activities are being scaled up.
- Expanded TB-HIV recording and reporting rolled out nationwide in all core RNTCP forms, registers, and reports.
- In the year 2008 more than 168824 TB suspects were referred from ICTCs to RNTCP. More than 1.3 lakh TB patients were tested for HIV and more than 20,000 patients are detected to be TB-HIV coinfected.
- Pilot study of provider initiated referral of all TB patients for HIV testing was undertaken by RNTCP in collaboration with NACO, TRC Chennai, and NTI Bangalore in two districts, Trichy & Mysore.

Training Modules for Intensified TB-HIV Package

- New special "scheme" for NGOs who are already providing "targeted interventions" to high risk populations under NACP for promoting TB-HIV comprehensive care in such populations.
- Initiative to formulate the airborne infection control guidelines specially to control the transmission of tuberculosis at HIV care facilities has been taken.

RNTCP DOTS Plus Services

Introduction

To address the issue of multi-drug resistant TB (MDR-TB), RNTCP initiated the DOTS Plus services in 2007 in the identified districts in the states of Gujarat and Maharashtra with a plan to roll out these services across the country. In 2008 the DOTS Plus activities have been rolled out in another five states—Andhra Pradesh, Delhi, Haryana, Kerala and West Bengal. During this year the states of Gujarat and Maharashtra have expanded the services to other districts of the state.

DOTS Plus vision

The programme has redefined its vision and intends to provide universal access to diagnostic services to all smear positive cases and treatment services to all diagnosed MDR-TB cases by 2015. This will require a rapid scale up of laboratory capacity and ensuring quality daily DOT services. Hence the programme will follow a step wise approach in achieving this vision which is as follows:

- DOTS Plus services to be made available in all states by 2010 with complete geographical coverage achieved by 2012.
- Universal access under RNTCP to laboratory based quality assured MDR-TB diagnosis for all re-treatment TB cases on entry and new cases who have failed treatment by 2012.
- Free and quality assured treatment to all MDR-TB cases diagnosed under RNTCP by 2012.
- Universal access to MDR-TB diagnosis and treatment for all smear positive TB cases under RNTCP by 2015.

Key activities during 2008

- **Policy changes related to DOTS Plus:** The National DOTS Plus Committee met twice during 2008 and made some key recommendations leading to important policy changes related to DOTS Plus. These include:
  - The MDR-TB suspects which previously included only Cat II patients who remained smear positive after 4 months of treatment was expanded to include Cat I and III failures also. The decision was taken so that the diagnostic services for MDR-TB can be offered to those groups of patients who are at a higher risk of suffering from MDR-TB, while keeping in view the available laboratory capacity.
  - The exclusion criteria for MDR-TB suspects was revised and now includes pregnant women and patients suffering from major psychiatric illness which were excluded earlier.
  - The programme has also decided 'in principle' to offer second line drug susceptibility testing to MDR patients who are not responding to Cat IV and remain culture positive after 6 months and also provide treatment to those diagnosed to be suffering from Extensively drug resistant TB (XDR-TB).
- **Training activities:** National level DOTS Plus trainings were undertaken for the states of Andhra Pradesh, Delhi, Gujarat (Phase II), Haryana, Kerala, Maharashtra (Phase II), Rajasthan, Tamil Nadu and West Bengal at STDC, Ahmedabad, which has been recognized as the National DOTS Plus training centre. Representatives from CTD, WHO and the National Institutes (LRS and TRC

Chennai) facilitated these trainings and assisted in development of the state DOTS Plus action plan.

- **Initiation of treatment services:** The DOTS Plus treatment services were initiated in the state of Andhra Pradesh in October 2008 followed by Haryana, Delhi, West Bengal and Kerala in December 2008.

Status of DOTS Plus at the end of 2008

At the end of the 4th quarter of 2008 the DOTS plus services are available in 7 states.

Dr. B. Sai Babu, STO AP, along with Dr. S.V. Prasad, OD, Superintendent, AP Chest and General Hospital, Hyderabad, administering first dose to Cat IV patient on 17th October 2008.

ANDHRA PRADESH

Andhra Pradesh which has been fully covered under RNTCP by 2004, has been consistently achieving and maintaining the programme objectives. The state Training and Demonstration Centre (STDC) is performing TB culture and Drug Susceptibility testing since last 40 years and in June 2008 got accreditation from TRC Chennai. The State DOTS Plus Committee was constituted in May 2008 and it was decided to initiate DOTS Plus services in 4 districts of the state—Hyderabad, Rangareddy, Nalgonda and Medak in Phase I. The AP Chest and General Hospital, a specialized centre in Hyderabad was designated as "RNTCP DOTS Plus site", for these 4 districts where a fully equipped, well ventilated 30 bedded ward has been identified to admit and treat MDR-TB patients. The "DOTS Plus Site Committee" was constituted with specialists from AP Chest and General Hospital and STDC staff. All the DOTS Plus site committee members along with District TB Officers (DTOs) and other master trainers underwent "DOTS Plus training" at the national level in Ahmedabad, Gujarat in Feb 2008. MOPHIs and all RNTCP key staff were trained subsequently in June-July 2008 in STDC Hyderabad. The first MDR-TB suspect was enrolled for culture & DST on 12th July 2008. The first confirmed MDR-TB patient was initiated on RNTCP Cat IV treatment on 17th October 2008. Till the end of 2008, 25 patients have been put on treatment in the state.

GUJARAT

State of Gujarat achieved complete coverage of population under Revised National TB Control Programme in 2004 and has sustained the achievement of twin objectives consistently since last three years. The Drug resistance surveillance was conducted in the state in August 2005 – June 2006 showing prevalence of MDR-TB amongst new cases as 2.4% (1.6-3.1) and amongst retreatment cases as 17.2% (14.9 – 19.5); it was the need of the hour to attend to the problem.

For diagnosis of MDR-TB cases, Culture & DST lab, which was functioning since 1978, was upgraded. However the accreditation under RNTCP was achieved after a rigorous and stringent process as per international guidelines by TRC Chennai. The first MDR-TB suspect was examined for C&DST in March at IRL Ahmedabad.

Accredited C & DST Lab inaugurated by Hon'ble Health Minister, Gujarat on 24th March 2008 at IRL Ahmedabad

DOTS Plus site at B.J. Medical College, Ahmedabad

The laboratory has been recently upgraded for molecular testing under FIND project to conduct RID (HAIN's Test) i.e. Multiplex PCR for evaluation and demonstration of line probe assay (LPA). State Govt. of Gujarat is committed to upgrade the lab to BSL level III and instal automated liquid culture system. This would further enhance the capacity of the state to diagnose MDR-TB.

Under expansion phase State of Gujarat is committed to establish two more C&DST labs in next two years at medical colleges which will cater to the entire state for diagnosis of MDR-TB under DOTS Plus.

For management of MDR-TB cases under programmatic conditions as per RNTCP DOTS Plus guidelines, a state level DOTS Plus committee was constituted under the chairmanship of Dr. Paresh Dave, STO Gujarat, with a mission to plan, initiate, coordinate and implement DOTS Plus activities in Gujarat, in Oct. 2006. DOTS Plus site committee was formed for clinical decisions regarding diagnosis and management of MDR-TB cases after selecting B.J. Medical College as DOTS Plus site. Initially DOTS Plus site committee meetings were held on weekly basis for trouble shooting and discussions and decisions on individual patients. In 2008 more than 25 of such meetings were held.

First action plan of DOTS Plus included formation of above-mentioned committees, upgradation and accreditation of IRL, ensuring training and capacity building, Human resource management, planning for patient flow, indoor admission policy, plan for In-hospital care, discharge of patients, information transmission, logistics management, peripheral staff training, recording and reporting, budget, counseling of individual patients, monitoring and supervision. Initial plan covered Ahmedabad Municipal Corporation (AMC) area covering population of 5 million of one RNTCP reporting district.

Expansion of DOTS Plus has already started and in the second phase an additional 10 million population is being covered in 5 districts—Gandhinagar, Mehsana, Sabarkantha, Kheda and Anand from Oct. 2008.

Till Dec 08, IRL Ahmedabad has examined 550 suspects of MDR-TB of which 324 results are available; 189 MDR-TB patients have been diagnosed, of which 131 patients have been put on Cat IV treatment. Ratio of Male:Female is 7:3 in patients registered for Cat IV treatment which is similar to situation of NSP case notification under DOTS in the state. Around 75% patients were below 45kg when treatment was initiated

Field visit: MDR-TB patient interview during home visit by Medical Officer, at B.J. Medical College

and around 20% of these patients crossed the weight band as a result of improvement in weight during treatment.

As per the first 12 month interim report 60% patients were culture negative after 12 months of treatment while 14% were culture positive, 10% died and 14% defaulted.

It is important to share that most of the patients are in the economically productive age-group. Side effects are common and prompt identification and referral along with treatment at appropriate facility is the key to success when combined with social support systems and optimal counseling of MDR-TB patients at all stages.

After Ahmedabad Municipal Corporation implemented DOTS Plus for one year, five districts (as mentioned above) have started DOTS Plus and first MDR-TB patient from these districts is expected to be put on treatment in early 2009.

Another 4 districts namely Ahmedabad (Rural), Surendranagar, Banaskantha and Patan are planned to be covered under DOTS Plus; thus achieving coverage of around 18 million by March 09.

State of Gujarat envisages complete coverage of population in the state by 2010 with a total of three C&DST labs (including one IRL - currently functioning) and 5-6 DOTS Plus sites (including BJMC – currently functioning).

Since February 2008, STDC Ahmedabad has been organizing national level training in DOTS Plus for various state level and district level officers throughout the country with the help of Central TB Division, Delhi. Training of 4 batches have been conducted till date for more than 150 participants from Andhra Pradesh, Gujarat, Haryana, Kerala, Maharashtra, Rajasthan, Tamil Nadu and West Bengal participating in these trainings.

HARYANA

On 10th December 2008, Haryana added a new milestone in its effort to control TB; the day marked the initiation of 4 MDR-TB cases in the state on DOTS Plus treatment at PGIMS, Rohtak—the DOTS Plus site.

This initiative is an achievement for which a lot of planning and background work has been going on since long. In the beginning of the year 2008, the training of the faculty of PGIMS, Rohtak and the District TB Officers of the 7 implementing districts was conducted at STDC, Gujarat, and later on the trainings of Medical Officers (TU) and rest of the requisite RNTCP staff were conducted in the State. In July '08 the districts started sending samples for C &DST to LRS, New Delhi

MDR ward at DOTS Plus Site, PGIMS, Rohtak

which is providing support to the state till the IRL at Karnal gets accredited. In October '08 the first tranche of second line drugs were received by State Drug Store (SDS) at Panchkula, the site where the medicines would be repackaged and supplied to the DOTS Plus site indoor facility and the districts. Later, in the month of November the civil works at DOTS Plus site at PGIMS, Rohtak were completed; thus enabling the state to provide Cat IV treatment services to the identified MDR-TB cases.

Smt P.K. Sreemathy, Hon'ble Minister of Health & Social Welfare, Kerala inaugurating the DOTS Plus programme

In the first year, the plan is to enroll 50 MDR patients on DOTS Plus treatment from 7 districts i.e. Bhiwani, Jhajjar, Jind, Karnal, Panipat, Rohtak, and Sonepat, covering a total population of 85.83 lakhs, and later this would be expanded in a phased manner to the rest of the state.

KERALA

DOTS Plus programme was formally inaugurated by Hon'ble Minister of Health and Social Welfare, Smt. PK Sreemathy in a public function held on 13th January 2008. The DOTS Plus action plan for Kerala was prepared in January 2008 and the first MDR patient could be put on Cat IV on 27th December 2008.

The state took up the challenge of starting the DOTS Plus programme to cover the whole of the state in the beginning itself. This was because of two reasons—first, the number of MDR-TB patients expected in a year was less than 100 and second, to avoid two types of treatment running in the state (one DOTS Plus and another second line treatment outside the programme). Covering the entire state required establishing two DOTS Plus sites, one at Trivandrum and another at Kozhikode.

Complete coverage of the state required well planned and executed training activities. The planned training activities could be conducted well within the time frame. All DTOs, STC and STDC Faculties, DOTS Plus site faculties and Consultants were trained in two batches at National level in June and August 08. STLSs and LTs were trained in sputum collection and transport in June/July 08. All MOTCs, STSs and STLSs were trained in two schedules, one in July/August 08 and another in September/October 08. The District Medical Officers and District Programme managers of NRHM were sensitized on DOTS Plus in September 08 and refreshed in November 08 during the Senior Medical Officers' conference. Training of DOTS Plus site Medical Officers and faculty was done in October 08. All Medical Officers were sensitized on DOTS Plus by the DTOs during the monthly DMO conferences. DTOs and Consultants are giving on the job training to Medical Officers dealing with day-to-day management of the patients on Cat IV in the field. Medical College senior faculty members were sensitized on DOTS Plus in a one day training session in December 08.

MAHARASHTRA

In Maharashtra, DOTS Plus was initiated in 7 districts of Nagpur Circle in September 2007 and at 6 districts of Akola Circle in December 2008.

Table 8: Upgradation of laboratories in Maharashtra			
Phase (year of completion)	**Laboratory planned for Upgradation and Accreditation**	**DOTS Plus Sites Proposed**	**Number of Districts to be covered**
Phase I & II (have implemented)	IRL Nagpur	GMC Nagpur GMC Akola	13
Phase III (by 2010)	IRL Pune; GMC & JJ Hospital - Mumbai and GTB Hospital – Sewri – Mumbai	Aundh Chest Hospital, Pune GTB Hospital Mumbai Civil Hosp. / SS Hosp., Nashik GMC Aurangabad	21
Phase IV (by 2011)	GMC Aurangabad	GMC Aurangabad	6
Phase V (by 2012)	GMC Solapur	GMC Solapur	8

The IRL at STDC Nagpur, accredited under RNTCP by NTI Bangalore in September 2007, conducts diagnosis and follow-up sputum culture and DST while a separate well ventilated ward at TB & Chest Department of Government Medical College, Nagpur functions as the DOTS Plus Site for initial inpatient care of the diagnosed MDR-TB Patients.

As on 31st December 2008, of the 474 MDR-TB suspects subjected to diagnosis at IRL Nagpur from the 13 districts of Nagpur and Akola circle, 132 MDR-TB patients were diagnosed. 85 MDR-TB patients have been put on Category IV treatment, of them 73 pateints are currently on treatment while 4 patients have died during treatment and 8 patients have defaulted.

The state envisages to accomplish 100% coverage of DOTS Plus services across the state of Maharashtra by the end of 2012.

The first and most important step towards this is to rigorously monitor the performance of each and every district under existing RNTCP activities to strengthen the basic DOTS services for pan-sensitive TB cases that would prevent the emergence of more MDR-TB cases.

The prioritization of the districts to be covered under DOTS Plus has been based on their performance and better quality of services to TB patients under RNTCP. The districts that need further strengthening in basic DOTS services under RNTCP are placed in the later phase of the plan. For monitoring of the progress, the districts of eastern Maharashtra has been assigned to STDC Nagpur while the districts of western Maharashtra has been assigned to STDC Pune.

Apart from the existing and functional accredited laboratory at STDC Nagpur for the districts covered under Phase I and II, it is proposed to develop and upgrade the following laboratories in Maharashtra by 2012 in order of priority (Table 8).

WEST BENGAL

IRL of the state is in Dr. B.C. Roy Polio Hospital, Beliaghata. The IRL has already done more than 100 primary cultures and DST. The results have been conveyed to NRL NTI Bangalore. They have selected 20 cultures to be sent to their lab for cross verification. IRL has already sent selected 21 stock solutions to NRL on 26th December 2008.

The state has launched the DOTS PLUS programme since 22nd December, 08. The state DOTS PLUS site is in Dr. K.S. RAY TB Hospital, Jadavpur, Kolkata.

The programme will initially diagnose and treat the MDR-TB patients from the Kolkata Municipal Corporation area. Patient intake will be 50 patients in the first year. Till the IRL of the state gets accredited, NTI Bangalore is conducting CDST of MDR suspects for the state.

Dr Suryakanta Misra, Hon'ble Minister for Health, West Bengal administrating first dose of medicine to a patient under DOTS Plus

Till date 65 patients' samples have been sent to NTI and the state has received results of 15 patients. Of them 5 patients have been diagnosed as MDR-TB.

Two patients have been excluded under exclusion criteria. Three patients have been put on CAT-IV in the state till date.Till date two DOTS PLUS Site committee meetings have been held. All HOD Chest Medicine of 5 medical colleges of Kolkata, Medical specialist, Psychiatrists, Nephrologist, Pediatrician and Endocrinologist have been made members of the site committee besides medical officers of the site. The specialists will be part of the committee on rotation basis.The site has been provided with a vehicle and the pre-treatment investigations are being done by the nearest medical college i.e National Medical College. The proposed civil renovation of the site has been sanctioned by the state govt. and PWD has already completed its formalities. The work will start very shortly.

Contribute to Health System Strengthening

Synergies and convergence under NRHM

Starting in April 2005, the National Rural Health Mission (NRHM) has been launched with special focus on 18 identified states with poor health indices. The primary goal of the NRHM is to improve the availability and access to quality health care by people, especially those residing in rural areas, and the poor and vulnerable groups. NRHM aims to carry out the necessary architectural correction in the basic health care delivery system of the country by increasing public expenditure on health, reducing regional imbalances in health infrastructure, pooling resources, integration of organizational structures, optimization of health manpower, decentralization and district management of health programmes, community participation and ownership of assets, and the induction of management and financial personnel into district health system. As part of the Mission, Indian Public Health Standards (IPHS) have been defined for the minimum level of infrastructure, human resource, equipment and drugs/consumables needed for effective functioning of the health institution (primary, secondary and tertiary units). This large scale investment into the health system would have positive ripple effects on the overall functioning of the health system and the disease specific interventions, including TB.

RNTCP, as other national disease control programmes is an integral part of the NRHM and would continue to deliver its services under the umbrella State/District Health society created under NRHM. As RNTCP is being implemented

Meeting of ASHAs and Self-Help Group (TB Care Group) in Andhra Pradesh

ASHA Training in progress

through the general health system, NRHM would further help in strengthening delivery of DOTS services and increasing accountability of general health system. ASHA workers recruited under NRHM, are being trained for DOT provision and support to decentralize DOT services to the doorstep of the patients, thereby increasing patient convenience and thus compliance.

Human Resource Development

Human resource development (HRD) under RNTCP has adopted a more holistic approach which includes management of personnel, while maintaining constant standards of training, leading to professional competency in TB control activities that will benefit every patient being treated in the programme.

The programme has a mandate to ensure that at least 80% of key health personnel are trained. They include Medical Officer (MO), Senior Treatment Supervisor (STS), Senior TB Laboratory Supervisor (STLS) and Laboratory Technician (LT). They are responsible for continuous RNTCP activities performed at state and district level. Newer areas for training include Medical College personnel, NGOs and Private Practitioners. The treatment functionaries are the DOT providers who are provided modular training and on-site updates during the course of supervision.

The overall aim of Human Resource Management is to improve the supervisory and managerial capacity of programme personnel. To ensure optimal utilisation of available staff to achieve maximum advantage for the programme, the following strategies are adopted:

- RNTCP encourages continuity of key staff such as STO, DTO and MO-TC.
- The centre regularly interacts with the states ensuring minimal vacancies in key posts. Such advocacy with states helps in establishing healthy interaction thus providing political and administrative commitment to the programme.
- Contract renewal of contractual staff is linked to their performance.
- Exchange of experiences amongst different programme managers is promoted during evaluations and meetings.

RNTCP undertakes a range of activities in HRD

1. Establish and Improve Existing Training Programmes

RNTCP has developed a series of modular training courses with printed material for all levels of staff ranging from the State TB Officers to the community DOT providers. These trainings are conducted at various venues.

Mrs. Rita Teaotia, Principal Secretary (Health), Govt. of Gujarat, at the inauguration of RNTCP Sensitization Workshop at Ahmedabad

- The Central Institutes provide training for State TB Officers, District TB Officers, faculty of State TB and Demonstration Centres (STDC) and Master trainers and medical college faculties. The Central Institutes are
  - Lala Ram Swaroop Institute of TB and Respiratory Diseases, Delhi.
  - National TB Institute, Bangalore, Karnataka
  - TB Research Centre, Chennai, Tamil Nadu
  - JALMA, Agra, Uttar Pradesh
- STDCs provide training for Medical Officer TB Control, STS and STLS
- The District provides training for MO, LT, MPWs and Community DOT providers

To date at least 600,000 individuals involved in RNTCP activities have been trained as per documentation.

Training modules have been revised and newer guidelines, modules and training programmes have been added to the existing training packages. Modules currently being used are:

- RNTCP Laboratory Network Guidelines for Quality Assurance of Smear Microscopy
- Strategy Document for Supervision and Monitoring of RNTCP
- RNTCP DOTS Plus guidelines
- RNTCP DOTS Plus modules for Medical Officers and Paramedical staff
- Guidelines for the involvement of NGOs and Private Practitioners in RNTCP
- Tribal Action Plan for RNTCP II
- Environmental and Bio-Medical Waste Management Plan for RNTCP II
- Financial Management Guidelines for State and District societies
- Training module for Medical Practitioners
- Training modules for Medical Officers, STS, STLS and counselors on TB-HIV coordination
- Improving Interpersonal Communication Skills in RNTCP training
- Standard Operating Procedure Manual for state and district drug stores
- Update training on Paediatric guidelines and paediatric patient wise boxes
- Procurement manual

There are three tiers of training which address the different needs of the staff providing RNTCP services:

(i) **Initial RNTCP training:** This includes all induction trainings in RNTCP of newly placed staff or replacement staff following staff turnover. It also includes the initial training of NGO and private practitioners on RNTCP, in addition to the basic modular trainings for Medical Officers, STS, STLS, LTs and MPWs.

(ii) **Re-training:** These trainings would be mainly for individuals who have already

Luncheon meeting of the NTF members

Group work in progress to promote RNTCP in medical colleges

Workshop on role of medical colleges in RNTCP training

Dr. Varinder Singh, Professor of Paediatrics, LHMC, advocating RNTCP Paediatric Guidelines at Pedicon 2008

received initial RNTCP training, but during supervision have been identified as requiring re-training on basic RNTCP activities.

(iii) **Updates on new activities and initiatives:** As the RNTCP introduces new activities and initiatives, it is imperative that the field staff are updated on these areas. These updates are given mainly by utilizing time under routine activities like regular programme review meetings such as the monthly district level meeting of the DTO, MO-TCs, STSs and STLSs and the quarterly state level review meetings.

Role of Medical Colleges in RNTCP training

Involvement of medical colleges in the Revised National Tuberculosis Control Programme (RNTCP) is a high priority. A national task force and five zonal task forces (ZTF) have been formed for their effective involvement in RNTCP. Within each zone, nominated medical colleges have been given the responsibility to function as nodal centres. All medical colleges have formed State Task Forces (STF). In each medical college, there is a core committee to arrange for training and oversee the functioning of the microscopy/treatment centre in their respective institutions. Continuing success of RNTCP requires involvement of all large health care providers including medical colleges. Professors of Medical Colleges have an important role in TB control as opinion leaders and trendsetters. By teaching and practicing DOTS they act as a role models for practicing physicians. More than 350 faculty members from medical colleges across the country have been trained at National institutes as "Master Trainers" and they participate in State/district level trainings.

2. Co-ordination of TB-related and HIV/AIDS training with the National AIDS Control Organization

Central TB Division, in collaboration with NACO, have developed a range of training packages which address the issues of TB-HIV. These training courses are targeted at various levels of health workers from MOs to VCTC counselors. Thus HIV/AIDS programme staff are being trained on RNTCP and vice versa. Training is also provided to NGOs who are involved in TB related and/or HIV/AIDS activities.

3. Data management training

The programme produces invaluable data at all levels. It is essential to ensure that districts and states know how to analyze and utilize their data for the betterment of the programme. Trainings have been conducted in many states by the centre. Feedback is encouraging, enabling more interactive and participative sessions with the

states. Two States (Rajasthan & Andhra Pradesh) undertook data management training for all DTOs in 2007. Master Trainers for other eight States i.e. Delhi, Gujarat, Karnataka, Kerala, Maharashtra, Orissa, Tamil Nadu and West Bengal have been trained at NTI, Bangalore in December, 2008.

4. Training in Advocacy, Communication and Social Mobilization

Advocacy, Communication and Social Mobilization (ACSM) has crucial role in increasing the reach of services by involvement of other sectors, civil society organizations, NGOs etc, creating conducive and patient friendly environment and also keeping the communities informed of the RNTCP services.

Over the years, ACSM component has been strengthened yet there are areas that need attention, such as capacity of the states and districts to systematically plan and implement need based, locally appropriate activities.

The RNTCP conducted four combined training/ workshop for Programme Managers in the states [State TB Officers and designated communication staff for RNTCP (State IEC Officers)] to assess, plan and implement state specific need based ACSM activities. These trainings were conducted by National Institute of Health and Family Welfare in the months of November/December 2008 and January 2009.

New initiatives and future plans

A large number of medical personnel of NGOs and Private Practitioners (PPs) are being sensitized either through the Indian Medical Association (IMA) or at their institutions/clinics. To impart adequate training with quality, an RNTCP training module has been developed to specifically meet the needs of this group of doctors.

A method to establish areas of weaknesses of Medical Officers in RNTCP, through tests and evaluations is being drafted. This will enable identification of issues that need to be addressed during retraining.

Increased efforts will be required to ensure that the pre-service training for doctors, nurses, MPHS/MPW and Anganwadi Workers is consistent with RNTCP. Also activities directed at health care providers outside of the public sector need to be strengthened. Specific training on management information systems (MIS) is needed for the RNTCP officers at the State and district levels.

Engage all Health Care Providers

Involve all health care providers, public, non-governmental and private, by scaling up approaches based on a public-private mix (PPM), to ensure adherence to the International Standards of TB care.

Public Private Mix

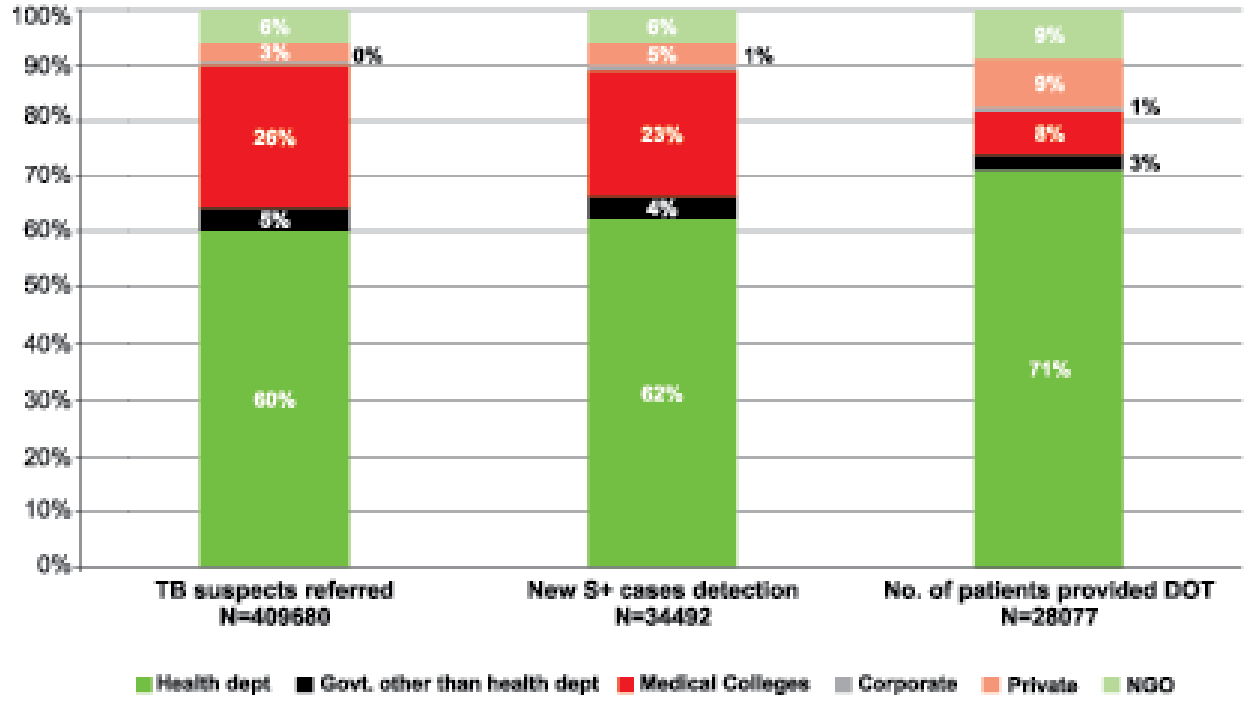
Public Private Mix (PPM) is the strategy to diagnose and treat TB patients reporting to all sectors of health care under RNTCP through a mix of different types of health care providers.

The WHO RNTCP PPM Project in 14 cities

The Central TB Division launched an Intensified PPM Project in fourteen urban areas in the country in August 2003. This project was set up to systematically undertake intensified PPM activities and to document the contribution of major categories of health providers to case detection and treatment under RNTCP.

The 14 sites are large urban areas in 14 different states: Bihar (Patna), Chandigarh, Gujarat (Ahmedabad), Jharkhand (Ranchi), Karnataka (Bangalore), Kerala (Thiruvananthapuram), Madhya Pradesh (Bhopal), Maharashtra (Pune-Mumbai), New Delhi, Orissa (Bhubaneswar), Rajasthan (Jaipur), Tamil Nadu (Chennai), Uttar Pradesh (Lucknow) and West Bengal (Kolkata). Additional human resources were provided

Fig. 7: 14 Intensified urban PPM districts (2008)–Summary of contribution by different health sectors



to each of these sites in the form of a RNTCP Medical Consultant and two field workers.

As PPM approaches in RNTCP continue to be scaled up and mainstreamed the additional human resource provided to the 14 sites have been withdrawn since January 2008. However, the modified surveillance system in these sites, which was set up to document contribution of different categories of health providers, will continue with some simplification. The reporting on this is a part of the results framework of the RNTCP Phase-II PIP. Reporting will now focus on the following four areas:

1. Referral of TB suspects
2. New smear positive case detection
3. DOT provision to TB patients and
4. Their treatment outcome

NGOs

Revision of NGO/PP Guidelines

A National Consultation on Revision of NGO /PP Guidelines was held on 29-31 January 2008 at LRS Institute, Delhi with the following objectives:

- To review the progress in involvement of NGO/PP in RNTCP since the formulation of schemes and share experiences
- To review the present NGO/PP schemes, identify constraints and suggest improvements
- To recommend new schemes to improve the collaboration with other sectors in all aspects of RNTCP implementation

The Consultation was held with 60-70 participants which included programme managers like STOs, DTOs, of regions where NGOs/PPs have been active in RNTCP; professional bodies like IMA and NGO representatives both from within the programme and outside RNTCP. The Consultation was held to have a consensus on the revised schemes in consultation with the stakeholders by sharing experiences from currently involved NGOs/PPs; NGOs/PPs who have discontinued their services under RNTCP due to operational problems with the existing schemes; NGOs/PPs who have not come forward due to non-flexibility in the present schemes.

The revised schemes as approved by the Government of India are given below:

- Scheme for ACSM
- Scheme for Sputum Collection Centre
- Scheme for Sputum Pick up and Transport Service
- Scheme for Designated Microscopy cum Treatment Centre
- Scheme for strengthening RNTCP diagnostic services
- Scheme for Culture and DST Services
- Scheme for Treatment Adherence
- Scheme for Urban Slums
- Scheme for the Tuberculosis Unit
- Scheme for TB-HIV

The revised schemes are being disseminated to all the States and new MoUs are being signed by the NGOs and PPs from 1st October 2008. (See Annexure on page 78)

Other Sectors

RNTCP has involved all the 16 centrally owned ESI hospitals, Zonal Railway Hospitals and 150 corporate health facilities. Some CGHS hospitals, public sector undertaking like COAL India, SAIL, BHEL, NTPC have Designated Microscopy Centres of RNTCP. There are DOTS centres in tea gardens of Jalpaiguri (WB) and Dibrugarh (Assam).

CHESTCON 2008. Around 100 Chest Physicians, Physicians, Chest Surgeons from all over Maharashtra attended the programme.

PPM Tools

Tools for PPM are specially made to help the NGOs, PPs and other partners. The Public Private Mix advocacy kit (flipbooks, stickers, display boards, posters etc.) developed for facilitating interaction with Private Practitioners for community involvement has been disseminated widely.

Fig. 8: NGO Status (State-wise) as per the 4th Quarter, 2008 (States with less than 50 NGOs have not been shown)

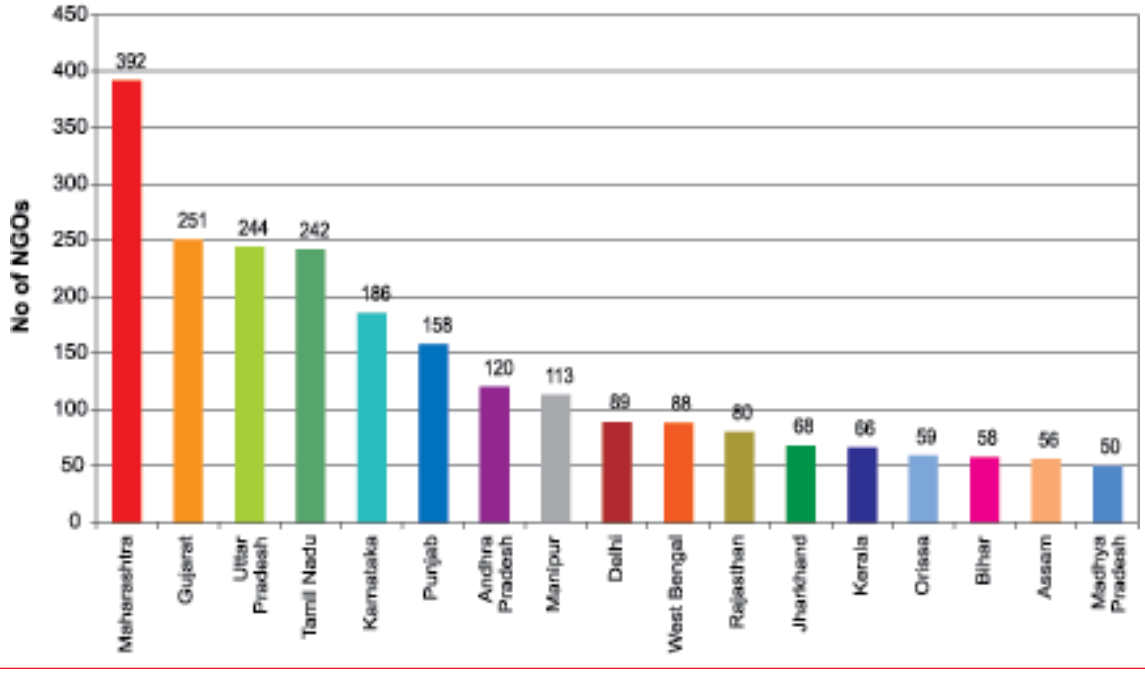
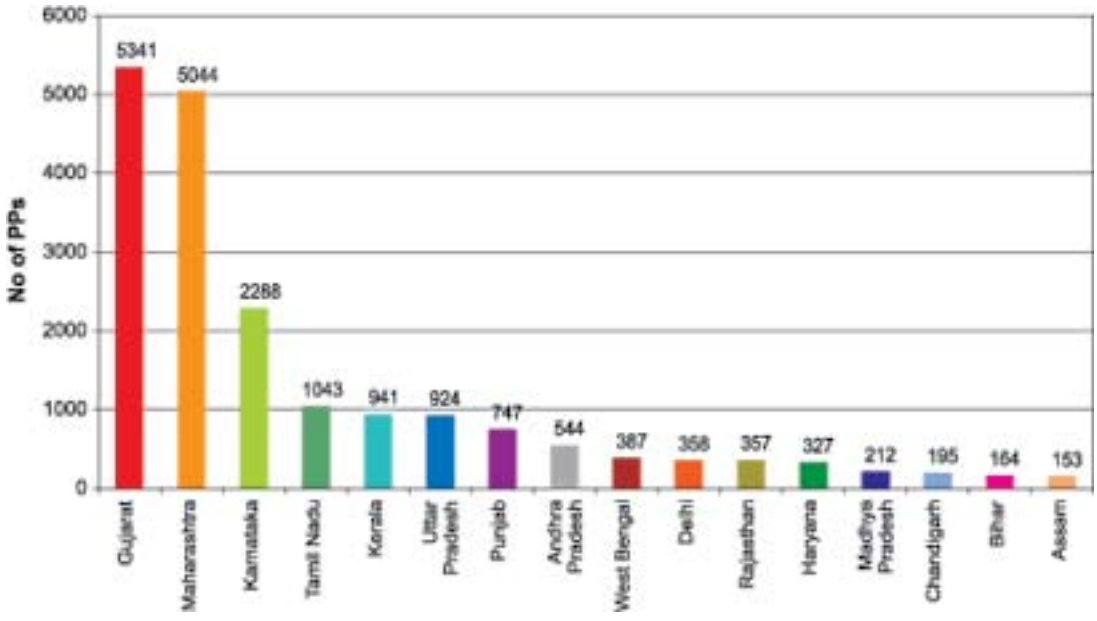


Fig. 9: PP Status (State-wise) as per the 4th Quarter, 2008 (States with less than 150 PPs have not been shown)



Indian Medical Association & IMPACT

The RNTCP PPM IMA Project supported by Round 6 of the GFATM (April 2007 to March 2012) has successfully completed the first year of the project. A National level Review workshop of the IMA was held at Kovalam on 9th -10th August 2008 which was attended by President and Secretaries of all State branches.

The project is being implemented in 167 districts in the six states of Andhra Pradesh, Chandigarh, Haryana, Maharashtra, Punjab and Uttar Pradesh, seeking to involve 536 IMA branches, sensitize around 40,000 PPs, involve around 7,000 PPs in signed schemes for PPs and circulate a quarterly RNTCP newsletter to around 55,000 IMA members in these states, during the five years of the project.

Status till December '08:

- Total no. of CMEs conducted – 432
- No. of PPs reached through the CMEs – 19,523
- No. of District Training programmes (DTP) – 101
- No. of PPs trained in DTP – 2133
- No. of DOT centres created – 461
- No. of DMCs created – 20

The IMA has endorsed the International Standards of TB Care (ISTC) Guidelines and disseminated them widely in the country.

IMPACT–Indian Medical Professional Association Coalition against TB

The IMA has supported the formation of Coalition of Professional Bodies against TB at the National level which has following members:

- API—Association of Physicians of India
- IAP—Indian Academy of Pediatrics
- NCCP—National College of Chest Physicians
- ICS—Indian Chest Society
- FPAI—Federation of Family Physicians Association of India

The President and Secretaries of these organizations met on 23rd March 2008 and endorsed the ISTC in their personal capacity and committed to get it endorsed by their respective associations. The Indian Medical Association, Federation of Family Physicians' Association of India, National College of Chest Physicians (India) have endorsed the ISTC till date.

Meeting of Indian Medical Associations' Coalition against TB

Catholic Bishops' Conference of India (CBCI)

The Revised National TB Control Programme has signed a MoU with the Catholic Bishops' Conference of India, Health Commission, for the First IMPACT TB Project under the direct supervision of Central TB Division in 11 states—Andhra Pradesh, Assam, Bihar, Chhattisgarh, Jharkhand, Karnataka, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal.

The Programme activities were initiated in all states after the recruitment of State TB Project Coordinators and Finance Officers for all 11 states in the month of July 2008.

The Catholic Healthcare network is the largest in the NGO sector with more than 5,500 health care facilities. 85% of these health facilities are in rural areas. In addition, the network is supported by Catholic Nurses Guild of India ~40,000; Sister Doctors Forum of India – 1000 and various other organizations involved in the field of health and social development. The project is supported by GFATM Round 4 project funding and will be implemented in more than 2000 health facilities, and involve more than 1002 doctors and 2475 paramedical staff. It will be expanded to all the Catholic health facilities in a phased manner.

A National level workshop (Pic 1.) was held on July 7-8, 2008, under the aegis of Central TB Division, to apprise the State TB Officers and the Catholic health network about RNTCP and the importance of the Catholic Health network in providing diagnostic and treatment services to TB patients. Subsequently, states conducted a situational analysis of the status of involvement of their Catholic Health Facilities in RNTCP. State level workshops (Pics 2&3) were then organized, which were inaugurated by senior Government functionaries and graced by leaders of the Catholic Church. Delegates who actively participated in these workshops included CTD representatives, WHO representatives, State TB Officers, RNTCP consultants, State TB Programme Coordinators (CBCI) and key decision makers from Catholic Health facilities.

The State TB Programme Coordinators have now begun the process of ensuring the active

Pic 1. DDG (TB), Exec Secy CBCI-HC and WHO representatives at the National level Workshop for the launch of the RNTCP – CBCI collaboration for TB control.

Pic 2. Hon Health Minister, AP inaugurating the state level workshop along with Hon Health Secy, Director CHAI and STO AP.

Pic 3. Health Commissioner, Karnataka, lighting the lamp. Also present from left: STO KA, Archbishop of Bangalore, CTD representative and president CHAKA

involvement of all Catholic Health facilities in RNTCP. They have participated in their State DTOs quarterly review meeting and apprised State and District TB officials about the project. Every diocese, headed by a Bishop and its Diocesan Social Service Society, are being sensitized (Pic 4) in the first step towards ensuring the participation of all health personnel whom the TB suspect is likely to approach for availing diagnostic and treatment services.

Pic 4: Diocese level sensitizations in different states

RNTCP training for Catholic Health personnel is taking place at a number of centres which are being conducted by the DTO and other facilitators appointed by the DTC. Concurrently, MOUs are being finalized between the DTC and the Catholic Health facilities present, based on the capacity and location of these health centres. This will ensure that there is good coordination between both the partners and a system is established for good diagnostic and treatment services, supply of drugs and consumables and in-depth monitoring and supportive supervision. Success stories are already being documented and this is a strong indicator of the necessity and value based success of this venture.

Involvement of Medical Colleges in RNTCP

Medical colleges play an important role in supporting any health programme in India. Medical college faculties have an important role in TB control as opinion leaders and trendsetters, teachers imparting knowledge and skills, partners in sustaining the programme by teaching and practicing DOTS and as role models for practicing physicians. Recognizing the significant role medical colleges can play, the RNTCP envisaged activities pertaining to training and teaching, service delivery, advocacy and operational research as priority areas for collaboration with the medical colleges.

Task Force

For effective implementation of the programme in medical colleges, the programme functions through a Task Force mechanism at the National, Zonal and State levels. By February 2006, State Task Forces were formed in all 27 States/UTs with medical colleges.

Zonal Task Force

Zonal task forces have been constituted in five zones of the country, catering to the medical colleges located in the north, south, east, west and north east zones of the country. RNTCP has established seven nodal centres for medical college involvement across the country at:

1. AIIMS (New Delhi)
2. PGI (Chandigarh)
3. SMS Medical College (Jaipur)
4. LTM Medical College (Mumbai)
5. Guwahati Medical College (Guwahati)
6. CMC (Vellore)
7. R G Kar Medical College (Kolkata)

These nodal centres are actively involved in the Zonal Task Forces and in the National Task Force.

Status of Medical College Involvement

In India, as per the Medical Council of India (Sept, 2008), there are 277 Medical colleges. Out of these, 267 medical colleges are involved (formation of core committee, DMC and DOT Centre) under RNTCP by the end of 4th quarter of '08.

The annual Zonal Task Force (ZTF) workshops for the year 2008 for all the five zones were planned in the months of August-September and were held as shown in Table 9.

The National Task Force CME cum Workshop was held at the All India Institute of Medical Sciences, New Delhi from 22nd to 24th Oct, 2008. All the states have reported at least one state task force meeting during the period 3Q07 to 2Q08.

At the national level, during the period 3Q07-2Q08, more than 0.6 million TB Suspects were examined at the DMC of medical colleges out of which 86,482 sputum smear positive cases were diagnosed. During the same period, more than 5,608 sputum smear negative TB cases were initiated on treatment in the medical college and more than 23,000 cases were referred to the other DOT centres for treatment. During the same period, more than 6,803

Table 9: Zonal Task Force Workshops			
Zone	**Dates**	**Venue**	**States**
North	August (4-5)	Patiala, Punjab	Chandigarh, Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, Uttarakhand, Uttar Pradesh
East	Aug (18-19)	Raipur, Chhattisgarh	Bihar, Chhattisgarh, Jharkhand, Orissa, West Bengal
South	Aug (28-29)	Trivandrum, Kerala	Andhra Pradesh, Karnataka, Kerala, Pondicherry, Tamil Nadu
West	September (11-12)	Panaji, Goa	Goa, Gujarat, Madhya Pradesh, Maharashtra, Rajasthan
North-East	September– Cancelled due to unavoidable local circumstances	Dibrugarh, Assam	Assam, Manipur, Meghalaya, Sikkim, Tripura

extra pulmonary TB cases were initiated on treatment in the medical college and more than 39,737 cases were referred to the other DOT centres for treatment.

This year the NTF, came up with recommendations on the following important topics:

1. Airborne infection control: Role of medical colleges in addressing the issues in medical college setting.
2. Mechanisms for promoting up-take of pediatric patient wise boxes in medical colleges and operationalisation of pediatric contact screening
3. Role of medical colleges in addressing the challenges of MDR and XDR including the application of Chennai consensus statement.
4. OR- Mechanisms for monitoring of OR by the Zonal OR Committee

The NTF also made a statement on the proposed changes in the RNTCP definitions of TB suspect and smear positive TB and the RNTCP recommendations on the number of sputum smear examinations required to diagnose smear positive TB. The statement is as follows:

- The NTF was informed about the new WHO STAG recommendations and the evidence supporting it, including additional evidence from TRC Chennai.
- The NTF is of the opinion that the changes proposed by RNTCP which changes the diagnostic criteria of smear positive TB as listed below will result in early diagnosis of TB, reduce the per patient work load for diagnosis and could lead to increased case detection of smear positive TB.
- NTF endorses the proposed changes in the RNTCP diagnostic criteria which are as follows:
  - TB suspect is any person with cough for two weeks, or more
  - Number of sputum specimen required for diagnosis is 2, with one of them being a morning sputum

Open discussion during NTF 2008

Workshop of ZTF, Raipur (East)


Workshop of ZTF, Panaji (West)

Workshop of ZTF, Patiala (North)

Workshop of ZTF, Trivandrum (South)

  - One specimen positive out of the two is enough to declare a patient as smear positive TB.
- However, in this context, to address a few concerns, NTF recommends the following:
  - RNTCP to ensure that the full range of EQA activities is implemented across all states and districts.
  - Implementation of all three proposed changes simultaneously and not in parts.
  - Operational research by a multi-centric study to determine the extent of false positive diagnosis of sputum smear positive pulmonary TB cases in patients with a single result of scanty positive.

The zonal OR committee meetings were held to review the proposals received from the medical colleges in their respective zones during the respective ZTF Meetings. Field visits have been reported to be conducted by the Members from the ZTFs of all the zones to oversee the activities/ participate in CMEs for advocating RNTCP.

Usage & Consumption of Pediatric Patient Wise Boxes (PPWBs) & INH Chemoprophylaxis

During the year, the issue of "Usage & Consumption of Pediatric Patient Wise Boxes (PPWBs) & INH Chemoprophylaxis" was discussed in the ZTF and NTF workshops for medical colleges through presentations and group work. During these workshops, pediatric faculty of various medical colleges and other participants were sensitized on this subject. Various recommendations have been made at these workshops to increase the utilization of PPWBs and INH for chemoprophylaxis in pediatric age group. The State TB Cell, Gujarat also organized a "RNTCP Sensitization Workshop" at Ahmedabad in January, 2009 for all the pediatric faculty of all the 12 medical colleges and district hospitals in Gujarat where this issue was also discussed.

Engage People with TB and Affected Communities

Engage people with TB, and affected communities to demand, and contribute to effective care. This will involve scaling-up of community TB care; creating demand through context-specific advocacy, communication and social mobilization.

Status of Advocacy, Communication and Social Mobilization (ACSM) in RNTCP

The goal of ACSM is to support TB control efforts by:

(i) improving case detection and treatment adherence (Enhance programme performance);

(ii) combating stigma and discrimination by creating patient friendly reassuring environment, and also informing communities about availability of quality services;

(iii) empowering people affected by TB

(iv) and mobilizing political commitment and resources for TB.

ACSM has been an important component of RNTCP since its launch, but it has assumed greater importance after achieving full coverage of the country in 2006. ACSM also aims to provide services in patient friendly environment from whichever health facility they seek treatment.

ACSM activities are meant to act as enabler for creating awareness, increasing accessibility and demand for quality services, and these are to be planned on the basis of needs assessment, identifying processes, implementation and expecting desired outcome. These are 'ongoing' activities for maintaining desired level of awareness, motivation, support and services in patient friendly environment, and like other components of the programme ACSM needs to be monitored regularly.

ACSM component of RNTCP aims to support TB control efforts for widening the reach of services by bringing in larger number of health care providers/ NGOs and other stakeholders so that patient get standardized good quality services.

RNTCP has well defined communication strategy. The first and foremost objective is to support TB control efforts to ensure basic DOTS services. In addition ACSM activities focus on TB-HIV and MDR-TB in order to provide services in patient friendly environment, ensure case holding under direct observation, reduce default, promote community DOT pro-vision, and ensure treatment completion and cure.

Roles and responsibilities for ACSM are well defined at Centre, State and District level. Centre takes care of mass media, organizes capacity building activities, and supports states in planning and implementing activities.

CMO (TB), representative from PATH, DDG (TB) and Prof. Mathi at ACSM training at NIHFW

Hands-on training at Gurgaon during capacity building training

Group work

Session in progress

ACSM training workshop at National Institute of Health and Family Welfare (NIHFW)

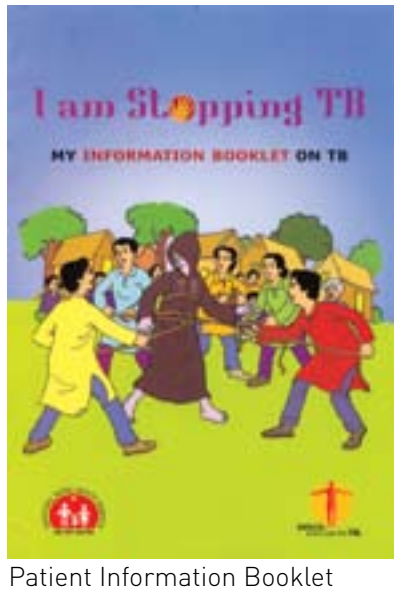
In this year ACSM capacity building training workshops have been held for State TB Officers, IEC Officers and Communication Facilitators in four batches. The purpose of these training workshops was to have shared understanding about ACSM and also appreciate the roles and responsibility of each staff. The five days workshops covered Advocacy, Communication and Social Mobilization activities in detail and had group work and field work exposure for each of the components. Half day was spent in each workshop on development of ACSM action on the basis of identification of objectives, problems, causes, strategy to address, action plan, budgeting, and monitoring.

States and districts develop state specific action plans for ACSM. Over the years quality of action plans have improved and states and districts have started developing need based ACSM activities.

ACSM District Review meeting with DTO in Andhra Pradesh

The states and districts are encouraged to draw support from NRHM, and other departments/ personnel responsible for IEC in the state and districts for having convergence with other disease control activities.

New prototype material is developed for use on mass media and for use in the districts in order to have standardized messages and have synergy throughout the country. Patient information booklet has been developed which is to be provided to each patient who is on treatment.



Patient Information Booklet

Centre with the support of media agency is organizing hands-on training for ACSM in six states. This will provide opportunity to learn to use communication material in the field. The objective is to ensure optimum and proper use of communication material that has been developed by the programme.

ACSM ACTIVITIES IN VARIOUS STATES

HARYANA

IEC activities on World TB Day

KARNATAKA

On the occasion of Dushehra, an exhibition was organised in Mysore.

KERALA

A nursing student, performed 'Ottamthullal' (dance) on TB in Alappuzha District.

MIZORAM

High School level quiz competition was organized at Kolasib District.

MADHYA PRADESH

Meeting of DOTS providers and the community in Indore.

Hon'ble Medical and Health Minister, Mr. Gauri Shanker Shejwar at Health Fair, Indore

MAHARASHTRA

Navi Mumbai Muncipal Corporation

Procession of Two Wheelers

NMMC organized a Two wheeler procession in Vashi area for creating awareness among general public about the TB.

The procession was flagged off by Mrs. Anjani Bhoir, Hon. Mayor, Navi Mumbai and Shri Vijay Nahata, Hon. Commissioner Navi Mumbai Municipal Corporation.

Workshop for Consultants & Private Practitioners

A workshop for consultants and private practitioners was organized to motivate them to actively participate in RNTCP. 175 consultants and private practitioners participated in the workshop.

The function was inaugurated by Shri Vijay Nahata, Hon. Commissioner, Navi Mumbai Municipal Corporation.

Oath Taking Function in Patients' Gathering

On the occasion of World TB day a "Patients Gathering" was organised. Four buses were sanctioned to bring the patients to the venue. Around 450 patients of all categories were present at the gathering.

Prizes were distributed to best TBHV, best worker and best DOT Providers. All the TB patients took an oath to stop TB by taking medication regularly and spreading awareness about the disease.

UTTAR PRADESH

School activities

Publicity on rickshaw in Azamgarh

Reaching out to tribal, hard to reach and marginalized populations

It is envisaged that for consolidation of the TB control measures, needs of marginalized sections/special groups should be paid special attention. Special mechanisms to make services accessible, acceptable to the 'difficult to reach' sections of the society are envisaged. These include communication approaches that are particular to specific geographic areas (media-dark areas) or cultural/social contexts. These processes allow for flexibility and adaptation.

Use of local medical practitioners for referral, provision for sputum collection centres, involvement of NGOs, and awareness generation about DOTS through culture specific local media are some of the initiatives taken up by the programme.

For Tribal Groups

The RNTCP Tribal action plan provides for special incentives to patients and DOT providers in identified tribal TB Units and districts. These incentives have contributed significantly to the considerable improvement in the case finding and treatment holding parameters of these districts.

RNTCP specifically monitors the programme performance in tribal, poor and backward districts, which is reflected in the quarterly RNTCP Performance Report.

Crossing the river Moyar – "Raging rivers do not stop us stopping TB" – Visit to Kallampalayam Tribal Hamlet

Urban Slums

Urban slum-dwellers require intensive focus and support from the tuberculosis programme, as these populations often are not able to access timely diagnosis or complete the full duration of anti TB treatment, and hence are at risk of unfavourable treatment outcomes including deaths, defaults, failures and drug resistance.

Under the revised PPM schemes, an 'Urban Slum Scheme' has been introduced to improve TB control activities. Any NGO/Community based organization/Self help group/Private practitioner with capacity and commitment to provide sustained support for at least 3 years is eligible for a support of Rs 50,000 per 20,000 slum population per annum. The activities include:

- IEC activities in slum population for TB and service awareness
- Counsel patients for diagnostic process completion, treatment initiation, treatment adherence, need to inform regarding pending migration, and default prevention
- Collect detailed information regarding place of residence, home village, and other information helpful to locate patients in the case of migration
- Facilitate sputum collection and transportation to DMCs, etc.

Prisons

India has about 1200 prisons/jails with a total capacity of 233,543 inmates. This includes 107 Central Jails, 268 District Jails, 678 Sub district Jails, 14 Women jails and 73 other jails. The current 326,000 jail inmates (Male: 3,13,739, Females: 12,780) are constituted of 28% convicts, 67% under-trials, 1.2% detainees and 4% others.

Since RNTCP has been implemented by all health systems under the public sector, including prison

hospitals and dispensaries, prison inmates are diagnosed and treated for tuberculosis according to the DOTS strategy. Sputum microscopy facilities (Designated Microscopy Centres – DMCs) have been established in select prison hospitals depending on availability of laboratory services and size of the inmate population. In other prisons, sputum collection centres have been linked to nearby DMCs, or TB suspects are referred to the nearest DMC in general health facilities for diagnosis. Moreover, screening for TB symptoms and signs are included in the routine health check-up of the inmates.

Gender

To provide gender sensitive approaches to facilitate access and utilization of TB control services by both men and women.

A constant feature of the RNTCP pulmonary TB case notifications is that more male patients are detected than female patients, with the ratio being 1.8:1. A number of community based epidemiological studies have consistently demonstrated that in all age groups, pulmonary TB is predominantly a male disease. Operational research studies have also shown that among the cases existing in the community, a significantly higher proportion of male cases, especially elderly males, are "missed" from the case notifications, suggesting that generally males may have poorer access to TB services than females.

The complexity and the cost of getting a TB diagnosis can be high for both poor women and men. Repeated visits, travel costs, rigid service timings, and delays in test reports reduce poor women's and men's ability to access services. It is seen that there are gender-based issues both for male and females in relation to TB control activities. The provision of country-wide available and accessible TB services as close to the patients as possible, is an important first step in addressing this issue. RNTCP has made efforts to increase access to services for socially disadvantaged groups through community outreach services (ASHA workers and community DOTS providers) and provision of DOTS service providers of acceptable gender, caste and religion. A range of innovative and creative provisions for DOTS treatment at the community level has been evolved. With increased accessibility to RNTCP services, some of the gender-based issues will be addressed e.g. difficulty of working males to attend public health services for DOTS due to inconvenient opening hours addressed by DOTS provision via NGO or private sector health facilities, or by community volunteers.

RNTCP has already taken steps to address some of the other gender-based issues. One such area was the lack of readily available gender-based information from the routine programme health information management system. The recording/reporting system has been redesigned to collect stratified data by sex and has provided data on the proportions of males and females being registered under the programme and their treatment outcomes.

Another area of programme activity that will address some of the gender-based issues the RNTCP ACSM strategy. The strategy encompasses efforts to encourage both men and women to report to health facilities if ill with symptoms of TB, and once diagnosed, to raise awareness amongst patients about the importance of completing treatment. Though intensified ACSM activities and greater accessibility of quality free TB services, community members with symtoms of TB will be encouraged to report to the health facilities for examination and treatment.

For poor women and men, dependent on low income earning livelihood strategies, RNTCP is pro-actively working to link such patients to existing social welfare schemes of State and Central Government, by creating awareness

among patients regarding availability of such schemes for their utilization.

Migrants

RNTCP has developed mechanisms and strong referral linkage system in order that migrant populations have access to TB services.

States have been using innovative mechanisms, like use of internet/email systems to communicate across districts, and organizing border-district meetings to strengthen inter-district and inter-state referrals. These mechanisms would be further strengthened and monitored to ensure low default rate. All these efforts are expected to further strengthen access of standardized services to all migrants and working population.

Enable and Promote Operational Research

RNTCP encourages operations research and has provisions for funding such studies. The goal of OR under the RNTCP is to generate appropriate and continuous flow of information to make TB control in India more effective. To encourage all levels of programme staff to address problems or find solutions in a research mode, the RNTCP research agenda has been framed for different levels of use according to the expertise and availability of resources. Operational research under RNTCP is directed on a priority basis, towards the wider objectives of improving DOT services to make it more patient-friendly, ensure that treatment is directly observed, and increase case detection of smear positive cases. It is only a broad framework and proposals aimed at addressing these issues would be funded by the RNTCP.

In order to incorporate the suggestions made by various stakeholders, RNTCP has revised the OR agenda that was initially published in 2005. The revised RNTCP Operational Research plan was reviewed by the WB consultant Dr Fabio Luelmo during his visit in June-July 2008. The plan was also shared with the members of the Standing OR Committee and the Zonal and National Task Forces. Concept notes on some of the RNTCP priority topics have been developed for commissioned research. The plan has been approved and placed on the RNTCP website www.tbcindia.org for dissemination to the interested researchers.

All the Zonal OR Committees have been constituted and four out of the five met during the respective Zonal Task Force meetings during August and September 2008. The Zonal OR Committees reviewed a total of 38 OR proposals out of which 7 were approved. 44 PG theses on RNTCP were approved by the respective state OR Committees.

A retrospective assessment of reasons and risk of default amongst Cat II patients was successfully undertaken by CTD. The results of the study showed important risk factors and reasons for default amongst retreatment cases. The results of the study and the remedial actions to be taken have been communicated to the districts.

The following studies have been approved and funded by CTD and are presently underway:

1. Disease prevalence studies at 6 sites by the following institutes: NTI, Bangalore; MGIMS, Wardha; AIIMS, New Delhi; PGIMER, Chandigarh; JALMA, Agra; RMRCT, Jabalpur
2. Zonal ARTI survey being coordinated by NTI, Bangalore
3. A Study on Treatment of Genital Tuberculosis: A randomized controlled trial to compare the 6 months of Cat I treatment with 9 months of Cat I Treatment (extension for 3 months) in genital tuberculosis under RNTCP. (AIIMS, New Delhi)
4. A multi-centric study on treatment of abdominal tuberculosis (intestinal or

peritoneal): A randomized controlled trial to compare the 6 months of Cat I treatment with 9 months of Cat I Treatment (extension for 3 months) in abdominal tuberculosis under RNTCP. (AIIMS, New Delhi)

5. Evaluation of the efficacy of thrice weekly DOTS regimen in TB pleural Effusion at six months. (AIIMS, New Delhi)
6. Utility of generic and disease specific health related quality of life instruments as outcome measures for tuberculosis patients treated under RNTCP at Chandigarh. (PGIMER, Chandigarh)
7. "Socioeconomic implications and incidence of default amongst patients put on DOTS, Himachal Pradesh" under RNTCP. (IGMC, Shimla)
8. A study on the assessment of RNTCP strategy of FNAC diagnosis (at 2 weeks) and 6 months duration of treatment for peripheral tubercular lymphadenitis. (PGIMER. Chandigarh)

In addition to this RNTCP in collaboration with FIND (Foundation for Innovative Newer Diagnostics) is evaluating and demonstrating newer diagnostics like Line probe assays, Liquid Culture and LED Fluorescent Microscopes. These studies are presently underway at various sites across the country.

Revised Operational Research Agenda Listing the Priority Research Areas

Interventions to Improve Case Detection and Diagnosis

- Health seeking behavior and reasons for TB diagnostic delay in vulnerable populations, including tribal and urban slum dwellers.
- Pilot test of "2+2" (2 weeks cough and 2 sputum specimens) for TB suspect identification and diagnosis in high and low workload settings
- Yield of sputum-smear examination of EP cases at diagnosis, and predictive value of follow up sputum-smear examination in EP and smear negative cases
- Prevalence of cough > 2 weeks among OPD attendees, and smear microscopy outcomes among them
- Efficiency of alternative questions to identify TB respiratory suspects in local language (e.g. productive cough vs. cough)

Interventions to Improve Microscopy

- Evaluation of the use of fluorescent smear microscopy in high-workload settings
- Operational and technical evaluation of low-cost battery-powered LED adaptation for binocular microscopes
- Effect of sputum collection centres on specimen quality, diagnostic access, and completion of follow-up sputum examinations
- Impact of one versus two sputum samples for follow-up sputum examination
- Effect of daily slide workload on laboratory technician proficiency (when does accuracy begin to suffer under programme conditions)
- EQA: Evaluation of quality of 1st level STLS reading of RBRC slides vs. a reference umpire's reading in the case of discordant slides
- EQA: Evaluation of the prevalence of scanty positive smears as a proxy indicator of the quality of smear microscopy activities

Interventions to Improve Treatment Outcomes

- Prospective, community-based long-term cohort study of patients registered and treated under RNTCP, evaluating multiple key treatment-related questions:
  - Risk factors for death, default, and failure during TB treatment
  - Impact of migration on treatment outcomes
  - Impact of co-morbidity (diabetes, HIV infection) on treatment outcomes
  - Impact of non-MDR drug resistance on treatment outcomes

- Incidence and risk factors for recurrent TB (relapse or re-infection)
- Risk factors for death after TB treatment

- Evaluation of patient reasons for initial default, and the effectiveness of interventions to prevent initial default
- Retrospective evaluation of risk factors for default in RNTCP category II treatment, and qualitative evaluation of patient and provider-reported determinants of TB treatment interruptions
- A cluster randomized controlled trial of innovative and cost-effective programme interventions to reduce default
- Impact on outcome and relapses of using a daily or partially intermittent treatment (two weeks daily) during the intensive phase of TB treatment) compared with fully-intermittent regimen, in patients with and without HIV infection
- Develop and test links of the TB programme with existing welfare schemes to improve case holding and treatment outcome
- Rapid retrospective evaluation of the impact of treatment interruptions on treatment outcomes
- Evaluation of family-DOTS in young pediatric TB patients using pediatric patient-wise boxes.
- Evaluation of financial and non-financial incentives for DOTS providers and patients on DOTS provision, and patient adherence
- Reasons for delay in initiating treatment after diagnosis and the effect on treatment outcomes
- Impact on treatment outcome of prolonging the intensive phase in new TB patients smear positive at two months
- Impact on outcome and clinical response of prolonging the continuation phase in serious forms of extra-pulmonary TB

Interventions to Address TB-HIV

- Evaluation of the screening methods for TB case finding in antiretroviral treatment and Care and Support Centres.
- Reasons for loss of TB suspects referred from integrated counseling and testing centres to designated microscopy centres
- Reasons for non-initiation of ART and CPT for HIV-infected TB patients
- Incidence and mortality associated with TB among patients awaiting ART and on ART.
- Causes for delay in treating HIV in TB patients, and effect of corrective actions
- Feasibility and cost-effectiveness of isoniazid preventive treatment for HIV-infected patients in ART centres
- Involvement of NGOs in TB-HIV interventions.
- Evaluation of the impact of infection control measures on the incidence of TB infection among health care workers.

Interventions to Address Drug-resistant TB

- Prevalence of MDR-TB in Cat I failures, Cat II entry, and Cat II patients smear positive a 3 months, and association of MDR-TB with source of and past history of anti-TB treatment.
- Evaluation of innovative methods of community-based DOT provision for the delivery of RNTCP Category IV treatment
- Rapid case-control study for risk factors for fluoroquinolone resistance and XDR-TB among patients with MDR-TB.
- Use of second-line anti-TB drugs and MDR-TB diagnostic and treatment practices among providers in urban areas (surveys)
- Sources of previous TB drug exposure for patients registered in RNTCP as re-treatment cases.
- Methods to improve sputum transportation for culture and DST
- Evaluation of the utility of rapid culture and DST methodologies in programme setting (high TB burden low income country)
- Slide culture to monitor response to treatment in patients on Category IV treatment

Interventions to Engage All Health Care Providers

- Evaluation of the quality of TB diagnosis and care among private sector physicians
- Marketing to private health providers – what messages change referral, diagnostic, and treatment behavior for TB?
- Evaluation of comparative results and effort required by the different RNTCP schemes to involve private practitioners
- Knowledge, attitudes and practices of providers of alternative systems of medicine
- Testing methods to involve providers of alternative systems of medicine in the referral of TB suspects
- Impact of PPM interventions on equity in access, diagnostic delay, and costs of care
- Effect of ISTC dissemination on knowledge, attitudes and practices of proper TB care among specialist physicians
- Contribution of medical colleges to TB case finding under RNTCP
- Testing methods to strengthen inter-department coordination within medical colleges to improve referral for treatment

Improving Community Access to TB Services

- Qualitative (focus groups) and quantitative (pre-and post intervention) evaluation of the effectiveness of communication methods and messages to promote client demand
- Testing innovative interventions to increase public visibility of TB diagnosis and treatment facilities
- Efficacy and cost of innovative interventions to increase demand of persons with respiratory symptoms in PHC facilities
- Qualitative evaluation of the effectiveness of use of 'patients charter' and other tools to promote advocacy and involve local communities fight TB
- Test the appropriateness of the RNTCP training and information materials for general health staff and private practitioners
- Develop and test simple methods to evaluate the quality of RNTCP supervision and the usefulness of current instruments

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CHANGES IN RNTCP POLICY
ON DIAGNOSIS OF SMEAR POSITIVE PULMONARY TB
Effective from 1st April 2009

On the recommendation of the National Laboratory Committee RNTCP has made changes in diagnosis of smear positive pulmonary TB (PTB). WHO 2007 STAG-TB recommended that

- The revised definition of a new sputum smear positive pulmonary TB case is based on the presence of at least one acid-fast bacillus (AFB) in at least one sputum sample in countries with a well functioning EQA system
- The reduction of the number of specimens to be examined for screening of TB cases from three to two, in places where workload is very high and human resources are limited

According to new policy there are changes in:

1. Number of sputum specimen required for diagnosis of smear positive PTB

The number of specimens required for diagnosis of smear positive pulmonary TB is two, with one of them being a morning sputum specimen. Two sputum specimens are collected over one, or two consecutive days. Of the two sputum specimens, one is collected on the spot and the other is an early morning specimen collected at home by the patient. If the health facility is a DMC, one spot specimen is collected immediately on the first day and patient is given a sputum container with instructions for collection of an early morning specimen which is brought to the DMC by the patient/attendant on the second day. If the health facility is not a DMC, then the patient is given a sputum container with instructions to collect an early morning specimen and go with the sputum specimen to the DMC where the spot specimen can be collected. In case the patient is not able to travel to the DMC, then both the morning and the spot specimens could be collected at the nearest health facility or sputum collection centre and transported to the DMC. Results of sputum tests should be reported within a day.

2. Diagnosis of smear PTB

Diagnosis of smear positive TB amongst TB suspects - One specimen positive out of the two is enough to declare a patient as smear positive TB. Smear positive TB is further classified as a new or retreatment case based on their previous treatment history, and appropriate therapy is prescribed. Patients in whom both specimens are smear-negative should be prescribed symptomatic treatment and broad-spectrum antibiotics for 10-14 days. In such cases antibiotics such as fluoroquinolones (ciprofloxacin, ofloxacin, etc.), rifampicin or streptomycin, which are active against tuberculosis, should not be used. Most patients are likely to improve with antibiotics if they are not suffering from TB. If the symptoms persist after a course of broad spectrum antibiotics, repeat sputum smear examination (2 samples) must be done for such patients. If one or more smears are positive, the patient is diagnosed as having smear-positive pulmonary TB. If none of the repeat sputum specimens is positive, a chest X-ray is taken, and if findings of the X-ray are consistent with pulmonary tuberculosis, the patient is diagnosed by the physician as a case of sputum negative pulmonary TB.

3. Definition of PTB suspect-TB suspect is any person with cough for 2 weeks, or more.

A pulmonary TB suspect is any person with cough for 2 weeks, or more. At all outpatient clinics, hospitals and health facilities, both in the public and private sectors, all patients need to be systematically screened for cough by medical officers and health staff manning the health facilities. Additionally, in medical colleges and hospitals, in-patients also need to be screened for identification of TB suspects. Persons with cough for 2 weeks, or more, with or without other symptoms suggestive of TB, should be promptly identified as pulmonary TB suspects and steps taken to subject them to sputum smear microscopy for acid-fast bacilli, for diagnosis of TB.

No changes are required in the recording and reporting formats for 2009. However, in view of these changes, the full range of External Quality Assessment (EQA) activities in all the RNTCP designated microscopy centres across all states and districts as per the existing guidelines will be maintined. The “RNTCP laboratory network: Guidelines for Quality Assurance of smear microscopy for diagnosing tuberculosis”, published in 2005 by the Central TB Division, Directorate General of Health Services, Ministry of Health & Family Welfare, New Delhi, are available in downloadable format at www.tbcindia.org.

Accordingly, these changes will be reflected in IEC material, on TB suspects and number of sputum samples for diagnosis.

All partners of RNTCP, including PPM partners and TB-HIV partners at state and district levels have been communicated the new policy.

CONSENSUS STATEMENT

MULTI-DRUG RESISTANT AND EXTENSIVELY DRUG RESISTANT TB IN INDIA

Based on the review of published evidence, international and national guidelines, and the experience of participants and their institutions in the management of multi-drug resistant TB (MDR-TB) and extensively drug resistant TB (XDR-TB), the following consensus was reached.

Epidemiology

As per the estimates from the State representative Drug Resistance Surveillance (DRS) survey in Gujarat and various district level DRS studies, the prevalence of MDR-TB in new smear positive pulmonary TB (PTB) cases is <3% and 12 to 17% amongst smear positive previously treated PTB cases. Review of studies with representative samples does not indicate any increase in India of the prevalence of drug resistance over the years.

Although isolated reports, both published and unpublished, indicate the existence of XDR-TB in the country, it is not possible as yet to estimate its magnitude and distribution from the available data.

Definitions

MDR-TB is defined as resistance to isoniazid and rifampicin, with or without resistance to other anti-TB drugs.

XDR-TB is defined as resistance to at least Isoniazid and Rifampicin (i.e. MDR-TB) plus resistance to any of the fluoroquinolones and any one of the second line injectable drugs (amikacin, kanamycin or capreomycin).

Prevention of MDR-TB and XDR-TB

The use of inadequate regimens and the absence, or inappropriate application, of directly observed treatment can lead to the development of drug resistance and potentially to an increase in drug resistance levels amongst the community. The implementation of a good quality DOTS programme will prevent the emergence of MDR and XDR-TB in the community. Therefore, the highest priority is to further improve the quality and reach of DOTS services in the country. For this, all health care providers managing TB patients need to be linked to RNTCP and operational challenges in implementing DOTS need to be addressed. The proportion of TB patients being treated outside the DOTS strategy needs to be minimised. The International Standards of TB Care need to be used by RNTCP and professional medical associations as a tool to improve TB care in the country. The fluoroquinolone group of drugs is not as yet recognised, nor recommended, as first line anti-TB drugs, and their use should be restricted only to the treatment of confirmed MDR-TB cases.

Management of MDR-TB

National guidelines and plans for scaling up management of MDR-TB have been developed under RNTCP. In the interim, while RNTCP DOTS Plus services are being expanded across the country, all health care providers in the public and private sector managing MDR-TB cases, need to adhere to the following:

- MDR-TB management to be preferably undertaken only at selected health institutions with experience, expertise and availability of required diagnostic and treatment facilities.
- Diagnosis of MDR-TB
  - Drug resistance may be suspected based on history of prior treatment (e.g. smear positive case after repeated treatment courses, Cat II failure etc.) and/or close exposure to a possible source case confirmed to have drug-resistant TB.
  - For patients in whom drug resistance is suspected, diagnosis of MDR-TB should be done through culture and drug susceptibility testing from a quality-assured laboratory.
- Interpretation of DST Results
  - Drug susceptibility test results of the first line anti-TB drugs like pyrazinamide, streptomycin, and ethambutol should be interpreted with caution due to the poor reproducibility of these results even under optimal laboratory conditions.
  - Drug Susceptibility Test (DST) results of second line anti-TB drugs[1] should be interpreted with great caution due to limited capacity of laboratories, absence of quality-assurance, and lack of standardised methodology.

- Treatment regimen
  - All relevant investigations to be performed prior to treatment initiation.
  - Preferably the standardised regimen as recommended in the national DOTS Plus guidelines should be used [6(9) Km Ofx Eto Cs Z E / 18 Ofx Eto Cs E][2].
  - If results of second line DST from an accredited laboratory are available, an individualized regimen may be used in such patients after obtaining a detailed history of previous anti-TB treatment.
- Duration of treatment
  - At least six months of Intensive Phase (IP) should be given, extended up to nine months in patients who have a positive culture result taken in fourth month of treatment.
  - Minimum 18 months of Continuation Phase (CP) should be given following the Intensive Phase.
- Follow-up schedule
  - Smear examination should be conducted monthly during IP and at least quarterly during CP.
  - Culture examination should be done at least at 4, 6, 12, 18 and 24 months of treatment.
  - Relevant additional investigations should be performed as indicated.
- Treatment adherence and support
  - All patients initiated on treatment and their family members should be intensively counselled prior to treatment initiation and during all follow-up visits.
  - To reduce the risk of development of resistance to second-line anti-TB drugs and promote optimal treatment outcomes, all efforts should be made to administer treatment under direct observation (DOT) over the entire course of treatment.
  - If DOTS is not possible, attempts to ensure treatment adherence should be made by:
    - checking empty blister packs; and
    - follow-up visits at least every month.
- Documentation of treatment
  - Health care facilities/practitioners managing MDR-TB patients should maintain a systematic record of treatment regimen, doses, duration, side-effects, investigation results and treatment outcome for all patients initiated on second line treatment.

Public Health Responsibilities of Health Care Providers

- Health care facilities/practitioners managing confirmed MDR-TB patients should inform their respective District TB Officer regarding treatment initiation and outcome of all MDR-TB cases.
- Prior to treatment initiation and on all follow-up visits the patient and family members should be counselled on all aspects of MDR-TB.
- All household contacts of the MDR-TB patients should be screened for active TB disease.
- Infection control measures
  - All large health care facilities need to have an infection control (including air-borne infection) plan and a team for implementation of measures to prevent nosocomial transmission of TB and other air-borne infections.
- Statements to the press/media on MDR-TB and XDR-TB should be made with extreme caution and after requisite verification and authentication.

[1] *Fluoroquinolones (Ciprofloxacin, Ofloxacin, Levofloxacin, Moxifloxacin, Gatifloxacin, Sparfloxacin, Pefloxacin); Kanamycin, Amikacin, Capreomycin, Ethionamide, Prothionamide, Cycloserine and PAS*

[2] *Km=Kanamycin; Ofx=Ofloxacin; Eto=Ethinamide; Cs=Cycloserine; Z=Pyrazinamide; E=EthambutoL*

INTERNATIONAL STANDARDS
FOR TB CARE

The International Standards for Tuberculosis Care (ISTC) describe an internationally accepted level of care that all practitioners, public and private, should follow in dealing with people who have, or are suspected of having, tuberculosis. The Standards are intended to facilitate the effective engagement of all care providers in delivering high-quality care for patients of all ages, including those with sputum smear-positive, sputum smear-negative, and extrapulmonary tuberculosis, tuberculosis caused by drug-resistant organisms, and tuberculosis combined with HIV infection.

The Standards have been developed by the Tuberculosis Coalition for Technical Assistance (TBCTA) with funding support from the US Agency for International Development. ISTC emerged after a year-long inclusive process guided by a 28-member steering committee that included individuals representing a wide variety of relevant perspectives on tuberculosis care and control. In addition, the document was presented at various public forums with an open invitation for comments. India was intimately involved in the development of the ISTC and a representative of the Indian Medical Association (IMA) was a member of the steering committee that supervised the development of the ISTC document. The RNTCP of the Government of India conforms to the standards prescribed in the ISTC.

STANDARDS FOR DIAGNOSIS

Standard 1. All persons with otherwise unexplained productive cough lasting two-three weeks or more should be evaluated for tuberculosis.

Standard 2. All patients (adults, adolescents, and children who are capable of producing sputum) suspected of having pulmonary tuberculosis should have at least two, and preferably three, sputum specimens obtained for microscopic examination. When possible, at least one early morning specimen should be obtained.

Standard 3. For all patients (adults, adolescents, and children) suspected of having extra-pulmonary tuberculosis, appropriate specimens from the suspected sites of involvement should be obtained for microscopy and, where facilities and resources are available, for culture and histopathological examination.

Standard 4. All persons with chest radiographic findings suggestive of tuberculosis should have sputum specimens submitted for microbiological examination.

Standard 5. The diagnosis of sputum smear-negative pulmonary tuberculosis should be based on the following criteria: at least three negative sputum smears (including at least one early morning specimen); chest radiography findings consistent with tuberculosis; and lack of response to a trial of broad spectrum antimicrobial agents. Because the fluoroquinolones are active against M. tuberculosis and, thus, may cause transient improvement in persons with tuberculosis, they should be avoided. In persons with known or suspected HIV infection, the diagnostic evaluation should be expedited.

Standard 6. The diagnosis of intrathoracic (i.e. pulmonary, pleural, and mediastinal or hilar lymph node) tuberculosis in symptomatic children with negative sputum smears should be based on the finding of chest radiographic abnormalities consistent with tuberculosis and either a history of exposure to an infectious case or evidence of tuberculosis infection (positive tuberculin skin test or interferon gamma release assay). For such patients, if facilities for culture are available, sputum specimens should be obtained (by expectoration, gastric washings, or induced sputum) for culture.

STANDARDS FOR TREATMENT

Standard 7. Any practitioner treating a patient for tuberculosis is assuming an important public health responsibility. To fulfill this responsibility the practitioner must not only prescribe an appropriate regimen but also be capable of assessing the adherence of the patient to the regimen and addressing poor adherence when it occurs. By doing so, the provider will be able to ensure adherence to the regimen until the treatment is completed.

Standard 8. All patients (including those with HIV infection) who have not been treated previously

Recommended treatment for persons not treated previously

Ranking	Initial phase	Continuation phase
Preferred	INH, RIF, PZA, EMB[1,2]	INH, RIF daily, 4 months
	INH, RIF, PZA, EMB[1,2] 3x/week, 2 months	INH, RIF 3x/ week, 4 months
Optional	INH, RIF, PZA, EMB[2] daily, 2 months	INH, EMB daily, 6 months[3]

INH = isoniazid; RIF = rifampicin; PZA = pyrazinamide; EMB = ethambutol

1. Streptomycin may be substituted for ethambutol.
2. Ethambutol may be omitted in the initial phase of treatment for adults and children who have negative sputum smears, do not have extensive pulmonary tuberculosis or severe forms of extra-pulmonary disease, and who are known to be HIV negative.
3. Associated with higher rate of treatment failure and relapse; should generally not be used in patients with HIV infection.

should receive an internationally accepted first line treatment regimen using drugs of known bioavailability. The initial phase should consist of two months of isoniazid, rifampicin, pyrazinamide and ethambutol. The preferred continuation phase consists of isoniazid and rifampicin given for four months. Isoniazid and ethambutol given for six months is an alternative continuation phase regimen that may be used when adherence cannot be assessed, but it is associated with a higher rate of failure and relapse, especially in patients with HIV infection. The doses of anti-tuberculosis drugs used should conform to international recommendations. Fixed-dose combinations of two (isoniazid and rifampicin), three (isoniazid, rifampicin, and pyrazinamide), and four (isoniazid, rifampicin, pyrazinamide, and ethambutol) drugs are highly recommended, especially when medication ingestion is not observed.

Standard 9. To foster and assess adherence, a patient-centred approach to administration of drug treatment, based on the patient's needs and mutual respect between the patient and the provider, should be developed for all patients. Supervision and support should be gender-sensitive and age-specific and should draw on the full range of recommended interventions and available support services, including patient counselling and education. A central element of the patient-centred strategy is the use of measures to assess and promote adherence to the treatment regimen and to address poor adherence when it occurs. These measures should be tailored to the individual patient's circumstances and be mutually acceptable to the patient and the provider. Such measures may include direct observation of medication ingestion (directly observed therapy-DOT) by a treatment supporter who is acceptable and accountable to the patient and to the health system.

Standard 10. All patients should be monitored for response to therapy, best judged in patients with pulmonary tuberculosis by follow-up sputum microscopy (two specimens) at least at the time of completion of the initial phase of treatment (two months), at five months, and at the end of treatment. Patients who have positive smears during the fifth month of treatment should be considered as treatment failures and have therapy modified appropriately (See Standards 14 and 15). In patients with extrapulmonary tuberculosis and in children, the response to treatment is best assessed clinically. Follow-up radiographic examinations are usually unnecessary and may be misleading.

Standard 11. A written record of all medications given, bacteriologic response, and adverse reactions should be maintained for all patients.

Standard 12. In areas with a high prevalence of HIV infection in the general population and where tuberculosis and HIV infection are likely to co-exist, HIV counselling and testing is indicated for all tuberculosis patients as part of their routine management. In areas with lower prevalence rates of HIV, HIV counselling and testing is indicated for tuberculosis patients with symptoms and/or signs of HIV-related conditions and in tuberculosis patients having a history suggestive of high risk of HIV exposure.

Standard 13. All patients with tuberculosis and HIV infection should be evaluated to determine if antiretroviral therapy is indicated during the course of treatment for tuberculosis. Appropriate arrangements for access to antiretroviral drugs should be made for patients who meet indications for treatment. Given the complexity of co-administration of anti-tuberculosis treatment and antiretroviral therapy, consultation with a physician who is expert in this area is recommended before initiation of concurrent treatment for tuberculosis and HIV infection, regardless of which disease appeared first. However, initiation of treatment for tuberculosis should not be delayed. Patients with tuberculosis and HIV infection should also receive cotrimoxazole as prophylaxis for other infections.

Standard 14. An assessment of the likelihood of drug resistance, based on history of prior treatment, exposure to a possible source case having drug-resistant organisms, and the community prevalence of drug resistance, should be obtained for all patients. Patients who fail treatment and chronic cases should always be assessed for possible drug resistance. For patients in whom drug resistance is considered to be likely, culture and drug susceptibility testing for isoniazid, rifampicin, and ethambutol should be performed promptly.

Standard 15. Patients with tuberculosis caused by drug resistant (especially multi drug resistant [MDR]) organisms should be treated with specialised regimens containing second line anti-tuberculosis drugs. At least four drugs to which the organisms are known or presumed to be susceptible should be used and treatment should be given for at least 18 months. Patient-centred measures are required to ensure adherence. Consultation with a provider experienced in treatment of patients with MDR tuberculosis should be obtained.

STANDARDS FOR PUBLIC HEALTH RESPONSIBILITIES

Standard 16. All providers of care for patients with tuberculosis should ensure that persons (especially children under five years of age and persons with HIV infection) who are in close contact with patients who have infectious tuberculosis are evaluated and managed in line with international recommendations. Children under five years of age and persons with HIV infection who have been in contact with an infectious case should be evaluated for both latent infection with M TB and for active tuberculosis.

Standard 17. All providers must report both new and re-treatment tuberculosis cases and their treatment outcomes to local public health authorities, in conformance with applicable legal requirements and policies.

Revised Schemes for NGOs / PPs

Scheme	Eligibility	Functions of NGO	Role of RNTCP	Grant-in-aid
ACSM SCHEME **TB Advocacy, Communication and Social Mobilization**	• NGO with at least 2-3 years experience in social mobilization activities and grass root level activities • Local presence and familiarity with local culture	• Community meetings • Street plays/puppet shows • School activities such as essay competition, painting competition • Sensitization of PRIs and SHGs • Sensitization of DOT providers/TB support groups • Patient Provider Meetings in the community • Sensitization of religious groups/ faith healers	• Sharing of ACSM District plan with the NGO • Provision of prototype material to the NGOs	Rs 1,50,000 per 1 million population per year
SPUTUM COLLECTION SCHEME	• NGO/Private facility with or without an outpatient that is not a DMC • In "underserved" areas (hard to reach, tribal area) • Well ventilated open space for sputum collection	• Sputum collection from TB suspects referred from outpatients of the same facility and other facilities linked in the vicinity • Sputum to be collected following RNTCP diagnostic and follow-up guidelines • Ensure timely transportation of sputa and timely communication of the results back to referring providers • Standardized kits for transportation to be procured by the NGOs	• Identification of underserved areas and planning in collaboration with Sputum Collection Centre and nearby DMC • Arrange for sputum microscopy at DMC and timely transmission of results, treatment initiation and follow up • Training of the concerned staff and provision of material including sputum cups	Rs 60,000 per annum per centre

Scheme	Eligibility	Functions of NGO	Role of RNTCP	Grant-in-aid
TRANSPORT SCHEME **Sputum Pick up and Transport Service**	NGO/CBO with outreach workers, or private organization with the capacity to transport sputum specimens as per RNTCP guidelines	• Coordinate with the assigned Sputum Collection Centres and the DMCs • Transport samples safely to DMCs periodically • Convey the results in dispatch lists and forms to the Sputum Collection Centres • Maintain travel log book	• Proper plan and allocation of collection centres and transporation in collaboration with DMC MO-IC and external partners • Training of the concerned staff and provision of materials listed • Ensuring quality microscopy and timely transmission of results	Rs 24,000 per annum
DMC SCHEME **Designated Microscopy cum Treatment centre (A & B)**	• NGO or Private labs with adequate civil works • Collective OPD of > 60 per day or 3-5 samples per day • Trained Medical Officer & Laboratory Technician • Functional Binocular Microscope	• To perform smear microscopy as per RNTCP guidelines • Covered under EQA	• Training of concerned staff and provision of lab consumables • Ensure quality assurance, supervise and monitor • Approval for initiation and closure to be obtained from the STO	• Annual grant-in-aid of Rs. 1,50,000 If the DMC wishes to start a treatment centre then it may be allowed but only honorarium will be paid. No further administrative costs will be given • Rs 25 per slide if only private lab
LT SCHEME **NGO to Strengthen Diagnostic Services**	Any registered NGO with capacity and commitment to provide sustained support for at least 3 years	• NGO should give commitment to provide and sustain support for at least 3 years • NGO to provide LTs in NGOs/Govt DMCs with vacant LT post • Ensure timely payment and monitor regularity of services	• Plan with NGO on areas that need strengthening in case detection activities • Coordinate with NGO and STO • Training and placement of LT at DMCs with vacant LT posts • Ensure EQA, supervision and monitoring	As per existing RNTCP contractual LT salary + 5% overhead and recruitment cost reimbursement equal to one month's salary

Scheme	Eligibility	Functions of NGO	Role of RNTCP	Grant-in-aid
CULTURE AND DST SCHEME **Providing Quality Assured Culture & DST Services**	• The lab should have adequate infrastructure, equipment and staff i.e. is an existing functioning mycobacterial culture and drug susceptibility laboratory • Willingness for accreditation under existing RNTCP accreditation mechanism • Willing to undergo routine QA & annual proficiency testing with RNTCP NRL • Patients will not be charged for culture and DST conducted for RNTCP	• Maintain adequate infrastructure, equipment, consumables and staff • Keep records and reports as per RNTCP procedures • Co-ordinate with respective NRL and STO for QA and PT processes	• Ensure timely payment to laboratory on 6 monthly basis • Co-ordinate with institution, respective DTOs and NRL in relation to service provision, training, supervision and QA • Report progress of activities to CTD and State level DOTS-Plus Committee • The necessary formats, records and reports will also be provided to the laboratory by the programme.	• The fee payable for sputum smear, culture, species identification and drug susceptibility testing Rs. 2,000 per specimen • For undertaking smear, culture and species identification will be Rs. 400 per specimen (in follow-up)
ADHERENCE SCHEME **Promoting Treatment Adherence**	• Any NGO registered under the Societies Registration Act, (1860) • Private Providers: PP should preferably have undergone training in at least the RNTCP module for Private Practitioners, or at least staff from the clinic should have undergone RNTCP DOT provider module training	• Provision of Directly Observed Therapy to patients on RNTCP treatment • Staff or volunteers of the NGO/PP provide counseling services to patients on RNTCP treatment • Awareness generation • Additional services: Transportation of patient wise boxes and treatment cards from the PHIs to the DOT centres and vice versa	• Literature for training and orientation is given as available • Medications are provided for the patients placed on treatment • Sputum containers are provided for follow up examinations • Formats (TB Treatment Cards, Identity Cards) as required	• Administrative and additional treatment support functions: Rs 40,000 for every 1 lakh population per annum • **For DOT:** Cat 1, 2, and 3 patients: Rs. 250 to the individual volunteer for each patient cured or treatment completed Cat 4 patients: Rs. 2500 (Rs. 1000 after completion of IP and Rs. 1500 after ompletion of CP.) • **For PP** Rs. 400 per patient successfully treated (Rs. 250 + Rs. 150)

Scheme	Eligibility	Functions of NGO	Role of RNTCP	Grant-in-aid
SLUM SCHEME	• Any NGO/Community based organization/ Self-help group/Private practitioner with capacity and commitment to provide sustained support for at least 3 years	• IEC activities with counseling of patients (drug abusers, migrants, patients with behavioral problems, alcoholism) • Sputum collection & transportation • DOT provision • Default retrieval • Linking with other health and social welfare facilities	• Training of NGO and Service providers • Logistic Support • Supervision, Monitoring and evaluation.	Rs. 50,000 per 20,000 population per annum
TU SCHEME	Any registered NGO/Private facility with a capacity to take up all RNTCP programme facilities in a population of 5 lakhs	• The NGO provides all RNTCP services earmarked for a Tuberculosis Unit with all programme implementation responsibilities • The NGO must also coordinate closely with all public and other health facilities in the area • NGO scrupulously maintains RNTCP records and submits quarterly reports to the District TB Officer in the prescribed manner and in a timely fashion.	• The DHS provide technical orientation, guidance, and supervision • Ensure good integration of the TU operated by the NGO with other TUs in the District • Include the staff of the TU in all regular meetings of nodal RNTCP implementing staff	• Start-up Activities (one-time assistance) Rs. 2,00,000 • Annual assistance- Rs. 5,30,000
TB-HIV SCHEME	• The scheme would be offered only to NGOs undertaking NACP TI in commercial sex worker populations; MSM, IDUs, or running a Community Care Centre for HIV (20 bedded) • Catering to at least 1000 target population	Comprehensive TB Care for High Risk Group - • ICF • Patient friendly approach for diagnosis • Organize for address verification through Outreach workers; • Treatment provision, advocacy with PLHA networks for TB control	• Training of NGO and Service providers • Provide sputum cups, IEC material, and printed material (treatment cards, identity cards etc.) • Provide supervision, monitoring and evaluation of NGO activities and patient care • Provide honorarium for individual DOT providers as per RNTCP norms	Rs. 1,20,000 per NGO per 1000 target population (or 1 NACP-approved CCC)

RNTCP Success Stories

RNTCP has made remarkable achievements. The coordination of various sectors to facilitate the programme in a decentralised way has been successfully achieved. There has been active participation from TB care providers like medical practitioners, laboratory technicans and STLS/ STS which ensured that the programme meets its target and it has been done successfully.

The extraordinary commitment and dedication shown by the programme's large contigent of NGO workers, members of self-help groups and cured patients, who work with the patients to make DOTS services available and accessible even in the most remote corners of India is commendable. These are ordinary people who have made a big difference in their own lives and in the lives of others. Their stories of success should be made known to others to work together to fight this deadly disease.

The success stories below are just a fraction of the initiatives representing the contribution of men, women, doctors, administrators, community workers who have contributed towards the global fight against TB.

ASSAM

DOTS Awareness for Jail Inmates of Assam

'We remain untouched on many occasions from the outside world'. This was the comment of a jail inmate, who attended the DOTS awareness meeting of the Kamrup District.

DOTS Awareness Programme at Nagaon Central Jail

This particular community of inmates of all the central jails of Assam have felt empowered and showed keen interest while attending the DOTS Awareness Meetings organized by all the 23 districts between 1Q08 to 2Q08 with the initiatives of State TB Cell, Assam. With the support of the highest authority of jail administration, the DTCS of Assam organized DOTS awareness meetings in all the central jails which were monitored by State TB Cell.

The doctors and paramedical staff of the jails were also sensitized and requested to ensure good quality DOTS for TB patients in the jails. This innovative campaign was implemented with active participation of all the districts and jail administrations for the first time in the State.

Moving Messengers: The Auto-rickshaw Campaign

Auto Rickshaw Association of Assam Takes Pledge to Stop TB

The 'Auto-rickshaw Campaign' was planned by the State TB Cell, Assam to reach the city dwellers of Guwahati. A sensitization meeting was conducted with the Greater Guwahati Auto Rickshaw Association which was presided over by the STO, Dr. D.Das, other officers and staff of State TB Cell, including DTO Kamrup, President and other members of the association.

STO pasting the poster

STO inaugurated the campaign by pasting specially designed DOTS posters on the back of auto-rickshaws. 100 posters were pasted and a contract was signed for three months.

This cost effective campaign was launched to draw the attention of different sections of the society and till now 100 auto-rickshaws with posters are moving around the city and the drivers are acting as the messengers of DOTS.

CHHATTISGARH

Involving the Corporate Sector

ACC Cement is one of the major PSUs in Chhattisgarh state. The hospital is located in the Jamul area of Durg district, inhabited mainly by mine workers who live in very poor conditions. The hospital OPD has an average of 150 patients per day.

Inauguration of DMC

The Management was sensitized about the availability of TB drugs free of cost under RNTCP and agreed to get involved in the programme. A DMC was inaugurated on 23 December 2008. The Inaugural function was chaired by G.M., ACC Hospital & CMO-Durg Dist.

Their LT was deputed for training in DTC Durg, which he completed successfully.

ACC hospital is also organizing awareness generation activities in the surrounding villages as part of their corporate social responsibility (CSR) activities and the IEC materials have been printed using the prototype supplied by DTO, Durg.

The Women's Club (Wives of Officers) of ACC Cement factory is actively involved in ACSM in the urban areas of Durg.

The Management of ACC has also decided to stop the procurement of ATT.

KARNATAKA

Petty Shop Owner becomes DOTS Provider

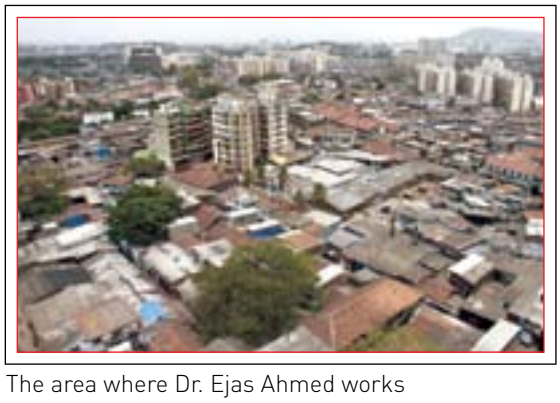
Basavaraju Kottegala is a petty shop owner and TB patient (immune compromised). He underwent DOTS treatment and after the treatment was complete, he became a DOTS provider. He has given DOTS to three patients, all of whom have completed the treatment.

Basavaraju Kottegala in his shop

MAHARASHTRA

Patients over Profit

Dr. Ejas Ahmed, BUMS, is a young, energetic and enthusiastic graduate from Pune University. He is part of a mission - a mission to facilitate the success of DOTS programme in the community. He is one of 243 Private Medical Practitioners (PMPs) who responded enthusiastically from this area to participate in the GPI (General Practitioners' Involvement) programme implemented in this area by Lok Seva Sangam (LSS) with support from Inter Aide Development India. These doctors refer patients with chest symptoms to the nearest microscopy centre (managed either by the NGO or the BMC Public Health Department Municipal Dispensary) for diagnosis of TB and if found positive refer them to the respective DOTS Centre to be treated under RNTCP which is free of cost.



The area where Dr. Ejas Ahmed works

Dr. Ejas Ahmed has been practicing in this area for the past one year. On an average he refers 2-3 patients with chest symptoms to the Health Centre every month.

His patients are mostly rag pickers and other poor denizens living in the vicinity of Deonar dumping ground. His dispensary, a tiny room 10'x10', is just a few hundred meters away from the dumps on one of the narrow and congested lanes of Baiganwadi.

Chemist is DOTS Provider

Mahavir Medical Store in Govandi, Mumbai has been involved in RNTCP since Dec 04. Field workers approach persons interested in social work and Mr. Udaichand Vinodkumar Jain responded. He is a member of Jain Temple Committee and Govandi Chemists Welfare Association in Shivaji Nagar. He has taken initiatives to control TB in his area, by providing free medicine under DOTS to TB patients, who are maintaining treatment card for the same. At present he is giving treatment as a DOTS Provider to 4 patients.

Mahavir Medical Store in Govandi, Mumbai


Mr. Udaichand V. Jain in his shop

IEC on Railway and BEST – Impact on General Public

Many activities were carried out by Mumbai District TB Control Society. One of them is TB awareness advertisement on railway panels, BEST panels, truck panels, etc.

As a result, there was wide publicity and awareness among the general public regarding free treatment and diagnosis, treatment availability near their houses, working places, etc.

An advertisement explicitly depicting behaviours associated with transmission of TB was developed with the aim of reminding people about the continued threat posed by the airborne disease.

This strategy continues with an important component of advocacy and social mobilization to create demand for services and increase utilization of services.

ORISSA

Sri Pradeep Das, 36 years, an electrician staying at Mayurbhanj, is a cured patient. He was cured of TB by DOTS strategy. This encouraged him to become a counselor and social mobiliser for the people of his area who were chest symptomatics. Although he is illiterate and poor he convinced 60 chest symptomatics to have sputum examination at the nearest DMC. By his effort 24 patients underwent treatment, of which 17 are cured and 7 are under DOTS. Due to his good counseling and motivation he ensured early detection of TB cases.

From left Dr. (Mrs.) Madhumita Nayak, TB & Chest Specialist, Mayurbhanj, Baripada, Sri Pradeep Das, cured patient, Sri Kishan Nandi, TBHV Sadar, Baripada

PUNJAB

Community Participation for DOTS Provision

Community volunteers have a very important role in RNTCP. Our programme needs sincere, honest, dedicated volunteers to succeed. Sh. Dhanna Singh, a tea vendor, is running a DOTS Centre at his tea stall outside T.B. Hospital Amritsar since 2004. He has already provided DOTS to 25 patients and 5 patients are now taking treatment. He provides DOTS to the patients till 8:00 P.M. This is a very good example of a flexible DOTS Centre.

Dhanna Singh gave DOTS to 25 patients at his tea stall

RMP of Slum Area Gives DOTS to 96 Patients

Subash Kalohtra is a RMP working in slum area in Indra Colony, Amritsar. He has been a DOTS provider since 2003. He also supports the organizing of community meetings and magic shows in his area. He has given DOTS to 96 patients till now in his clinic.

He was honored by Honorable Health Minister Mrs. Laxmikanta Chawla.

Religious Leaders Extend Support for Spreading Awareness about TB

The *Gurudwara* in Malupota (Distt. Nawanshahr) and 15 other *Gurudwaras* in Roopnagar have used miking to spread awareness about TB in addition to regular activities. This has resulted in an increase in self-referrals and case detection. Sh. Darshan Singh, who has been working as *granthi* in the *Gurudwara* in Malupota for the last 26 years, has extended support by making announcements from the *Gurudwara* for the last two years, asking the patients with history of cough for more than three weeks to go for the free investigation of sputum for detection of TB and free treatment of TB in the village itself under supervision of DOTS provider (*Aanganwari* Worker). Due to his efforts, so far 14 patients have been diagnosed.

Darshan Singh, a *Granthi*

Aanganwari Worker Working as DOTS Provider

Malupota is a remote village in Distt Nawanshahr with a population of 1915. Smt. Kashmir Kaur aged about 38 years is working as *Aanganwari* Worker for the last 16 years. She is a doing the job of DOTS provider for the last two years by giving TB medicine under supervision. She is also a social worker attached to *Istri Sehat Shaba* and is bringing awareness among people regarding TB during interaction at the *Aanganwari* Centre and in the meetings and camps. So far she has treated 14 patients. She is such a motivator that none of her patients defaulted and all were cured or completed the treatment.

Kashmir Kaur, DOTS Provider, with patient

Using Magic to Stop TB

District Tarn Taran has engaged a magician to spread messages about TB in areas such as urban slums. This activity is also organized to reach the large number of passers-by near major hospitals: hospital visitors, hospital staff, people heading for nearby bus stops and railway stations.

Tarn Taran also held a sensitization workshop for the TB patients, NGOs, health workers and the general public on World TB Day, where all present took the pledge of "I am stopping TB". This was reported in STB NEWS April 2008.

Shri Ved Prakash, magician, creating awareness about TB through magic

Screening of RNTCP Film

To create awareness amongst the general public in rural areas and to increase the detection rate in district Roopnagar, a new initiative has been undertaken by the District Health Society. A van equipped with TV set and CD player has been supplied by the District Health Society to go to the remote areas to create awareness about TB. This activity is being supervised by either STS or TBHV or MPHW of the area. So far 426 villages have been covered by the team which is headed by MEIO. The remaining villages will be covered in the near future. This IEC activity is proving very useful as the self-referrals have increased.

RAJASTHAN

Involving of *Bhopas* (Faith healers) in RNTCP

An Innovative & Novel Approach

Bhopas are traditional/tribal/faith or magic healers who are the first and often the lone point of contact for patients suffering from diverse illnesses in the remote and tribal regions of Rajasthan.

Sensitization of Bhopas

Udaipur and Bhilwara District of Rajasthan initiated an innovative and novel approach by involving and sensitizing *Bhopas* about Revised National TB Control Programme. Initially sensitization of *Bhopas* was undertaken by both districts under RNTCP and a total of 80 *Bhopas* were trained.

In Udaipur a sensitization was arranged for them by ALERT Sansthan, an NGO working for ACSM in Udaipur. As the Bhopas are generally illiterate, pictorial flipcharts, from the IEC Resource Centre at www.tbcindia.org, were provided to them for reference.

Mr. B.K. Gupta of ALERT Sansthan addressing a gathering of TB patients. The *Bhopa* (in turban) is seated in front.

Since they were acquainted with the programme, they also agreed to propagate the message of RNTCP and to make the patients understand the real need for taking DOTS without interruption. They also agreed to work for default retrieval.

Bhopas were given IEC Material in form of posters, pamphlets and TB Guide. During field visits the members of ALERT Sansthan interact with *Bhopas* and are happy to note that they remember the messages and lessons learned and are applying them in practice.

Currently more than 100 *Bhopas* from both districts are actively involved in the programme and referring hundreds of TB symptomatic patients for sputum testing and providing DOTS to a fairly large number of patients.

Rajasthan has started replicating this innovation in other districts.

PRI Member's (*Paarshad*) Efforts to Stop TB

Ms. Sugna Devi, a Municipal *Paarshad* (PRI) in Bhilwara, has been working as a DOTS provider for RNTCP for the last 7 years. Before being elected as *Paarshad* she worked for more than 13 years as an *Aanganwari* worker in Badhi Handi (Bhilwara). She has successfully cured 15 patients and 5 patients are under DOTS treatment. Her efforts are very valuable to RNTCP.

Ms. Sugna Devi, Municipal *Paarshad* and DOTS provider

A Technician Turns DOTS Provider

Mr. Brijesh Kumar is a technician in a private lab in Dholpur, the eastern most district of the state. He suffered from TB in 2002 and was cured by DOTS treatment, under the supervision of a DOTS provider at DTC Dholpur. His experience with the services of DOTS motivated him to render his services in whatever way he could towards the cause of other patients suffering from TB. He was selected as a DOTS provider in 2003. Besides providing DOTS to patients residing in the vicinity of his house, he also takes keen interest in case finding, to the extent that he refers chest symptomatic patients, who come to his lab for other investigations, for sputum test at DMC and ensures that they go there.

Mr. Brijesh Kumar, Lab Technician and DOTS provider

So far, as a DOTS provider, he has cured 14 patients and is giving DOTS to 6 patients.

TB Care Groups

German Leprosy and TB Relief Association – India (GLRA) is an agency involved in eradication of leprosy and control of Tuberculosis in India.

In view of the large migratory and industrial labour population in urban areas/slums, GLRA coordinates with district TB control societies in sensitizing qualified private practitioners, and local charitable NGOs regarding symptoms of TB and availability of facilities for free sputum examination and treatment services in nearby health facilities. GLRA intends to facilitate training to sensitize the above mentioned target group to encourage their participation as 'Community – DOTS provider or microscopy centre'.

GLRA has been working in four TB Units – Chomun and Shahpura in Sikar District and Srimadhopur & Danta, since July 2007.

43 TB Care groups were formed during this period in which social workers, ASHA *sahyoginis*, *Aanganwadi* workers, private practitioners and cured patients were included. Meetings were held at ten different places.

What is praiseworthy is that there is 100% adherence to treatment without any failure among patients managed by TB Care Group.

The concept of TB Care Group in every village can make the services reach all, specially remote and difficult to reach areas.

ANM's Efforts to Stop TB

Mrs. Beena Chauhan, is a very efficient and popular ANM at sub center Aalooda under CHC Papdhdha, District Dausa for the last 7 years. She takes interest in all the health programmes, and RNTCP is no exception. She ensures the chest symptomatics are identified early and makes sure that they go for sputum microscopy. The patients thus identified are given not only DOTS but also adequate health education about the disease by Mrs. Chauhan. It is no surprise that since DOTS is being observed in real sense, the default rate in her patients is negligible. She has also sensitized *Asha Sahyognies* in her area so that more patients are detected early.

TAMIL NADU

Tribal DOTS Provider

A small hamlet in Tamil Nadu which boasts around 15-20 habitations is in one of the most inaccessible parts of the Nilgiris district, cut off from civilization by lush tropical jungles, home to elephants and infested with leeches. The situation is further worsened by the absence of proper roads and communications.

Madhi, who belongs to the Kattunayak Tribal Community, explaining how DOTS is to be administered

The hamlet is inhabited by around 50 individuals belonging to the Kattunayak tribal community, which is the most backward of all tribal communities of Nilgiri District.

The nearest health facility is the Government Hospital situated at the Taluk Headquarters of Pandalur, 11 kms away. The entire distance has to be covered on foot. A person named Omana, hailing from the hamlet, reported at the Hospital, with symptoms suggestive of TB. Microscopy revealed that her sputum was positive for Mycobacterium Tuberculli.

As it was difficult for the patient to walk 11 kms to GH Pandalur for her medication even thrice a week, it was decided to appoint a Community DOTS provider after visiting the hamlet.

A small community meeting was organized to sensitize the community and identify a volunteer to act as a DOTS provider but all of them were reluctant and shy. An old lady named Madhi who had been sitting in the background suddenly approached and volunteered to be the DOTS provider for the patient. She has been on treatment through a NGO and knew about the treatment. She became DOT provider for the patient.

Omana's sputum has turned negative on follow-up. She is now better and able to carry on with her normal household activities. All this is thanks to Madhi, an illiterate old lady.

UTTAR PRADESH

Using Religious Places to Spread Awareness about TB

Situated in the eastern part of U.P., Jaunpur has a significant number of Muslims in certain pockets of the city. To improve awareness about free diagnosis and treatment services under DOTS, DTO Jaunpur contacted Secretary, ATALA *Masjid*, to tell people about DOTS immediately after Friday *Namaz*. About two thousand people who gathered after the *Namaz* were made aware and requested to avail the free services under DOTS.

Similar activity has also been planned for other *Masjids* with the help of *'Maulvis'*, *Gurudwaras* through *'Sewadars'* and temples through *'Pujaris'*.

Awareness about DOTS in Jaunpur at ATALA *Masjid* after Friday *Namaz*

Dr. T.A.Siddiqui (Gen. Surgeon), Pvt. Practitioner in Distt. Balrampur (U.P.) telling the gathering about the free DOTS services after Friday *Namaz*

Self Motivated Cured Patient Spreading Awareness about TB

An awareness camp was organized in one of the villages in Distt. Ghazipur, where one of the self-motivated, cured patients is creating awareness in the community on his bicycle. He is doing miking using a prerecorded cassette in the local Bhojpuri language. This gave the idea of miking in villages using a bicycle on rotation basis. DTO Ghazipur specially fabricated a bicycle for this purpose which is kept at TU.

Sahara Group: Corporate Sector Involvement

Sahara Welfare Foundation field workers/volunteers have started spreading awareness of the symptoms of TB and motivating community members to contact the nearest diagnostic centre. This activity has taken by them into the slums of Lucknow. Meetings in the slums are held with the support of district staff, patients and DOTS provider.

This has helped the slum community to believe in the RNTCP. Being link persons between the system and the community, the volunteers are useful for providing feedback on the working of RNTCP and suggesting solutions for problems identified in service delivery or health seeking behaviour. This has resulted in enhancing the quality of the programme, and thereby reduced the social distance between provider and patient.

Community DOTS Provider

The DOTS centre of Karonda under microscopy centre of Devan-Barabanki is run by P.K. Yadav, a DOTS provider-cum-social worker. The centre has been running since 2004. A total of 59 patients have taken medicines between 2004 and 2008. Under the guidance of Naresh Singh, a DOTS provider and L.T., none of the patients has defaulted so far. Everyone got cured.

CBCI SUCCESS STORIES

ANDHRA PRADESH

The Way beyond DOTS, Warangal

The *Sarva Prema* Welfare Society (SPWS) located at Fatimanagar (12 Kms from Warangal city) had been providing treatment and care to leprosy patients in the area. Since 2006, SPWS has imparted DOTS to over 1000 TB patients and has received the District Collector's award for the best DOTS centre every year till date.

Baraboina Pratap a CAT II patient (defaulting due to alcoholism), wife was the only earning person as a daily wage worker, has a family of 4 with 2 children, SPWS provided food supplements and constructed a house, he is now cured and working too.

The surrounding area has been divided into 7 zones and each paramedic is responsible for DOTS in his assigned area. He plays the role of a supervisor of his area and has a team of DOTS providers. In all there are 114 DOTS providers— Community Volunteers, Private Practitioners, Registered Medical Practitioners (RMPs), School Teachers, Senior Students and ASHAs. The centre provides DOTS to 65% of the TB patients in urban Warangal, with 97% compliance by the TB patients under their DOTS service.

Navin with mother Jaya. Navin lost both his parents to TB. His father was also HIV+. After his mother's death, he was adopted by Fr. Antonio.

The SPWS also looks into the socio-economic rehabilitation of the TB patients and provides micro-credit to cured TB patients involved in other development work.

Apart from imparting quality DOTS, these add-on services provided by the organization makes it unique for providing the WAY BEYOND DOTS. The credit for such an achievement goes to the highly motivated and dedicated team of SPWS under Fr. Dr. Antonio Grugni, P.I.M.E., who gave up his successful cardiology practice in Italy 35 years ago to come to India and serve the community.

Jaya's grave. Fr Antonio adopted Navin (in Class XI) & Praveen (in ITI)

MADHYA PRADESH

Working with the Diocese Authorities

There is a Catholic Hospital well known for TB treatment at Dhani in Dhar district under Indore Diocese Social Service Society. The Hospital caters to TB patients in the districts of Madhya Pradesh, as well as a few districts of Rajasthan.

District authorities of RNTCP had been trying to involve this hospital in RNTCP for almost 5-6 years but in vain.

The launch of CBCI-HC IMPACT TB Project in MP, opened opportunities for collaboration.

DTO, Dhar and a team of STS/ STLS went to the hospital and met the hospital staff. The DTO & STPC addressed all issues and concerns which were raised by the hospital staff. At the end of the discussion, the Advisor, Indore Diocese directed the Hospital Administrator to sign the MoU on behalf of hospital, and dates for the training of the LT & MO of the Hospital were finalised.

This is a perfect example of how Diocese authority can be utilized to enable the DTO to ensure treatment for all TB patients in the district.

RAJASTHAN

National Domestic Workers' Movement

The Rajasthan Chapter of National Domestic Workers' Movement has taken root through the tireless efforts of Sister Kirti, PSA, who belongs to a CBCI-HC member institution "St Teresa Vidya Deep" in Udaipur.

Presently there are about 2000 members in Udaipur District and about 500 members in Bhilwara District. These people hail from the urban slum *bastis* and work in households scattered across the city.

A sensitization session on RNTCP, followed by a large meeting organized by Sister Kirti and the DTO, has resulted in many members being trained as DOTS providers to provide treatment services in the slum areas in which they live.

Tribal artistes performing a skit on DOTS messages during a meet for Domestic Workers' Union in Udaipur

ALERT Sansthan, a local NGO of Udaipur, has contributed greatly to this success story through their performances, conveying salient messages related to TB.

UTTAR PRADESH

St. Jude's Hospital, Jhansi

St. Jude's Hospital, has been contributing selflessly to the success of RNTCP for the past three years. Since 2006, more than 100 patients have been treated successfully by the hospital every year. No material benefits have been availed as the hospital is not working under any signed NGO scheme of RNTCP. However, the success of the hospital has been a strong motivating factor in persuading other Catholic Health facilities to join RNTCP.

DOTS at St Jude's Hospital, Jhansi

WEST BENGAL

DOTS Centre in Seva Kendra, Kolkata

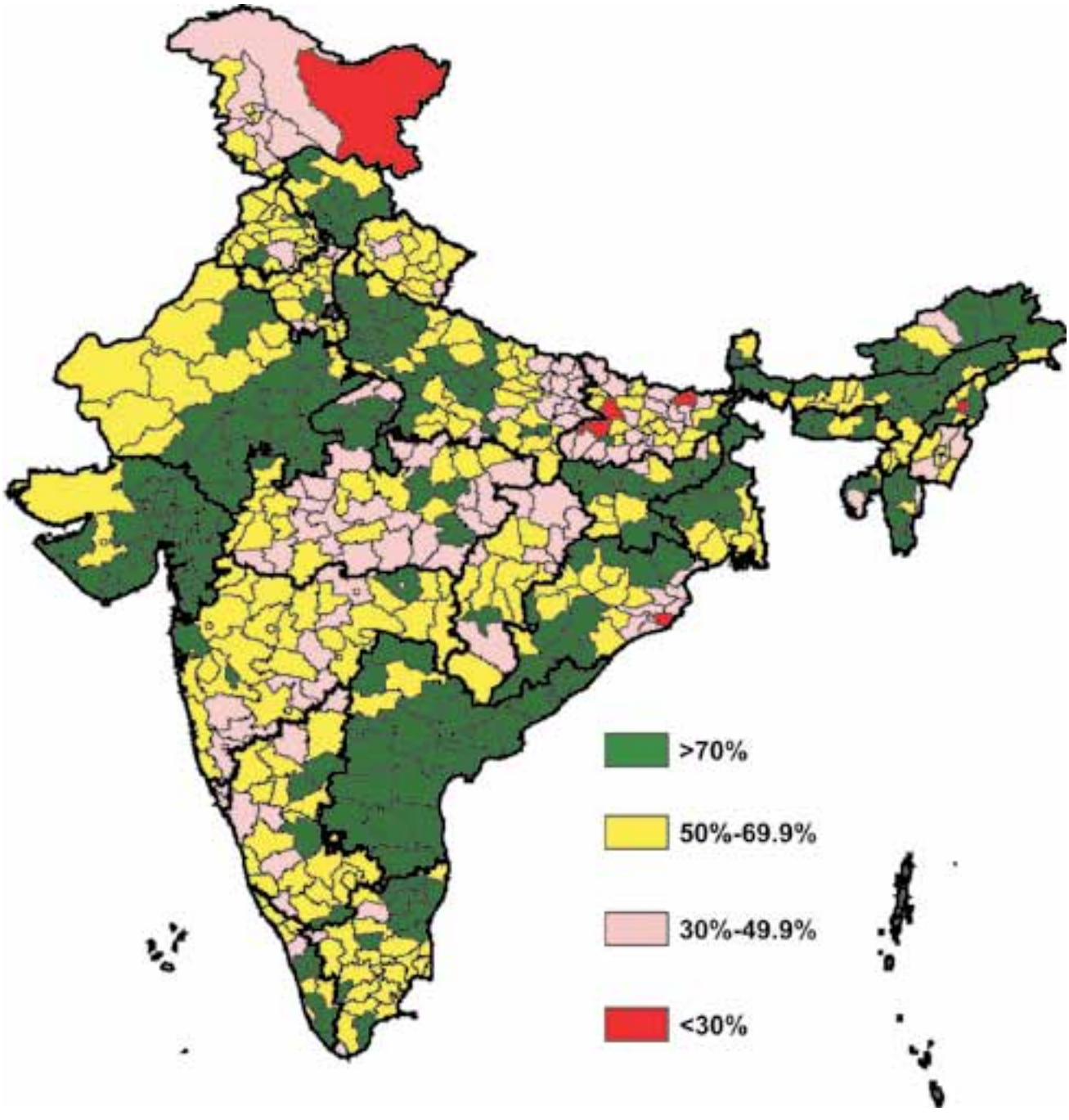
The Social Service Society of the Archdiocese of Kolkata took a special initiative to construct a DOTS Centre by opening up a portion of their boundary wall for the benefit of the local TB patients, enabling the DOTS Centre to be strategically placed on the main road, an initiative taken by Fr. Reginald Fernandez, Director SKC with Dr. Ashok Sen, TB Coordinator for Kolkata. This marks the beginning of a unique partnership between the Catholic Church network and the RNTCP team in West Bengal.

Rev. Fr. Fernandez, while giving DOTS to TB patients, also promised that Seva Kendra would work towards opening up more DOTS centres in Kolkata and six other districts of the Archdiocese of Kolkata.

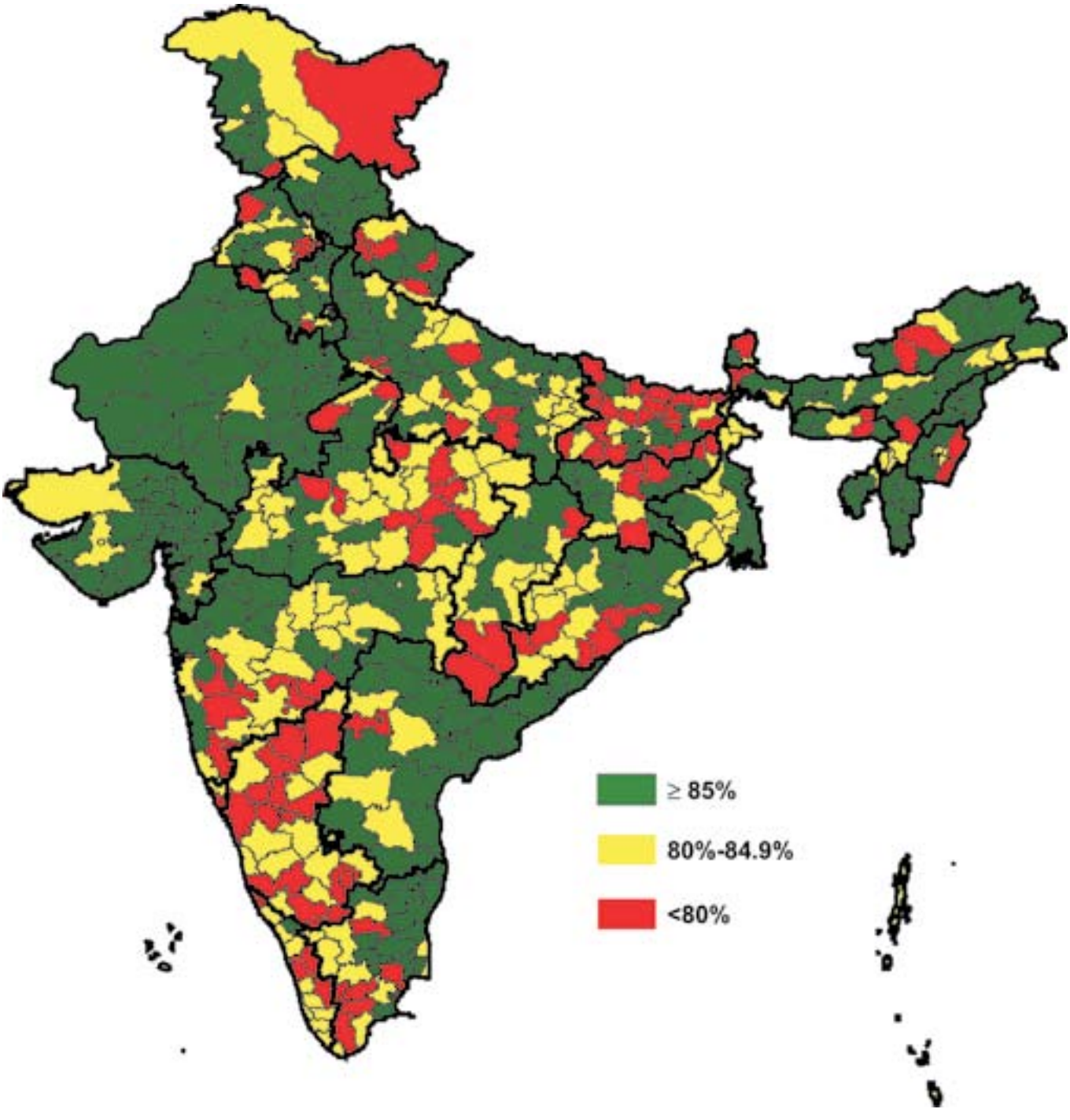
These success stories are small examples of how the Catholic network is reaching out to the community through RNTCP, enabling a wider reach for the programme and ensuring uniformity of standardised treatment for all patients visiting these health facilities.

Performance of RNTCP – Annual Data

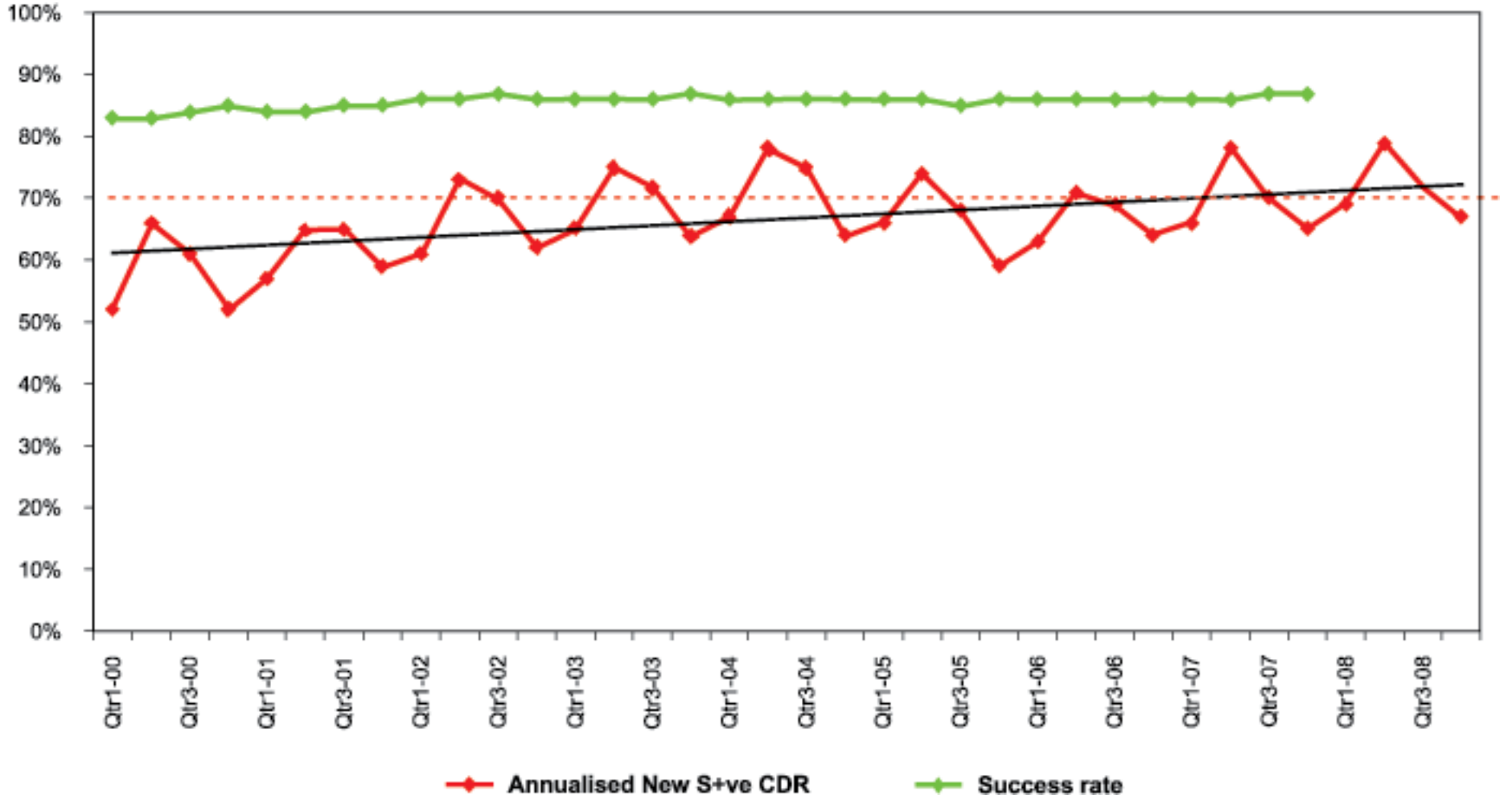
Case Detection Rate (New Smear Positive TB) by District, India, 2008



Cure Rate (New Smear Positive TB) by District, India, 2007 Patient Cohort

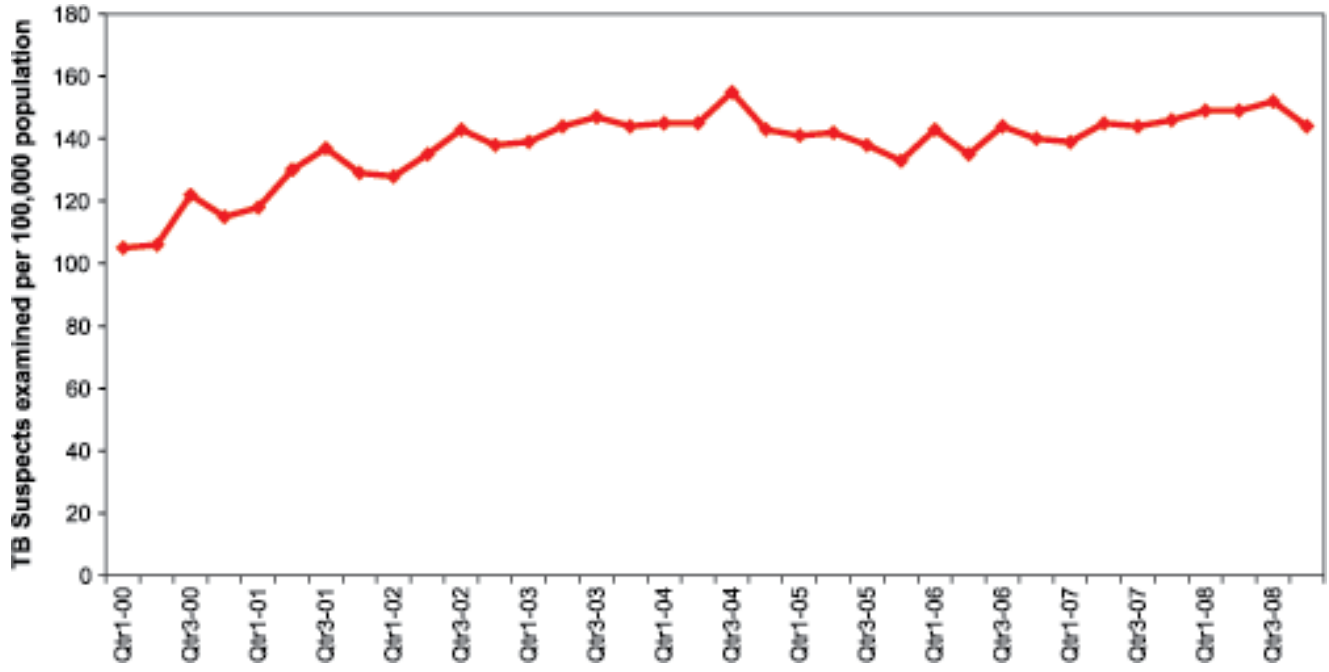


Annualized New Smear-Positive Case Detection Rate and Treatment Success Rate in DOTS areas, 1999-2008



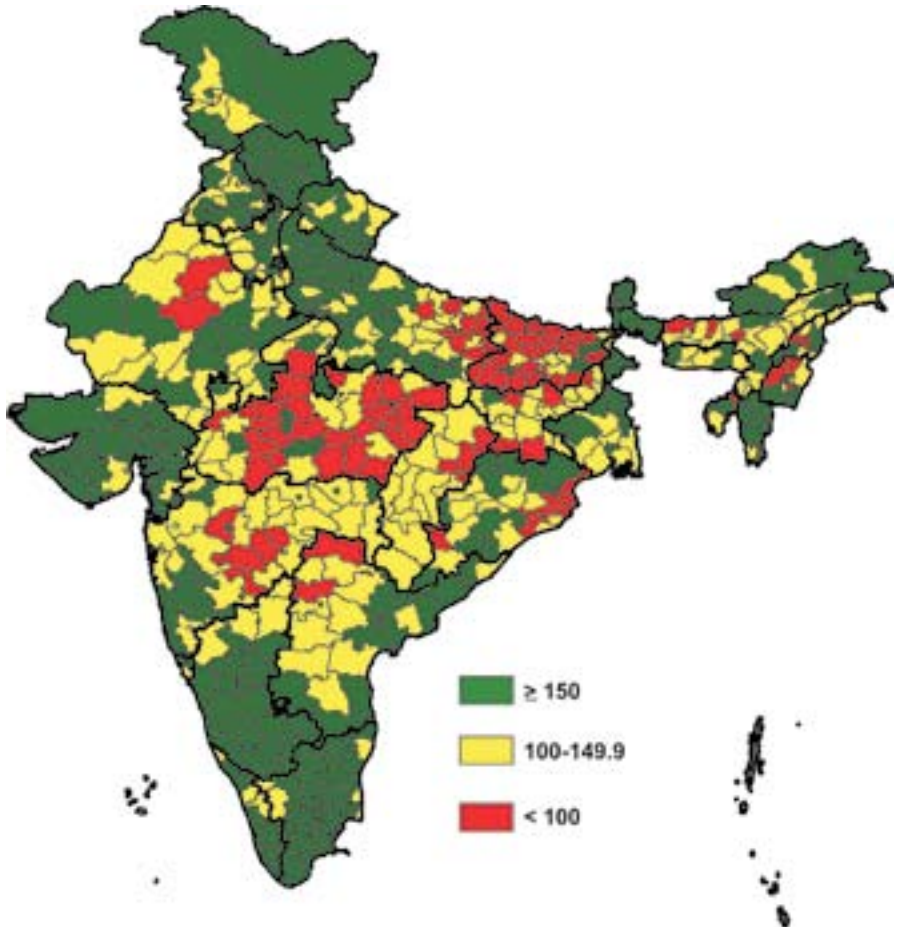
- Population projected from 2001 census
- Estimated no. of NSP cases - 75/100,000 population per year (based on recent ARTI report)

TB Suspects Examined per 100,000 Population*, 2000-2008



* During RNTCP expansion phase, data for districts implementing partial quarters has been excluded

TB Suspects Examined per 100,000 Population by District India, 2008



Case Detection Rate and Treatment Success Rate in RNTCP areas for 2008/2007

AP-Andhra Pradesh; AR- Arunachal Pradesh; AN- Andaman & Nicobar; AS- Assam; BI- Bihar; CH- Chandigarh; CG- Chhatisgarh; DD-Daman & Diu; DL- Delhi; DN- Dadra & Nagar Haveli; GA- Goa; GU- Gujarat; HR- Haryana; HP- Himachal Pradesh; JK-Jammu & Kashmir; JH- Jharkhand; KA- Karnataka; KE- Kerala; LK- Lakshadweep; MP- Madhya Pradesh; MH- Maharashtra; MN- Manipur; MG- Meghalaya; MZ- Mizoram, NG- Nagaland; OR- Orissa, PD- Puducherry; PN-Punjab; RJ- Rajasthan; SK-Sikkim; TN- Tamil Nadu; TR- Tripura; UP- Uttar Pradesh; UR- Uttarakhand; WB- West Bengal

Performance of RNTCP Case Detection (2008), Smear Conversion (4th Quarter 2007 to 3rd Quarter 2008), and Treatment Outcomes (2007)

State	Population (in lakh) covered by RNTCP[1]	No. of suspects examined	Suspects examined per lakh population per quarter	No. of smear positive patients diagnosed[2]	% of S+ve cases among suspects	Total patients registered for treatment[3]	Annual total case detection rate	New smear positive patients registered for treatment	Annual new smear positive case detection rate (%)		% new sputum positive out of total new pulmonary cases	No. of new smear negative cases registered for treatment	No of new EP cases registered for treament	% of new EP cases out of all new cases	No. of retreatment cases registered for treament	No. of smear positive retreatment cases registered for treatment
Andaman & Nicobar	4	3887	236	373	10%	748	182	269	65	87%	55%	221	167	25%	83	68
Andhra Pradesh	822	510805	155	75093	15%	114624	139	49759	61	81%	61%	32128	12003	13%	20636	15574
Arunachal Pradesh	12	10767	224	1149	11%	2450	204	819	68	91%	57%	609	400	22%	615	323
Assam	299	148014	124	21900	15%	38454	128	16466	55	73%	60%	10992	4670	15%	6292	3501
Bihar	938	327206	87	44592	14%	84404	90	33505	36	48%	54%	28414	5903	9%	16414	7938
Chandigarh	11	13937	328	1815	13%	2492	234	837	79	83%	65%	441	764	37%	450	281
Chhatisgarh	236	108439	115	12700	12%	27280	115	10470	44	55%	49%	10825	3225	13%	2741	1458
D & N Haveli	3	1923	183	300	16%	443	169	152	58	73%	60%	101	91	26%	99	49
Daman & Diu	2	2594	345	172	7%	224	119	57	30	38%	46%	68	31	20%	68	23
Delhi	171	154825	227	24860	16%	49505	290	14000	82	86%	63%	8174	15853	42%	11359	6789
Goa	16	11986	184	1076	9%	1996	123	641	39	49%	59%	449	525	33%	381	238
Gujarat	564	378332	168	61645	16%	79365	141	35375	63	78%	77%	10525	10102	18%	23330	17031
Haryana	238	152022	160	23171	15%	35348	149	13063	55	58%	65%	6960	5715	22%	9502	7164
Himachal Pradesh	66	61927	236	8259	13%	13618	208	5091	78	82%	67%	2541	2921	28%	3028	2160
Jammu & Kashmir	124	72912	147	7435	10%	12521	101	5643	46	48%	73%	2104	2862	27%	1904	1519
Jharkhand	300	137407	114	21110	15%	38395	128	16821	56	75%	57%	12719	2863	9%	5893	2867
Karnataka	574	419401	183	41530	10%	66159	115	25537	44	59%	63%	15018	12355	23%	13175	9044
Kerala	342	263152	192	14426	5%	24935	73	11045	32	65%	69%	4850	5907	27%	3110	2368
Lakshadweep	1	235	85	5	2%	11	16	5	7	10%	63%	3	1	11%	2	1
Madhya Pradesh	693	298291	108	47390	16%	80929	117	29689	43	54%	54%	25734	9297	14%	16122	11007
Maharashtra	1069	596831	140	76398	13%	139641	131	52509	49	61%	60%	34894	24269	22%	27829	15896
Manipur	26	14196	135	1329	9%	4293	163	976	37	50%	38%	1567	844	25%	850	289
Meghalaya	25	15158	149	2198	15%	4639	183	1474	58	77%	62%	910	1210	33%	1019	542
Mizoram	10	8811	225	1025	12%	2558	261	770	79	105%	53%	692	715	33%	378	168
Nagaland	22	10372	119	1456	14%	2984	136	1149	53	70%	61%	740	503	21%	581	393
Orissa	399	211688	133	28987	14%	51031	128	22505	56	66%	64%	12556	9154	21%	6795	4165
Puducherry	11	13332	310	1703	13%	1333	124	635	59	79%	77%	195	309	27%	194	169

Performance of RNTCP (Contd.)

State	Population (in lakh) covered by RNTCP[1]	No. of suspects examined	Suspects examined per lakh population per quarter	No. of smear positive patients diagnosed[2]	% of S+ve cases among suspects	Total patients registered for treatment[3]	Annual total case detection rate	New smear positive patients registered for treatment	Annual new smear positive case detection rate (%)		% new sputum positive out of total new pulmonary cases	No. of new smear negative cases registered for treatment	No of new EP cases registered for treament	% of new EP cases out of all new cases	No. of retreatment cases registered for treament	No. of smear positive retreatment cases registered for treatment
Punjab	266	164595	155	22864	14%	37076	139	14707	55	58%	67%	7102	7438	25%	7795	6043
Rajasthan	646	366138	142	71581	20%	112192	174	41700	65	81%	56%	32375	12919	15%	25182	20757
Sikkim	6	7666	323	764	10%	1641	276	483	81	108%	59%	329	463	36%	364	225
Tamil Nadu	664	566948	213	45268	8%	84610	127	33245	50	67%	60%	22467	17463	24%	11283	8659
Tripura	35	22673	161	1901	8%	2846	81	1584	45	60%	76%	498	445	18%	319	251
Uttar Pradesh	1909	1135157	149	171940	15%	278044	146	119884	63	66%	60%	78538	29329	13%	49926	38025
Uttarakhand	95	65463	172	9034	14%	13331	140	5152	54	57%	62%	3220	2002	19%	2929	2248
West Bengal	879	540300	154	66374	12%	107213	122	49999	57	76%	70%	21401	17227	19%	18564	12005
Grand Total	**11477**	**6817390**	**149**	**911823**	**13%**	**1517333**	**132**	**616016**	**54**	**72%**	**61%**	**390360**	**219945**	**18%**	**289212**	**199238**

Estimated New Smear Positive cases / lakh population based on ARTI data for North Zone (Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, Uttar Pradesh, Uttarakhand) is 95; East Zone (Andaman & Nicobar, Arunachal Pradesh, Assam, Bihar, Jharkhand, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, West Bengal) is 75; South Zone (Andhra Pradesh, Karnataka, Lakshdweep, Puducherry, Tamil Nadu) is 75 and West Zone (Chhattisgarh, Dadra & Nagar Haveli, Daman & Diu, Goa, Gujarat, Madhya Pradesh, Maharashtra, Rajasthan) is 80; Orissa is 85,Kerala is 50

1 Projected population based on census population of 2001 is used for calculation of case-detection rate. 1 lakh = 100,000 population

2 Smear positive patients diagnosed include new smear positive cases and smear positive retreatment cases

3 Total patients registered for treatment includes new sputum smear positive cases, new smear negative cases, new extra-pulmonary cases, new others ,relapse,failure,TAD and retreatment others

Performance of RNTCP (Contd.)

State	% of smear positive retreat-ment cases out of all smear positive cases	No. (%) of pediatric cases out of all New cases		3 month conversion rate of new smear positive patients	Cure rate of new smear positive patients	Success rate of new smear positive patients	% smear positive patients living in the district placed on DOTS	No. (%) of patients put on Non-DOTS treatment regi-men		No. (%) of NSP cases started RNTCP DOTS within 7 days of diagnosis		No. (%) of NSP cases registered within one month of starting RNTCP DOTS treatment		No. (%) of interviewed NSP cases who received DOT during IP as per guidelines		No. (%) of cured NSP cases having end of treatment follow-up sputum done within 7 days of last dose	
Andaman & Nicobar	20%	67	10%	93%	83%	84%	87%	12	3%	206	88%	256	93%	156	95%	182	97%
Andhra Pradesh	24%	3664	4%	92%	86%	88%	92%	252	0%	42368	87%	48371	97%	18066	79%	34423	81%
Arunachal Pradesh	28%	180	10%	90%	85%	88%	88%	81	8%	777	95%	839	97%	763	89%	662	81%
Assam	18%	1530	5%	90%	86%	87%	92%	90	0%	14018	87%	15856	95%	3809	80%	11415	83%
Bihar	19%	4862	7%	88%	78%	86%	94%	46	0%	25738	88%	30467	98%	9625	54%	18444	78%
Chandigarh	25%	224	11%	92%	88%	90%	95%	35	3%	732	87%	831	99%	240	71%	589	88%
Chhatisgarh	12%	1373	6%	89%	83%	87%	91%	40	0%	9344	89%	10270	98%	2447	56%	6382	72%
D & N Haveli	24%	25	7%	92%	87%	87%	86%	0	0%	150	99%	152	100%	79	100%	108	95%
Daman & Diu	29%	14	9%	91%	69%	86%	69%	0	0%	57	100%	57	100%	42	100%	65	92%
Delhi	33%	5461	14%	90%	86%	87%	91%	352	2%	12608	90%	14002	100%	6323	92%	11675	98%
Goa	27%	168	10%	91%	79%	81%	84%	45	5%	500	78%	571	89%	98	99%	432	83%
Gujarat	32%	3562	6%	92%	87%	87%	94%	631	1%	32000	90%	34909	99%	9925	90%	26404	87%
Haryana	35%	1579	6%	90%	85%	85%	94%	83	0%	10606	90%	12374	95%	3310	79%	10002	90%
Himachal Pradesh	30%	468	4%	92%	87%	89%	91%	127	2%	4835	94%	5005	96%	2792	83%	4105	91%
Jammu & Kashmir	21%	588	6%	91%	88%	89%	98%	21	0%	5075	93%	5080	92%	4024	90%	3941	85%
Jharkhand	15%	2048	6%	90%	83%	89%	94%	25	0%	13811	85%	16680	99%	4009	75%	9566	70%
Karnataka	26%	3399	6%	86%	77%	79%	92%	289	1%	21459	85%	24036	94%	4447	89%	15409	78%
Kerala	18%	2146	10%	83%	81%	83%	91%	131	1%	9741	91%	9920	93%	1125	84%	6914	79%
Lakshadweep	17%	1	11%	100%	100%	100%	100%	0	0%	5	100%	5	100%	5	100%	6	100%
Madhya Pradesh	27%	3539	5%	88%	82%	86%	92%	467	1%	24286	86%	28116	94%	10546	71%	19388	76%
Maharashtra	23%	6790	6%	90%	84%	86%	91%	1055	2%	44548	88%	50575	97%	12354	54%	37986	82%
Manipur	23%	358	10%	88%	83%	83%	95%	21	2%	983	95%	909	87%	865	84%	819	81%
Meghalaya	27%	461	13%	85%	84%	85%	94%	7	0%	1262	87%	1469	98%	818	89%	1091	90%
Mizoram	18%	269	12%	95%	93%	93%	95%	15	2%	751	98%	763	99%	725	99%	616	97%
Nagaland	25%	235	10%	92%	90%	90%	84%	1	0%	1013	71%	1081	72%	686	61%	1339	85%
Orissa	16%	2494	6%	87%	83%	87%	92%	218	1%	18426	84%	21946	97%	5491	63%	12951	71%
Puducherry	21%	77	7%	88%	84%	85%	90%	39	4%	554	87%	598	94%	351	91%	497	93%

Performance of RNTCP (Contd.)

State	% of smear positive retreat-ment cases out of all smear positive cases	No. (%) of pediatric cases out of all New cases		3 month conversion rate of new smear positive patients	Cure rate of new smear positive patients	Success rate of new smear positive patients	% smear positive patients living in the district placed on DOTS	No. (%) of patients put on Non-DOTS treatment regi-men		No. (%) of NSP cases started RNTCP DOTS within 7 days of diagnosis		No. (%) of NSP cases registered within one month of starting RNTCP DOTS treatment		No. (%) of interviewed NSP cases who received DOT during IP as per guidelines		No. (%) of cured NSP cases having end of treatment follow-up sputum done within 7 days of last dose	
Punjab	29%	1739	6%	88%	83%	86%	92%	447	2%	13514	92%	14391	98%	2718	86%	10825	92%
Rajasthan	33%	4289	5%	92%	88%	89%	92%	541	1%	34663	83%	40036	96%	7303	80%	30180	84%
Sikkim	32%	128	10%	90%	85%	85%	92%	29	4%	464	96%	481	100%	276	95%	400	96%
Tamil Nadu	21%	7398	10%	90%	84%	85%	94%	430	1%	27342	81%	32585	98%	6525	71%	22612	82%
Tripura	14%	67	3%	93%	88%	91%	91%	48	3%	1297	85%	1529	96%	509	85%	1085	86%
Uttar Pradesh	24%	14965	7%	91%	85%	87%	93%	184	0%	108465	88%	118852	99%	30850	71%	75009	87%
Uttarakhand	30%	777	7%	89%	82%	86%	89%	139	2%	4451	87%	4984	97%	1774	84%	3981	85%
West Bengal	19%	4834	5%	89%	85%	86%	91%	77	0%	40284	81%	47500	95%	5923	82%	35126	82%
Grand Total	**24%**	**79779**	**6%**	**90%**	**84%**	**87%**	**92%**	**5978**	**1%**	**526333**	**87%**	**595496**	**97%**	**158999**	**73%**	**414629**	**83%**

Estimated New Smear Positive cases / lakh population based on ARTI data for North Zone (Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, Uttar Pradesh, Uttarakhand) is 95; East Zone (Andaman & Nicobar, Arunachal Pradesh, Assam, Bihar, Jharkhand, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, West Bengal) is 75; South Zone (Andhra Pradesh, Karnataka, Lakshdweep, Puducherry, Tamil Nadu) is 75 and West Zone (Chhattisgarh, Dadra & Nagar Haveli, Daman & Diu, Goa, Gujarat, Madhya Pradesh, Maharashtra, Rajasthan) is 80; Orissa is 85,Kerala is 50

1 Projected population based on census population of 2001 is used for calculation of case-detection rate. 1 lakh = 100,000 population

2 Smear positive patients diagnosed include new smear positive cases and smear positive retreatment cases

3 Total patients registered for treatment includes new sputum smear positive cases, new smear negative cases, new extra-pulmonary cases, new others ,relapse,failure,TAD and retreatment others

Treatment Outcome of New Cases for 2007

Implementing states	New Smear Positive[1]							New Smear Negative[2]						New Extra Pulmonary[2]					
	Regist-ered	Cured	Comp-leted	Died	Fail-ure	Defaulted	Trans out	Regist-ered	Comp-leted	Died	Fail-ure	De-faulted	Trans out	Regist-ered	Comp-leted	Died	Failure	De-faulted	Trans out
Andaman & Nicobar	255	83.1%	1.2%	2.0%	2.0%	7.1%	4.7%	248	85.9%	3.6%	0.0%	8.1%	2.4%	188	78.7%	5.3%	0.0%	6.4%	9.6%
Andhra Pradesh	49098	86.4%	2.1%	5.1%	2.3%	3.3%	0.8%	32564	88.2%	4.2%	0.5%	5.9%	1.2%	11006	89.8%	2.9%	0.2%	4.4%	2.7%
Arunacha Pradesh	890	85.3%	2.2%	2.9%	3.0%	4.6%	0.8%	735	86.1%	2.0%	0.4%	11.2%	0.3%	379	90.8%	3.4%	0.0%	4.7%	1.1%
Assam	16250	85.5%	1.7%	4.5%	1.5%	6.2%	0.5%	10526	83.7%	3.6%	0.4%	11.6%	0.7%	3774	89.3%	2.6%	0.1%	7.0%	1.0%
Bihar	30781	77.6%	8.6%	3.8%	1.3%	7.9%	0.8%	27971	87.8%	2.0%	0.3%	8.7%	1.1%	5013	85.5%	2.2%	0.1%	7.6%	4.5%
Chandigarh	737	87.5%	2.0%	2.3%	2.3%	3.0%	2.8%	489	93.7%	1.8%	0.8%	1.8%	1.8%	721	96.5%	1.1%	0.1%	0.7%	1.5%
Chhatisgarh	10599	82.8%	4.0%	4.6%	1.0%	7.4%	0.3%	11102	87.1%	2.7%	0.3%	9.6%	0.2%	2983	92.8%	1.6%	0.1%	5.2%	0.3%
D & N Haveli	127	87.4%	0.0%	2.4%	0.8%	4.7%	4.7%	82	92.7%	1.2%	0.0%	3.7%	2.4%	68	86.8%	1.5%	0.0%	8.8%	2.9%
Daman & Diu	98	69.4%	16.3%	2.0%	1.0%	9.2%	2.0%	95	92.6%	0.0%	0.0%	5.3%	2.1%	27	74.1%	22.2%	0.0%	3.7%	0.0%
Delhi	13752	86.5%	0.3%	2.6%	4.0%	4.9%	1.8%	9049	91.9%	2.1%	1.0%	4.2%	0.8%	15463	95.9%	0.9%	0.1%	2.4%	0.6%
Goa	643	78.8%	1.9%	5.1%	4.4%	8.7%	1.1%	571	87.6%	4.0%	0.4%	6.8%	1.2%	510	89.4%	3.5%	0.6%	4.5%	1.8%
Gujarat	34856	86.9%	0.3%	4.6%	2.4%	4.7%	1.2%	11699	87.2%	4.0%	1.1%	6.8%	0.9%	10380	91.8%	2.5%	0.2%	4.6%	1.0%
Haryana	13113	84.6%	0.7%	4.4%	3.3%	6.6%	0.4%	7636	85.8%	3.6%	1.3%	9.0%	0.2%	5507	93.5%	1.7%	0.2%	4.4%	0.2%
Himachal Pradesh	4979	87.5%	1.9%	3.6%	3.1%	3.5%	0.4%	2621	88.1%	4.7%	1.5%	4.8%	0.5%	2950	93.1%	3.0%	0.2%	3.1%	0.4%
Jammu & Kashmir	4964	87.8%	1.4%	4.3%	1.3%	2.9%	2.4%	2538	88.7%	3.6%	0.7%	5.0%	2.0%	3017	90.4%	3.4%	0.2%	3.6%	2.4%
Jharkhand	16237	83.2%	5.9%	4.0%	1.2%	5.0%	0.5%	11845	90.1%	2.4%	0.3%	6.6%	0.4%	2615	90.7%	2.3%	0.2%	3.5%	3.1%
Karnataka	25960	77.0%	1.6%	7.1%	2.9%	8.9%	2.4%	15882	80.5%	7.3%	0.8%	9.4%	2.4%	12313	86.9%	4.8%	0.2%	5.6%	2.5%
Kerala	10840	81.2%	2.3%	5.7%	4.6%	5.3%	0.8%	4649	88.5%	4.2%	0.5%	5.6%	1.2%	5658	90.1%	3.0%	0.1%	5.1%	1.4%
Lakshadweep	6	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5	80.0%	0.0%	0.0%	20.0%	0.0%	2	0.0%	0.0%	0.0%	0.0%	0.0%
Madhya Pradesh	30602	82.5%	3.2%	4.2%	1.8%	6.9%	1.1%	25296	86.7%	2.3%	0.6%	9.2%	1.3%	8749	89.2%	2.2%	0.1%	5.5%	3.0%
Maharashtra	55290	84.0%	1.7%	5.6%	2.0%	5.6%	1.1%	37437	85.7%	4.2%	0.6%	7.9%	1.6%	23233	89.6%	3.1%	0.3%	5.6%	1.3%
Manipur	1064	82.6%	0.7%	3.6%	3.1%	9.5%	0.6%	1893	86.2%	2.8%	0.1%	10.7%	0.2%	918	89.7%	2.1%	0.2%	8.1%	0.0%
Meghalaya	1447	84.2%	0.6%	3.7%	5.4%	4.7%	1.5%	1097	87.1%	2.8%	1.2%	6.5%	2.4%	1149	90.6%	1.6%	0.1%	5.2%	2.5%
Mizoram	689	92.7%	0.7%	1.0%	2.8%	2.6%	0.1%	513	86.9%	5.8%	0.4%	6.4%	0.2%	659	94.5%	2.6%	0.5%	2.6%	0.0%
Nagaland	1179	89.6%	0.4%	2.5%	2.3%	4.9%	0.2%	853	85.8%	2.5%	1.1%	10.4%	0.2%	488	91.2%	2.0%	0.0%	4.1%	0.2%
Orissa	21719	82.7%	4.0%	5.0%	1.3%	6.1%	0.9%	12778	86.1%	5.2%	0.4%	6.8%	1.5%	8219	90.1%	3.1%	0.1%	5.1%	1.5%
Puducherry	636	84.4%	0.2%	6.0%	5.0%	3.5%	0.9%	201	90.5%	5.0%	1.0%	3.0%	0.5%	299	91.6%	5.0%	0.3%	2.0%	0.0%
Punjab	13913	83.0%	3.3%	4.7%	2.1%	4.9%	2.1%	7642	88.1%	3.7%	1.0%	5.4%	1.8%	6808	92.7%	2.2%	0.0%	3.6%	1.5%
Rajasthan	41154	87.5%	1.8%	3.6%	2.0%	5.0%	0.2%	33091	89.2%	2.7%	1.0%	7.0%	0.1%	12836	93.2%	1.7%	0.1%	4.5%	0.4%

Treatment Outcome of New Cases for 2007 (Contd.)

Implementing states	New Smear Positive[1]							New Smear Negative[2]						New Extra Pulmonary[2]					
	Regist-ered	Cured	Comp-leted	Died	Fail-ure	Defaulted	Trans out	Regist-ered	Comp-leted	Died	Fail-ure	De-faulted	Trans out	Regist-ered	Comp-leted	Died	Failure	De-faulted	Trans out
Sikkim	493	84.8%	0.0%	2.4%	11.0%	1.4%	0.4%	279	89.2%	3.6%	3.2%	3.6%	0.4%	436	94.3%	2.8%	0.2%	2.3%	0.5%
Tamil Nadu	33357	84.1%	1.2%	5.4%	1.9%	6.5%	0.9%	24069	90.2%	4.0%	0.3%	4.7%	0.8%	17161	93.3%	2.4%	0.1%	2.5%	1.7%
Tripura	1459	87.8%	2.8%	4.3%	1.9%	3.0%	0.1%	470	87.7%	7.2%	1.1%	3.6%	0.4%	368	92.7%	4.3%	1.4%	1.1%	0.5%
Uttar Pradesh	99754	84.6%	2.9%	3.9%	1.2%	6.6%	0.6%	77245	88.4%	2.1%	0.5%	8.0%	0.7%	24895	93.2%	1.0%	0.0%	4.7%	1.0%
Uttarakhand	5417	82.2%	3.8%	2.8%	1.3%	8.9%	0.8%	3327	88.3%	1.7%	0.8%	8.3%	0.9%	1901	94.3%	1.2%	0.1%	3.8%	0.5%
West Bengal	50132	84.6%	1.4%	4.3%	2.4%	6.5%	0.7%	22539	85.4%	5.2%	0.7%	8.0%	0.8%	16283	89.3%	3.1%	0.2%	4.7%	2.7%
Grand Total	**592490**	**84.1%**	**2.5%**	**4.5%**	**2.0%**	**6.0%**	**0.9%**	**399037**	**87.4%**	**3.4%**	**0.6%**	**7.6%**	**1.0%**	**206976**	**91.3%**	**2.4%**	**0.1%**	**4.5%**	**1.6%**

1 Treatment success for New Smear Positive is cured and treatment completed.

2 Treatment success for New Smear Negative and New Extra Pulmonary are treatment completed.

Outcome of Smear Positive Retreatment Cases for India 2007 (excluding "Others")

Type of retreatment case	Cured	Success	Died	Failure	Defaulted	Transferred out	No. registered
Relapse	67.9%	74.5%	7.3%	4.5%	12.3%	1.3%	96891
Failure	52.8%	60.4%	8.8%	13.3%	16.2%	1.3%	19023
Treatment after default	59.2%	67.7%	8.1%	3.9%	17.7%	2.7%	77483
Total	**63.0%**	**70.4%**	**7.8%**	**5.1%**	**14.9%**	**1.9%**	**193397**

State-wise outcome of Smear Positive Retreatment Cases 2007 (excluding "Others")

Implementing states	Cured	Success	Died	Failure	Defaulted	Transferred out	No. registered
Andaman & Nicobar	64.3%	64.3%	14.3%	5.4%	12.5%	3.6%	56
Andhra Pradesh	63.0%	71.0%	9.1%	5.3%	12.6%	1.9%	14355
Arunachal Pradesh	72.6%	76.5%	5.3%	8.2%	7.9%	1.8%	340
Assam	57.8%	66.5%	7.2%	5.2%	19.0%	2.1%	3445
Bihar	59.7%	75.9%	6.3%	3.9%	12.8%	1.0%	7710
Chandigarh	73.3%	75.3%	5.3%	8.3%	6.7%	4.3%	300
Chhatisgarh	58.8%	71.1%	7.8%	3.8%	16.7%	0.5%	1608
D & N Haveli	62.3%	62.3%	5.7%	5.7%	17.0%	9.4%	53
Daman & Diu	51.1%	76.6%	4.3%	8.5%	10.6%	0.0%	47
Delhi	71.8%	72.4%	5.9%	7.2%	11.8%	2.7%	6611
Goa	50.2%	56.9%	9.1%	8.1%	23.4%	2.4%	209
Gujarat	64.4%	66.3%	9.5%	7.1%	15.1%	1.8%	17064
Haryana	65.3%	70.7%	7.1%	5.8%	15.7%	0.6%	7132
Himachal Pradesh	68.9%	76.3%	7.3%	7.6%	8.2%	0.6%	2143
Jammu & Kashmir	71.3%	78.3%	4.5%	4.6%	7.4%	5.1%	1452
Jharkhand	64.5%	77.4%	6.4%	3.3%	11.5%	1.4%	2969
Karnataka	49.0%	55.2%	10.2%	6.8%	22.0%	5.7%	9499
Kerala	60.2%	66.0%	7.8%	7.8%	16.5%	2.2%	2299
Lakshadweep							0
Madhya Pradesh	55.6%	69.5%	7.5%	4.1%	16.2%	2.6%	11569
Maharashtra	57.7%	63.9%	9.4%	5.9%	18.1%	2.7%	15685
Manipur	60.3%	63.4%	6.2%	9.3%	20.7%	0.3%	290
Meghalaya	52.6%	59.5%	10.8%	11.7%	13.9%	4.0%	546
Mizoram	75.8%	82.2%	3.8%	6.4%	7.0%	0.0%	157
Nagaland	72.1%	72.9%	3.4%	5.4%	17.9%	0.3%	351
Orissa	54.3%	67.4%	9.3%	3.5%	17.2%	2.6%	3918
Puducherry	59.8%	62.1%	10.7%	10.7%	16.5%	0.0%	224
Punjab	62.7%	73.7%	7.7%	4.3%	10.4%	3.8%	5423
Rajasthan	69.8%	77.9%	6.1%	3.8%	12.0%	0.2%	20430
Sikkim	57.7%	57.7%	11.9%	23.8%	5.7%	0.9%	227
Tamil Nadu	56.4%	62.9%	9.0%	5.7%	20.8%	1.6%	8737
Tripura	82.3%	86.6%	6.9%	3.9%	2.6%	0.0%	232
Uttar Pradesh	68.0%	75.7%	6.6%	3.2%	13.1%	1.4%	34646
Uttarakhand	68.0%	73.9%	4.3%	4.1%	16.3%	1.3%	2245
West Bengal	61.7%	66.4%	8.5%	6.7%	16.9%	1.5%	11425
Grand Total	**63.0%**	**70.4%**	**7.8%**	**5.1%**	**14.9%**	**1.9%**	**193397**

Values for grey areas are not expected

Programme Infrastructure, Staffing and Training Status at the End of 4th Quarter 2008

Implementing states	Total no. of reporting units (Districts/DTC)	Implementing district details		Involvement of other sectors			Number of key staff in position						In place and trained in RNTCP	
		No. of TB Units	No. of DMCs	NGO	PP	Medical College	DTO	2nd MO	MO-TC	STS	STLS	LT	MO	MPW
Andaman & Nicobar	1	3	13	4	1	0	1	0	3	3	3	19	76%	70%
Andhra Pradesh	24	177	918	120	544	32	21	21	169	166	175	859	73%	89%
Arunachal Pradesh	13	13	33	25	2	0	13	4	5	13	12	39	80%	67%
Assam	23	67	336	56	153	3	22	9	62	67	69	364	87%	77%
Bihar	38	168	750	58	164	8	29	27	140	149	150	535	69%	82%
Chandigarh	1	2	15	19	195	2	1	0	2	2	4	15	89%	100%
Chhatisgarh	16	61	280	13	93	3	15	1	57	47	55	269	78%	90%
D & N Haveli	1	1	5	0	5	0	1	0	1	1	1	5	100%	100%
Daman & Diu	2	2	3	0	24	0	2	0	1	2	2	3	100%	94%
Delhi	24	36	192	89	358	4	24	18	25	46	44	182	75%	45%
Goa	2	4	19	8	15	1	0	0	3	4	4	45	73%	89%
Gujarat	29	134	708	251	5341	12	28	11	132	131	130	682	93%	82%
Haryana	20	47	214	25	327	3	17	10	46	44	47	205	86%	88%
Himachal Pradesh	12	41	166	11	63	2	12	3	38	44	45	187	82%	84%
Jammu & Kashmir	14	47	172	6	0	5	11	10	37	43	41	172	88%	71%
Jharkhand	22	66	293	68	140	3	20	13	58	63	62	314	84%	78%
Karnataka	30	124	636	186	2288	39	30	9	119	120	123	734	86%	83%
Kerala	14	77	532	66	941	18	12	9	60	67	68	521	60%	86%
Lakshadweep	1	1	9	0	0	0	0	0	1	0	1	15	67%	100%
Madhya Pradesh	45	142	734	50	212	9	41	10	184	135	140	720	89%	80%
Maharashtra	48	252	1241	392	5044	41	44	40	239	250	240	1207	77%	78%
Manipur	9	15	48	113	10	1	9	6	4	13	17	43	45%	46%
Meghalaya	7	12	52	25	28	1	6	4	12	12	12	59	92%	85%
Mizoram	8	9	30	2	0	0	8	2	1	9	9	51	60%	92%
Nagaland	11	13	40	31	22	0	8	0	2	13	26	49	72%	57%
Orissa	31	104	546	59	80	5	28	13	92	106	101	554	79%	81%
Puducherry	1	4	20	4	4	8	0	0	4	5	5	20	71%	96%
Punjab	20	57	289	158	747	7	20	4	48	53	57	349	79%	84%
Rajasthan	32	150	814	80	357	7	32	8	137	145	143	784	78%	74%
Sikkim	4	5	20	12	16	1	4	0	4	5	5	22	86%	91%

Programme Infrastructure, Staffing and Training Status (Contd.)

Implementing states	Total no. of reporting units (Districts/DTC)	Implementing district details		Involvement of other sectors			Number of key staff in position						In place and trained in RNTCP	
		No. of TB Units	No. of DMCs	NGO	PP	Medical College	DTO	2nd MO	MO-TC	STS	STLS	LT	MO	MPW
Tamil Nadu	30	142	782	242	1043	19	22	25	125	132	75	651	82%	93%
Tripura	4	10	52	0	0	2	4	1	10	71	10	64	81%	90%
Uttar Pradesh	70	369	1750	244	924	20	64	56	353	363	350	1727	70%	66%
Uttarakhand	13	30	142	19	14	2	13	11	23	28	28	122	65%	64%
West Bengal	19	188	851	88	387	9	18	14	176	184	194	984	83%	93%
Grand Total	**639**	**2573**	**12705**	**2524**	**19542**	**267**	**580**	**339**	**2373**	**2536**	**2448**	**12571**	**79%**	**81%**

Performance of RNTCP Case Detection (2008), Smear Conversion (4th Quarter 2007 to 3rd Quarter 2008), and Treatment Outcomes (2007)

State	District	Population (in lakh) covered by RNTCP[1]	No. of suspects examined	Suspects examined per lakh population per quarter	No of Smear positive patients diagnosed[2]	% of S+ve cases among suspects	Total patients registered for treatment[3]	Annual total case detection rate	New smear positive patients registered for treatment	Annual new smear positive case detection rate (%)		% new sputum positive out of total new pulmonary cases	No of new smear negative cases registered for treatment	No of new EP cases registered for treatment	% of new EP cases out of all new cases	No of re-treatment cases registered for treatment	No of smear positive retreatment cases registered for treatment	% of smear positive retreatment cases out of all smear positive cases
Andaman & Nicobar	Andaman & Nicobar Islands *	4	3887	236	373	10%	748	182	269	65	87%	55%	221	167	25%	83	68	20%
Andhra Pradesh	Adilabad *	27	10371	96	2012	19%	3306	123	1527	57	76%	58%	1110	182	6%	487	452	23%
Andhra Pradesh	Anantapur	39	30590	194	4181	14%	5954	151	2777	70	94%	67%	1378	667	14%	1127	843	23%
Andhra Pradesh	Bhadrachalam	8	8633	255	1260	15%	1784	211	835	99	132%	58%	594	57	4%	298	282	25%
Andhra Pradesh	Chittoor	41	26899	166	3808	14%	5090	126	2134	53	70%	65%	1139	765	19%	1050	731	26%
Andhra Pradesh	Cuddapah	28	16339	146	2077	13%	4266	153	1479	53	71%	48%	1597	424	12%	766	487	25%
Andhra Pradesh	East Godavari	53	34741	164	4439	13%	8336	158	3410	64	86%	54%	2855	952	13%	1112	679	17%
Andhra Pradesh	Guntur	48	42029	220	5825	14%	6993	146	3278	69	91%	61%	2127	419	7%	1169	953	23%
Andhra Pradesh	Hyderabad	40	41324	258	5663	14%	6694	167	2281	57	76%	61%	1451	1627	30%	1317	876	28%
Andhra Pradesh	Karimnagar	38	17655	117	2779	16%	4092	108	1839	49	65%	60%	1225	234	7%	790	701	28%
Andhra Pradesh	Khammam	19	13631	176	2575	19%	3385	175	1771	91	122%	67%	870	254	9%	487	455	20%
Andhra Pradesh	Krishna	46	28984	158	3880	13%	5965	130	2685	59	78%	62%	1669	437	9%	1173	876	25%
Andhra Pradesh	Kurnool	38	21508	141	2937	14%	6195	163	2117	56	74%	48%	2324	522	11%	1232	721	25%
Andhra Pradesh	Mahbubnagar	38	19580	129	3086	16%	4428	116	2239	59	78%	67%	1093	246	7%	850	695	24%
Andhra Pradesh	Medak	29	10543	91	1843	17%	3208	111	1423	49	66%	67%	699	421	17%	659	569	29%
Andhra Pradesh	Nalgonda	35	14570	104	3117	21%	4356	124	1984	56	75%	66%	1012	331	10%	1010	904	31%
Andhra Pradesh	Nellore	29	19165	166	2833	15%	4394	152	1887	65	87%	62%	1167	325	10%	996	702	27%
Andhra Pradesh	Nizamabad	25	14740	145	1512	10%	3089	121	1377	54	72%	52%	1260	184	7%	267	218	14%
Andhra Pradesh	Prakasam	33	15665	118	2209	14%	4062	123	1916	58	77%	61%	1248	157	5%	740	560	23%
Andhra Pradesh	Rangareddi	38	21642	142	3683	17%	5249	138	2266	60	79%	67%	1102	792	19%	1089	865	28%
Andhra Pradesh	Srikakulam	27	16001	146	2194	14%	4110	150	1711	62	83%	56%	1355	486	14%	548	404	19%
Andhra Pradesh	Visakhapatnam	41	26244	160	3807	15%	5678	138	2521	61	82%	65%	1374	1059	21%	723	552	18%
Andhra Pradesh	Vizianagaram	24	15470	159	2324	15%	3804	156	1700	70	93%	68%	794	669	21%	641	492	22%
Andhra Pradesh	Warangal	35	20493	146	3528	17%	4163	119	2034	58	77%	69%	908	252	8%	968	830	29%

District-wise Performance of RNTCP (Contd.)

State	District	No (%) of pediatric cases out of all New cases		3 month conversion rate of new smear positive patients[4]	Cure rate of new smear positive patients[5]	Success rate of new smear positive patients[5]	% smear positive patients living in the district placed on DOTS	No (%) of patients put on Non-DOTS treatment regimen		No (%) of NSP cases started RNTCP DOTS within 7 days of diagnosis		No (%) of NSP cases registered within one month of starting RNTCP DOTS treatment		No (%) of interviewed NSP cases who received DOT during IP as per guidelines		No (%) of cured NSP cases having end of treatment follow-up sputum done within 7 days of last dose	
Andaman & Nicobar	Andaman & Nicobar Islands *	67	10%	93%	83%	84%	87%	12	3%	206	88%	256	93%	156	95%	182	97%
Andhra Pradesh	Adilabad *	65	2%	92%	88%	91%	92%	11	1%	1388	91%	1523	100%	837	67%	1142	84%
Andhra Pradesh	Anantapur	122	3%	92%	87%	88%	91%	0	0%	2278	85%	2749	98%	851	87%	1886	80%
Andhra Pradesh	Bhadrachalam	35	2%	93%	89%	93%	92%	0	0%	715	85%	829	98%	896	93%	757	99%
Andhra Pradesh	Chittoor	161	4%	91%	85%	87%	83%	2	0%	1750	82%	2020	95%	193	75%	1152	68%
Andhra Pradesh	Cuddapah	85	2%	87%	81%	86%	83%	4	0%	1218	82%	1445	98%	359	82%	1044	82%
Andhra Pradesh	East Godavari	321	4%	94%	89%	91%	95%	1	0%	2899	85%	3362	99%	1413	86%	2305	81%
Andhra Pradesh	Guntur	152	3%	93%	87%	89%	92%	38	1%	3044	93%	3257	99%	1531	81%	2411	85%
Andhra Pradesh	Hyderabad	466	9%	92%	86%	87%	93%	2	0%	2180	97%	2245	100%	2210	98%	2137	94%
Andhra Pradesh	Karimnagar	70	2%	92%	86%	90%	91%	73	3%	1186	83%	1765	96%	907	71%	1238	86%
Andhra Pradesh	Khammam	66	2%	91%	86%	87%	90%	1	0%	1212	90%	1726	97%	369	30%	1067	86%
Andhra Pradesh	Krishna	149	3%	92%	87%	89%	95%	17	0%	2337	87%	2529	94%	196	83%	1696	76%
Andhra Pradesh	Kurnool	213	4%	91%	84%	84%	93%	25	1%	1626	77%	2092	99%	331	84%	869	50%
Andhra Pradesh	Mahbubnagar	98	3%	90%	86%	87%	89%	0	0%	1968	88%	2134	95%	359	90%	1405	78%
Andhra Pradesh	Medak	155	6%	90%	82%	85%	89%	0	0%	1313	92%	1353	95%	639	68%	1042	77%
Andhra Pradesh	Nalgonda	142	4%	90%	84%	86%	95%	18	1%	1336	85%	1851	93%	887	64%	1334	82%
Andhra Pradesh	Nellore	95	3%	93%	88%	91%	89%	0	0%	1662	88%	1867	99%	156	79%	1182	74%
Andhra Pradesh	Nizamabad	56	2%	91%	87%	90%	97%	1	0%	1275	94%	1330	98%	650	62%	1141	92%
Andhra Pradesh	Prakasam	70	2%	92%	86%	90%	95%	4	0%	1568	82%	1821	95%	850	91%	1414	86%
Andhra Pradesh	Rangareddi	246	6%	88%	79%	80%	95%	10	0%	2119	94%	2249	99%	427	92%	1659	91%
Andhra Pradesh	Srikakulam	176	5%	92%	86%	91%	95%	6	0%	1296	76%	1672	98%	213	97%	964	64%
Andhra Pradesh	Visakhapatnam	319	6%	94%	88%	90%	95%	27	1%	2363	94%	2512	100%	1477	93%	2032	90%
Andhra Pradesh	Vizianagaram	207	7%	92%	88%	90%	96%	2	0%	1410	83%	1665	98%	142	87%	921	62%
Andhra Pradesh	Warangal	34	1%	92%	86%	88%	92%	0	0%	1760	83%	1818	86%	561	63%	1295	68%

District-wise Performance of RNTCP (Contd.)

State	District	Population (in lakh) covered by RNTCP[1]	No. of suspects examined	Suspects examined per lakh population per quarter	No of Smear positive patients diagnosed[2]	% of S+ve cases among suspects	Total patients registered for treatment[3]	Annual total case detection rate	New smear positive patients registered for treatment	Annual new smear positive case detection rate (%)		% new sputum positive out of total new pulmonary cases	No of new smear negative cases registered for treatment	No of new EP cases registered for treatment	% of new EP cases out of all new cases	No of re-treatment cases registered for treatment	No of smear positive retreatment cases registered for treatment	% of smear positive retreatment cases out of all smear positive cases
Andhra Pradesh	West Godavari	41	23988	146	3521	15%	6023	146	2568	62	83%	59%	1777	541	11%	1137	727	22%
Arunachal Pradesh	Changlang **	1	796	145	71	9%	139	101	70	51	68%	69%	32	16	13%	20	15	18%
Arunachal Pradesh	Dibang Valley	1	551	218	47	9%	105	166	46	73	97%	68%	22	9	12%	28	22	32%
Arunachal Pradesh	East Kameng *	1	729	290	56	8%	229	365	54	86	115%	51%	52	40	27%	83	25	32%
Arunachal Pradesh	East Siang *	1	901	234	130	14%	250	260	101	105	140%	59%	69	26	13%	54	39	28%
Arunachal Pradesh	Lohit **	2	997	158	129	13%	252	160	101	64	85%	62%	62	14	8%	75	42	29%
Arunachal Pradesh	Lower Subansiri *	1	531	124	55	10%	127	118	52	48	65%	69%	23	18	19%	33	26	33%
Arunachal Pradesh	Papum Pare *	1	3271	611	319	10%	624	466	123	92	122%	40%	186	140	31%	175	77	39%
Arunachal Pradesh	Tawang *	0	368	241	39	11%	90	236	32	84	112%	54%	27	18	23%	13	6	16%
Arunachal Pradesh	Tirap †	1	631	143	96	15%	208	189	73	66	88%	62%	45	53	31%	37	21	22%
Arunachal Pradesh	Upper Siang *	0	353	242	30	8%	58	159	24	66	88%	75%	8	12	27%	14	11	31%
Arunachal Pradesh	Upper Subansiri *	1	366	151	44	12%	76	126	22	36	48%	59%	15	17	31%	22	7	24%
Arunachal Pradesh	West Kameng *	1	691	211	71	10%	134	163	59	72	96%	62%	36	22	19%	17	10	14%
Arunachal Pradesh	West Siang *	1	582	128	62	11%	158	139	62	54	73%	66%	32	15	13%	44	22	26%
Assam	Barpeta	18	7527	102	932	12%	1761	95	744	40	54%	60%	493	182	13%	342	201	21%
Assam	Bongaigaon	10	4979	122	656	13%	1172	115	526	52	69%	60%	350	73	8%	223	106	17%
Assam	Cachar	16	8971	138	1027	11%	2183	135	739	46	61%	47%	829	351	18%	264	126	15%
Assam	Darrang	17	8508	126	1131	13%	2051	121	896	53	71%	58%	646	195	11%	314	165	16%
Assam	Dhemaji	6	2905	114	458	16%	794	124	385	60	80%	62%	239	54	8%	112	54	12%
Assam	Dhubri	18	8600	117	1076	13%	2298	125	818	45	59%	47%	925	88	5%	467	206	20%
Assam	Dibrugarh	13	8230	156	1541	19%	2440	185	937	71	95%	64%	528	652	31%	323	206	18%
Assam	Goalpara	9	4002	108	601	15%	929	101	484	52	70%	65%	256	46	6%	143	80	14%
Assam	Golaghat	11	4700	111	797	17%	1449	136	652	61	82%	61%	415	190	15%	186	99	13%
Assam	Hailakandi	6	3331	137	382	11%	598	98	312	51	68%	68%	149	69	13%	68	44	12%
Assam	Jorhat	11	5083	112	909	18%	1427	126	740	65	87%	76%	235	275	22%	172	121	14%

District-wise Performance of RNTCP (Contd.)

State	District	No (%) of pediatric cases out of all New cases		3 month conversion rate of new smear positive patients[4]	Cure rate of new smear positive patients[5]	Success rate of new smear positive patients[5]	% smear positive patients living in the district placed on DOTS	No (%) of patients put on Non-DOTS treatment regimen		No (%) of NSP cases started RNTCP DOTS within 7 days of diagnosis		No (%) of NSP cases registered within one month of starting RNTCP DOTS treatment		No (%) of interviewed NSP cases who received DOT during IP as per guidelines		No (%) of cured NSP cases having end of treatment follow-up sputum done within 7 days of last dose	
Andhra Pradesh	West Godavari	161	3%	96%	94%	94%	97%	10	0%	2465	96%	2557	100%	1612	96%	2330	94%
Arunachal Pradesh	Changlang **	5	4%	84%	80%	89%	94%	0	0%	62	89%	59	84%	35	60%	41	73%
Arunachal Pradesh	Dibang Valley	3	4%	95%	98%	98%	98%	1	2%	43	100%	43	100%	43	100%	54	98%
Arunachal Pradesh	East Kameng *	20	14%	81%	58%	70%	100%	0	0%	54	100%	54	100%	54	100%	29	48%
Arunachal Pradesh	East Siang *	12	6%	93%	87%	87%	92%	0	0%	101	100%	99	98%	92	91%	68	91%
Arunachal Pradesh	Lohit **	7	4%	88%	89%	89%	95%	2	2%	115	97%	118	100%	118	100%	100	96%
Arunachal Pradesh	Lower Subansiri *	12	13%	79%	74%	81%	91%	0	0%	44	94%	47	100%	47	100%	42	74%
Arunachal Pradesh	Papum Pare *	59	13%	95%	88%	88%	69%	78	30%	159	96%	165	100%	157	95%	141	93%
Arunachal Pradesh	Tawang *	9	12%	92%	96%	96%	100%	0	0%	30	97%	32	100%	32	100%	22	96%
Arunachal Pradesh	Tirap †	29	17%	90%	91%	91%	98%	0	0%	12	50%	58	79%	67	92%	31	52%
Arunachal Pradesh	Upper Siang *	5	11%	95%	87%	90%	93%	0	0%	24	100%	24	100%	24	100%	21	70%
Arunachal Pradesh	Upper Subansiri *	6	11%	87%	82%	82%	70%	0	0%	14	64%	20	91%	22	100%	28	68%
Arunachal Pradesh	West Kameng *	6	5%	98%	98%	98%	99%	0	0%	59	100%	59	100%	37	63%	36	77%
Arunachal Pradesh	West Siang *	7	6%	84%	90%	90%	100%	0	0%	60	98%	61	100%	35	58%	49	83%
Assam	Barpeta	58	4%	90%	87%	88%	97%	0	0%	628	84%	742	100%	192	83%	457	65%
Assam	Bongaigaon	30	3%	91%	87%	87%	97%	0	0%	476	90%	475	90%	82	94%	316	68%
Assam	Cachar	55	3%	89%	81%	82%	92%	15	2%	634	86%	715	97%	178	89%	481	80%
Assam	Darrang	37	2%	91%	87%	89%	96%	2	0%	834	93%	888	99%	94	80%	666	88%
Assam	Dhemaji	20	3%	91%	89%	90%	98%	0	0%	360	94%	384	100%	60	83%	278	89%
Assam	Dhubri	69	4%	90%	86%	90%	94%	15	1%	619	76%	774	95%	249	88%	578	79%
Assam	Dibrugarh	261	12%	93%	84%	85%	87%	5	0%	724	97%	899	96%	89	26%	603	69%
Assam	Goalpara	15	2%	91%	84%	84%	88%	0	0%	446	92%	483	100%	58	85%	359	89%
Assam	Golaghat	79	6%	91%	86%	89%	95%	0	0%	610	94%	635	97%	259	85%	467	88%
Assam	Hailakandi	14	3%	91%	84%	84%	96%	0	0%	187	60%	307	98%	104	88%	175	67%
Assam	Jorhat	111	9%	93%	86%	87%	97%	2	0%	725	98%	739	100%	54	100%	532	96%

District-wise Performance of RNTCP (Contd.)

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Assam	Kamrup	28	15672	139	2340	15%	3789	134	1428	51	67%	64%	814	607	21%	939	550	28%
Assam	Karbi Anglong *	9	4380	120	608	14%	1421	156	481	53	70%	42%	654	79	7%	206	76	14%
Assam	Karimganj	11	5147	114	652	13%	1024	91	447	40	53%	57%	336	120	13%	121	62	12%
Assam	Kokrajhar	10	3790	91	704	19%	1233	118	623	60	79%	65%	334	36	4%	240	108	15%
Assam	Lakhimpur	10	4872	122	798	16%	1185	119	599	60	80%	70%	257	125	13%	197	137	19%
Assam	Marigaon	9	3327	95	502	15%	988	113	348	40	53%	52%	316	56	8%	268	124	26%
Assam	Nagaon	26	11585	111	1723	15%	2961	114	1410	54	72%	59%	962	263	10%	326	172	11%
Assam	Nalbari	13	4509	88	647	14%	1381	108	629	49	66%	61%	402	128	11%	213	129	17%
Assam	North Cachar Hills *	2	1268	152	144	11%	283	135	101	48	64%	51%	98	20	9%	63	35	26%
Assam	Sibsagar	12	6047	128	805	13%	1756	148	616	52	69%	56%	484	338	24%	318	174	22%
Assam	Sonitpur	19	11713	155	1982	17%	3107	165	1528	81	108%	66%	800	300	11%	479	304	17%
Assam	Tinsukia	13	8868	172	1485	17%	2224	172	1023	79	106%	69%	470	423	22%	308	222	18%
Bihar	Araria **	24	6439	67	832	13%	1579	66	643	27	36%	50%	648	48	4%	240	108	14%
Bihar	Arwal	7	2578	93	358	14%	664	96	292	42	56%	60%	194	47	9%	131	53	15%
Bihar	Aurangabad-BI **	23	6776	75	1037	15%	1762	78	757	33	44%	62%	458	178	13%	369	241	24%
Bihar	Banka **	18	6369	87	956	15%	1839	101	873	48	64%	62%	529	47	3%	362	88	9%
Bihar	Begusarai **	27	10890	103	1502	14%	3285	124	1110	42	56%	43%	1481	132	5%	562	328	23%
Bihar	Bhagalpur **	28	17237	157	1908	11%	3965	144	1426	52	69%	49%	1494	385	12%	659	333	19%
Bihar	Bhojpur **	25	5428	54	573	11%	1084	43	397	16	21%	52%	371	77	9%	239	140	26%
Bihar	Buxar	16	3723	59	496	13%	1005	63	353	22	30%	54%	295	61	9%	296	127	26%
Bihar	Darbhanga **	37	12992	87	2046	16%	3285	88	1320	35	47%	70%	576	692	27%	696	419	24%
Bihar	Gaya **	39	9364	60	1436	15%	3690	94	962	25	33%	34%	1861	175	6%	671	252	21%
Bihar	Gopalganj **	24	8007	82	1148	14%	2383	98	945	39	52%	69%	433	110	7%	883	243	20%
Bihar	Jamui **	16	3434	54	653	19%	1270	80	549	35	46%	54%	471	46	4%	204	90	14%
Bihar	Jehanabad **	10	7349	180	723	10%	1367	134	545	53	71%	48%	583	46	4%	193	124	19%

District-wise Performance of RNTCP (Contd.)

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Assam	Kamrup	96	3%	90%	87%	88%	91%	19	1%	937	78%	1324	93%	569	92%	828	88%
Assam	Karbi Anglong *	33	3%	88%	86%	87%	95%	0	0%	471	94%	478	95%	63	77%	308	77%
Assam	Karimganj	17	2%	90%	84%	88%	94%	2	0%	427	85%	500	99%	138	60%	343	87%
Assam	Kokrajhar	13	1%	87%	87%	87%	90%	0	0%	551	88%	616	99%	108	96%	523	92%
Assam	Lakhimpur	51	5%	89%	87%	87%	91%	3	0%	558	93%	709	100%	232	55%	476	87%
Assam	Marigaon	14	2%	94%	84%	86%	93%	6	1%	319	92%	323	93%	76	93%	348	93%
Assam	Nagaon	72	3%	91%	87%	90%	86%	0	0%	1044	74%	1340	95%	301	92%	1146	91%
Assam	Nalbari	39	3%	89%	85%	89%	86%	0	0%	553	91%	603	100%	185	86%	383	73%
Assam	North Cachar Hills *	5	2%	91%	77%	79%	94%	0	0%	91	90%	100	99%	22	39%	52	55%
Assam	Sibsagar	127	9%	91%	87%	88%	92%	5	1%	476	87%	550	89%	163	94%	388	70%
Assam	Sonitpur	154	6%	87%	83%	87%	92%	4	0%	1462	95%	1526	100%	41	45%	1019	91%
Assam	Tinsukia	160	8%	92%	85%	85%	85%	12	1%	886	87%	746	73%	492	100%	689	87%
Bihar	Araria **	57	4%	84%	74%	77%	90%	0	0%	484	75%	628	97%	210	53%	415	71%
Bihar	Arwal	20	4%	91%	82%	91%	92%	0	0%	245	89%	274	100%	155	57%	185	88%
Bihar	Aurangabad-BI **	98	7%	85%	79%	80%	91%	0	0%	615	81%	757	100%	193	32%	588	78%
Bihar	Banka **	54	4%	93%	76%	89%	99%	0	0%	662	95%	887	100%	424	48%	608	76%
Bihar	Begusarai **	289	11%	91%	86%	93%	96%	0	0%	1030	93%	1110	100%	984	89%	505	80%
Bihar	Bhagalpur **	464	14%	92%	87%	89%	94%	0	0%	1397	98%	1426	100%	465	33%	1186	95%
Bihar	Bhojpur **	34	4%	80%	49%	73%	79%	4	1%	101	67%	161	77%	21	70%	129	62%
Bihar	Buxar	50	7%	92%	88%	88%	97%	0	0%	250	92%	365	98%	114	100%	238	81%
Bihar	Darbhanga **	299	12%	86%	74%	81%	99%	1	0%	1245	94%	1301	99%	138	100%	822	86%
Bihar	Gaya **	161	5%	76%	72%	90%	90%	3	0%	364	71%	851	92%	248	40%	605	62%
Bihar	Gopalganj **	132	9%	89%	77%	87%	100%	0	0%	627	84%	916	99%	342	95%	591	84%
Bihar	Jamui **	47	4%	81%	70%	77%	92%	0	0%	484	88%	550	100%	258	47%	235	55%
Bihar	Jehanabad **	72	6%	81%	74%	85%	98%	9	1%	473	84%	532	94%	178	49%	274	74%

District-wise Performance of RNTCP (Contd.)

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Bihar	Kaimur **	15	3872	67	589	15%	977	67	380	26	35%	65%	205	22	4%	370	186	33%
Bihar	Katihar **	27	9933	92	1907	19%	2417	89	1448	54	71%	78%	402	122	6%	445	313	18%
Bihar	Khagaria **	14	5917	102	586	10%	880	61	411	28	38%	67%	204	41	6%	224	145	26%
Bihar	Kishanganj **	15	7382	126	965	13%	1238	85	723	49	66%	79%	192	62	6%	261	190	21%
Bihar	Lakhisarai **	9	3371	93	316	9%	705	78	255	28	37%	51%	247	42	8%	161	63	20%
Bihar	Madhepura **	17	4957	72	590	12%	805	47	469	27	36%	73%	170	34	5%	132	102	18%
Bihar	Madhubani **	40	13870	86	1834	13%	2670	66	1449	36	48%	67%	703	131	6%	377	249	15%
Bihar	Munger **	13	5513	107	796	14%	1407	109	612	48	63%	59%	418	159	13%	218	146	19%
Bihar	Muzaffarpur **	42	14377	85	1896	13%	5962	141	1709	40	54%	37%	2938	439	9%	876	409	19%
Bihar	Nalanda **	27	6136	57	1149	19%	1892	71	890	33	44%	61%	566	131	8%	305	160	15%
Bihar	Nawada **	20	4791	58	768	16%	1107	54	571	28	37%	72%	221	65	8%	250	159	22%
Bihar	Pashchim Champaran **	34	11281	82	1509	13%	2357	68	1189	35	46%	70%	503	141	8%	524	304	20%
Bihar	Patna	53	24707	116	3482	14%	7285	137	2168	41	54%	43%	2910	920	15%	1287	475	18%
Bihar	Purba Champaran **	45	12350	69	1847	15%	2913	65	1367	31	41%	61%	883	132	6%	531	269	16%
Bihar	Purnia **	29	19490	169	1909	10%	3083	107	1470	51	68%	59%	1037	79	3%	497	279	16%
Bihar	Rohtas	28	10420	94	1297	12%	1950	70	917	33	44%	65%	493	67	5%	473	230	20%
Bihar	Saharsa **	17	6405	94	750	12%	1585	93	616	36	48%	47%	691	41	3%	200	99	14%
Bihar	Samastipur **	39	13598	88	2333	17%	4537	117	1847	48	64%	54%	1548	419	11%	723	370	17%
Bihar	Saran **	37	8469	58	1059	13%	2099	57	782	21	28%	56%	608	235	14%	473	271	26%
Bihar	Sheikpura	6	3005	126	261	9%	698	117	168	28	38%	39%	258	11	2%	214	20	11%
Bihar	Sheohar	6	1466	63	198	14%	477	82	159	27	36%	45%	193	38	10%	84	39	20%
Bihar	Sitamarhi **	30	9732	80	1724	18%	2829	94	1390	46	61%	61%	881	186	8%	365	220	14%
Bihar	Siwan	31	12359	101	1841	15%	3296	107	1221	40	53%	53%	1087	62	3%	926	332	21%

District-wise Performance of RNTCP (Contd.)

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Bihar	Kaimur **	39	6%	87%	75%	78%	93%	0	0%	356	94%	377	99%	173	46%	280	83%
Bihar	Katihar **	110	6%	87%	79%	80%	92%	0	0%	1292	89%	1448	100%	823	75%	1036	100%
Bihar	Khagaria **	44	7%	89%	76%	81%	94%	0	0%	382	90%	420	99%	69	21%	233	64%
Bihar	Kishanganj **	60	6%	89%	75%	87%	94%	0	0%	9	100%	180	91%	197	100%	107	100%
Bihar	Lakhisarai **	47	9%	93%	82%	85%	96%	0	0%	177	95%	248	97%	58	60%	143	78%
Bihar	Madhepura **	29	4%	92%	90%	94%	97%	0	0%	457	97%	469	100%	133	28%	472	90%
Bihar	Madhubani **	120	5%	85%	75%	89%	94%	4	0%	1136	95%	1449	100%	100	94%	632	75%
Bihar	Munger **	90	8%	91%	86%	92%	98%	0	0%	583	95%	611	100%	284	96%	486	88%
Bihar	Muzaffarpur **	304	6%	91%	85%	89%	94%	0	0%	1311	89%	1450	98%	151	33%	1035	73%
Bihar	Nalanda **	119	7%	93%	88%	91%	97%	0	0%	820	91%	847	95%	176	95%	694	90%
Bihar	Nawada **	56	7%	94%	89%	92%	97%	1	0%	557	98%	564	99%	135	82%	431	78%
Bihar	Pashchim Champaran **	108	6%	92%	79%	87%	98%	2	0%	810	89%	1171	98%	507	92%	388	78%
Bihar	Patna	742	12%	89%	81%	90%	85%	2	0%	1841	85%	2129	98%	423	23%	1489	66%
Bihar	Purba Champaran **	80	3%	92%	86%	90%	97%	7	0%	1292	94%	1350	98%	230	34%	610	94%
Bihar	Purnia **	104	4%	90%	84%	91%	97%	0	0%	287	87%	349	96%	50	37%	154	73%
Bihar	Rohtas	68	5%	88%	81%	85%	92%	2	0%	800	87%	905	99%	383	63%	555	77%
Bihar	Saharsa **	46	3%	91%	77%	89%	95%	0	0%	621	88%	689	98%	634	90%	312	85%
Bihar	Samastipur **	299	8%	89%	80%	87%	96%	8	0%	1578	85%	1826	99%	113	77%	858	79%
Bihar	Saran **	94	6%	80%	61%	72%	93%	0	0%	730	93%	782	100%	375	48%	576	77%
Bihar	Sheikpura	42	9%	87%	87%	88%	96%	0	0%	150	100%	150	100%	103	64%	106	85%
Bihar	Sheohar	19	5%	71%	56%	87%	77%	0	0%	51	64%	143	90%	114	72%	57	97%
Bihar	Sitamarhi **	192	8%	78%	57%	74%	83%	3	0%	1014	77%	1381	99%	135	32%	554	72%
Bihar	Siwan	76	3%	89%	71%	89%	95%	0	0%	1126	87%	1289	100%	336	44%	499	79%

District-wise Performance of RNTCP (Contd.)

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Bihar	Supaul **	20	4019	51	356	9%	807	41	267	14	18%	52%	247	34	6%	259	68	20%
Bihar	Vaishali **	31	9200	75	962	10%	3250	106	855	28	37%	38%	1415	246	10%	734	294	26%
Chandigarh	Chandigarh	11	13937	328	1815	13%	2492	234	837	79	83%	65%	441	764	37%	450	281	25%
Chhatisgarh	Bastar *	15	6615	112	781	12%	1660	112	561	38	47%	46%	650	208	15%	241	111	17%
Chhatisgarh	Bilaspur-CG	23	11206	124	1391	12%	2693	119	1091	48	60%	54%	930	400	17%	269	190	15%
Chhatisgarh	Dantewada *	8	4057	124	569	14%	845	103	443	54	68%	62%	270	63	8%	69	55	11%
Chhatisgarh	Dhamtari	8	3505	110	494	14%	810	101	418	52	65%	66%	215	76	11%	99	77	16%
Chhatisgarh	Durg	32	16495	129	1611	10%	4071	128	1399	44	55%	47%	1591	845	22%	236	167	11%
Chhatisgarh	Janjgir	15	5933	99	622	10%	1562	104	587	39	49%	45%	731	126	9%	118	53	8%
Chhatisgarh	Jashpur *	8	1948	58	254	13%	529	63	210	25	31%	46%	249	20	4%	49	11	5%
Chhatisgarh	Kanker *	7	3945	133	508	13%	938	127	444	60	75%	58%	326	82	10%	85	49	10%
Chhatisgarh	Kawardha **	7	2672	100	306	11%	523	79	250	38	47%	60%	168	40	9%	65	40	14%
Chhatisgarh	Korba	12	6655	145	662	10%	1493	130	569	49	62%	47%	645	131	10%	148	61	10%
Chhatisgarh	Koriya **	7	2971	112	335	11%	710	107	242	36	45%	50%	242	102	17%	124	63	21%
Chhatisgarh	Mahasamund	10	4241	108	456	11%	1130	116	423	43	54%	44%	549	99	9%	59	25	6%
Chhatisgarh	Raigarh-CG **	14	4524	79	658	15%	1397	97	544	38	47%	43%	710	48	4%	95	43	7%
Chhatisgarh	Raipur	34	17484	128	2117	12%	4174	122	1698	50	62%	53%	1501	570	15%	404	260	13%
Chhatisgarh	Rajnandgaon	15	6628	114	946	14%	2020	139	809	56	69%	54%	693	237	14%	281	139	15%
Chhatisgarh	Surguja †	22	9560	107	990	10%	2725	122	782	35	44%	37%	1355	178	8%	399	114	13%
D & N Haveli	Dadra & Nagar Haveli †	3	1923	183	300	16%	443	169	152	58	73%	60%	101	91	26%	99	49	24%
Daman & Diu	Daman	1	1821	336	131	7%	187	138	44	32	41%	43%	58	24	19%	61	21	32%
Daman & Diu	Diu	1	773	368	41	5%	37	71	13	25	31%	57%	10	7	23%	7	2	13%
Delhi	BJRM Chest Clinic	5	4263	212	589	14%	1316	262	403	80	84%	62%	243	377	36%	279	175	30%
Delhi	BSA Chest Clinic	5	2521	125	413	16%	1148	229	284	57	60%	56%	219	367	42%	278	171	38%

District-wise Performance of RNTCP (Contd.)

State	District	No (%) of pediatric cases out of all New cases		3 month conversion rate of new smear positive patients[4]	Cure rate of new smear positive patients[5]	Success rate of new smear positive patients[5]	% smear positive patients living in the district placed on DOTS	No (%) of patients put on Non-DOTS treatment regimen		No (%) of NSP cases started RNTCP DOTS within 7 days of diagnosis		No (%) of NSP cases registered within one month of starting RNTCP DOTS treatment		No (%) of interviewed NSP cases who received DOT during IP as per guidelines		No (%) of cured NSP cases having end of treatment follow-up sputum done within 7 days of last dose	
Bihar	Supaul **	32	6%	79%	61%	87%	98%	0	0%	215	78%	274	100%	140	51%	236	55%
Bihar	Vaishali **	165	7%	87%	65%	89%	96%	0	0%	166	58%	208	100%	53	50%	120	47%
Chandigarh	Chandigarh	224	11%	92%	88%	90%	95%	35	3%	732	87%	831	99%	240	71%	589	88%
Chhatisgarh	Bastar *	84	6%	75%	51%	68%	85%	2	0%	483	86%	546	97%	119	34%	241	76%
Chhatisgarh	Bilaspur-CG	147	6%	92%	85%	88%	88%	2	0%	954	87%	1056	97%	290	58%	522	58%
Chhatisgarh	Dantewada *	25	3%	75%	72%	81%	88%	6	1%	341	77%	390	88%	142	30%	243	67%
Chhatisgarh	Dhamtari	17	2%	93%	86%	87%	96%	1	0%	380	91%	418	100%	53	67%	236	79%
Chhatisgarh	Durg	234	6%	92%	87%	87%	92%	16	1%	1250	89%	1381	99%	107	91%	771	65%
Chhatisgarh	Janjgir	45	3%	95%	92%	94%	74%	0	0%	506	89%	567	99%	71	60%	345	62%
Chhatisgarh	Jashpur *	5	1%	80%	70%	93%	90%	0	0%	172	82%	160	76%	140	67%	126	75%
Chhatisgarh	Kanker *	19	2%	90%	84%	88%	95%	2	0%	411	93%	444	100%	155	95%	272	80%
Chhatisgarh	Kawardha **	31	7%	88%	83%	84%	89%	5	2%	215	86%	250	100%	81	91%	188	87%
Chhatisgarh	Korba	60	4%	94%	89%	93%	95%	0	0%	523	92%	569	100%	265	94%	387	85%
Chhatisgarh	Koriya **	30	5%	85%	81%	86%	88%	0	0%	204	84%	241	100%	137	76%	205	86%
Chhatisgarh	Mahasamund	87	8%	90%	84%	85%	96%	1	0%	384	91%	420	99%	64	80%	253	76%
Chhatisgarh	Raigarh-CG **	39	3%	85%	80%	88%	85%	0	0%	486	89%	544	100%	193	100%	444	70%
Chhatisgarh	Raipur	189	5%	90%	85%	87%	97%	2	0%	1577	93%	1697	100%	317	64%	924	61%
Chhatisgarh	Rajnandgaon	180	10%	85%	83%	86%	96%	0	0%	750	93%	809	100%	183	75%	562	85%
Chhatisgarh	Surguja †	181	8%	94%	89%	90%	89%	3	0%	708	91%	778	100%	130	17%	663	89%
D & N Haveli	Dadra & Nagar Haveli †	25	7%	92%	87%	87%	86%	0	0%	150	99%	152	100%	79	100%	108	95%
Daman & Diu	Daman	6	5%	94%	66%	86%	74%	0	0%	44	100%	44	100%	29	100%	49	94%
Daman & Diu	Diu	8	27%	80%	84%	84%	50%	0	0%	13	100%	13	100%	13	100%	16	84%
Delhi	BJRM Chest Clinic	135	13%	92%	92%	92%	92%	1	0%	379	94%	403	100%	244	100%	372	100%
Delhi	BSA Chest Clinic	126	14%	91%	89%	90%	94%	0	0%	263	93%	284	100%	284	100%	179	77%

District-wise Performance of RNTCP (Contd.)

State	District	Population (in lakh) covered by RNTCP[1]	No. of suspects examined	Suspects examined per lakh population per quarter	No of Smear positive patients diagnosed[2]	% of S+ve cases among suspects	Total patients registered for treatment[3]	Annual total case detection rate	New smear positive patients registered for treatment	Annual new smear positive case detection rate (%)		% new sputum positive out of total new pulmonary cases	No of new smear negative cases registered for treatment	No of new EP cases registered for treament	% of new EP cases out of all new cases	No of re-treatment cases registered for treatment	No of smear positive retreatment cases registered for treatment	% of smear positive retreatment cases out of all smear positive cases
Delhi	CD Chest Clinic	5	3521	175	450	13%	940	187	208	41	44%	46%	247	337	43%	148	83	29%
Delhi	DDU Chest Clinic	19	11000	144	1920	17%	4986	261	1330	70	73%	61%	859	1704	44%	1089	626	32%
Delhi	GTB Chest Clinic	6	8931	370	1440	16%	2044	339	583	97	102%	66%	303	643	42%	515	320	35%
Delhi	Gulabi Bagh	10	6578	164	943	14%	1722	171	521	52	55%	63%	307	553	40%	324	203	28%
Delhi	Hedgewar C Clinic	5	3644	181	581	16%	1247	248	355	71	74%	67%	178	430	45%	284	166	32%
Delhi	Jhandewalan	5	4191	209	736	18%	1676	334	446	89	93%	66%	229	498	42%	483	219	33%
Delhi	Karawal Nagar	6	4424	184	936	21%	2443	405	668	111	117%	61%	426	791	42%	558	304	31%
Delhi	Kingsway	5	4398	219	872	20%	1858	370	568	113	119%	60%	375	488	34%	419	278	33%
Delhi	LN Chest Clinic	5	5824	290	774	13%	986	196	294	59	62%	77%	88	349	48%	255	147	33%
Delhi	LRS	10	6935	173	871	13%	1874	187	581	58	61%	67%	284	579	40%	423	273	32%
Delhi	MNCH Chest Clinic	10	5875	146	891	15%	3559	354	971	97	102%	61%	613	1085	41%	890	503	34%
Delhi	Moti Nagar	6	6617	274	969	15%	2029	337	481	80	84%	58%	350	744	47%	447	208	30%
Delhi	Narela	6	5288	219	823	16%	1417	235	481	80	84%	67%	238	377	34%	318	213	31%
Delhi	NDMC	8	14378	447	2295	16%	1737	216	447	56	59%	65%	242	652	49%	394	225	33%
Delhi	Nehru Nagar	10	9399	234	1593	17%	3659	364	1074	107	113%	64%	605	1140	40%	813	533	33%
Delhi	Patparganj	7	8812	313	1559	18%	2690	383	821	117	123%	69%	371	905	43%	593	429	34%
Delhi	RK Mission	6	6412	266	995	16%	1940	322	557	92	97%	65%	306	633	42%	440	300	35%
Delhi	RTRM Chest Clinic	10	7579	189	1118	15%	2019	201	692	69	73%	70%	296	519	34%	510	318	31%
Delhi	SGM Chest Clinic	6	8855	367	1299	15%	2833	470	718	119	125%	55%	590	845	39%	680	376	34%
Delhi	Shahadra	5	7662	381	1442	19%	2173	433	628	125	132%	64%	349	720	42%	472	296	32%
Delhi	SPM Marg	5	3289	164	621	19%	1106	220	348	69	73%	71%	144	347	41%	267	180	34%
Delhi	SPMH Chest Clinic	5	4429	220	730	16%	2103	419	541	108	113%	63%	312	770	47%	480	243	31%

District-wise Performance of RNTCP (Contd.)

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Delhi	CD Chest Clinic	126	16%	87%	85%	85%	88%	3	1%	177	85%	208	100%	76	100%	134	97%
Delhi	DDU Chest Clinic	535	14%	91%	85%	85%	92%	14	1%	1180	89%	1330	100%	452	92%	1069	100%
Delhi	GTB Chest Clinic	263	17%	88%	84%	84%	89%	34	4%	531	91%	583	100%	99	100%	459	92%
Delhi	Gulabi Bagh	197	14%	91%	84%	84%	77%	41	5%	495	95%	521	100%	130	92%	449	100%
Delhi	Hedgewar C Clinic	112	12%	88%	82%	83%	94%	6	1%	329	93%	355	100%	152	33%	310	89%
Delhi	Jhandewalan	148	12%	86%	85%	85%	89%	25	4%	370	83%	446	100%	188	100%	367	100%
Delhi	Karawal Nagar	342	18%	86%	86%	86%	95%	10	1%	628	94%	668	100%	154	97%	689	98%
Delhi	Kingsway	186	13%	92%	86%	86%	88%	5	1%	533	94%	556	98%	503	95%	452	95%
Delhi	LN Chest Clinic	102	14%	87%	87%	87%	86%	2	0%	274	93%	294	100%	115	100%	263	100%
Delhi	LRS	159	11%	89%	88%	89%	97%	0	0%	519	89%	581	100%	234	100%	554	100%
Delhi	MNCH Chest Clinic	382	14%	92%	87%	89%	94%	0	0%	789	81%	971	100%	504	99%	634	100%
Delhi	Moti Nagar	243	15%	91%	83%	83%	87%	19	2%	466	97%	481	100%	130	98%	375	99%
Delhi	Narela	171	16%	88%	88%	88%	80%	56	8%	465	97%	469	98%	108	97%	395	99%
Delhi	NDMC	161	12%	92%	91%	91%	93%	18	2%	378	85%	474	100%	127	57%	341	100%
Delhi	Nehru Nagar	365	13%	90%	85%	85%	93%	30	2%	936	87%	1074	100%	650	94%	911	98%
Delhi	Patparganj	302	14%	92%	89%	89%	90%	26	2%	683	83%	821	100%	390	94%	731	100%
Delhi	RK Mission	236	16%	90%	88%	88%	95%	11	1%	474	85%	557	100%	440	100%	537	100%
Delhi	RTRM Chest Clinic	178	12%	89%	90%	91%	95%	4	0%	679	99%	692	100%	692	100%	506	100%
Delhi	SGM Chest Clinic	306	14%	92%	87%	88%	94%	0	0%	662	92%	718	100%	281	100%	767	100%
Delhi	Shahadra	283	17%	86%	84%	84%	89%	47	5%	626	100%	627	100%	182	99%	541	100%
Delhi	SPM Marg	114	14%	87%	86%	86%	86%	0	0%	337	97%	348	100%	118	93%	282	97%
Delhi	SPMH Chest Clinic	289	18%	92%	87%	88%	92%	0	0%	435	80%	541	100%	70	88%	358	98%

District-wise Performance of RNTCP (Contd.)

State	District	Population (in lakh) covered by RNTCP[1]	No. of suspects examined	Suspects examined per lakh population per quarter	No of Smear positive patients diagnosed[2]	% of S+ve cases among suspects	Total patients registered for treatment[3]	Annual total case detection rate	New smear positive patients registered for treatment	Annual new smear positive case detection rate (%)		% new sputum positive out of total new pulmonary cases	No of new smear negative cases registered for treatment	No of new EP cases registered for treament	% of new EP cases out of all new cases	No of re-treatment cases registered for treatment	No of smear positive retreatment cases registered for treatment	% of smear positive retreatment cases out of all smear positive cases
Goa	North Goa	9	8547	233	642	8%	1176	128	358	39	49%	61%	233	370	39%	215	129	26%
Goa	South Goa	7	3439	121	434	13%	820	115	283	40	50%	57%	216	155	24%	166	109	28%
Gujarat	Ahmadabad	15	11020	181	1739	16%	1920	126	860	56	70%	79%	223	204	16%	632	463	35%
Gujarat	AMC	50	35058	177	6085	17%	9128	184	3011	61	76%	75%	991	2186	35%	2938	1958	39%
Gujarat	Amreli	16	10948	176	1412	13%	1663	107	884	57	71%	84%	170	147	12%	462	369	29%
Gujarat	Anand	21	12973	157	2440	19%	3163	153	1350	65	82%	73%	495	318	15%	1000	788	37%
Gujarat	Banas Kantha	28	15612	140	3225	21%	4084	146	1689	61	76%	71%	699	272	10%	1424	997	37%
Gujarat	Bharuch	21	14169	169	2203	16%	2687	128	1499	71	89%	78%	418	209	10%	561	423	22%
Gujarat	Bhavnagar	28	14965	136	2386	16%	3290	120	1553	56	71%	80%	377	460	19%	900	676	30%
Gujarat	Chhota Udepur	10	5640	139	953	17%	1317	130	697	69	86%	77%	207	96	10%	316	245	26%
Gujarat	Dahod *	18	18622	255	2870	15%	3555	195	1590	87	109%	79%	427	244	11%	1294	1047	40%
Gujarat	Gandhinagar	15	9456	159	1352	14%	1937	130	846	57	71%	76%	270	253	18%	565	371	30%
Gujarat	Jamnagar	21	13547	159	1860	14%	2550	120	1198	56	70%	87%	178	428	24%	746	566	32%
Gujarat	Junagadh	27	17256	158	2157	13%	3155	116	1534	56	70%	77%	466	282	12%	873	638	29%
Gujarat	Kachchh	17	10392	153	1549	15%	1909	112	918	54	67%	84%	180	175	14%	630	481	34%
Gujarat	Kheda	23	14271	158	2745	19%	2983	132	1519	67	84%	82%	331	212	10%	921	735	33%
Gujarat	Mahesana	20	14513	177	2151	15%	2477	121	1237	60	75%	79%	320	227	13%	693	527	30%
Gujarat	Navsari	14	8313	152	1385	17%	1747	127	883	64	81%	79%	233	207	16%	424	304	26%
Gujarat	Panch Mahals	23	15886	176	3664	23%	4196	186	2025	90	112%	81%	465	233	9%	1473	1274	39%
Gujarat	Patan	13	9728	185	1427	15%	1698	129	753	57	71%	74%	258	156	13%	531	400	35%
Gujarat	Pobandar	6	3892	161	425	11%	789	130	347	57	72%	59%	237	66	10%	139	82	19%
Gujarat	Rajkot	35	22650	161	3061	14%	4093	116	1877	53	67%	79%	497	637	21%	1082	825	31%
Gujarat	Sabar Kantha	23	15931	171	3062	19%	3990	172	1453	63	78%	59%	1023	269	10%	1245	848	37%
Gujarat	Surat	12	12515	259	2451	20%	2163	179	1169	97	121%	83%	241	274	16%	479	349	23%
Gujarat	Surat Municipal Corp	32	23513	184	3016	13%	5473	171	1976	62	77%	78%	544	1444	36%	1509	865	30%

District-wise Performance of RNTCP (Contd.)

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Goa	North Goa	65	7%	93%	83%	83%	88%	5	1%	286	80%	331	92%	30	100%	267	89%
Goa	South Goa	103	16%	87%	74%	78%	78%	40	10%	214	76%	240	85%	68	99%	165	75%
Gujarat	Ahmadabad	57	4%	92%	85%	85%	93%	7	1%	707	82%	854	99%	625	86%	544	77%
Gujarat	AMC	730	12%	90%	86%	86%	90%	120	2%	2854	95%	3010	100%	711	97%	2351	96%
Gujarat	Amreli	60	5%	92%	88%	89%	97%	5	0%	837	95%	875	99%	253	91%	700	91%
Gujarat	Anand	118	5%	92%	87%	88%	94%	11	1%	1192	88%	1312	97%	324	96%	1065	88%
Gujarat	Banas Kantha	129	5%	92%	88%	88%	93%	19	1%	1506	89%	1649	98%	481	79%	1246	84%
Gujarat	Bharuch	59	3%	94%	91%	91%	96%	2	0%	1309	87%	1495	100%	520	91%	1130	86%
Gujarat	Bhavnagar	206	9%	91%	88%	88%	94%	24	1%	1428	92%	1537	99%	422	77%	1130	85%
Gujarat	Chhota Udepur	42	4%	92%	90%	91%	94%	11	1%	561	80%	696	100%	221	89%	514	81%
Gujarat	Dahod *	161	7%	95%	87%	88%	94%	74	3%	1453	91%	1586	100%	1319	94%	1227	88%
Gujarat	Gandhinagar	82	6%	93%	90%	90%	96%	1	0%	792	94%	829	98%	259	97%	720	95%
Gujarat	Jamnagar	125	7%	92%	87%	87%	95%	12	1%	1161	97%	1147	96%	251	86%	933	89%
Gujarat	Junagadh	127	6%	91%	86%	86%	95%	9	0%	1471	96%	1533	100%	293	97%	1141	90%
Gujarat	Kachchh	35	3%	88%	84%	84%	96%	1	0%	843	92%	902	98%	401	82%	646	86%
Gujarat	Kheda	69	3%	91%	86%	86%	92%	29	1%	1296	85%	1433	94%	197	89%	1107	87%
Gujarat	Mahesana	68	4%	92%	86%	87%	96%	21	1%	1113	90%	1225	99%	305	95%	925	91%
Gujarat	Navsari	77	6%	90%	86%	86%	90%	25	2%	825	93%	878	99%	63	85%	651	94%
Gujarat	Panch Mahals	135	5%	95%	89%	89%	94%	13	0%	1820	90%	2025	100%	435	82%	1553	82%
Gujarat	Patan	41	4%	90%	86%	86%	89%	33	3%	642	85%	713	95%	176	93%	547	83%
Gujarat	Pobandar	52	8%	95%	91%	91%	98%	0	0%	340	98%	345	99%	299	98%	292	95%
Gujarat	Rajkot	195	6%	88%	81%	82%	95%	29	1%	1743	93%	1870	100%	377	94%	1376	86%
Gujarat	Sabar Kantha	157	6%	91%	87%	88%	94%	15	1%	1172	81%	1388	96%	512	92%	1065	81%
Gujarat	Surat	72	4%	92%	87%	88%	94%	28	2%	1030	88%	1158	99%	349	91%	694	85%
Gujarat	Surat Municipal Corp	408	10%	90%	87%	87%	92%	43	2%	1823	92%	1976	100%	207	96%	1373	96%

District-wise Performance of RNTCP (Contd.)

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Gujarat	Surendranagar	17	11355	168	1995	18%	1989	118	955	57	71%	81%	221	259	18%	554	451	32%
Gujarat	The Dangs *	2	1755	211	160	9%	207	99	122	59	73%	87%	18	14	9%	53	36	23%
Gujarat	Vadodara	15	10295	170	1705	17%	1985	131	940	62	78%	75%	320	169	12%	556	415	31%
Gujarat	Vadodara Corp	15	9447	154	2033	22%	2228	145	894	58	73%	77%	272	359	23%	684	458	34%
Gujarat	Valsad *	16	9797	156	1225	13%	1756	112	917	58	73%	80%	236	213	16%	389	229	20%
Gujarat	Vyara(Surat)	12	4813	103	909	19%	1233	106	679	58	73%	77%	208	89	9%	257	211	24%
Haryana	Ambala	11	9696	212	1060	11%	1418	124	525	46	48%	67%	253	282	27%	358	270	34%
Haryana	Bhiwani	16	8819	137	1747	20%	2159	134	985	61	65%	79%	261	190	13%	723	609	38%
Haryana	Faridabad	22	12504	139	1625	13%	3644	162	1074	48	50%	54%	912	874	31%	784	550	34%
Haryana	Fatehabad	9	4938	136	879	18%	1192	131	580	64	67%	74%	206	99	11%	307	244	30%
Haryana	Gurgaon	11	7825	175	1188	15%	1717	154	655	59	62%	78%	185	431	34%	446	362	36%
Haryana	Hisar	17	10104	146	2049	20%	2211	128	916	53	56%	69%	402	242	16%	651	542	37%
Haryana	Jhajjar	10	4332	108	734	17%	1664	166	624	62	66%	62%	380	237	19%	423	366	37%
Haryana	Jind	13	8290	154	1236	15%	1926	144	759	57	60%	73%	281	294	22%	590	495	39%
Haryana	Kaithal **	11	4747	111	791	17%	1400	131	589	55	58%	74%	210	247	23%	348	284	33%
Haryana	Karnal	14	9144	159	1482	16%	2250	157	847	59	62%	64%	486	337	20%	580	424	33%
Haryana	Kurukshetra	9	6458	173	915	14%	1233	132	510	55	57%	70%	222	194	21%	289	227	31%
Haryana	Mahendragarh	9	5735	157	819	14%	1113	122	423	46	49%	68%	201	162	21%	327	247	37%
Haryana	Mewat**	10	5086	130	1049	21%	1535	156	581	59	62%	69%	255	148	15%	542	439	43%
Haryana	Panchkula	5	4502	213	538	12%	974	184	328	62	65%	66%	166	258	34%	220	128	28%
Haryana	Panipat	11	6523	150	888	14%	1998	183	595	55	57%	49%	623	268	18%	512	262	31%
Haryana	Rewari	9	4703	136	723	15%	1263	146	372	43	45%	56%	290	215	24%	377	293	44%
Haryana	Rohtak	11	17562	414	2375	14%	2055	194	762	72	76%	70%	323	436	29%	534	411	35%
Haryana	Sirsa	13	6997	140	1258	18%	1682	134	759	61	64%	81%	173	227	20%	523	416	35%
Haryana	Sonipat	14	7956	138	1030	13%	2553	177	669	46	49%	44%	854	362	19%	606	356	35%

District-wise Performance of RNTCP (Contd.)

State	District	No (%) of pediatric cases out of all New cases		3 month conversion rate of new smear positive patients[4]	Cure rate of new smear positive patients[5]	Success rate of new smear positive patients[5]	% smear positive patients living in the district placed on DOTS	No (%) of patients put on Non-DOTS treatment regimen		No (%) of NSP cases started RNTCP DOTS within 7 days of diagnosis		No (%) of NSP cases registered within one month of starting RNTCP DOTS treatment		No (%) of interviewed NSP cases who received DOT during IP as per guidelines		No (%) of cured NSP cases having end of treatment follow-up sputum done within 7 days of last dose	
Gujarat	Surendranagar	67	5%	90%	88%	88%	93%	36	2%	877	92%	951	100%	232	81%	709	85%
Gujarat	The Dangs *	4	3%	91%	92%	93%	96%	4	3%	115	94%	122	100%	84	100%	96	82%
Gujarat	Vadodara	83	6%	93%	88%	88%	95%	12	1%	883	94%	919	98%	146	84%	780	90%
Gujarat	Vadodara Corp	123	8%	90%	86%	86%	92%	2	0%	806	90%	894	100%	165	89%	716	91%
Gujarat	Valsad *	57	4%	92%	88%	88%	93%	32	3%	827	90%	917	100%	100	76%	625	81%
Gujarat	Vyara(Surat)	23	2%	91%	84%	85%	92%	13	1%	574	85%	670	99%	198	88%	548	73%
Haryana	Ambala	51	5%	93%	87%	87%	96%	4	0%	483	92%	517	98%	210	81%	461	91%
Haryana	Bhiwani	86	6%	88%	85%	85%	93%	6	0%	682	80%	854	87%	217	87%	590	82%
Haryana	Faridabad	204	7%	89%	85%	85%	96%	0	0%	968	89%	1006	93%	121	85%	929	92%
Haryana	Fatehabad	54	6%	89%	83%	86%	97%	10	1%	544	94%	563	97%	216	91%	395	91%
Haryana	Gurgaon	108	8%	88%	84%	85%	87%	0	0%	516	79%	587	90%	47	92%	530	93%
Haryana	Hisar	67	4%	90%	85%	85%	93%	0	0%	823	90%	864	94%	186	91%	697	89%
Haryana	Jhajjar	76	6%	90%	84%	84%	98%	0	0%	583	93%	609	98%	87	89%	475	89%
Haryana	Jind	82	6%	90%	86%	86%	93%	12	1%	700	92%	744	98%	146	74%	636	92%
Haryana	Kaithal **	78	7%	89%	86%	87%	97%	0	0%	526	89%	589	100%	41	71%	449	89%
Haryana	Karnal	93	6%	92%	85%	86%	94%	16	1%	632	95%	833	98%	573	97%	714	99%
Haryana	Kurukshetra	57	6%	92%	87%	88%	94%	14	2%	490	96%	504	100%	118	94%	368	91%
Haryana	Mahendragarh	60	8%	90%	86%	86%	92%	2	0%	258	95%	399	94%	133	97%	382	91%
Haryana	Mewat**	56	6%	89%	85%	85%	91%	0	0%	527	91%	581	100%	33	8%	327	77%
Haryana	Panchkula	70	9%	90%	86%	86%	95%	0	0%	312	95%	316	96%	52	80%	258	93%
Haryana	Panipat	106	7%	90%	85%	85%	95%	0	0%	444	91%	588	99%	89	82%	416	87%
Haryana	Rewari	46	5%	82%	73%	77%	90%	0	0%	258	86%	325	87%	177	86%	224	79%
Haryana	Rohtak	97	6%	89%	86%	86%	96%	0	0%	640	84%	679	89%	167	97%	509	88%
Haryana	Sirsa	71	6%	85%	76%	78%	93%	6	1%	377	88%	669	88%	320	87%	548	90%
Haryana	Sonipat	72	4%	92%	88%	90%	98%	0	0%	631	94%	669	100%	155	91%	610	93%

District-wise Performance of RNTCP (Contd.)

State	District	Population (in lakh) covered by RNTCP[1]	No. of suspects examined	Suspects examined per lakh population per quarter	No of Smear positive patients diagnosed[2]	% of S+ve cases among suspects	Total patients registered for treatment[3]	Annual total case detection rate	New smear positive patients registered for treatment	Annual new smear positive case detection rate (%)		% new sputum positive out of total new pulmonary cases	No of new smear negative cases registered for treatment	No of new EP cases registered for treament	% of new EP cases out of all new cases	No of re-treatment cases registered for treatment	No of smear positive retreatment cases registered for treatment	% of smear positive retreatment cases out of all smear positive cases
Haryana	Yamunanagar	11	6101	138	785	13%	1361	123	510	46	48%	65%	277	212	21%	362	239	32%
Himachal Pradesh	Bilaspur-HP	4	3525	240	487	14%	772	210	327	89	94%	63%	189	51	9%	204	171	34%
Himachal Pradesh	Chamba	5	3543	178	631	18%	1130	228	414	83	88%	73%	156	238	29%	322	218	34%
Himachal Pradesh	Hamirpur-HP **	4	4768	268	460	10%	840	189	300	68	71%	61%	193	193	28%	153	107	26%
Himachal Pradesh	Kangra	14	9823	170	1627	17%	2585	179	938	65	68%	66%	475	676	32%	485	372	28%
Himachal Pradesh	Kinnaur *	1	649	179	98	15%	210	232	85	94	99%	83%	18	47	30%	55	32	27%
Himachal Pradesh	Kullu	4	5241	320	782	15%	1395	341	495	121	127%	67%	248	332	31%	320	208	30%
Himachal Pradesh	Lahul & Spiti *	0	641	448	31	5%	98	274	20	56	59%	43%	26	28	38%	24	15	43%
Himachal Pradesh	Mandi	10	8743	225	1098	13%	2078	214	744	77	81%	65%	404	381	25%	549	458	38%
Himachal Pradesh	Shimla	8	8875	285	1182	13%	1691	217	607	78	82%	70%	266	468	34%	332	215	26%
Himachal Pradesh	Sirmaur	5	4931	250	598	12%	1030	208	442	89	94%	76%	140	224	28%	224	125	22%
Himachal Pradesh	Solan	5	7765	361	880	11%	1181	219	463	86	91%	61%	301	197	20%	219	134	22%
Himachal Pradesh	Una	5	3423	177	385	11%	608	126	256	53	56%	67%	125	86	18%	141	105	29%
Jammu & Kashmir	Anantanag	14	8434	147	631	7%	870	61	572	40	42%	90%	67	159	20%	72	65	10%
Jammu & Kashmir	Badgam	7	5183	178	404	8%	576	79	410	56	59%	93%	32	103	19%	31	28	6%
Jammu & Kashmir	Baramula	14	7043	123	579	8%	858	60	490	34	36%	82%	106	160	21%	102	76	13%
Jammu & Kashmir	Doda	8	4108	121	482	12%	944	111	313	37	39%	64%	179	264	35%	187	156	33%
Jammu & Kashmir	Jammu	19	12573	163	1826	15%	2637	137	957	50	52%	66%	493	564	28%	622	514	35%
Jammu & Kashmir	Kargil *	1	1215	215	62	5%	168	119	44	31	33%	41%	64	31	22%	27	20	31%
Jammu & Kashmir	Kathua	7	4138	155	548	13%	1066	160	410	61	65%	60%	272	143	17%	241	170	29%
Jammu & Kashmir	Kupwara	8	5558	177	394	7%	736	94	386	49	52%	75%	131	160	24%	59	50	11%
Jammu & Kashmir	Leh *	1	1421	246	56	4%	193	134	39	27	28%	45%	47	88	51%	19	16	29%
Jammu & Kashmir	Poonch	5	2489	136	251	10%	572	125	214	47	49%	59%	149	137	27%	72	35	14%
Jammu & Kashmir	Pulwama	8	4045	130	379	9%	678	87	390	50	53%	75%	130	124	19%	34	30	7%
Jammu & Kashmir	Rajouri	6	3600	153	368	10%	772	131	280	48	50%	68%	132	253	38%	107	80	22%

District-wise Performance of RNTCP (Contd.)

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Haryana	Yamunanagar	45	5%	90%	86%	86%	95%	13	2%	212	84%	478	94%	222	66%	484	96%
Himachal Pradesh	Bilaspur-HP	20	4%	92%	86%	88%	97%	7	2%	309	94%	325	99%	69	66%	225	87%
Himachal Pradesh	Chamba	34	4%	95%	84%	87%	95%	21	3%	390	93%	513	97%	414	88%	292	86%
Himachal Pradesh	Hamirpur-HP **	11	2%	94%	93%	93%	89%	12	3%	285	95%	298	99%	203	68%	251	92%
Himachal Pradesh	Kangra	90	4%	91%	87%	87%	93%	16	1%	930	96%	934	97%	521	67%	746	92%
Himachal Pradesh	Kinnaur *	10	6%	88%	93%	96%	91%	1	1%	64	79%	77	96%	39	100%	57	85%
Himachal Pradesh	Kullu	72	7%	93%	89%	90%	86%	2	0%	467	95%	490	99%	233	90%	357	90%
Himachal Pradesh	Lahul & Spiti *	5	7%	95%	95%	95%	93%	2	7%	21	95%	21	95%	21	95%	19	95%
Himachal Pradesh	Mandi	32	2%	93%	87%	89%	92%	8	1%	700	94%	735	99%	221	87%	679	97%
Himachal Pradesh	Shimla	56	4%	95%	86%	91%	81%	15	2%	541	89%	513	86%	580	96%	474	83%
Himachal Pradesh	Sirmaur	54	7%	90%	86%	89%	93%	19	3%	428	97%	433	98%	65	72%	336	85%
Himachal Pradesh	Solan	76	8%	93%	90%	90%	90%	20	3%	455	98%	460	99%	292	98%	420	97%
Himachal Pradesh	Una	8	2%	89%	92%	92%	93%	4	1%	245	96%	206	80%	134	94%	249	97%
Jammu & Kashmir	Anantanag	60	8%	93%	87%	88%	99%	1	0%	572	100%	572	100%	283	100%	338	100%
Jammu & Kashmir	Badgam	25	5%	95%	84%	86%	100%	0	0%	281	84%	296	75%	296	75%	268	74%
Jammu & Kashmir	Baramula	63	8%	95%	94%	94%	100%	0	0%	213	51%	121	29%	121	29%	138	31%
Jammu & Kashmir	Doda	46	6%	87%	82%	86%	94%	3	1%	311	99%	313	100%	288	92%	280	82%
Jammu & Kashmir	Jammu	115	6%	89%	89%	89%	98%	13	1%	964	100%	955	99%	750	100%	766	97%
Jammu & Kashmir	Kargil *	14	10%	85%	85%	85%	100%	0	0%	12	100%	12	100%	12	100%	9	100%
Jammu & Kashmir	Kathua	34	4%	90%	80%	85%	97%	4	1%	380	93%	387	94%	227	100%	326	86%
Jammu & Kashmir	Kupwara	34	5%	94%	94%	94%	100%	0	0%	339	86%	394	100%	394	100%	360	95%
Jammu & Kashmir	Leh *	4	2%	83%	59%	61%	100%	0	0%	37	100%	37	100%	37	100%	32	94%
Jammu & Kashmir	Poonch	20	4%	93%	83%	86%	100%	0	0%	214	100%	214	100%	214	100%	154	87%
Jammu & Kashmir	Pulwama	29	5%	93%	92%	92%	100%	0	0%	371	100%	371	100%	241	100%	320	92%
Jammu & Kashmir	Rajouri	40	6%	88%	88%	89%	93%	0	0%	267	95%	270	96%	184	91%	183	90%

District-wise Performance of RNTCP (Contd.)

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Jammu & Kashmir	Srinagar	15	7148	117	809	11%	1305	86	708	47	49%	87%	104	396	33%	97	78	10%
Jammu & Kashmir	Udhampur	9	5957	164	646	11%	1146	126	430	47	50%	68%	198	280	31%	234	201	32%
Jharkhand	Bokaro	20	9809	124	1348	14%	2746	139	1086	55	73%	53%	948	321	14%	391	182	14%
Jharkhand	Chatra **	9	2998	85	523	17%	906	103	484	55	73%	61%	313	24	3%	85	50	9%
Jharkhand	Deoghar **	13	6110	118	1001	16%	1325	102	723	56	74%	70%	310	97	9%	195	145	17%
Jharkhand	Dhanbad	27	12349	116	1895	15%	3230	121	1530	57	76%	61%	977	173	6%	550	241	14%
Jharkhand	Dumka **	12	6775	138	1176	17%	2730	222	917	75	99%	48%	1006	50	3%	757	202	18%
Jharkhand	Garhwa	12	5765	125	815	14%	1972	171	715	62	83%	46%	832	100	6%	325	114	14%
Jharkhand	Giridih **	21	7993	94	1362	17%	2002	94	1025	48	64%	65%	555	103	6%	319	252	20%
Jharkhand	Godda **	12	3582	77	557	16%	959	82	417	36	48%	51%	400	15	2%	127	74	15%
Jharkhand	Gumla †	9	4129	112	560	14%	821	89	447	49	65%	66%	235	29	4%	110	57	11%
Jharkhand	Hazaribagh **	25	14106	139	1818	13%	3194	126	1610	63	85%	63%	958	216	8%	403	206	11%
Jharkhand	Jamtara **	7	3674	126	580	16%	901	124	456	63	84%	70%	196	33	5%	216	102	18%
Jharkhand	Kodarma **	6	2276	102	251	11%	399	72	198	36	47%	66%	104	23	7%	58	23	10%
Jharkhand	Lathehar **	6	2833	109	492	17%	925	143	424	65	87%	56%	330	63	8%	106	81	16%
Jharkhand	Lohardaga *	4	1838	113	211	11%	429	106	173	43	57%	62%	108	73	21%	75	37	18%
Jharkhand	Pakaur **	8	3590	115	605	17%	939	120	458	59	78%	63%	272	21	3%	188	84	15%
Jharkhand	Palamu **	17	11253	167	1442	13%	2832	168	1171	69	93%	51%	1138	255	10%	265	195	14%
Jharkhand	Pashchimi Singhbhum *	15	4561	78	1134	25%	1993	137	928	64	85%	54%	784	122	7%	152	77	8%
Jharkhand	Purbi Singhbhum †	22	9137	104	1734	19%	2993	136	1272	58	77%	61%	811	289	12%	602	289	19%
Jharkhand	Ranchi †	31	13693	110	2216	16%	4092	132	1594	51	68%	58%	1160	698	20%	640	291	15%
Jharkhand	Sahibganj **	10	4484	108	525	12%	1409	136	405	39	52%	35%	745	40	3%	177	60	13%
Jharkhand	Saraikela-Kharsawan **	9	4299	124	531	12%	1043	120	504	58	78%	56%	394	65	7%	78	48	9%
Jharkhand	Simdega **	6	2153	93	334	16%	555	96	284	49	65%	67%	143	53	11%	74	57	17%

District-wise Performance of RNTCP (Contd.)

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Jammu & Kashmir	Srinagar	68	6%	93%	91%	91%	98%	0	0%	708	100%	708	100%	708	100%	484	91%
Jammu & Kashmir	Udhampur	36	4%	90%	86%	89%	95%	0	0%	406	94%	430	100%	269	91%	283	90%
Jharkhand	Bokaro	45	2%	92%	86%	89%	91%	6	0%	1064	98%	1085	100%	420	77%	741	66%
Jharkhand	Chatra **	21	3%	88%	85%	85%	98%	0	0%	396	84%	470	100%	67	64%	304	77%
Jharkhand	Deoghar **	73	6%	95%	87%	90%	98%	1	0%	630	87%	723	100%	438	72%	399	68%
Jharkhand	Dhanbad	206	8%	92%	85%	87%	95%	0	0%	1298	85%	1506	98%	423	83%	803	70%
Jharkhand	Dumka **	51	3%	93%	90%	92%	95%	2	0%	779	85%	917	100%	369	74%	581	67%
Jharkhand	Garhwa	128	8%	92%	87%	92%	100%	0	0%	638	89%	715	100%	59	84%	371	68%
Jharkhand	Giridih **	95	6%	91%	80%	92%	95%	0	0%	912	89%	1025	100%	545	78%	551	67%
Jharkhand	Godda **	38	5%	69%	61%	91%	92%	0	0%	266	59%	388	94%	165	87%	118	40%
Jharkhand	Gumla †	34	5%	94%	91%	93%	88%	2	0%	379	85%	447	100%	37	24%	309	79%
Jharkhand	Hazaribagh **	212	8%	85%	73%	92%	98%	0	0%	1124	93%	1610	100%	59	100%	742	67%
Jharkhand	Jamtara **	24	4%	93%	88%	90%	97%	0	0%	401	88%	456	100%	155	82%	305	78%
Jharkhand	Kodarma **	7	2%	66%	48%	55%	94%	0	0%	184	93%	192	97%	89	60%	39	59%
Jharkhand	Lathehar **	74	9%	91%	88%	89%	98%	0	0%	353	83%	421	99%	170	84%	288	76%
Jharkhand	Lohardaga *	34	10%	88%	88%	88%	99%	0	0%	124	72%	171	99%	64	81%	125	79%
Jharkhand	Pakaur **	16	2%	86%	81%	82%	82%	1	0%	283	62%	458	100%	30	86%	162	51%
Jharkhand	Palamu **	234	9%	95%	92%	93%	100%	0	0%	1092	93%	1171	100%	211	81%	884	82%
Jharkhand	Pashchimi Singhbhum *	40	2%	85%	76%	87%	83%	0	0%	630	68%	898	97%	45	57%	165	28%
Jharkhand	Purbi Singhbhum †	124	5%	93%	86%	89%	97%	4	0%	1081	85%	1254	99%	214	92%	1037	90%
Jharkhand	Ranchi †	417	12%	89%	85%	87%	89%	8	0%	1366	86%	1594	100%	111	48%	1037	76%
Jharkhand	Sahibganj **	117	9%	79%	67%	86%	79%	0	0%	148	74%	398	98%	25	57%	166	58%
Jharkhand	Saraikela-Kharsawan **	41	4%	93%	87%	90%	92%	0	0%	425	84%	503	100%	266	81%	315	73%
Jharkhand	Simdega **	17	4%	85%	84%	85%	95%	1	0%	238	84%	278	98%	47	59%	124	53%

District-wise Performance of RNTCP (Contd.)

State	District	Population (in lakh) covered by RNTCP[1]	No. of suspects examined	Suspects examined per lakh population per quarter	No of Smear positive patients diagnosed[2]	% of S+ve cases among suspects	Total patients registered for treatment[3]	Annual total case detection rate	New smear positive patients registered for treatment	Annual new smear positive case detection rate (%)		% new sputum positive out of total new pulmonary cases	No of new smear negative cases registered for treatment	No of new EP cases registered for treatment	% of new EP cases out of all new cases	No of re-treatment cases registered for treatment	No of smear positive retreatment cases registered for treatment	% of smear positive retreatment cases out of all smear positive cases
Karnataka	Bagalkot	18	12772	178	1223	10%	1953	109	805	45	60%	58%	584	187	12%	377	259	24%
Karnataka	Bangalore City	45	44283	244	5593	13%	6032	133	1861	41	55%	62%	1140	1672	36%	1352	888	32%
Karnataka	Bangalore Rural	9	7031	196	483	7%	1009	112	377	42	56%	62%	234	207	25%	191	139	27%
Karnataka	Bangalore U	26	12854	126	1276	10%	3598	141	1297	51	68%	71%	528	1016	36%	757	519	29%
Karnataka	Belgaum	46	26745	146	2246	8%	4849	106	1795	39	52%	53%	1578	808	19%	664	382	18%
Karnataka	Bellary	22	15483	176	2237	14%	2768	126	1116	51	68%	61%	710	493	21%	449	346	24%
Karnataka	Bidar **	16	9330	143	912	10%	1532	94	563	34	46%	57%	424	141	13%	404	262	32%
Karnataka	Bijapur	20	10457	133	1063	10%	2495	127	651	33	44%	38%	1081	209	11%	537	302	32%
Karnataka	Chamarajanagar	10	6768	161	685	10%	1468	140	588	56	75%	74%	209	337	30%	330	252	30%
Karnataka	Chikmagalur	12	11408	230	658	6%	1134	91	451	36	48%	68%	210	299	31%	174	119	21%
Karnataka	Chikkaballapur	12	7219	146	687	10%	1348	109	572	46	62%	64%	316	265	23%	195	151	21%
Karnataka	Chitradurga	16	11157	170	1172	11%	2284	139	928	56	75%	57%	688	300	16%	368	215	19%
Karnataka	Dakshina Kannada	21	13801	167	1381	10%	1929	93	789	38	51%	72%	309	385	26%	442	293	27%
Karnataka	Davanagere	19	14236	183	1613	11%	2429	125	884	45	61%	57%	671	391	20%	483	308	26%
Karnataka	Dharwad	17	11971	171	1380	12%	1814	104	679	39	52%	72%	264	555	37%	314	242	26%
Karnataka	Gadag	11	8967	212	816	9%	1081	102	493	47	62%	75%	163	169	20%	256	186	27%
Karnataka	Gulbarga **	34	17798	131	2047	12%	3617	106	1275	37	50%	57%	952	374	14%	991	652	34%
Karnataka	Hassan	19	13372	178	1051	8%	1811	97	770	41	55%	72%	295	385	27%	361	249	24%
Karnataka	Haveri	16	13437	215	685	5%	1519	97	566	36	48%	60%	374	275	23%	303	195	26%
Karnataka	Kodagu	6	4749	200	237	5%	429	72	169	28	38%	68%	80	112	31%	68	45	21%
Karnataka	Kolar	15	12499	207	1433	11%	1653	110	777	51	69%	74%	271	332	24%	273	212	21%
Karnataka	Koppal	13	9449	182	1343	14%	1743	134	919	71	94%	73%	339	141	10%	342	282	23%
Karnataka	Mandya	19	19289	251	1303	7%	2275	119	932	49	65%	77%	285	546	31%	510	363	28%
Karnataka	Mysore	29	29655	259	2695	9%	3811	133	1411	49	66%	67%	709	912	30%	776	565	29%
Karnataka	Raichur	18	13324	186	2040	15%	2889	161	1225	68	91%	64%	697	245	11%	722	504	29%

District-wise Performance of RNTCP (Contd.)

State	District	No (%) of pediatric cases out of all New cases		3 month conversion rate of new smear positive patients[4]	Cure rate of new smear positive patients[5]	Success rate of new smear positive patients[5]	% smear positive patients living in the district placed on DOTS	No (%) of patients put on Non-DOTS treatment regimen		No (%) of NSP cases started RNTCP DOTS within 7 days of diagnosis		No (%) of NSP cases registered within one month of starting RNTCP DOTS treatment		No (%) of interviewed NSP cases who received DOT during IP as per guidelines		No (%) of cured NSP cases having end of treatment follow-up sputum done within 7 days of last dose	
Karnataka	Bagalkot	84	5%	81%	66%	69%	90%	3	0%	594	74%	738	92%	89	75%	399	77%
Karnataka	Bangalore City	360	8%	81%	70%	71%	95%	22	1%	1584	85%	1861	100%	265	91%	1185	85%
Karnataka	Bangalore Rural	29	4%	81%	65%	68%	94%	8	2%	319	85%	359	95%	58	81%	265	77%
Karnataka	Bangalore U	179	6%	85%	72%	76%	97%	1	0%	1113	86%	1190	92%	46	69%	751	88%
Karnataka	Belgaum	582	14%	90%	81%	81%	95%	1	0%	1676	93%	1751	98%	266	87%	1071	80%
Karnataka	Bellary	136	6%	90%	77%	77%	82%	0	0%	915	82%	1011	91%	235	82%	889	80%
Karnataka	Bidar **	65	6%	87%	81%	83%	93%	0	0%	491	87%	516	92%	44	77%	386	84%
Karnataka	Bijapur	128	7%	77%	64%	67%	94%	0	0%	513	79%	623	96%	46	90%	204	45%
Karnataka	Chamarajanagar	55	5%	85%	78%	81%	94%	7	1%	515	88%	562	96%	43	83%	324	73%
Karnataka	Chikmagalur	45	5%	87%	85%	85%	97%	0	0%	411	91%	449	100%	194	94%	274	76%
Karnataka	Chikkaballapur	55	5%	89%			92%	6	1%	372	74%	539	94%	93	98%	0	
Karnataka	Chitradurga	72	4%	88%	81%	81%	91%	12	1%	809	87%	845	91%	54	59%	559	71%
Karnataka	Dakshina Kannada	86	6%	86%	79%	79%	86%	46	4%	724	92%	738	94%	98	84%	584	85%
Karnataka	Davanagere	72	4%	87%	77%	81%	92%	17	1%	732	83%	811	92%	145	81%	506	69%
Karnataka	Dharwad	90	6%	86%	79%	80%	91%	10	1%	603	89%	675	99%	103	100%	363	65%
Karnataka	Gadag	47	6%	89%	79%	80%	90%	13	2%	413	84%	484	98%	194	98%	263	75%
Karnataka	Gulbarga **	165	6%	78%	68%	70%	90%	1	0%	944	74%	1144	90%	43	66%	495	53%
Karnataka	Hassan	54	4%	91%	80%	83%	93%	29	3%	667	87%	716	93%	92	88%	516	86%
Karnataka	Haveri	53	4%	86%	79%	81%	88%	13	2%	379	67%	535	95%	47	89%	355	69%
Karnataka	Kodagu	18	5%	85%	83%	85%	91%	0	0%	151	93%	162	100%	59	100%	142	92%
Karnataka	Kolar	62	4%	89%	82%	83%	95%	1	0%	681	88%	768	99%	214	93%	844	72%
Karnataka	Koppal	110	8%	88%	82%	83%	90%	24	2%	790	86%	892	97%	112	92%	628	88%
Karnataka	Mandya	98	6%	90%	81%	82%	93%	9	1%	804	86%	890	95%	543	96%	755	89%
Karnataka	Mysore	193	6%	89%	77%	79%	95%	1	0%	1191	84%	1318	93%	269	78%	869	81%
Karnataka	Raichur	143	7%	86%	83%	83%	88%	0	0%	978	80%	1079	88%	170	81%	813	74%

District-wise Performance of RNTCP (Contd.)

State	District	Population (in lakh) covered by RNTCP[1]	No. of suspects examined	Suspects examined per lakh population per quarter	No of Smear positive patients diagnosed[2]	% of S+ve cases among suspects	Total patients registered for treatment[3]	Annual total case detection rate	New smear positive patients registered for treatment	Annual new smear positive case detection rate (%)		% new sputum positive out of total new pulmonary cases	No of new smear negative cases registered for treatment	No of new EP cases registered for treatment	% of new EP cases out of all new cases	No of re-treatment cases registered for treatment	No of smear positive retreatment cases registered for treatment	% of smear positive retreatment cases out of all smear positive cases
Karnataka	Ramanagara	11	6349	139	585	9%	1294	113	544	48	63%	71%	225	259	25%	266	214	28%
Karnataka	Shimoga	18	12657	177	1111	9%	1907	107	753	42	56%	54%	646	256	15%	252	197	21%
Karnataka	Tumkur	28	21042	187	2055	10%	3035	108	1366	49	65%	74%	491	646	26%	531	374	21%
Karnataka	Udupi	12	9937	206	864	9%	1114	92	478	40	53%	72%	182	230	26%	224	171	26%
Karnataka	Uttara Kannada	15	11362	193	656	6%	1339	91	503	34	46%	58%	363	208	19%	263	158	24%
Kerala	Alappuzha	23	20249	224	890	4%	1831	81	751	33	66%	60%	501	372	23%	207	169	18%
Kerala	Ernakulam	33	26359	198	1637	6%	2552	77	1144	34	69%	68%	545	447	21%	416	301	21%
Kerala	Idukki	12	12372	255	358	3%	708	58	326	27	54%	72%	128	167	27%	87	63	16%
Kerala	Kannur	26	19618	189	1042	5%	1736	67	742	29	57%	77%	225	538	36%	228	173	19%
Kerala	Kasaragod	13	6648	128	474	7%	889	69	420	32	65%	79%	114	205	28%	150	123	23%
Kerala	Kollam	28	16689	150	1247	7%	2078	75	996	36	72%	71%	402	420	23%	249	182	15%
Kerala	Kottayam	21	23541	280	1177	5%	1748	83	841	40	80%	74%	296	396	26%	215	171	17%
Kerala	Kozhikode	31	22888	185	1192	5%	2526	82	888	29	57%	59%	617	768	34%	253	193	18%
Kerala	Malappuram	39	21527	138	1041	5%	2017	52	842	22	43%	65%	448	524	29%	203	154	15%
Kerala	Palakkad	28	15105	134	1248	8%	2159	77	1008	36	72%	75%	344	555	29%	251	219	18%
Kerala	Pathanamthitta	13	8621	163	624	7%	913	69	514	39	78%	87%	78	188	24%	133	85	14%
Kerala	Thiruvananthapuram	35	37515	270	1666	4%	2837	82	1230	35	71%	65%	667	612	24%	326	230	16%
Kerala	Thrissur	32	25030	196	1552	6%	2393	75	1123	35	70%	77%	337	580	28%	347	267	19%
Kerala	Wayanad	8	6990	207	278	4%	548	65	220	26	52%	60%	148	135	27%	45	38	15%
Lakshadweep	Lakshadweep *	1	235	85	5	2%	11	16	5	7	10%	63%	3	1	11%	2	1	17%
Madhya Pradesh	Balaghat **	17	3675	55	727	20%	1256	76	575	35	43%	60%	381	102	10%	198	131	19%
Madhya Pradesh	Barwani †	12	6667	134	776	12%	934	75	482	39	49%	71%	194	97	13%	161	147	23%
Madhya Pradesh	Betul **	16	7604	119	661	9%	1069	67	389	24	30%	52%	363	124	14%	193	148	28%
Madhya Pradesh	Bhind	16	7288	111	948	13%	1530	93	512	31	39%	48%	555	139	12%	324	277	35%

District-wise Performance of RNTCP (Contd.)

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Karnataka	Ramanagara	51	5%	82%			94%	2	0%	356	76%	363	67%	110	100%	33	52%
Karnataka	Shimoga	73	4%	90%	82%	84%	93%	0	0%	667	89%	745	99%	177	100%	424	86%
Karnataka	Tumkur	126	5%	84%	81%	82%	89%	39	2%	1170	86%	1310	96%	60	87%	868	81%
Karnataka	Udupi	105	12%	84%	83%	83%	85%	19	2%	459	96%	470	98%	420	99%	400	97%
Karnataka	Uttara Kannada	63	6%	82%	76%	80%	94%	5	1%	438	87%	492	98%	158	87%	244	77%
Kerala	Alappuzha	233	14%	87%	85%	86%	98%	4	0%	723	96%	700	93%	144	92%	510	78%
Kerala	Ernakulam	152	7%	83%	81%	82%	93%	26	2%	1039	91%	1117	98%	87	62%	801	85%
Kerala	Idukki	45	7%	83%	77%	78%	96%	0	0%	302	93%	321	99%	112	97%	183	76%
Kerala	Kannur	91	6%	82%	82%	83%	84%	20	2%	661	90%	700	94%	79	73%	534	87%
Kerala	Kasaragod	39	5%	82%	79%	82%	96%	0	0%	396	94%	410	98%	52	84%	222	77%
Kerala	Kollam	168	9%	88%	84%	86%	95%	18	2%	899	93%	966	100%	269	87%	619	80%
Kerala	Kottayam	139	9%	83%	81%	85%	91%	16	2%	805	96%	710	85%	82	86%	616	82%
Kerala	Kozhikode	406	18%	82%	81%	83%	59%	2	0%	576	90%	619	96%	31	79%	497	87%
Kerala	Malappuram	204	11%	81%	81%	87%	92%	1	0%	741	88%	792	94%	47	87%	546	77%
Kerala	Palakkad	82	4%	80%	79%	83%	97%	2	0%	903	90%	904	90%	47	75%	638	85%
Kerala	Pathanamthitta	13	2%	83%	82%	83%	96%	1	0%	465	90%	513	100%	42	95%	295	70%
Kerala	Thiruvananthapuram	274	11%	84%	81%	83%	94%	15	1%	1066	87%	1099	89%	50	83%	684	74%
Kerala	Thrissur	187	9%	82%	77%	78%	94%	21	1%	1019	91%	908	81%	61	77%	596	64%
Kerala	Wayanad	113	22%	82%	91%	92%	98%	5	2%	146	88%	161	97%	22	100%	173	87%
Lakshadweep	Lakshadweep *	1	11%	100%	100%	100%	100%	0	0%	5	100%	5	100%	5	100%	6	100%
Madhya Pradesh	Balaghat **	60	6%	87%	81%	84%	90%	0	0%	440	77%	550	96%	209	39%	182	52%
Madhya Pradesh	Barwani †	26	3%	91%	86%	89%	96%	0	0%	498	79%	479	99%	225	89%	325	76%
Madhya Pradesh	Betul **	52	6%	92%	81%	84%	83%	43	7%	286	85%	380	98%	101	79%	284	83%
Madhya Pradesh	Bhind	42	3%	90%	80%	84%	85%	23	2%	466	91%	504	96%	318	86%	469	81%

District-wise Performance of RNTCP (Contd.)

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Madhya Pradesh	Bhopal	21	18601	221	3044	16%	4061	193	1109	53	66%	44%	1433	462	15%	1057	530	32%
Madhya Pradesh	Chhatarpur **	17	9429	139	1134	12%	1727	102	602	36	44%	50%	599	68	5%	458	332	36%
Madhya Pradesh	Chhindwara **	21	6811	80	1170	17%	1558	73	723	34	43%	69%	326	264	20%	245	220	23%
Madhya Pradesh	Damoh **	12	6259	126	1003	16%	1756	141	733	59	74%	62%	458	215	15%	346	258	26%
Madhya Pradesh	Datia	7	3916	136	832	21%	1360	189	435	60	75%	49%	452	101	10%	372	241	36%
Madhya Pradesh	Dewas	15	5836	97	720	12%	1444	96	573	38	48%	53%	517	189	15%	165	116	17%
Madhya Pradesh	Dhar †	20	9418	118	1084	12%	2197	110	840	42	53%	51%	805	242	13%	309	241	22%
Madhya Pradesh	Dindori †	7	2528	95	289	11%	412	62	218	33	41%	74%	78	42	12%	74	52	19%
Madhya Pradesh	Guna	19	6575	86	1144	17%	1796	94	755	40	49%	56%	592	131	9%	316	236	24%
Madhya Pradesh	Gwalior	19	14498	194	2554	18%	2751	147	1112	59	74%	66%	569	264	14%	806	742	40%
Madhya Pradesh	Harda **	5	1905	88	251	13%	464	85	166	31	38%	51%	162	54	14%	82	75	31%
Madhya Pradesh	Hoshangabad **	12	7457	150	928	12%	2050	165	670	54	67%	47%	746	310	18%	324	232	26%
Madhya Pradesh	Indore	30	19930	168	2723	14%	4327	146	1462	49	62%	62%	882	947	29%	1036	641	30%
Madhya Pradesh	Jabalpur	25	9687	97	2236	23%	3174	128	1259	51	63%	69%	575	614	25%	722	496	28%
Madhya Pradesh	Jhabua †	16	6668	104	979	15%	1607	100	735	46	57%	60%	493	99	7%	272	225	23%
Madhya Pradesh	Katni	12	4414	90	1136	26%	1843	151	822	67	84%	56%	634	150	9%	236	234	22%
Madhya Pradesh	Khandwa **	20	7419	95	1115	15%	2101	107	852	43	54%	52%	782	214	12%	252	211	20%
Madhya Pradesh	Khargone **	18	7287	104	931	13%	2123	121	692	39	49%	42%	942	293	15%	196	171	20%
Madhya Pradesh	Mandla †	10	4179	102	889	21%	1243	121	644	63	78%	68%	310	139	13%	150	120	16%
Madhya Pradesh	Mandsaur	14	6412	118	1134	18%	2050	151	697	51	64%	54%	585	210	14%	558	397	36%
Madhya Pradesh	Morena	18	8000	110	1240	16%	1939	106	631	35	43%	62%	391	224	18%	693	471	43%
Madhya Pradesh	Narsinghpur **	11	4108	93	519	13%	999	91	376	34	43%	57%	281	137	17%	201	141	27%
Madhya Pradesh	Neemuch	8	5890	177	662	11%	1273	153	478	57	72%	54%	408	141	14%	246	182	28%
Madhya Pradesh	Panna **	10	2689	69	790	29%	1300	133	536	55	68%	68%	251	97	11%	416	228	30%
Madhya Pradesh	Raisen **	13	2865	56	415	14%	1322	103	352	27	34%	38%	581	84	8%	304	130	27%

District-wise Performance of RNTCP (Contd.)

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Madhya Pradesh	Bhopal	126	4%	83%	78%	78%	78%	12	1%	816	94%	519	47%	1006	90%	722	85%
Madhya Pradesh	Chhatarpur **	9	1%	89%	80%	88%	94%	10	1%	524	87%	486	81%	471	78%	475	86%
Madhya Pradesh	Chhindwara **	47	4%	89%	82%	86%	91%	9	1%	646	89%	696	96%	228	79%	389	66%
Madhya Pradesh	Damoh **	26	2%	85%	83%	89%	91%	30	3%	393	91%	570	78%	162	73%	511	82%
Madhya Pradesh	Datia	86	9%	90%	81%	82%	84%	62	8%	413	95%	412	95%	221	84%	160	40%
Madhya Pradesh	Dewas	89	7%	90%	87%	87%	97%	0	0%	522	91%	573	100%	92	76%	363	73%
Madhya Pradesh	Dhar †	35	2%	90%	84%	88%	100%	2	0%	486	92%	670	100%	190	74%	470	73%
Madhya Pradesh	Dindori †	13	4%	87%	77%	79%	93%	0	0%	157	72%	215	99%	86	39%	73	43%
Madhya Pradesh	Guna	40	3%	90%	86%	90%	97%	1	0%	672	89%	747	99%	93	15%	630	84%
Madhya Pradesh	Gwalior	196	10%	92%	85%	86%	90%	73	4%	982	88%	1109	100%	718	92%	838	99%
Madhya Pradesh	Harda **	13	3%	87%	83%	85%	97%	0	0%	144	87%	164	99%	100	60%	55	43%
Madhya Pradesh	Hoshangabad **	121	7%	93%	91%	92%	96%	7	1%	451	87%	650	97%	313	93%	663	94%
Madhya Pradesh	Indore	399	12%	91%	85%	86%	97%	24	1%	1372	94%	1460	100%	454	92%	1074	90%
Madhya Pradesh	Jabalpur	229	9%	74%	62%	69%	81%	4	0%	1011	80%	1212	96%	97	70%	571	70%
Madhya Pradesh	Jhabua †	36	3%	95%	90%	93%	99%	0	0%	357	83%	756	94%	525	76%	560	76%
Madhya Pradesh	Katni	89	6%	84%	78%	83%	96%	32	3%	638	78%	787	96%	191	66%	399	60%
Madhya Pradesh	Khandwa **	73	4%	91%	87%	89%	97%	0	0%	761	89%	836	98%	98	86%	664	87%
Madhya Pradesh	Khargone **	125	6%	92%	87%	88%	98%	0	0%	628	91%	687	99%	246	86%	523	84%
Madhya Pradesh	Mandla †	86	8%	92%	88%	89%	91%	0	0%	471	73%	602	93%	297	54%	369	71%
Madhya Pradesh	Mandsaur	39	3%	87%	83%	93%	96%	0	0%	573	82%	697	100%	149	82%	625	86%
Madhya Pradesh	Morena	108	9%	86%	83%	84%	87%	6	0%	439	70%	620	98%	204	72%	330	56%
Madhya Pradesh	Narsinghpur **	58	7%	83%	74%	75%	93%	2	0%	268	71%	370	98%	135	36%	161	57%
Madhya Pradesh	Neemuch	39	4%	92%	87%	89%	93%	22	3%	423	88%	471	99%	110	74%	334	77%
Madhya Pradesh	Panna **	32	4%	89%	79%	88%	92%	19	2%	504	94%	530	99%	113	89%	388	90%
Madhya Pradesh	Raisen **	25	2%	88%	83%	86%	98%	0	0%	175	65%	338	96%	258	73%	230	67%

District-wise Performance of RNTCP (Contd.)

State	District	Population (in lakh) covered by RNTCP[1]	No. of suspects examined	Suspects examined per lakh population per quarter	No of Smear positive patients diagnosed[2]	% of S+ve cases among suspects	Total patients registered for treatment[3]	Annual total case detection rate	New smear positive patients registered for treatment	Annual new smear positive case detection rate (%)		% new sputum positive out of total new pulmonary cases	No of new smear negative cases registered for treatment	No of new EP cases registered for treament	% of new EP cases out of all new cases	No of re-treatment cases registered for treatment	No of smear positive retreatment cases registered for treatment	% of smear positive retreatment cases out of all smear positive cases
Madhya Pradesh	Rajgarh	14	5075	88	778	15%	2036	142	536	37	47%	37%	909	127	8%	460	150	22%
Madhya Pradesh	Ratlam	14	5341	96	1101	21%	1875	135	609	44	55%	50%	597	233	16%	436	296	33%
Madhya Pradesh	Rewa	23	9968	110	1299	13%	3185	141	936	41	52%	48%	1020	712	27%	500	288	24%
Madhya Pradesh	Sagar **	23	9711	105	1580	16%	2959	128	1068	46	58%	48%	1169	257	10%	465	409	28%
Madhya Pradesh	Satna	21	7073	82	1432	20%	3195	149	1015	47	59%	42%	1404	347	12%	399	178	15%
Madhya Pradesh	Sehore **	12	3805	77	417	11%	1113	90	321	26	32%	38%	527	104	11%	161	68	17%
Madhya Pradesh	Seoni **	13	2590	48	553	21%	1013	76	371	28	35%	62%	227	166	22%	249	177	32%
Madhya Pradesh	Shahdol	18	5222	72	898	17%	1496	83	685	38	47%	56%	536	101	8%	169	97	12%
Madhya Pradesh	Shajapur	15	5311	90	813	15%	1268	86	489	33	41%	64%	273	120	14%	386	283	37%
Madhya Pradesh	Sheopur	6	3319	129	834	25%	1036	161	554	86	108%	70%	237	50	6%	195	158	22%
Madhya Pradesh	Shivpuri	17	6373	96	1109	17%	1983	120	931	56	70%	55%	754	36	2%	258	170	15%
Madhya Pradesh	Sidhi	21	7740	92	1118	14%	1929	92	743	35	44%	58%	529	274	18%	382	192	21%
Madhya Pradesh	Tikamgarh **	14	3249	59	526	16%	1029	75	376	27	34%	47%	429	80	9%	144	116	24%
Madhya Pradesh	Ujjain	20	8706	111	1767	20%	2280	116	843	43	54%	58%	600	287	17%	550	464	36%
Madhya Pradesh	Umaria	6	1584	67	244	15%	499	84	185	31	39%	52%	172	43	11%	99	51	22%
Madhya Pradesh	Vidisha **	14	5209	93	887	17%	2367	170	597	43	54%	37%	1006	207	11%	557	285	32%
Maharashtra	Ahmadnagar	45	20639	114	2051	10%	3987	88	1817	40	50%	63%	1067	603	17%	500	242	12%
Maharashtra	Akola	18	7718	107	1191	15%	1848	103	820	46	57%	70%	354	280	19%	394	266	24%
Maharashtra	Amravati Mun Corp	6	6102	251	576	9%	796	131	312	51	64%	74%	108	171	29%	205	123	28%
Maharashtra	Amravati Rural	23	12849	141	1340	10%	2470	109	887	39	49%	59%	621	382	20%	569	347	28%
Maharashtra	Aurangabad Muni Corp	10	6568	170	1043	16%	1235	128	530	55	69%	78%	152	310	31%	243	135	20%
Maharashtra	Aurangabad-MH **	23	8021	89	1033	13%	1942	86	1041	46	58%	72%	409	217	13%	253	176	14%
Maharashtra	Bhandara	13	6980	139	783	11%	1339	107	533	42	53%	61%	338	166	16%	301	215	29%
Maharashtra	Bid **	24	9271	97	1270	14%	2096	88	1040	44	54%	74%	362	426	23%	268	178	15%

District-wise Performance of RNTCP (Contd.)

State	District	No (%) of pediatric cases out of all New cases		3 month conversion rate of new smear positive patients[4]	Cure rate of new smear positive patients[5]	Success rate of new smear positive patients[5]	% smear positive patients living in the district placed on DOTS	No (%) of patients put on Non-DOTS treatment regimen		No (%) of NSP cases started RNTCP DOTS within 7 days of diagnosis		No (%) of NSP cases registered within one month of starting RNTCP DOTS treatment		No (%) of interviewed NSP cases who received DOT during IP as per guidelines		No (%) of cured NSP cases having end of treatment follow-up sputum done within 7 days of last dose	
Madhya Pradesh	Rajgarh	43	3%	85%	80%	80%	93%	0	0%	507	95%	523	98%	25	57%	419	85%
Madhya Pradesh	Ratlam	52	4%	94%	81%	86%	92%	4	0%	541	89%	592	97%	187	36%	458	87%
Madhya Pradesh	Rewa	252	9%	90%	83%	85%	97%	9	1%	794	85%	935	100%	321	68%	441	74%
Madhya Pradesh	Sagar **	171	7%	87%	83%	87%	93%	9	1%	890	84%	1045	98%	235	83%	542	61%
Madhya Pradesh	Satna	100	4%	89%	85%	86%	98%	0	0%	924	91%	960	95%	144	91%	697	84%
Madhya Pradesh	Sehore **	92	10%	88%	83%	86%	95%	0	0%	302	94%	320	99%	119	60%	243	85%
Madhya Pradesh	Seoni **	45	6%	84%	79%	79%	87%	16	3%	301	82%	315	85%	15	71%	165	59%
Madhya Pradesh	Shahdol	25	2%	89%	84%	86%	91%	5	1%	504	83%	749	96%	324	95%	281	52%
Madhya Pradesh	Shajapur	15	2%	93%	91%	92%	94%	0	0%	441	90%	469	96%	386	93%	431	92%
Madhya Pradesh	Sheopur	85	10%	81%	71%	82%	77%	39	5%	354	64%	496	90%	145	79%	202	43%
Madhya Pradesh	Shivpuri	25	1%	91%	87%	90%	95%	0	0%	913	98%	926	99%	849	87%	802	78%
Madhya Pradesh	Sidhi	88	6%	86%	85%	89%	94%	0	0%	599	72%	784	94%	39	76%	449	64%
Madhya Pradesh	Tikamgarh **	12	1%	87%	80%	81%	90%	0	0%	249	75%	373	96%	240	63%	275	78%
Madhya Pradesh	Ujjain	71	4%	90%	84%	87%	98%	3	0%	779	92%	838	99%	31	100%	632	81%
Madhya Pradesh	Umaria	14	4%	87%	81%	83%	83%	1	0%	149	81%	169	91%	14	93%	84	58%
Madhya Pradesh	Vidisha **	130	7%	89%	83%	89%	100%	0	0%	523	88%	532	89%	62	14%	430	84%
Maharashtra	Ahmadnagar	208	6%	90%	82%	86%	98%	0	0%	1676	92%	1817	100%	40	89%	1641	86%
Maharashtra	Akola	58	4%	89%	81%	86%	98%	1	0%	748	91%	820	100%	96	92%	643	84%
Maharashtra	Amravati Mun Corp	34	6%	86%	79%	82%	88%	4	1%	281	90%	304	97%	64	94%	198	91%
Maharashtra	Amravati Rural	90	5%	89%	85%	87%	93%	4	0%	731	82%	876	99%	141	64%	628	70%
Maharashtra	Aurangabad Muni Corp	65	7%	92%	86%	86%	91%	2	0%	359	83%	533	98%	68	22%	355	94%
Maharashtra	Aurangabad-MH **	69	4%	93%	87%	91%	100%	0	0%	732	87%	1015	96%	614	82%	870	90%
Maharashtra	Bhandara	73	7%	88%	84%	85%	95%	5	1%	493	92%	531	99%	131	83%	412	82%
Maharashtra	Bid **	72	4%	91%	83%	84%	98%	0	0%	939	90%	993	95%	867	83%	750	77%

District-wise Performance of RNTCP (Contd.)

State	District	Population (in lakh) covered by RNTCP[1]	No. of suspects examined	Suspects examined per lakh population per quarter	No of Smear positive patients diagnosed[2]	% of S+ve cases among suspects	Total patients registered for treatment[3]	Annual total case detection rate	New smear positive patients registered for treatment	Annual new smear positive case detection rate (%)		% new sputum positive out of total new pulmonary cases	No of new smear negative cases registered for treatment	No of new EP cases registered for treatment	% of new EP cases out of all new cases	No of re-treatment cases registered for treatment	No of smear positive retreatment cases registered for treatment	% of smear positive retreatment cases out of all smear positive cases
Maharashtra	Buldana **	25	13521	137	2177	16%	2590	105	1084	44	55%	62%	677	298	14%	519	416	28%
Maharashtra	Chandrapur	23	13117	143	1528	12%	2745	120	1166	51	63%	59%	810	323	14%	418	263	18%
Maharashtra	Dhule	19	13397	177	1422	11%	2244	119	944	50	62%	60%	629	315	17%	355	229	20%
Maharashtra	Gadchiroli **	11	5425	127	802	15%	1188	111	569	53	66%	61%	366	130	12%	121	78	12%
Maharashtra	Gondiya	13	8625	163	826	10%	1439	109	571	43	54%	61%	372	222	19%	274	192	25%
Maharashtra	Hingoli **	11	4179	96	564	13%	1317	121	526	48	60%	60%	350	205	19%	236	160	23%
Maharashtra	Jalgaon	41	20838	128	2377	11%	5074	125	1975	49	61%	51%	1931	524	12%	643	428	18%
Maharashtra	Jalna **	18	8854	124	1017	11%	1834	103	753	42	53%	58%	549	189	13%	343	254	25%
Maharashtra	Kalyan Dombivli MC	13	5750	109	949	17%	1947	148	718	54	68%	66%	368	444	29%	417	103	13%
Maharashtra	Kolhapur	33	18614	139	1509	8%	2917	87	1154	34	43%	61%	739	561	23%	463	274	19%
Maharashtra	Kolhapur Mun Corp	5	2659	124	263	10%	549	102	187	35	44%	63%	112	133	31%	117	67	26%
Maharashtra	Latur **	23	10677	116	992	9%	1661	72	616	27	34%	58%	453	292	21%	300	210	25%
Maharashtra	Mumbai	132	89565	170	15893	18%	30606	233	8975	68	85%	58%	6609	6200	28%	8822	4699	34%
Maharashtra	Nagpur Muni Corp	23	14610	161	2263	15%	3664	162	1099	48	61%	67%	545	1153	41%	855	475	30%
Maharashtra	Nagpur Rural	22	9198	104	1162	13%	2583	117	1238	56	70%	63%	735	219	10%	391	263	18%
Maharashtra	Nanded **	27	11049	103	1517	14%	2873	107	1088	40	50%	54%	935	410	17%	440	297	21%
Maharashtra	Nanded Waghela MC	5	2285	120	385	17%	545	115	213	45	56%	71%	89	139	32%	104	62	23%
Maharashtra	Nandurbar *	14	6820	118	837	12%	1695	117	670	46	58%	51%	650	195	13%	179	113	14%
Maharashtra	Nashik	43	22901	133	2742	12%	5007	116	2242	52	65%	60%	1483	784	17%	498	308	12%
Maharashtra	Nashik Corp	12	4893	103	771	16%	1447	122	641	54	67%	64%	358	261	21%	187	110	15%
Maharashtra	Navi Mumbai	8	9452	304	1224	13%	1783	229	581	75	93%	70%	248	460	36%	494	277	32%
Maharashtra	Osmanabad **	16	5807	89	583	10%	1181	73	511	31	39%	63%	294	204	20%	172	113	18%
Maharashtra	Parbhani **	16	6271	95	864	14%	1590	97	621	38	47%	57%	478	262	19%	229	191	24%
Maharashtra	Pimpri Chinchwad	11	8877	200	1083	12%	1879	169	637	57	72%	69%	286	551	37%	405	230	27%

District-wise Performance of RNTCP (Contd.)

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Maharashtra	Buldana **	72	3%	88%	81%	84%	79%	2	0%	732	85%	797	89%	326	76%	623	74%
Maharashtra	Chandrapur	135	6%	91%	88%	89%	97%	3	0%	839	89%	1134	97%	407	97%	709	82%
Maharashtra	Dhule	66	3%	91%	85%	87%	95%	6	0%	965	92%	958	91%	496	83%	753	84%
Maharashtra	Gadchiroli **	53	5%	90%	84%	89%	96%	0	0%	520	90%	552	96%	559	80%	400	81%
Maharashtra	Gondiya	68	6%	86%	83%	84%	94%	3	0%	493	86%	571	100%	146	90%	411	74%
Maharashtra	Hingoli **	36	3%	90%	85%	89%	98%	3	1%	480	90%	484	91%	215	82%	422	87%
Maharashtra	Jalgaon	213	5%	91%	86%	86%	89%	4	0%	1666	90%	1779	96%	690	64%	1622	84%
Maharashtra	Jalna **	31	2%	88%	83%	89%	100%	0	0%	678	89%	740	98%	219	89%	587	87%
Maharashtra	Kalyan Dombivli MC	58	4%	91%	87%	87%	95%	14	2%	647	90%	718	100%	84	88%	595	94%
Maharashtra	Kolhapur	124	5%	85%	73%	75%	94%	2	0%	986	85%	1145	99%	161	26%	650	76%
Maharashtra	Kolhapur Mun Corp	36	8%	79%	70%	71%	95%	3	1%	165	89%	183	98%	119	78%	124	82%
Maharashtra	Latur **	84	6%	79%	51%	68%	88%	0	0%	486	79%	614	100%	91	26%	251	63%
Maharashtra	Mumbai	1888	9%	91%	87%	87%	83%	747	5%	7909	88%	8537	95%	0	0%	6519	87%
Maharashtra	Nagpur Muni Corp	158	6%	89%	83%	83%	97%	0	0%	771	90%	1061	97%	375	100%	857	80%
Maharashtra	Nagpur Rural	121	6%	93%	89%	90%	96%	1	0%	1004	89%	1136	98%	59	86%	1081	87%
Maharashtra	Nanded **	127	5%	90%	85%	89%	98%	0	0%	902	83%	1046	96%	198	83%	780	72%
Maharashtra	Nanded Waghela MC	16	4%	88%	79%	79%	92%	0	0%	167	78%	211	99%	70	93%	115	58%
Maharashtra	Nandurbar *	50	3%	92%	87%	89%	89%	26	3%	534	80%	642	96%	502	81%	378	65%
Maharashtra	Nashik	470	10%	93%	88%	89%	97%	0	0%	2005	90%	2240	100%	180	94%	1460	66%
Maharashtra	Nashik Corp	72	6%	92%	86%	87%	94%	7	1%	588	92%	641	100%	101	100%	526	89%
Maharashtra	Navi Mumbai	176	14%	92%	89%	89%	88%	81	9%	567	98%	581	100%	468	100%	544	97%
Maharashtra	Osmanabad **	42	4%	87%	77%	83%	94%	1	0%	265	76%	449	88%	255	85%	296	50%
Maharashtra	Parbhani **	73	5%	90%	85%	87%	97%	0	0%	555	89%	621	100%	144	93%	483	86%
Maharashtra	Pimpri Chinchwad	96	7%	89%	85%	85%	94%	8	1%	588	92%	631	99%	109	90%	482	86%

District-wise Performance of RNTCP (Contd.)

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Maharashtra	Pune	28	12047	107	1554	13%	3853	137	1474	53	66%	71%	610	1078	34%	691	353	19%
Maharashtra	Pune Rural	41	32675	201	3778	12%	4490	111	2076	51	64%	67%	1019	676	18%	714	426	17%
Maharashtra	Raigarh-MH	24	13136	135	1733	13%	3414	140	1210	50	62%	56%	960	473	18%	769	398	25%
Maharashtra	Ratnagiri	19	11213	150	1205	11%	2666	142	975	52	65%	53%	852	235	11%	604	246	20%
Maharashtra	Sangli	24	15438	163	1244	8%	2357	99	926	39	49%	61%	600	403	21%	428	180	16%
Maharashtra	Sangli Muni Corp	5	2359	122	315	13%	662	137	179	37	46%	51%	173	164	31%	126	42	19%
Maharashtra	Satara	31	21140	171	1487	7%	3418	111	1115	36	45%	48%	1216	517	18%	570	306	22%
Maharashtra	Sindhudurg	10	5978	157	546	9%	1111	117	384	40	50%	54%	321	176	20%	230	122	24%
Maharashtra	Solapur	33	17930	136	1594	9%	2550	77	1376	42	52%	71%	567	285	13%	322	203	13%
Maharashtra	Solapur Muni Corp	10	6286	163	883	14%	1261	131	445	46	58%	56%	355	205	20%	256	145	25%
Maharashtra	Thane	50	24491	123	3573	15%	7789	157	3016	61	76%	57%	2256	1206	19%	1311	688	19%
Maharashtra	Thane Muni Corp	14	9034	162	1641	18%	3121	224	842	60	76%	54%	707	721	32%	843	438	34%
Maharashtra	Ulhasnagar Muni Corp	5	3110	149	665	21%	886	170	321	61	77%	62%	194	100	16%	271	127	28%
Maharashtra	Wardha	14	7646	141	987	13%	1607	118	668	49	61%	67%	323	365	27%	251	197	23%
Maharashtra	Washim	11	4834	107	553	11%	1083	96	435	39	48%	59%	303	137	16%	208	148	25%
Maharashtra	Yavatmal **	27	13982	129	1603	11%	3302	121	1308	48	60%	58%	961	499	18%	520	383	23%
Manipur	Bishnupur	2	1049	116	120	11%	301	133	104	46	61%	65%	56	85	35%	56	29	22%
Manipur	Chandel *	1	896	166	69	8%	261	193	60	44	59%	37%	101	37	19%	63	27	31%
Manipur	Churachandpur *	3	2535	252	97	4%	948	377	82	33	43%	13%	534	90	12%	186	27	25%
Manipur	Imphal East	4	2129	123	220	10%	828	191	193	45	59%	39%	299	170	26%	166	50	21%
Manipur	Imphal West	5	4050	209	435	11%	788	163	211	44	58%	47%	242	198	30%	137	52	20%
Manipur	Senapati *	4	1221	73	102	8%	340	82	102	24	33%	61%	66	96	36%	76	39	28%
Manipur	Tamenglong *	1	439	90	55	13%	93	76	48	39	52%	69%	22	6	8%	17	10	17%
Manipur	Thoubal	4	1182	73	159	13%	571	142	126	31	42%	36%	223	114	25%	108	28	18%
Manipur	Ukhrul *	2	695	112	72	10%	163	105	50	32	43%	68%	24	48	39%	41	27	35%

District-wise Performance of RNTCP (Contd.)

State	District	No (%) of pediatric cases out of all New cases		3 month conversion rate of new smear positive patients[4]	Cure rate of new smear positive patients[5]	Success rate of new smear positive patients[5]	% smear positive patients living in the district placed on DOTS	No (%) of patients put on Non-DOTS treatment regimen		No (%) of NSP cases started RNTCP DOTS within 7 days of diagnosis		No (%) of NSP cases registered within one month of starting RNTCP DOTS treatment		No (%) of interviewed NSP cases who received DOT during IP as per guidelines		No (%) of cured NSP cases having end of treatment follow-up sputum done within 7 days of last dose	
Maharashtra	Pune	119	4%	93%	87%	87%	93%	0	0%	1366	93%	1455	99%	256	100%	1335	94%
Maharashtra	Pune Rural	151	4%	90%	80%	81%	96%	9	0%	1771	85%	2071	100%	796	93%	1286	81%
Maharashtra	Raigarh-MH	73	3%	89%	81%	83%	94%	10	1%	930	79%	1103	97%	68	100%	921	82%
Maharashtra	Ratnagiri	87	4%	92%	85%	86%	96%	0	0%	911	93%	961	98%	472	100%	592	79%
Maharashtra	Sangli	74	4%	89%	84%	85%	92%	19	2%	798	86%	923	100%	174	39%	714	77%
Maharashtra	Sangli Muni Corp	25	5%	94%	87%	88%	88%	6	3%	158	89%	177	99%	115	63%	92	51%
Maharashtra	Satara	96	3%	85%	74%	80%	94%	2	0%	1000	90%	1105	99%	413	83%	755	84%
Maharashtra	Sindhudurg	39	4%	90%	85%	85%	88%	0	0%	308	80%	372	97%	37	97%	297	75%
Maharashtra	Solapur	105	5%	90%	83%	84%	97%	0	0%	1242	87%	1452	100%	213	50%	1190	84%
Maharashtra	Solapur Muni Corp	91	9%	89%	77%	78%	90%	1	0%	377	85%	445	100%	30	100%	336	90%
Maharashtra	Thane	526	8%	91%	87%	88%	89%	8	0%	2458	81%	2873	95%	839	63%	1639	88%
Maharashtra	Thane Muni Corp	221	10%	87%	82%	83%	89%	23	2%	748	89%	785	93%	109	96%	732	92%
Maharashtra	Ulhasnagar Muni Corp	36	6%	86%	78%	78%	82%	11	2%	281	88%	320	100%	184	91%	244	98%
Maharashtra	Wardha	66	5%	90%	86%	89%	95%	34	4%	482	86%	642	96%	90	33%	542	89%
Maharashtra	Washim	24	3%	84%	83%	84%	90%	5	1%	300	82%	286	66%	137	93%	289	83%
Maharashtra	Yavatmal **	123	4%	91%	84%	87%	96%	0	0%	947	87%	1245	95%	426	78%	857	88%
Manipur	Bishnupur	4	2%	87%	91%	93%	89%	8	7%	88	85%	78	75%	72	73%	78	89%
Manipur	Chandel *	12	6%	91%	66%	71%	96%	0	0%	61	97%	63	100%	21	33%	34	79%
Manipur	Churachandpur *	236	31%	89%	91%	91%	95%	0	0%	92	100%	92	100%	17	17%	111	91%
Manipur	Imphal East	46	7%	87%	80%	81%	90%	3	1%	174	90%	178	92%	175	91%	124	55%
Manipur	Imphal West	13	2%	90%	81%	81%	93%	10	3%	230	95%	211	83%	253	100%	179	89%
Manipur	Senapati *	20	8%	94%	87%	87%	100%	0	0%	102	100%	102	100%	100	100%	102	100%
Manipur	Tamenglong *	3	4%	91%	87%	87%	98%	0	0%	48	100%	45	90%	38	100%	26	100%
Manipur	Thoubal	18	4%	86%	84%	85%	100%	0	0%	139	100%	139	100%	139	100%	120	75%
Manipur	Ukhrul *	6	5%	64%	71%	71%	100%	0	0%	49	98%	1	2%	50	100%	45	98%

District-wise Performance of RNTCP (Contd.)

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Meghalaya	East Khasi Hills *	7	5714	197	887	16%	2234	307	459	63	84%	49%	482	734	43%	537	275	37%
Meghalaya	East Garo Hills *	3	1260	116	170	13%	244	90	148	54	72%	79%	39	15	7%	42	31	17%
Meghalaya	Jaintia Hills *	3	1300	100	216	17%	398	122	141	43	58%	68%	67	99	32%	91	53	27%
Meghalaya	Ri Bhoi *	2	1378	162	174	13%	396	187	145	68	91%	71%	58	92	31%	99	62	30%
Meghalaya	South Garo Hills *	1	438	100	57	13%	104	95	60	55	73%	85%	11	21	23%	12	7	10%
Meghalaya	West Garo Hills *	6	3542	156	484	14%	647	114	359	63	84%	76%	114	54	10%	120	56	13%
Meghalaya	West Khasi Hills *	3	1526	118	210	14%	616	190	162	50	67%	54%	139	195	39%	118	58	26%
Mizoram	Aizawl *	4	3894	260	401	10%	1321	353	243	65	87%	37%	406	434	40%	238	86	26%
Mizoram	Champhai *	1	678	152	39	6%	144	129	38	34	45%	49%	40	51	40%	15	7	16%
Mizoram	Kolasib *	1	822	306	101	12%	243	362	71	106	141%	50%	71	78	35%	23	16	18%
Mizoram	Lawngtlai *	1	333	104	25	8%	144	179	64	80	106%	60%	42	19	15%	19	7	10%
Mizoram	Lunglei *	2	1474	244	322	22%	365	242	222	147	196%	83%	45	60	18%	38	29	12%
Mizoram	Mamit *	1	461	168	52	11%	82	120	46	67	89%	68%	22	5	7%	8	6	12%
Mizoram	Saiha *	1	652	244	56	9%	181	271	59	88	118%	55%	48	41	28%	33	15	20%
Mizoram	Serchhip *	1	497	203	29	6%	78	128	27	44	59%	60%	18	27	36%	4	2	7%
Nagaland	Dimapur *	3	2086	154	384	18%	695	205	282	83	111%	56%	218	7	1%	188	110	28%
Nagaland	Kohima *	2	1596	162	249	16%	445	181	159	65	86%	57%	122	76	21%	88	49	24%
Nagaland	Kiphire*	1	324	79	52	16%	104	101	47	46	61%	68%	22	20	22%	14	11	19%
Nagaland	Longleng*	1	284	58	24	8%	80	65	24	19	26%	46%	28	10	14%	8	6	20%
Nagaland	Mokokchung *	2	1079	109	103	10%	227	92	103	42	56%	75%	35	24	15%	65	55	35%
Nagaland	Mon *	3	1220	107	141	12%	459	161	149	52	70%	62%	93	135	36%	82	69	32%
Nagaland	Peren	1	342	87	36	11%	81	82	36	37	49%	62%	22	2	3%	21	14	28%
Nagaland	Phek *	2	670	102	175	26%	154	94	62	38	50%	76%	20	53	39%	19	15	19%
Nagaland	Tuensang *	2	1391	150	170	12%	501	216	170	73	98%	60%	112	150	35%	69	38	18%
Nagaland	Wokha *	2	695	98	93	13%	132	75	80	45	60%	71%	32	7	6%	13	13	14%

District-wise Performance of RNTCP (Contd.)

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Meghalaya	Hills *	263	15%	79%	76%	77%	88%	6	1%	428	93%	456	99%	148	98%	295	92%
Meghalaya	East Garo Hills *	12	6%	87%	86%	88%	96%	0	0%	99	80%	130	88%	129	91%	72	81%
Meghalaya	Jaintia Hills *	4	1%	85%	87%	88%	100%	0	0%	101	72%	141	100%	108	77%	108	89%
Meghalaya	Ri Bhoi *	58	20%	78%	80%	80%	100%	0	0%	136	94%	133	92%	90	62%	107	100%
Meghalaya	South Garo Hills *	9	10%	99%	98%	98%	93%	0	0%	22	35%	63	100%	36	100%	32	52%
Meghalaya	West Garo Hills *	23	4%	91%	91%	91%	95%	0	0%	358	93%	386	100%	179	100%	337	90%
Meghalaya	West Khasi Hills *	92	18%	85%	83%	83%	99%	1	0%	118	88%	160	99%	128	100%	140	100%
Mizoram	Aizawl *	133	12%	92%	87%	87%	93%	1	0%	243	100%	243	100%	243	100%	202	100%
Mizoram	Champhai *	20	16%	95%	93%	95%	97%	0	0%	37	100%	37	100%	37	100%	40	100%
Mizoram	Kolasib *	41	19%	93%	87%	91%	88%	11	11%	72	100%	72	100%	37	84%	55	83%
Mizoram	Lawngtlai *	12	10%	98%	96%	96%	100%	0	0%	48	75%	59	92%	59	92%	44	83%
Mizoram	Lunglei *	38	12%	97%	98%	99%	98%	1	0%	222	100%	222	100%	222	100%	143	100%
Mizoram	Mamit *	2	3%	100%	100%	100%	98%	0	0%	46	100%	46	100%	43	113%	33	100%
Mizoram	Saiha *	18	12%	100%	99%	99%	93%	2	4%	56	98%	57	100%	57	100%	74	99%
Mizoram	Serchhip *	5	7%	94%	100%	100%	100%	0	0%	27	100%	27	100%	27	100%	25	100%
Nagaland	Dimapur *	14	3%	91%	87%	88%	81%	0	0%	232	100%	282	100%	203	96%	275	97%
Nagaland	Kohima *	26	7%	94%	89%	90%	73%	0	0%	158	99%	159	100%	116	99%	149	88%
Nagaland	Kiphire*	8	9%	91%			90%	0	0%	47	100%	47	100%	15	100%	0	
Nagaland	Longleng*	6	8%	100%			100%	0	0%	23	96%	17	100%	9	39%	0	0%
Nagaland	Mokokchung *	13	8%	97%	88%	88%	99%	1	1%	102	100%	102	100%	102	100%	113	94%
Nagaland	Mon *	48	13%	88%	96%	96%	100%	0	0%	125	67%	141	69%	41	40%	219	99%
Nagaland	Peren	2	3%	92%			100%	0	0%	36	17%	36	17%	36	17%	0	0%
Nagaland	Phek *	11	8%	81%	89%	91%	44%	0	0%	54	90%	61	98%	52	88%	44	90%
Nagaland	Tuensang *	83	19%	93%	90%	90%	100%	0	0%	137	100%	137	100%	13	100%	243	100%
Nagaland	Wokha *	14	12%	92%	91%	91%	100%	0	0%	62	42%	62	42%	62	42%	246	101%

District-wise Performance of RNTCP (Contd.)

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Nagaland	Zunheboto *	2	685	99	29	4%	106	61	37	21	29%	51%	36	19	21%	14	13	26%
Orissa	Anugul	12	7217	146	804	11%	1272	103	579	47	55%	65%	313	205	19%	175	130	18%
Orissa	Balangir **	15	6742	116	990	15%	2249	155	853	59	69%	51%	818	391	19%	174	62	7%
Orissa	Baleshwar	22	8611	98	1093	13%	1769	80	831	38	44%	65%	445	271	18%	222	158	16%
Orissa	Bargarh	15	6695	114	825	12%	1758	120	732	50	59%	62%	441	398	25%	187	105	13%
Orissa	Baudh	4	2020	125	233	12%	440	109	245	60	71%	82%	54	75	20%	66	41	14%
Orissa	Bhadrak	14	4661	80	476	10%	897	62	389	27	32%	69%	171	225	29%	112	71	15%
Orissa	Bhubaneshwar Corp	7	4635	165	598	13%	681	97	218	31	36%	68%	102	229	42%	131	89	29%
Orissa	Cuttack	25	9560	94	1443	15%	2124	83	786	31	36%	68%	376	637	35%	325	197	20%
Orissa	Debagarh	3	1595	134	171	11%	316	106	157	53	62%	68%	75	55	19%	29	20	11%
Orissa	Dhenkanal	12	6808	147	703	10%	1209	104	581	50	59%	70%	244	218	21%	166	125	18%
Orissa	Gajapati †	6	3422	152	649	19%	1045	185	551	98	115%	73%	207	166	18%	121	88	14%
Orissa	Ganjam	34	18160	133	2665	15%	5483	161	1907	56	66%	54%	1596	1065	23%	915	548	22%
Orissa	Jagatsinghapur	11	4605	100	312	7%	616	54	278	24	28%	80%	71	185	35%	82	64	19%
Orissa	Jajapur	18	4957	70	754	15%	1670	95	710	40	47%	70%	311	476	32%	173	122	15%
Orissa	Jharsuguda	6	4677	211	469	10%	845	153	396	72	84%	71%	158	188	25%	103	65	14%
Orissa	Kalahandi **	15	7744	133	1222	16%	2358	163	1043	72	85%	65%	551	435	21%	328	183	15%
Orissa	Kandhamal †	7	4747	169	624	13%	939	133	490	70	82%	69%	220	133	16%	96	55	10%
Orissa	Kendrapara	14	4836	85	443	9%	878	62	417	29	35%	78%	116	211	28%	134	76	15%
Orissa	Kendujhar	17	12270	181	1896	15%	2949	174	1422	84	99%	67%	714	397	16%	416	242	15%
Orissa	Khordha	13	4264	80	497	12%	1223	92	469	35	41%	62%	283	290	28%	181	123	21%
Orissa	Koraput †	13	7100	139	1298	18%	1660	130	963	75	88%	82%	210	238	17%	249	174	15%
Orissa	Malkangiri *	5	4285	205	773	18%	1267	243	680	130	153%	68%	321	94	9%	171	143	17%
Orissa	Mayurbhanj †	24	19919	206	3140	16%	5449	226	2717	113	132%	65%	1477	672	14%	583	306	10%

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Nagaland	Zunheboto *	10	11%	100%	88%	88%	100%	0	0%	37	28%	37	28%	37	28%	50	34%
Orissa	Anugul	71	6%	93%	90%	91%	91%	8	1%	448	77%	568	98%	288	90%	409	76%
Orissa	Balangir **	88	4%	87%	83%	86%	95%	5	1%	683	80%	837	98%	71	83%	352	53%
Orissa	Baleshwar	53	3%	87%	81%	86%	98%	3	0%	750	85%	829	94%	234	82%	464	76%
Orissa	Bargarh	62	4%	89%	81%	85%	93%	2	0%	599	83%	709	98%	61	68%	450	69%
Orissa	Baudh	30	8%	84%	89%	91%	97%	0	0%	218	89%	245	100%	70	93%	174	85%
Orissa	Bhadrak	32	4%	85%	82%	86%	93%	0	0%	329	85%	389	100%	119	100%	284	91%
Orissa	Bhubaneshwar Corp	65	12%	89%	80%	82%	92%	17	5%	213	85%	244	98%	114	100%	216	92%
Orissa	Cuttack	105	6%	88%	76%	83%	94%	5	0%	665	84%	777	99%	128	88%	318	55%
Orissa	Debagarh	10	3%	86%	86%	86%	89%	0	0%	143	128%	156	99%	146	93%	154	148%
Orissa	Dhenkanal	77	7%	93%	89%	91%	96%	0	0%	451	78%	577	100%	335	82%	338	65%
Orissa	Gajapati †	98	11%	87%	79%	83%	89%	16	3%	435	79%	522	93%	146	72%	294	63%
Orissa	Ganjam	315	7%	81%	79%	82%	84%	10	0%	1476	80%	1732	94%	287	58%	948	56%
Orissa	Jagatsinghapur	14	3%	88%	91%	93%	96%	1	0%	234	84%	276	99%	171	87%	190	79%
Orissa	Jajapur	60	4%	91%	88%	91%	97%	0	0%	568	81%	633	90%	328	75%	380	71%
Orissa	Jharsuguda	29	4%	94%	92%	94%	92%	0	0%	364	92%	378	95%	215	91%	340	94%
Orissa	Kalahandi **	105	5%	79%	70%	79%	89%	1	0%	855	83%	992	95%	11	34%	389	54%
Orissa	Kandhamal †	62	7%	83%	80%	88%	92%	2	0%	413	84%	490	100%	92	18%	262	68%
Orissa	Kendrapara	44	6%	96%	91%	92%	98%	0	0%	383	92%	417	100%	248	95%	392	97%
Orissa	Kendujhar	89	4%	91%	86%	89%	90%	15	1%	1313	89%	1474	100%	478	82%	924	81%
Orissa	Khordha	67	6%	88%	86%	90%	99%	0	0%	204	73%	441	94%	195	79%	241	64%
Orissa	Koraput †	82	6%	88%	82%	85%	91%	18	1%	790	82%	942	98%	92	78%	475	69%
Orissa	Malkangiri *	47	4%	90%	86%	87%	98%	0	0%	579	85%	679	100%	158	23%	476	72%
Orissa	Mayurbhanj †	203	4%	91%	86%	89%	92%	1	0%	2400	88%	2626	97%	166	90%	1694	79%

District-wise Performance of RNTCP (Contd.)

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Orissa	Nabarangapur †	11	3863	87	725	19%	927	84	519	47	55%	67%	251	42	5%	110	77	13%
Orissa	Nayagarh	9	6012	160	785	13%	1541	164	544	58	68%	55%	439	294	23%	264	176	24%
Orissa	Nuapada †	6	3525	153	496	14%	1059	184	407	71	83%	46%	480	54	6%	118	79	16%
Orissa	Puri	16	7765	119	630	8%	1458	90	477	29	34%	57%	354	331	28%	296	115	19%
Orissa	Rayagada †	9	6384	178	1174	18%	1608	180	936	105	123%	73%	346	154	11%	172	136	13%
Orissa	Sambalpur	10	7754	192	912	12%	1480	147	556	55	65%	62%	347	399	31%	178	101	15%
Orissa	Sonapur	6	2724	116	243	9%	599	102	250	43	50%	64%	140	146	27%	63	35	12%
Orissa	Sundargarh †	20	14131	178	1944	14%	3262	164	1402	71	83%	60%	925	480	17%	455	259	16%
Puducherry	Puducherry	11	13332	310	1703	13%	1333	124	635	59	79%	77%	195	309	27%	194	169	21%
Punjab	Amritsar	21	13010	152	2473	19%	3766	176	1313	61	65%	65%	722	1009	33%	719	533	29%
Punjab	Barnala	6	3106	131	419	13%	662	111	338	57	60%	75%	113	95	17%	116	100	23%
Punjab	Bathinda	13	9507	184	1325	14%	2046	158	889	69	72%	69%	398	288	18%	467	395	31%
Punjab	Faridkot	6	4621	191	713	15%	1130	187	398	66	69%	66%	206	272	31%	248	183	31%
Punjab	Fatehgarh Sahib	6	3511	149	349	10%	695	118	293	50	52%	77%	88	189	33%	125	94	24%
Punjab	Firozpur	19	8460	111	1634	19%	2108	110	916	48	50%	72%	349	319	20%	524	432	32%
Punjab	Gurdaspur	23	11423	124	1604	14%	2548	111	1097	48	50%	70%	468	363	19%	613	506	32%
Punjab	Hoshiarpur	16	10929	169	1302	12%	2070	128	862	53	56%	64%	485	300	18%	423	336	28%
Punjab	Jalandhar	21	12388	145	1922	16%	3074	144	1173	55	58%	69%	515	727	30%	658	512	30%
Punjab	Kapurthala	8	4870	148	683	14%	1062	129	473	57	60%	73%	171	199	23%	214	189	29%
Punjab	Ludhiana	33	19947	150	2652	13%	5191	156	1709	52	54%	56%	1353	1209	28%	920	596	26%
Punjab	Mansa-PU	8	4060	135	589	15%	911	121	433	57	60%	74%	154	137	19%	182	148	25%
Punjab	Moga	10	4659	120	827	18%	1101	113	600	62	65%	81%	144	118	14%	237	188	24%
Punjab	Mohali	7	5393	186	524	10%	1248	172	462	64	67%	69%	208	315	32%	263	190	29%
Punjab	Muktsar	9	5270	155	767	15%	1275	150	520	61	64%	66%	263	177	18%	314	242	32%
Punjab	Nawanshahr	6	4715	184	560	12%	915	142	429	67	70%	72%	166	157	21%	163	139	24%

District-wise Performance of RNTCP (Contd.)

State	District	No (%) of pediatric cases out of all New cases		3 month conversion rate of new smear positive patients[4]	Cure rate of new smear positive patients[5]	Success rate of new smear positive patients[5]	% smear positive patients living in the district placed on DOTS	No (%) of patients put on Non-DOTS treatment regimen		No (%) of NSP cases started RNTCP DOTS within 7 days of diagnosis		No (%) of NSP cases registered within one month of starting RNTCP DOTS treatment		No (%) of interviewed NSP cases who received DOT during IP as per guidelines		No (%) of cured NSP cases having end of treatment follow-up sputum done within 7 days of last dose	
Orissa	Nabarangapur †	43	5%	84%	80%	88%	85%	5	1%	381	89%	560	98%	131	33%	314	73%
Orissa	Nayagarh	111	9%	62%	67%	77%	93%	2	0%	475	87%	503	93%	77	75%	183	50%
Orissa	Nuapada †	65	7%	87%	82%	91%	93%	0	0%	302	91%	398	98%	109	56%	288	75%
Orissa	Puri	160	14%	93%	84%	87%	99%	1	0%	436	91%	476	100%	79	85%	245	71%
Orissa	Rayagada †	119	8%	88%	84%	87%	90%	4	0%	662	71%	919	98%	148	83%	456	70%
Orissa	Sambalpur	78	6%	85%	81%	85%	85%	40	6%	485	87%	533	96%	214	60%	328	71%
Orissa	Sonapur	31	6%	85%	84%	89%	96%	2	1%	219	88%	250	100%	47	89%	144	66%
Orissa	Sundargarh †	79	3%	91%	86%	89%	89%	60	3%	953	79%	1374	98%	533	38%	829	74%
Puducherry	Puducherry	77	7%	88%	84%	85%	90%	39	4%	554	87%	598	94%	351	91%	497	93%
Punjab	Amritsar	260	9%	88%	80%	86%	87%	97	5%	1227	93%	1313	100%	112	90%	1235	89%
Punjab	Barnala	19	3%	79%	72%	90%	95%	4	1%	299	88%	308	91%	26	70%	196	73%
Punjab	Bathinda	86	5%	93%	91%	92%	95%	15	1%	887	100%	889	100%	402	97%	670	100%
Punjab	Faridkot	36	4%	86%	85%	87%	89%	52	8%	363	91%	371	93%	82	91%	300	96%
Punjab	Fatehgarh Sahib	42	7%	80%	65%	70%	98%	0	0%	266	91%	291	99%	127	45%	135	83%
Punjab	Firozpur	93	6%	87%	80%	83%	85%	70	5%	758	83%	862	94%	35	73%	618	93%
Punjab	Gurdaspur	67	3%	91%	86%	89%	97%	8	1%	981	89%	1093	100%	23	88%	702	86%
Punjab	Hoshiarpur	63	4%	92%	86%	87%	92%	59	5%	844	98%	862	100%	144	100%	730	97%
Punjab	Jalandhar	163	7%	85%	81%	83%	95%	39	2%	1075	92%	1116	95%	165	87%	730	86%
Punjab	Kapurthala	35	4%	90%	90%	91%	96%	17	3%	459	97%	473	100%	90	96%	390	92%
Punjab	Ludhiana	300	7%	92%	85%	88%	86%	38	2%	1556	91%	1691	99%	35	100%	1333	93%
Punjab	Mansa-PU	33	5%	89%	89%	91%	95%	0	0%	419	97%	433	100%	253	79%	404	100%
Punjab	Moga	37	4%	96%	90%	90%	97%	1	0%	588	98%	589	98%	96	100%	433	99%
Punjab	Mohali	75	8%	86%	79%	83%	91%	7	2%	364	78%	460	100%	129	88%	114	81%
Punjab	Muktsar	39	4%	92%	87%	90%	88%	29	4%	491	94%	519	100%	228	99%	414	94%
Punjab	Nawanshahr	24	3%	94%	90%	90%	98%	1	0%	414	97%	428	100%	201	95%	382	96%

District-wise Performance of RNTCP (Contd.)

State	District	Population (in lakh) covered by RNTCP[1]	No. of suspects examined	Suspects examined per lakh population per quarter	No of Smear positive patients diagnosed[2]	% of S+ve cases among suspects	Total patients registered for treatment[3]	Annual total case detection rate	New smear positive patients registered for treatment	Annual new smear positive case detection rate (%)		% new sputum positive out of total new pulmonary cases	No of new smear negative cases registered for treatment	No of new EP cases registered for treament	% of new EP cases out of all new cases	No of re-treatment cases registered for treatment	No of smear positive retreatment cases registered for treatment	% of smear positive retreatment cases out of all smear positive cases
Punjab	Patiala	18	16903	238	2114	13%	3032	171	1098	62	65%	71%	441	795	34%	698	537	33%
Punjab	Rupnagar	7	5598	192	649	12%	890	122	428	59	62%	83%	88	185	26%	189	155	27%
Punjab	Sangrur	16	10736	168	1012	9%	1987	125	693	43	46%	59%	491	354	23%	449	335	33%
Punjab	Tarn Taran	12	5489	112	746	14%	1365	111	583	47	50%	68%	279	230	21%	273	233	29%
Rajasthan	Ajmer	25	16270	163	3759	23%	5801	232	1807	72	90%	53%	1610	911	21%	1473	1201	40%
Rajasthan	Alwar	34	16585	121	2865	17%	5286	154	1963	57	72%	52%	1811	614	14%	898	733	27%
Rajasthan	Banswara †	17	7098	103	2345	33%	3489	203	1524	89	111%	64%	876	260	10%	829	803	35%
Rajasthan	Baran	12	7070	151	1438	20%	2378	203	964	82	103%	57%	742	235	12%	437	378	28%
Rajasthan	Barmer	22	12049	134	1652	14%	3325	148	1089	48	61%	45%	1336	213	8%	686	507	32%
Rajasthan	Bharatpur	24	10642	111	1641	15%	3316	138	1072	45	56%	43%	1440	203	7%	601	478	31%
Rajasthan	Bhilwara	23	15451	168	3350	22%	5955	259	2106	92	114%	61%	1358	787	19%	1704	1393	40%
Rajasthan	Bikaner	22	12100	139	2210	18%	2915	134	1209	56	70%	70%	529	520	23%	657	503	29%
Rajasthan	Bundi	11	5315	121	986	19%	2019	183	707	64	80%	53%	627	223	14%	462	327	32%
Rajasthan	Chittaurgarh	21	8313	101	1747	21%	3642	177	1480	72	90%	64%	843	455	16%	864	769	34%
Rajasthan	Churu	19	7644	98	1747	23%	2886	148	1089	56	70%	60%	713	357	17%	727	621	36%
Rajasthan	Dausa	15	8516	141	1458	17%	2516	167	916	61	76%	51%	888	222	11%	490	429	32%
Rajasthan	Dhaulpur	11	7133	159	1348	19%	2298	204	861	77	96%	57%	646	212	12%	579	504	37%
Rajasthan	Dungarpur †	13	6033	119	1787	30%	2817	222	1330	105	131%	65%	712	171	8%	604	567	30%
Rajasthan	Ganganagar	20	10415	127	1629	16%	3039	148	1144	56	70%	55%	936	396	16%	563	454	28%
Rajasthan	Hanumangarh	17	8924	128	2041	23%	2943	169	1160	67	83%	66%	607	367	17%	808	673	37%
Rajasthan	Jaipur	60	51522	214	8444	16%	10963	182	3511	58	73%	55%	2866	1949	23%	2637	2103	37%
Rajasthan	Jaisalmer	6	4449	191	414	9%	658	113	293	50	63%	70%	127	112	21%	126	114	28%
Rajasthan	Jalore	17	6682	101	1171	18%	2638	159	900	54	68%	46%	1072	111	5%	550	381	30%
Rajasthan	Jhalawar	14	6409	119	1441	22%	2229	165	826	61	76%	54%	705	151	9%	547	470	36%
Rajasthan	Jhunjhunun	22	9626	110	1696	18%	2784	127	974	44	56%	60%	657	391	19%	891	694	31%

District-wise Performance of RNTCP (Contd.)

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Punjab	Patiala	189	8%	78%	71%	76%	97%	6	0%	956	87%	1007	92%	204	78%	735	83%
Punjab	Rupnagar	21	3%	92%	83%	85%	97%	3	1%	377	88%	421	98%	91	100%	375	91%
Punjab	Sangrur	90	6%	88%	82%	88%	94%	0	0%	651	94%	682	98%	124	86%	560	93%
Punjab	Tarn Taran	67	6%	88%	86%	91%	98%	1	0%	539	92%	583	100%	151	93%	369	99%
Rajasthan	Ajmer	340	8%	91%	85%	85%	90%	56	2%	1475	82%	1720	95%	181	90%	1307	85%
Rajasthan	Alwar	168	4%	92%	87%	89%	92%	12	0%	1704	87%	1963	100%	327	85%	1213	86%
Rajasthan	Banswara †	153	6%	91%	86%	90%	91%	9	0%	1100	72%	1441	95%	85	50%	793	65%
Rajasthan	Baran	107	6%	92%	89%	91%	93%	22	2%	828	86%	933	97%	384	85%	751	83%
Rajasthan	Barmer	75	3%	89%	89%	91%	90%	1	0%	934	86%	1070	98%	256	80%	894	84%
Rajasthan	Bharatpur	102	4%	91%	87%	90%	93%	0	0%	785	73%	1071	100%	50	76%	685	71%
Rajasthan	Bhilwara	157	4%	93%	90%	90%	95%	18	1%	2014	96%	2082	99%	385	96%	1870	96%
Rajasthan	Bikaner	159	7%	92%	86%	88%	94%	8	0%	1085	90%	1168	97%	76	89%	824	86%
Rajasthan	Bundi	74	5%	93%	90%	90%	92%	28	3%	665	94%	681	96%	45	90%	578	93%
Rajasthan	Chittaurgarh	112	4%	90%	86%	90%	93%	29	2%	1095	74%	1289	87%	121	90%	1097	87%
Rajasthan	Churu	131	6%	93%	87%	89%	89%	10	1%	889	82%	982	90%	311	91%	876	89%
Rajasthan	Dausa	93	5%	91%	88%	89%	89%	5	0%	763	83%	911	99%	56	69%	627	80%
Rajasthan	Dhaulpur	136	8%	93%	87%	88%	95%	2	0%	693	80%	843	98%	136	85%	576	80%
Rajasthan	Dungarpur †	64	3%	90%	88%	91%	94%	8	0%	1109	83%	1272	96%	625	85%	848	74%
Rajasthan	Ganganagar	87	4%	93%	88%	88%	94%	14	1%	1060	93%	1119	98%	117	92%	934	87%
Rajasthan	Hanumangarh	120	6%	91%	87%	88%	91%	7	0%	1006	87%	1093	94%	216	89%	942	91%
Rajasthan	Jaipur	618	7%	94%	87%	87%	89%	64	1%	2590	74%	3336	95%	723	80%	2371	84%
Rajasthan	Jaisalmer	18	3%	91%	87%	90%	94%	11	3%	250	85%	279	95%	147	83%	231	88%
Rajasthan	Jalore	37	2%	93%	88%	89%	93%	0	0%	762	85%	868	96%	328	44%	676	87%
Rajasthan	Jhalawar	64	4%	91%	86%	87%	90%	24	2%	674	82%	752	91%	84	88%	571	80%
Rajasthan	Jhunjhunun	101	5%	91%	87%	88%	87%	15	1%	823	84%	969	99%	70	92%	744	84%

District-wise Performance of RNTCP (Contd.)

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Rajasthan	Jodhpur	33	19860	151	2962	15%	4636	141	1561	47	59%	51%	1490	694	19%	891	694	31%
Rajasthan	Karauli	14	10039	182	1837	18%	2779	201	1047	76	95%	55%	871	152	7%	709	634	38%
Rajasthan	Kota	18	10025	140	1951	19%	3501	195	1260	70	88%	53%	1130	502	17%	609	472	27%
Rajasthan	Nagaur	32	11897	94	2304	19%	3956	125	1512	48	60%	55%	1231	365	12%	848	711	32%
Rajasthan	Pali	21	9528	114	1806	19%	3243	156	1192	57	72%	52%	1111	341	13%	599	537	31%
Rajasthan	Rajsamand	11	4564	101	1113	24%	1880	167	873	77	97%	63%	512	159	10%	336	310	26%
Rajasthan	Sawai Madhopur	13	9512	186	1629	17%	2519	197	1003	79	98%	63%	586	335	17%	595	510	34%
Rajasthan	Sikar	26	13032	124	2110	16%	3432	131	1313	50	63%	57%	989	300	12%	830	578	31%
Rajasthan	Sirohi	10	6389	164	989	15%	1718	176	634	65	81%	56%	489	156	12%	436	332	34%
Rajasthan	Tonk	14	9883	178	2370	24%	3813	275	1538	111	139%	60%	1017	315	11%	942	860	36%
Rajasthan	Udaipur	30	23163	192	7341	32%	6818	226	2842	94	118%	61%	1848	740	14%	1384	1125	28%
Sikkim	East	3	5069	471	465	9%	918	341	273	101	135%	60%	183	253	36%	209	127	32%
Sikkim	North *	0	358	199	33	9%	141	313	21	47	62%	33%	42	40	39%	38	20	49%
Sikkim	South **	1	1338	231	157	12%	336	232	101	70	93%	60%	66	102	38%	67	41	29%
Sikkim	West **	1	901	166	109	12%	246	182	88	65	87%	70%	38	68	35%	50	37	30%
Tamil Nadu	Chennai	45	57565	319	5527	10%	6184	137	2536	56	75%	68%	1192	1617	30%	833	691	21%
Tamil Nadu	Coimbatore	45	26254	145	2588	10%	4464	99	2107	47	62%	73%	776	902	24%	678	549	21%
Tamil Nadu	Cuddalore	24	29394	301	1657	6%	3701	152	1297	53	71%	55%	1073	639	21%	692	403	24%
Tamil Nadu	Dharmapuri	14	16330	297	828	5%	1248	91	501	36	49%	59%	353	236	22%	158	134	21%
Tamil Nadu	Dindigul	21	22363	273	2139	10%	2990	146	1037	51	67%	54%	884	798	29%	271	234	18%
Tamil Nadu	Erode	28	28933	263	2601	9%	2911	106	1326	48	64%	67%	663	452	19%	470	378	22%
Tamil Nadu	Kancheepuram	31	15116	123	1176	8%	4763	155	1891	62	82%	65%	1003	1165	29%	704	611	24%
Tamil Nadu	Kanniyakumari	18	14043	197	970	7%	1492	84	588	33	44%	54%	501	247	18%	156	127	18%
Tamil Nadu	Karur	10	7658	192	615	8%	1368	137	523	52	70%	56%	406	177	16%	262	185	26%
Tamil Nadu	Krishnagiri	17	15194	230	715	5%	1850	112	622	38	50%	48%	669	366	22%	192	150	19%

District-wise Performance of RNTCP (Contd.)

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Rajasthan	Jodhpur	200	5%	92%	89%	90%	91%	12	0%	1314	84%	1541	99%	412	82%	1100	79%
Rajasthan	Karauli	83	4%	93%	90%	91%	91%	5	0%	721	69%	1032	99%	314	73%	693	75%
Rajasthan	Kota	192	7%	93%	91%	94%	92%	10	1%	1145	91%	1169	93%	206	91%	1065	91%
Rajasthan	Nagaur	142	5%	89%	86%	88%	92%	9	0%	1298	86%	1405	93%	140	77%	1116	82%
Rajasthan	Pali	95	4%	90%	86%	89%	92%	20	1%	1046	88%	1118	94%	451	76%	869	80%
Rajasthan	Rajsamand	45	3%	91%	87%	88%	87%	24	2%	548	63%	855	98%	97	53%	608	84%
Rajasthan	Sawai Madhopur	107	6%	92%	87%	90%	93%	20	1%	789	79%	961	96%	203	91%	708	82%
Rajasthan	Sikar	79	3%	92%	88%	88%	94%	16	1%	1127	86%	1247	95%	132	92%	984	87%
Rajasthan	Sirohi	83	6%	93%	89%	89%	92%	28	3%	545	86%	626	99%	154	92%	520	93%
Rajasthan	Tonk	85	3%	91%	86%	88%	96%	1	0%	1438	93%	1494	97%	36	90%	1171	94%
Rajasthan	Udaipur	262	5%	92%	89%	92%	95%	53	1%	2388	84%	2746	97%	435	92%	1938	78%
Sikkim	East	57	8%	88%	83%	83%	90%	26	6%	269	99%	271	99%	80	88%	210	95%
Sikkim	North *	10	10%	83%	76%	76%	100%	0	0%	20	95%	21	100%	19	100%	26	100%
Sikkim	South **	32	12%	93%	87%	87%	93%	2	1%	90	89%	101	100%	107	100%	80	94%
Sikkim	West **	29	15%	94%	92%	92%	96%	1	1%	85	97%	88	100%	70	95%	84	99%
Tamil Nadu	Chennai	391	7%	92%	87%	87%	92%	0	0%	2358	90%	2611	100%	273	100%	2097	93%
Tamil Nadu	Coimbatore	165	4%	89%	85%	85%	95%	1	0%	1730	83%	2073	100%	250	76%	1558	90%
Tamil Nadu	Cuddalore	336	11%	95%	89%	91%	93%	15	1%	1066	79%	1350	99%	437	72%	1020	84%
Tamil Nadu	Dharmapuri	81	7%	91%	81%	81%	100%	0	0%	506	80%	595	94%	96	91%	412	85%
Tamil Nadu	Dindigul	556	20%	89%	83%	84%	79%	295	18%	827	77%	1029	95%	357	75%	676	74%
Tamil Nadu	Erode	86	4%	89%	81%	81%	93%	0	0%	1076	81%	1298	98%	241	83%	680	70%
Tamil Nadu	Kancheepuram	494	12%	92%	87%	88%	98%	8	1%	1545	79%	1934	99%	198	77%	1559	94%
Tamil Nadu	Kanniyakumari	148	11%	87%	83%	83%	96%	4	1%	447	77%	561	96%	189	58%	318	69%
Tamil Nadu	Karur	55	5%	91%	86%	86%	92%	0	0%	355	67%	488	93%	101	60%	227	53%
Tamil Nadu	Krishnagiri	120	7%	92%	87%	91%	97%	0	0%	531	66%	578	95%	48	96%	470	90%

District-wise Performance of RNTCP (Contd.)

State	District	Population (in lakh) covered by RNTCP[1]	No. of suspects examined	Suspects examined per lakh population per quarter	No of Smear positive patients diagnosed[2]	% of S+ve cases among suspects	Total patients registered for treatment[3]	Annual total case detection rate	New smear positive patients registered for treatment	Annual new smear positive case detection rate (%)		% new sputum positive out of total new pulmonary cases	No of new smear negative cases registered for treatment	No of new EP cases registered for treament	% of new EP cases out of all new cases	No of re-treatment cases registered for treatment	No of smear positive retreatment cases registered for treatment	% of smear positive retreatment cases out of all smear positive cases
Tamil Nadu	Madurai	27	22232	203	2322	10%	4169	152	1359	50	66%	53%	1216	898	26%	696	378	22%
Tamil Nadu	Nagapattinam	16	9100	143	705	8%	1618	102	645	41	54%	53%	578	196	14%	198	174	21%
Tamil Nadu	Namakkal	16	12848	201	984	8%	2005	125	919	57	77%	72%	366	516	29%	204	177	16%
Tamil Nadu	Perambalur	13	8227	163	689	8%	1535	122	581	46	61%	56%	465	320	23%	169	146	20%
Tamil Nadu	Pudukkottai	16	11277	182	814	7%	1531	99	661	43	57%	61%	415	271	20%	184	149	18%
Tamil Nadu	Ramanathapuram	13	10352	205	651	6%	1431	113	645	51	68%	62%	403	211	17%	172	146	18%
Tamil Nadu	Salem	32	22832	178	2238	10%	3774	118	1666	52	69%	70%	719	868	27%	514	414	20%
Tamil Nadu	Sivaganga	12	10718	218	797	7%	1393	113	512	42	55%	53%	458	227	19%	196	149	23%
Tamil Nadu	Thanjavur	24	26123	277	1733	7%	2979	126	1126	48	64%	56%	884	616	23%	353	241	18%
Tamil Nadu	The Nilgiris	8	3686	113	172	5%	457	56	187	23	30%	62%	116	130	30%	23	18	9%
Tamil Nadu	Theni	12	13592	290	1026	8%	2115	181	632	54	72%	43%	831	382	21%	270	162	20%
Tamil Nadu	Thiruvallur	29	27287	233	1301	5%	4137	141	1529	52	70%	62%	942	964	28%	700	537	26%
Tamil Nadu	Thiruvarur	12	7986	160	656	8%	1424	114	543	44	58%	58%	401	203	16%	165	108	17%
Tamil Nadu	Tiruchirappalli	26	20950	205	1566	7%	3319	130	1228	48	64%	57%	928	859	28%	293	238	16%
Tamil Nadu	Tirunelveli	30	18550	155	1655	9%	4038	135	1285	43	57%	46%	1518	784	22%	451	352	22%
Tamil Nadu	Tiruvanamalai	23	18588	199	1379	7%	3060	131	1403	60	80%	64%	780	498	19%	377	331	19%
Tamil Nadu	Toothukudi	17	13015	194	1293	10%	2111	126	961	57	77%	62%	586	312	17%	251	222	19%
Tamil Nadu	Vellore	37	42494	285	3238	8%	5512	148	2210	59	79%	62%	1335	1352	28%	609	470	18%
Tamil Nadu	Viluppuram	31	20056	159	1910	10%	4528	144	1783	57	76%	62%	1083	913	24%	749	557	24%
Tamil Nadu	Virudhunagar	19	14185	189	1323	9%	2503	134	942	50	67%	51%	923	344	16%	293	228	19%
Tripura	Dhalai *	3	2447	181	182	7%	282	83	178	53	70%	74%	63	14	5%	27	21	11%
Tripura	North Tripura	6	2449	94	304	12%	532	82	256	39	53%	64%	146	56	12%	74	53	17%
Tripura	South Tripura	8	4753	142	300	6%	490	58	248	30	39%	73%	92	74	18%	76	51	17%
Tripura	West Tripura	17	13024	193	1115	9%	1542	92	902	54	71%	82%	197	301	22%	142	126	12%
Uttar Pradesh	Agra	42	30465	183	5669	19%	8542	206	2621	63	66%	61%	1701	1320	23%	2777	1927	42%

District-wise Performance of RNTCP (Contd.)

State	District	No (%) of pediatric cases out of all New cases		3 month conversion rate of new smear positive patients[4]	Cure rate of new smear positive patients[5]	Success rate of new smear positive patients[5]	% smear positive patients living in the district placed on DOTS	No (%) of patients put on Non-DOTS treatment regimen		No (%) of NSP cases started RNTCP DOTS within 7 days of diagnosis		No (%) of NSP cases registered within one month of starting RNTCP DOTS treatment		No (%) of interviewed NSP cases who received DOT during IP as per guidelines		No (%) of cured NSP cases having end of treatment follow-up sputum done within 7 days of last dose	
Tamil Nadu	Madurai	487	14%	83%	74%	77%	94%	0	0%	1273	90%	1328	94%	174	66%	1012	91%
Tamil Nadu	Nagapattinam	164	12%	89%	84%	85%	94%	0	0%	524	85%	584	95%	16	33%	262	58%
Tamil Nadu	Namakkal	216	12%	94%	88%	88%	97%	0	0%	846	91%	926	100%	526	73%	778	99%
Tamil Nadu	Perambalur	170	12%	89%	86%	86%	98%	0	0%	471	81%	581	99%	222	87%	467	91%
Tamil Nadu	Pudukkottai	121	9%	85%	79%	82%	95%	14	2%	433	69%	550	87%	82	60%	386	79%
Tamil Nadu	Ramanathapuram	175	14%	90%	87%	87%	95%	0	0%	478	75%	638	100%	97	33%	448	81%
Tamil Nadu	Salem	271	8%	88%	80%	81%	92%	0	0%	1409	85%	1665	100%	52	63%	545	44%
Tamil Nadu	Sivaganga	87	7%	90%	85%	86%	97%	0	0%	465	90%	502	97%	69	33%	417	87%
Tamil Nadu	Thanjavur	393	15%	88%	85%	86%	98%	20	1%	1059	96%	1099	100%	290	62%	811	87%
Tamil Nadu	The Nilgiris	77	18%	89%	85%	85%	99%	0	0%	171	99%	173	100%	28	76%	151	100%
Tamil Nadu	Theni	327	18%	81%	69%	72%	93%	0	0%	489	78%	599	95%	75	57%	345	78%
Tamil Nadu	Thiruvallur	258	8%	91%	86%	87%	91%	7	1%	1114	74%	1500	100%	945	77%	1085	80%
Tamil Nadu	Thiruvarur	177	14%	90%	86%	86%	92%	18	3%	494	93%	532	100%	105	68%	407	85%
Tamil Nadu	Tiruchirappalli	209	7%	92%	90%	90%	97%	4	0%	1105	93%	1170	98%	577	93%	987	96%
Tamil Nadu	Tirunelveli	458	13%	86%	74%	83%	88%	0	0%	896	72%	1180	95%	103	66%	697	69%
Tamil Nadu	Tiruvanamalai	375	14%	93%	86%	89%	96%	4	0%	912	66%	1389	100%	71	45%	632	61%
Tamil Nadu	Toothukudi	133	7%	88%	85%	85%	95%	5	0%	809	87%	909	98%	147	79%	785	95%
Tamil Nadu	Vellore	171	3%	92%	88%	89%	95%	0	0%	1806	82%	2117	96%	167	73%	1603	85%
Tamil Nadu	Viluppuram	408	11%	92%	88%	88%	95%	34	2%	1441	82%	1658	95%	64	70%	1448	92%
Tamil Nadu	Virudhunagar	289	13%	87%	77%	79%	95%	1	0%	706	73%	968	100%	525	69%	329	47%
Tripura	Dhalai *	3	1%	94%	95%	95%	99%	0	0%	168	95%	169	95%	85	72%	139	91%
Tripura	North Tripura	20	4%	88%	83%	87%	93%	3	1%	217	85%	240	94%	117	92%	191	81%
Tripura	South Tripura	13	3%	96%	91%	92%	92%	8	3%	204	82%	242	98%	55	81%	210	86%
Tripura	West Tripura	31	2%	93%	88%	91%	89%	37	3%	708	83%	878	97%	252	88%	545	86%
Uttar Pradesh	Agra	987	17%	89%	84%	86%	94%	0	0%	2109	80%	2621	100%	629	37%	1275	79%

District-wise Performance of RNTCP (Contd.)

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Uttar Pradesh	Aligarh	34	28815	210	3821	13%	6634	193	2613	76	80%	54%	2270	910	16%	841	669	20%
Uttar Pradesh	Allahabad	57	40816	180	5687	14%	8598	151	3361	59	62%	58%	2391	871	13%	1974	1453	30%
Uttar Pradesh	Ambedkar Nagar	23	8256	89	1454	18%	2027	87	1200	52	54%	74%	423	159	9%	245	195	14%
Uttar Pradesh	Auraiya	14	8196	151	1420	17%	2143	158	1004	74	78%	69%	461	166	10%	512	441	31%
Uttar Pradesh	Azamgarh	45	17685	97	2606	15%	4805	106	1958	43	45%	55%	1629	315	8%	901	526	21%
Uttar Pradesh	Baghpat	13	7186	134	1266	18%	2181	163	989	74	78%	67%	496	298	17%	398	351	26%
Uttar Pradesh	Bahraich **	31	21550	175	3089	14%	5316	173	2263	73	77%	53%	1981	477	10%	595	590	21%
Uttar Pradesh	Ballia	32	10002	79	1389	14%	2739	87	1070	34	36%	52%	969	349	15%	351	234	18%
Uttar Pradesh	Balrampur	19	9602	124	1328	14%	2419	125	1191	62	65%	57%	898	178	8%	152	123	9%
Uttar Pradesh	Banda **	17	11381	165	1852	16%	2589	150	909	53	55%	64%	509	296	17%	875	783	46%
Uttar Pradesh	Barabanki **	35	19239	137	3057	16%	5354	152	2412	69	72%	60%	1578	685	15%	679	656	21%
Uttar Pradesh	Bareilly	41	34264	207	4909	14%	7481	181	3011	73	77%	61%	1962	774	13%	1734	1191	28%
Uttar Pradesh	Basti **	24	9770	103	1614	17%	3304	139	1240	52	55%	47%	1406	403	13%	255	214	15%
Uttar Pradesh	Bijnor **	36	21820	152	2738	13%	3919	109	2154	60	63%	78%	613	562	17%	590	528	20%
Uttar Pradesh	Budaun **	35	27383	194	3644	13%	5567	158	2708	77	81%	64%	1493	175	4%	1191	905	25%
Uttar Pradesh	Bulandshahar	34	21341	159	3214	15%	7068	210	2599	77	81%	48%	2774	859	14%	828	609	19%
Uttar Pradesh	Chandauli	19	9404	125	1413	15%	1893	100	1026	54	57%	75%	335	203	13%	328	292	22%
Uttar Pradesh	Chitrakoot	9	4585	125	818	18%	1253	136	430	47	49%	55%	358	119	13%	346	205	32%
Uttar Pradesh	Deoria	31	11057	88	1750	16%	2361	75	1271	40	43%	75%	435	210	11%	444	373	23%
Uttar Pradesh	Etah	32	21415	167	3529	16%	5013	156	2336	73	77%	65%	1232	459	11%	961	803	26%
Uttar Pradesh	Etawah	15	12552	204	2068	16%	2578	167	1105	72	76%	73%	418	351	19%	702	621	36%
Uttar Pradesh	Faizabad	20	11243	144	1568	14%	2570	131	1201	61	65%	62%	750	275	12%	344	276	19%
Uttar Pradesh	Farrukhabad	18	9369	129	1576	17%	2254	124	1071	59	62%	65%	568	232	12%	383	344	24%
Uttar Pradesh	Fatehpur **	27	15991	151	2127	13%	3463	131	1688	64	67%	63%	1002	328	11%	445	346	17%
Uttar Pradesh	Firozabad	24	14912	159	2801	19%	4277	182	1678	71	75%	69%	759	573	19%	1264	901	35%

District-wise Performance of RNTCP (Contd.)

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Uttar Pradesh	Aligarh	484	8%	94%	88%	91%	93%	0	0%	2512	96%	2613	100%	1248	81%	2121	96%
Uttar Pradesh	Allahabad	467	7%	88%	70%	77%	92%	97	2%	2613	88%	3175	99%	578	75%	1381	70%
Uttar Pradesh	Ambedkar Nagar	60	3%	92%	86%	88%	96%	0	0%	1083	90%	1187	99%	85	79%	695	84%
Uttar Pradesh	Auraiya	68	4%	91%	85%	88%	95%	0	0%	912	91%	1004	100%	289	29%	510	73%
Uttar Pradesh	Azamgarh	163	4%	88%	84%	86%	95%	3	0%	1733	89%	1902	97%	340	92%	1078	80%
Uttar Pradesh	Baghpat	92	5%	92%	90%	90%	97%	0	0%	902	91%	989	100%	63	93%	833	89%
Uttar Pradesh	Bahraich **	191	4%	90%	88%	89%	97%	0	0%	2192	97%	2263	100%	60	100%	1480	94%
Uttar Pradesh	Ballia	139	6%	89%	80%	85%	90%	0	0%	953	88%	1052	98%	60	94%	474	81%
Uttar Pradesh	Balrampur	105	5%	91%	85%	87%	99%	0	0%	1176	99%	1190	100%	1165	98%	717	95%
Uttar Pradesh	Banda **	178	10%	91%	78%	79%	95%	0	0%	650	92%	893	98%	400	94%	537	88%
Uttar Pradesh	Barabanki **	378	8%	92%	87%	89%	100%	0	0%	2258	97%	2332	100%	393	60%	1692	94%
Uttar Pradesh	Bareilly	337	6%	90%	85%	87%	91%	14	0%	2647	89%	2958	99%	599	44%	2372	95%
Uttar Pradesh	Basti **	178	6%	89%	84%	85%	95%	0	0%	1158	93%	1240	100%	236	81%	644	63%
Uttar Pradesh	Bijnor **	250	8%	90%	84%	86%	93%	13	0%	1946	90%	2151	100%	72	92%	1382	95%
Uttar Pradesh	Budaun **	299	7%	93%	86%	90%	96%	0	0%	1945	93%	2653	98%	932	89%	1902	87%
Uttar Pradesh	Bulandshahar	476	8%	94%	88%	92%	96%	1	0%	2376	91%	2487	99%	1392	61%	1722	88%
Uttar Pradesh	Chandauli	107	7%	90%	85%	85%	95%	0	0%	847	84%	1025	100%	141	100%	573	98%
Uttar Pradesh	Chitrakoot	84	9%	90%	84%	87%	96%	0	0%	477	92%	521	100%	60	75%	362	80%
Uttar Pradesh	Deoria	119	6%	90%	83%	87%	95%	0	0%	991	78%	1270	100%	50	14%	431	83%
Uttar Pradesh	Etah	288	7%	93%	86%	93%	97%	12	0%	1980	85%	2336	100%	760	86%	1316	83%
Uttar Pradesh	Etawah	131	7%	90%	86%	86%	96%	0	0%	995	83%	1194	100%	217	41%	663	80%
Uttar Pradesh	Faizabad	138	6%	91%	87%	88%	97%	0	0%	1092	91%	1196	100%	349	124%	698	90%
Uttar Pradesh	Farrukhabad	122	7%	91%	86%	87%	95%	0	0%	702	86%	999	93%	649	61%	818	85%
Uttar Pradesh	Fatehpur **	153	5%	91%	82%	90%	96%	2	0%	1569	93%	1685	100%	594	58%	822	88%
Uttar Pradesh	Firozabad	638	21%	90%	79%	80%	95%	0	0%	1447	88%	1633	99%	741	72%	668	70%

District-wise Performance of RNTCP (Contd.)

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Uttar Pradesh	Gautam Budh Nagar	14	9958	182	1628	16%	3558	260	1303	95	100%	62%	794	866	29%	595	430	25%
Uttar Pradesh	Ghaziabad	38	28533	189	4721	17%	10347	274	3798	100	106%	57%	2891	1905	22%	1753	1167	24%
Uttar Pradesh	Ghazipur	35	11726	84	1972	17%	2948	84	1558	44	47%	68%	747	206	8%	436	313	17%
Uttar Pradesh	Gonda	32	12135	95	2476	20%	4456	140	1807	57	60%	47%	1998	153	4%	498	456	20%
Uttar Pradesh	Gorakhpur	44	15673	90	2345	15%	3090	71	1546	36	37%	66%	779	293	11%	472	376	20%
Uttar Pradesh	Hamirpur-UP **	12	6690	140	1112	17%	1797	150	629	52	55%	50%	631	175	12%	362	224	26%
Uttar Pradesh	Hardoi **	39	25062	160	3620	14%	6475	166	2685	69	72%	53%	2391	369	7%	1030	864	24%
Uttar Pradesh	Hathras	15	8356	136	1449	17%	2047	134	1068	70	73%	73%	388	106	7%	471	296	22%
Uttar Pradesh	Jalaun **	17	11734	175	1737	15%	2883	172	1127	67	71%	59%	785	211	10%	760	520	32%
Uttar Pradesh	Jaunpur	45	18697	104	3162	17%	7092	158	2296	51	54%	42%	3175	946	15%	673	466	17%
Uttar Pradesh	Jhansi **	20	11418	142	2299	20%	3014	150	1484	74	78%	72%	582	302	13%	646	437	23%
Uttar Pradesh	Jyotiba Phule Nagar **	17	13346	194	1683	13%	2171	126	1315	76	80%	77%	401	94	5%	359	350	21%
Uttar Pradesh	Kannauj	16	10169	160	1460	14%	2079	131	1076	68	71%	70%	465	188	11%	350	328	23%
Uttar Pradesh	Kanpur Dehat **	18	7410	102	1480	20%	2151	118	1203	66	70%	77%	367	162	9%	419	326	21%
Uttar Pradesh	Kanpur Nagar	48	27916	147	5199	19%	6965	146	2654	56	59%	65%	1417	1006	20%	1868	1316	33%
Uttar Pradesh	Kaushambi	15	9957	167	1167	12%	2130	143	1139	77	81%	66%	596	117	6%	278	147	11%
Uttar Pradesh	Kheri	37	19454	132	3383	17%	5595	152	2340	64	67%	56%	1849	358	8%	1048	899	28%
Uttar Pradesh	Kushinagar	33	11714	88	1696	14%	2664	80	1459	44	46%	68%	693	246	10%	266	205	12%
Uttar Pradesh	Lalitpur **	11	8044	179	1322	16%	1921	171	912	81	85%	66%	479	110	7%	420	328	26%
Uttar Pradesh	Lucknow	42	42097	249	6647	16%	7989	189	3141	74	78%	65%	1722	1295	21%	1827	1446	32%
Uttar Pradesh	Maharajganj **	25	10965	110	1306	12%	2033	82	1093	44	46%	63%	648	129	7%	163	149	12%
Uttar Pradesh	Mahoba **	8	5071	156	921	18%	1200	147	525	64	68%	78%	144	94	12%	437	369	41%
Uttar Pradesh	Mainpuri	18	8334	114	1367	16%	2480	135	1000	55	57%	55%	816	116	6%	495	304	23%
Uttar Pradesh	Mathura	24	17085	180	2391	14%	3906	164	1698	71	75%	60%	1139	515	15%	554	458	21%

District-wise Performance of RNTCP (Contd.)

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Uttar Pradesh	Gautam Budh Nagar	236	8%	92%	87%	90%	102%	0	0%	1241	95%	1286	99%	113	100%	553	95%
Uttar Pradesh	Ghaziabad	770	9%	94%	90%	90%	97%	0	0%	3788	99%	3840	100%	1289	100%	3205	93%
Uttar Pradesh	Ghazipur	107	4%	90%	82%	87%	95%	0	0%	1438	92%	1558	100%	320	66%	689	82%
Uttar Pradesh	Gonda	188	5%	91%	85%	88%	93%	0	0%	1614	89%	1747	100%	818	82%	1074	79%
Uttar Pradesh	Gorakhpur	126	5%	91%	80%	82%	83%	0	0%	1194	77%	1467	95%	740	61%	576	78%
Uttar Pradesh	Hamirpur-UP **	113	8%	91%	88%	88%	94%	0	0%	540	86%	626	100%	36	90%	329	81%
Uttar Pradesh	Hardoi **	204	4%	91%	85%	87%	91%	0	0%	2470	92%	2658	99%	1060	94%	1739	89%
Uttar Pradesh	Hathras	126	8%	93%	86%	90%	91%	0	0%	1018	95%	1068	100%	914	86%	773	100%
Uttar Pradesh	Jalaun **	93	4%	90%	84%	87%	95%	5	0%	987	88%	1119	99%	52	87%	745	90%
Uttar Pradesh	Jaunpur	337	5%	91%	85%	88%	96%	0	0%	2052	94%	2154	99%	207	15%	1526	85%
Uttar Pradesh	Jhansi **	122	5%	91%	86%	87%	98%	0	0%	1407	95%	1477	100%	526	81%	919	88%
Uttar Pradesh	Jyotiba Phule Nagar **	31	2%	93%	86%	86%	97%	0	0%	1234	94%	1311	100%	183	84%	878	91%
Uttar Pradesh	Kannauj	110	6%	94%	92%	92%	95%	0	0%	993	92%	1076	100%	167	94%	451	98%
Uttar Pradesh	Kanpur Dehat **	63	4%	94%	84%	85%	95%	0	0%	1129	94%	1202	100%	708	70%	667	96%
Uttar Pradesh	Kanpur Nagar	385	8%	87%	79%	84%	86%	1	0%	2377	90%	2599	98%	946	95%	1850	93%
Uttar Pradesh	Kaushambi	68	4%	96%	90%	93%	99%	0	0%	1145	100%	1145	100%	101	80%	458	96%
Uttar Pradesh	Kheri	236	5%	87%	80%	85%	92%	0	0%	2002	86%	2340	100%	92	84%	1579	84%
Uttar Pradesh	Kushinagar	125	5%	93%	86%	88%	93%	0	0%	1271	87%	1461	100%	658	85%	720	86%
Uttar Pradesh	Lalitpur **	91	6%	90%	85%	88%	94%	0	0%	639	93%	876	96%	307	59%	571	90%
Uttar Pradesh	Lucknow	523	8%	85%	81%	81%	81%	0	0%	2736	87%	3141	100%	918	93%	2352	99%
Uttar Pradesh	Maharajganj **	71	4%	93%	87%	90%	91%	0	0%	1018	91%	1120	100%	160	74%	469	97%
Uttar Pradesh	Mahoba **	61	8%	88%	83%	86%	98%	2	0%	451	87%	520	100%	155	88%	344	90%
Uttar Pradesh	Mainpuri	94	5%	89%	87%	91%	93%	1	0%	2673	39%	988	100%	64	58%	520	57%
Uttar Pradesh	Mathura	233	7%	90%	85%	87%	94%	0	0%	1568	92%	1698	100%	836	97%	1100	88%

District-wise Performance of RNTCP (Contd.)

State	District	Population (in lakh) covered by RNTCP[1]	No. of suspects examined	Suspects examined per lakh population per quarter	No of Smear positive patients diagnosed[2]	% of S+ve cases among suspects	Total patients registered for treatment[3]	Annual total case detection rate	New smear positive patients registered for treatment	Annual new smear positive case detection rate (%)		% new sputum positive out of total new pulmonary cases	No of new smear negative cases registered for treatment	No of new EP cases registered for treatment	% of new EP cases out of all new cases	No of retreatment cases registered for treatment	No of smear positive retreatment cases registered for treatment	% of smear positive retreatment cases out of all smear positive cases
Uttar Pradesh	Mau **	21	9115	107	1156	13%	1998	94	845	40	42%	52%	792	122	7%	185	127	13%
Uttar Pradesh	Meerut	35	29421	213	3998	14%	6662	193	2922	85	89%	62%	1756	975	17%	1009	815	22%
Uttar Pradesh	Mirzapur	24	15890	163	1961	12%	3125	129	1436	59	62%	59%	1001	226	8%	462	426	23%
Uttar Pradesh	Moradabad **	43	31507	183	4875	15%	6374	148	3641	84	89%	74%	1294	424	8%	1011	918	20%
Uttar Pradesh	Muzaffarnagar	41	27919	171	4123	15%	5918	145	3113	76	80%	76%	999	827	17%	979	872	22%
Uttar Pradesh	Pilibhit **	19	17052	226	1970	12%	3459	183	1224	65	68%	63%	718	186	9%	1329	436	26%
Uttar Pradesh	Pratapgarh **	31	14218	113	1422	10%	2997	96	1011	32	34%	44%	1297	220	9%	467	335	25%
Uttar Pradesh	Rae Bareli **	33	16966	128	2880	17%	5385	163	2204	67	70%	49%	2334	383	8%	462	413	16%
Uttar Pradesh	Rampur	22	18372	208	2398	13%	3788	171	1772	80	84%	67%	881	292	10%	832	721	29%
Uttar Pradesh	Saharanpur	33	25185	192	3542	14%	5489	168	2160	66	69%	72%	846	1037	26%	1446	1113	34%
Uttar Pradesh	Sant Kabir Nagar **	16	7088	108	919	13%	1626	99	761	46	49%	55%	614	107	7%	144	109	13%
Uttar Pradesh	Sant Ravidas Nagar	16	9725	156	1336	14%	2547	164	1047	67	71%	56%	833	184	9%	476	261	20%
Uttar Pradesh	Shahjahanpur	29	17562	150	2609	15%	3709	127	1904	65	68%	67%	917	251	8%	637	476	20%
Uttar Pradesh	Shravasti **	10	4926	122	752	15%	1032	102	626	62	65%	78%	177	91	10%	138	133	18%
Uttar Pradesh	Siddharthnagar **	23	8427	90	1195	14%	2084	89	983	42	44%	58%	712	141	8%	248	207	17%
Uttar Pradesh	Sitapur **	42	25045	151	3331	13%	6960	167	2341	56	59%	45%	2826	393	7%	1380	916	28%
Uttar Pradesh	Sonbhadra	17	7292	108	1430	20%	1800	107	1117	66	70%	79%	289	118	8%	274	242	18%
Uttar Pradesh	Sultanpur	37	16555	113	2596	16%	4353	119	2155	59	62%	58%	1574	269	7%	355	306	12%
Uttar Pradesh	Unnao **	31	19218	155	3044	16%	5193	167	2162	70	73%	61%	1373	617	15%	1040	919	30%
Uttar Pradesh	Varanasi	36	23831	165	3453	14%	6206	171	2495	69	73%	56%	1997	957	18%	757	550	18%
Uttarakhand	Almora	7	5953	211	605	10%	752	107	344	49	51%	80%	84	131	23%	186	161	32%
Uttarakhand	Bageshwar	3	1740	156	208	12%	373	134	144	52	54%	55%	116	38	13%	75	58	29%
Uttarakhand	Chamoli	4	1935	117	328	17%	561	136	235	57	60%	70%	100	62	15%	159	108	31%
Uttarakhand	Champawat	3	1861	185	166	9%	266	106	111	44	46%	69%	50	33	16%	64	56	34%
Uttarakhand	Dehradun	14	13836	241	1695	12%	2645	185	730	51	54%	48%	789	664	30%	460	371	34%
Uttarakhand	Garhwal	8	5233	168	783	15%	1115	143	482	62	65%	62%	296	154	17%	182	152	24%

District-wise Performance of RNTCP (Contd.)

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Uttar Pradesh	Mau **	83	5%	92%	85%	93%	92%	0	0%	605	88%	838	98%	96	15%	431	85%
Uttar Pradesh	Meerut	195	3%	92%	91%	92%	94%	0	0%	2677	92%	2922	100%	485	92%	2265	91%
Uttar Pradesh	Mirzapur	156	6%	94%	89%	94%	96%	0	0%	1335	93%	1422	99%	191	87%	1190	87%
Uttar Pradesh	Moradabad **	237	4%	91%	83%	84%	94%	1	0%	3304	91%	3630	100%	188	91%	1907	86%
Uttar Pradesh	Muzaffarnagar	244	5%	91%	86%	87%	92%	7	0%	2738	88%	3103	100%	337	76%	1797	92%
Uttar Pradesh	Pilibhit **	151	7%	91%	83%	85%	98%	1	0%	1175	96%	1213	99%	756	94%	911	93%
Uttar Pradesh	Pratapgarh **	111	4%	89%	80%	91%	96%	0	0%	944	91%	1040	100%	547	53%	490	62%
Uttar Pradesh	Rae Bareli **	220	4%	88%	81%	86%	85%	13	0%	2003	91%	2204	100%	180	96%	1478	84%
Uttar Pradesh	Rampur	152	5%	89%	86%	87%	95%	0	0%	1690	95%	1772	100%	357	97%	1226	96%
Uttar Pradesh	Saharanpur	329	8%	91%	86%	89%	94%	4	0%	2027	94%	2160	100%	158	95%	1909	95%
Uttar Pradesh	Sant Kabir Nagar **	62	4%	95%	88%	89%	94%	0	0%	656	87%	760	100%	350	85%	392	79%
Uttar Pradesh	Sant Ravidas Nagar	159	8%	96%	93%	94%	99%	4	0%	1046	98%	1064	100%	483	45%	840	79%
Uttar Pradesh	Shahjahanpur	141	5%	90%	83%	85%	86%	1	0%	1491	78%	1876	99%	684	55%	944	85%
Uttar Pradesh	Shravasti **	34	4%	93%	88%	88%	99%	0	0%	292	90%	595	95%	117	23%	346	88%
Uttar Pradesh	Siddharthnagar **	108	6%	93%	85%	87%	96%	0	0%	914	93%	983	100%	177	89%	519	84%
Uttar Pradesh	Sitapur **	250	4%	88%	77%	91%	88%	0	0%	2048	87%	2341	100%	158	85%	1853	89%
Uttar Pradesh	Sonbhadra	75	5%	92%	88%	92%	94%	0	0%	1048	94%	1117	100%	190	79%	525	68%
Uttar Pradesh	Sultanpur	216	5%	93%	86%	90%	96%	0	0%	1950	90%	2132	99%	789	93%	1329	87%
Uttar Pradesh	Unnao **	288	7%	94%	87%	87%	89%	2	0%	2030	94%	2161	100%	607	95%	1444	96%
Uttar Pradesh	Varanasi	609	11%	91%	85%	87%	92%	0	0%	2242	90%	2473	99%	528	97%	1960	88%
Uttarakhand	Almora	76	13%	94%	94%	94%	96%	1	0%	329	96%	332	97%	167	89%	303	94%
Uttarakhand	Bageshwar	18	6%	85%	78%	78%	93%	2	1%	138	96%	144	100%	50	82%	93	83%
Uttarakhand	Chamoli	25	6%	88%	88%	90%	92%	2	1%	211	90%	229	97%	72	97%	217	87%
Uttarakhand	Champawat	19	9%	83%	91%	95%	90%	2	1%	98	88%	107	96%	68	75%	116	83%
Uttarakhand	Dehradun	221	10%	92%	80%	82%	89%	35	3%	604	82%	659	90%	199	84%	567	80%
Uttarakhand	Garhwal	55	6%	90%	86%	86%	94%	0	0%	429	89%	456	95%	181	83%	382	81%

District-wise Performance of RNTCP (Contd.)

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Uttarakhand	Hardwar	16	9506	147	1406	15%	1768	109	803	50	52%	69%	359	123	10%	483	382	32%
Uttarakhand	Nainital	9	7187	210	1284	18%	1679	197	553	65	68%	59%	377	286	23%	458	301	35%
Uttarakhand	Pithoragarh	5	2865	138	431	15%	621	120	287	55	58%	74%	101	112	22%	121	109	28%
Uttarakhand	Rudraprayag	3	1564	153	179	11%	365	143	160	63	66%	65%	88	57	19%	60	52	25%
Uttarakhand	Tehri Garhwal	7	3007	111	364	12%	881	130	312	46	49%	55%	256	103	15%	210	148	32%
Uttarakhand	Udhamsingh Nagar	14	8650	156	1306	15%	1840	133	824	60	63%	63%	489	163	11%	364	269	25%
Uttarakhand	Uttarkashi	3	2126	161	279	13%	465	141	167	51	53%	59%	115	76	21%	107	81	33%
West Bengal	Bankura	35	21983	157	2563	12%	4025	115	2076	59	79%	72%	824	691	19%	434	324	14%
West Bengal	Barddhaman	76	45164	149	5500	12%	9811	129	4090	54	72%	59%	2890	1158	14%	1673	975	19%
West Bengal	Birbhum	33	22417	170	3021	13%	4192	127	2300	70	93%	71%	923	331	9%	634	470	17%
West Bengal	Dakshin Dinajpur	16	11682	177	1757	15%	2484	151	1403	85	114%	79%	378	355	17%	346	244	15%
West Bengal	Darjiling **	18	14962	213	2499	17%	4133	235	1407	80	107%	64%	781	994	31%	951	627	31%
West Bengal	Haora	47	29002	155	3442	12%	5902	126	2225	48	63%	66%	1166	1116	25%	1392	934	30%
West Bengal	Hugli	55	28616	130	3781	13%	5996	109	2906	53	70%	72%	1130	1050	21%	909	583	17%
West Bengal	Jalpaiguri **	37	30559	205	4177	14%	6910	185	3392	91	121%	76%	1100	1109	20%	1309	921	21%
West Bengal	Koch Bihar **	27	17526	161	1826	10%	3114	115	1392	51	68%	67%	695	562	21%	465	283	17%
West Bengal	Kolkata	50	38714	193	5443	14%	7894	157	2960	59	79%	77%	908	2112	35%	1914	1326	31%
West Bengal	Maldah **	36	25524	177	3584	14%	5071	141	2758	77	102%	73%	1004	508	12%	800	565	17%
West Bengal	Medinipur East	48	22157	114	2257	10%	3040	63	1890	39	52%	84%	348	400	15%	400	266	12%
West Bengal	Medinipur West	57	28688	125	3989	14%	6636	116	2881	50	67%	65%	1521	1107	20%	1127	617	18%
West Bengal	Murshidabad	64	43170	168	5061	12%	8047	125	4011	62	83%	70%	1692	1305	19%	1039	794	17%
West Bengal	Nadia	50	35357	175	3470	10%	5462	108	2563	51	68%	69%	1140	859	19%	900	530	17%
West Bengal	North 24 Parganas	98	53095	136	6105	11%	10591	108	5091	52	69%	76%	1603	1830	21%	2067	1233	19%
West Bengal	Puruliya	28	17567	158	2035	12%	4152	150	1698	61	82%	54%	1448	306	9%	697	304	15%

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Uttarakhand	Hardwar	68	5%	92%	86%	86%	83%	70	5%	563	70%	802	100%	127	81%	441	72%
Uttarakhand	Nainital	93	8%	83%	68%	86%	81%	3	0%	526	95%	547	99%	260	85%	439	100%
Uttarakhand	Pithoragarh	22	4%	92%	85%	88%	93%	2	1%	267	93%	287	100%	127	79%	249	87%
Uttarakhand	Rudraprayag	23	8%	90%	86%	92%	97%	0	0%	123	84%	140	96%	62	85%	143	85%
Uttarakhand	Tehri Garhwal	47	7%	88%	77%	85%	88%	8	2%	241	77%	310	99%	120	90%	230	80%
Uttarakhand	Udhamsingh Nagar	90	6%	88%	84%	84%	93%	14	1%	779	95%	804	98%	266	80%	660	92%
Uttarakhand	Uttarkashi	20	6%	92%	83%	87%	93%	0	0%	143	86%	167	100%	75	88%	141	89%
West Bengal	Bankura	135	4%	92%	88%	89%	91%	1	0%	1576	77%	1981	95%	843	85%	1616	87%
West Bengal	Barddhaman	328	4%	89%	85%	86%	91%	1	0%	2966	74%	3863	96%	501	65%	2031	62%
West Bengal	Birbhum	109	3%	88%	82%	84%	92%	0	0%	1678	73%	2174	95%	335	72%	1369	78%
West Bengal	Dakshin Dinajpur	70	3%	88%	84%	86%	86%	1	0%	999	71%	1232	88%	126	83%	1002	85%
West Bengal	Darjiling **	300	9%	89%	78%	83%	75%	12	1%	1055	75%	1179	84%	312	85%	771	67%
West Bengal	Haora	406	9%	88%	84%	86%	92%	17	1%	2041	92%	2208	99%	525	68%	1829	91%
West Bengal	Hugli	195	4%	88%	83%	85%	85%	1	0%	2189	75%	2891	99%	53	82%	1779	80%
West Bengal	Jalpaiguri **	399	7%	89%	87%	88%	98%	0	0%	3039	90%	3341	98%	237	96%	2516	89%
West Bengal	Koch Bihar **	62	2%	89%	84%	86%	96%	0	0%	1061	76%	1316	95%	158	84%	914	77%
West Bengal	Kolkata	590	10%	82%	80%	80%	89%	5	0%	2560	89%	2853	99%	202	97%	2273	97%
West Bengal	Maldah **	344	8%	89%	83%	84%	86%	17	0%	1777	64%	2420	88%	418	80%	1660	71%
West Bengal	Medinipur East	57	2%	86%	81%	82%	95%	0	0%	1404	74%	1778	94%	75	77%	1500	71%
West Bengal	Medinipur West	203	4%	90%	85%	86%	88%	14	0%	2120	74%	2305	80%	276	88%	2047	79%
West Bengal	Murshidabad	460	7%	90%	86%	88%	93%	0	0%	3230	81%	3878	97%	217	92%	2739	82%
West Bengal	Nadia	163	4%	90%	87%	87%	93%	2	0%	2042	80%	2550	99%	361	89%	1890	83%
West Bengal	North 24 Parganas	456	5%	89%	88%	89%	95%	6	0%	4935	97%	5084	100%	740	97%	4214	96%
West Bengal	Puruliya	164	5%	91%	85%	89%	95%	0	0%	1357	80%	1584	93%	251	86%	1286	83%

District-wise Performance of RNTCP (Contd.)

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West Bengal	South 24 Parganas	76	39443	130	4048	10%	6791	90	3430	45	60%	73%	1257	1028	18%	1072	738	18%
West Bengal	Uttar Dinajpur	27	14674	137	1816	12%	2962	111	1526	57	76%	72%	593	406	16%	435	271	15%
Grand Total		**11477**	**6817390**	**149**	**911823**	**13%**	**1517333**	**132**	**616016**	**54**	**72%**	**61%**	**390360**	**219945**	**18%**	**289212**	**199238**	**24%**
Summary of performance of Tribal Districts		**518**	**283789**	**137**	**42901**	**15%**	**75397**	**146**	**31850**	**61**	**82%**	**60%**	**21213**	**9365**	**15%**	**12794**	**8270**	**21%**
Summary of performance of Poor and Backward Districts		**2605**	**1221384**	**117**	**174708**	**14%**	**304183**	**117**	**129799**	**50**	**66%**	**59%**	**91909**	**28749**	**11%**	**53238**	**34967**	**21%**
Zonal Analysis																		
North Zone		2878	1820838	158	269378	15%	441935	154	178377	62	65%	62%	109080	66884	19%	86893	86893	33%
South Zone		2414	1773873	184	178025	10%	291672	121	120226	50	66%	62%	74661	48038	20%	48400	48400	29%
West Zone		3229	1764534	137	271262	15%	442070	137	170593	53	66%	60%	114971	60459	17%	95752	95752	36%
East zone		2520	1220488	121	161436	13%	281791	112	123099	49	65%	62%	75311	35314	15%	47749	47749	28%
North East		436	237657	136	31722	13%	59865	137	23721	54	73%	59%	16337	9250	19%	10418	10418	31%

District-wise Performance of RNTCP (Contd.)

State	District	No (%) of pediatric cases out of all New cases		3 month conversion rate of new smear positive patients[4]	Cure rate of new smear positive patients[5]	Success rate of new smear positive patients[5]	% smear positive patients living in the district placed on DOTS	No (%) of patients put on Non-DOTS treatment regimen		No (%) of NSP cases started RNTCP DOTS within 7 days of diagnosis		No (%) of NSP cases registered within one month of starting RNTCP DOTS treatment		No (%) of interviewed NSP cases who received DOT during IP as per guidelines		No (%) of cured NSP cases having end of treatment follow-up sputum done within 7 days of last dose	
West Bengal	South 24 Parganas	232	4%	90%	86%	88%	96%	0	0%	2902	85%	3369	98%	87	67%	2633	87%
West Bengal	Uttar Dinajpur	161	6%	88%	84%	86%	94%	0	0%	1353	89%	1494	98%	206	100%	1057	84%
Grand Total		**79779**	**6%**	**90%**	**84%**	**87%**	**92%**	**5978**	**1%**	**526333**	**87%**	**595496**	**97%**	**158999**	**73%**	**414629**	**83%**
Summary of performance of Tribal Districts		**4095**	**7%**	**90%**	**85%**	**88%**	**92%**	**415**	**1%**	**26285**	**84%**	**30980**	**96%**	**11167**	**64%**	**20981**	**77%**
Summary of performance of Poor and Backward Districts		**14620**	**6%**	**89%**	**82%**	**87%**	**93%**	**437**	**0%**	**105651**	**87%**	**123824**	**98%**	**33205**	**65%**	**78676**	**80%**
Zonal Analysis																	
North Zone		25801	7%	91%	85%	87%	93%	1388	1%	160286	89%	175519	99%	52031	76%	120127	89%
South Zone		16685	7%	89%	83%	85%	92%	1141	1%	101469	85%	115515	96%	30519	79%	79861	80%
West Zone		19760	6%	90%	85%	87%	92%	2779	1%	145548	87%	164686	97%	42794	68%	120945	82%
East zone		14305	6%	88%	82%	87%	92%	378	0%	98465	84%	116849	97%	25204	64%	76269	77%
North East		3228	7%	90%	86%	87%	92%	292	1%	20565	87%	22927	94%	8451	82%	17427	84%

* Tribal Districts (more than 50% tribal population) ** Poor/Backward District † Tribal & Poor/Backward Districts

Estimated New Smear Positive cases / lakh population based on ARTI data for North Zone (Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, Uttar Pradesh, Uttaranchal) is 95; East Zone (Andaman & Nicobar, Arunachal Pradesh, Assam, Bihar, Jharkhand, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, West Bengal) is 75; South Zone (Andhra Pradesh, Karnataka, Lakshdweep, Pondicherry, Tamil Nadu) is 75 and West Zone (Chhattisgarh, Dadra & Nagar Haveli, Daman & Diu, Goa, Gujarat, Madhya Pradesh, Maharashtra, Rajasthan) is 80; Orissa is 85,Kerala is 50

1 Projected population based on census population of 2001 is used for calculation of case-detection rate. 1 lakh = 100,000 population

2 Smear positive patients diagnosed include new smear positive cases and smear positive retreatment cases

3 Total patients registered for treatment includes new sputum smear positive cases, new smear negative cases, new extra-pulmonary cases, new others ,relapse,failure,TAD and retreatment others

4 Smear conversion rate not expected for new districts that began implementing RNTCP during 1st quarter 2008

5 Cure rate and success rate are not expected for new districts that began implementing RNTCP after Second quarter 2007

Values for grey areas are not expected

Referral of TB Suspects from ICTCs to RNCTP diagnostic units (2008)
(Reported by phase - I states implementing Joints TB-HIV Action Plan)

	Andhra Pradesh		Karnataka		Maharashtra		Manipur		Mizoram		Nagaland		Tamil Nadu *		Total	
Total Population (In lakhs)	822		574		1069		26		10		22		664		**3187**	
Total No. of districts	24		28		34		9		8		11		30		**144**	
	HIV Positive	HIV Negative	HIV Positive	HIV Negative	HIV Positive	HIV Negative	HIV Positive	HIV Negative	HIV Positive	HIV Negative	HIV Positive	HIV Negative	HIV Positive	HIV Negative	HIV Positive	HIV Negative
1. Number of TB suspects referred from VCTCs to RNTCP facilities*	21316	25830	9692	12592	14491	30998	612	660	117	59	471	1968	14055	35963	60754	108070
2. Out of the above persons, number diagnosed as having TB:																
a) Sputum Positive TB	2003	4233	715	1605	1201	3912	19	55	10	6	18	219	815	2740	4781	12770
b) Sputum Negative TB	721	1194	295	406	496	1123	19	47	83	37	28	196	474	451	2116	3454
c) Extra-Pulmonary TB	113	117	108	105	344	254	5	6	1	5	6	40	218	129	795	656
d) Total diagnosed TB patients	2837	5544	1118	2116	2041	5289	43	108	94	48	52	455	1507	3320	7692	16880
3. Out of above total diagnosed TB patients (d), number receiving DOTS	2387	4855	921	1752	1531	4420	38	103	6	6	26	297	1135	2705	6044	14138

- Source of data: Monthly reports on TB-HIV cross referals submitted by individual ICTCs to the respective state SACS

* Tamil Nadu's data is from January to October only

HIV Status of TB Patients - 2008
(Reported by Nine states implementing Intensified TB-HIV Action Plan)

States	Total TB patient registered	Tested for HIV before or during the TB treatment	Known to be HIV infected
		No.	No.
Andhra Pradesh	114624	15806	3445
Goa	1996	125	19
Karnataka	66159	13165	2605
Maharashtra	139641	10530	1578
Manipur	4293	314	73
Mizoram	2558	111	44
Nagaland	2984	583	184
Puducherry	1333	759	31
Tamil Nadu	84610	31753	2799
Total (9 states)	**418198**	**73146**	**10778**

MDR TB National Data

Cohort		Quarterly report on CF of MDR patients				
Quarter (1/2/3/4)	Year (yyyy)	State	Name of the DOTS plus site	No. of MDR Suspects subjected to Culture and DST	No. of MDR TB cases detected	No. of MDR TB Cases registered and initiated on Cat-IV treatment
4th	2007	Gujarat	BJMC, Ahmd	59	30	32**
4th	2007	Maharashtra	GMC, Nagpur	26	12	1
4th	2007	Total		85	42	33

** This also includes the MDR suspects subjected to culture & DST in previous quarter

Cohort	Quarterly report on CF of MDR patients				
Year (yyyy)	State	Name of the DOTS plus site	No. of MDR Suspects subjected to Culture and DST	No. of MDR TB cases detected	No. of MDR TB Cases registered and initiated on Cat-IV treatment
2008	Gujarat	BJMC, Ahmd	326	95	71
2008	Maharashtra	GMC, Nagpur	244	129	83
2008	Andhra Pradesh	Hyderabad	332	38	25
2008	West Bengal	Kolkata	55	5	1
2008	Haryana	Rohtak	70	7	5
2008	Kerala	Trivandrum	330	15	1
2008	Delhi	Delhi	139	19	4
2008	**Total**		**1496**	**308**	**190**

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NATIONAL RURAL HEALTH MISSION
राष्ट्रीय ग्रामीण स्वास्थ्य मिशन
(2005-2012)

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