TB India 2005

RNTCP
Status Report

Frontline TB Care Providers working towards freedom from TB

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सत्यमेव जयते

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Dr. Anbumani Ramadoss

Foreword

TB is one of the most pressing health problems of India. Every year, India has more than 1.8 million new cases of tuberculosis of which 0.8 million are new smear-positive. It also causes huge social and economic burden.

India has been implementing Revised National Tuberculosis Control Programme (RNTCP), an application of the WHO-recommended Directly Observed Treatment, Short Course (DOTS) strategy to control TB with the objective of curing at least 85% of new sputum positive TB patients and detecting at least 70% of such patients.

Revised National Tuberculosis Control Programme (RNTCP) is well recognised globally for fastest expansion and quality of services. Every month more than 100,000 patients are being initiated on treatment. In the year 2003, more than 9 lakh patients were initiated on treatment under DOTS. During 2004, about 12 lakh patients were put on treatment. From its inception more than 3.8 million patients have been initiated on treatment, saving more than 600,000 additional lives.

However, we are not content to implement effective TB control services only in public health institutions. It is critical that all major care providers are part and parcel of the programme. After a successful private public mix (PPM) pilot project in 1995 in Hyderabad, the programme recognised the need to partner with NGOs, private health care providers and the corporate sector. The RNTCP is one of the few DOTS programmes in the world to have official prescribed guidelines for the involvement of NGOs and private practitioners. So also the collaboration with National AIDS Control Programme, as TB is the most common opportunistic infection amongst HIV +ve patients. We need to further strengthen these partnerships.

Recognising the need to reach to every TB patient in the country, and for awareness generation and information sharing, the web-based Resource Centre for IEC material on official web site of the RNTCP is a unique initiative by the programme.

The World TB Day 2005 focuses on the theme of frontline TB care providers and their crucial role in stopping TB, as ultimately success of the programme depends on the army of health workers and volunteers who help spread the messages of TB services, who diagnose, treat, support and cure millions of TB patients every year.

The success of RNTCP has earned us international recognition, but challenging tasks still lie ahead. The entire country has to be covered under DOTS by 2005, while maintaining the quality of services provided under RNTCP. I am sure that with the dedicated and committed TB care providers at all levels, the target of full national coverage by 2005 would be achieved.

I congratulate all those associated with the RNTCP and stress that through education, social mobilisation, early diagnosis and treatment of TB, we can work towards this winnable battle of controlling TB in India. I would also like to appreciate the work of TB care providers who have tirelessly worked to reach out to the TB patients.

I am glad that an annual report of the TB programme is being published for the fifth consecutive year. I hope that the publication of this report, showcasing the experiences and achievements of the programme, will motivate others involved in TB control to emulate India's example.

Dr. Anbumani Ramadoss

Contents

RNTCP – An Overview

The Revised National Tuberculosis Control Programme (RNTCP), based on the internationally recommended DOTS strategy, has been expanding and widening its reach rapidly. From covering 50% of the population by end 2002, it has now leapfrogged to cover 87% of the population (approximately 947 million people) as of end 2004.

RNTCP achievements till December 2004

- The programme covers 87% of the population amounting to approximately 947 million people.
- Twenty-six states and union territories are fully covered and RNTCP now extends across more than 547 districts in India.
- Treatment success rate has more than trebled, from 25% to 86%, from 1998 to 2004. Death rate has been brought down seven-fold, from 29% to 4%.
- The programme boasts of the involvement of more than 1000 non-governmental organisations (NGOs) and more than 5000 private practitioners.
- Over 200 medical colleges and 100 corporate health facilities are participating in the programme.
- More than 10,000 peripheral laboratories/District Medical Centres (DMCs) have been established under the RNTCP.
- Treatment has been initiated for over 3.8 million patients, thus saving more than 600,000 lives.
- Over 900 National AIDS Control Programme (NACP) staff members and 2,000 RNTCP staff members have been trained in TB-HIV-related issues.

Expansion during 2004

- Increase in population coverage from 778 million (at the end of 2003) to 947 million by end 2004.
- Monthly initiation of approximately 100,000 patients on treatment.
- Increase in new smear-positive detection in DOTS area from 69% in 2003 to 72% in 2004.
- Achieved treatment success rate of 86%.
- Training of over 50,000 health workers completed.

Other achievements since January 2004

- The Central TB Division (CTD) is piloting a 'referral for treatment' mechanism in 12 districts with large medical colleges, aimed at developing a seamless RNTCP service between medical colleges and general health services.
- Public-private mix (PPM) DOTS projects have been initiated in 12 large urban areas with technical assistance from WHO.
- Blinded rechecking of routine sputum smears was pilot tested and based on the results, the necessary changes have been made in the External Quality Assessment (EQA) protocol and the revised RNTCP EQA guidelines have been finalised.
- Phase I of joint TB-HIV activities, initiated in collaboration with Nationl AIDS Control Organisation (NACO) and covering six high-HIV prevalent states has been completed. Phase II activities have been started in eight other states. Thus, as of 2004, 14 states have initiated TB-HIV co-ordination activities.
- Based on the consensus between RNTCP and Indian Academy of Pediatrics (IAP), the existing RNTCP guidelines for the diagnosis and treatment of pediatric cases have been modified and published in the Journal of Indian Pediatrics.
- Development work on Pediatric Patient-wise Boxes (PWBs) is in process and boxes will be introdued in the programme in 2006. This will be a unique global achievement for RNTCP, as no other DOTS programme in the world has such PWBs for the treatment of children with tuberculosis.
- RNTCP has continued to improve drug logistic manangement in 2004.
- A number of training modules and courses have been added and some of the existing training packages have been revised within RNTCP. These are being used from January 2005 for training new participants.
- The RNTCP modules on EQA of sputum microscopy services and Drug Resistance Surveillance (DRS) have been finalised and are being published. Training modules on PPM are also under publication.
- In collaboration with NACO, the CTD has developed training packages on TB-HIV issues, targeted at various levels of health workers.
- Onsite evaluation of three state-level laboratory facilities has been done by teams comprising of CTD, Central Institutes and World Health Organization (WHO) representatives.
- In collaboration with the Ministry of Health & Family Welfare, the 2nd Stop TB Partners Forum was held in New Delhi in March 2004.
- Four exhibitions and media workshops were organised in Gujarat, Rajasthan and Tamil Nadu between July 2004 and February 2005.
- A unique initiative in the context of TB control in India was the development of a web-based resource centre for Information, Education and Communication (IEC) developed with the help of the Danish International Development Agency (Danida). The material can be accessed by all those involved in TB control: states, districts, NGOs, etc.

Tuberculosis: Burden of the Disease in India

Every year 1.8 million people in India develop tuberculosis (TB). Tuberculosis is an infectious disease caused by the bacillus *Mycobacterium tuberculosis* and spreads through air. India accounts for one-fifth of the global TB incidence and is estimated to have the highest number of active TB cases amongst the countries of the world.

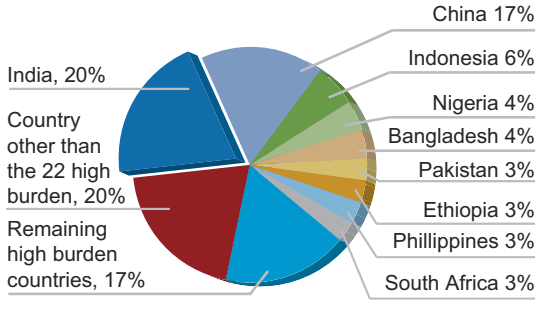
The nationwide Annual Risk of TB Infection (ARTI) survey, completed in 2003, showed that each year 75 new smear positive pulmonary TB cases occur per 100,000 population, with a higher incidence in the northern states and in the urban population.

The emergence of TB/HIV co-infection poses an additional challenge to the control of TB in India. The continuing burden of the disease is tragic since TB is fully curable.

Enormity of the epidemic

- Approximately 40% of Indians are infected with *Mycobacterium tuberculosis*.
- Every day, about 5000 people develop TB disease while over 1000 die of TB.

Estimated Incidence of TB, 2002



Source: WHO Report 2004: Global TB Control

STOP TB Ambassador A. R. Rahman giving DOTS

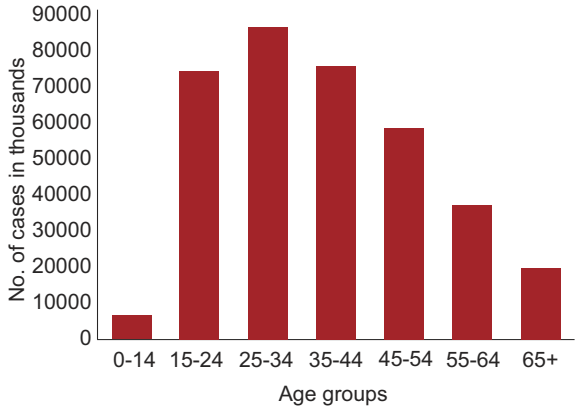
- Every year 1.8 million new cases occur in the country of which 0.8 million are infectious.
- Unless properly treated, infectious pulmonary TB patients can infect 10–15 persons in a year.
- Poorly treated patients can develop drug resistant and potentially incurable forms of TB.

Economic burden of tuberculosis

TB kills more adults than any other infectious disease, accounting for almost 400,000 deaths annually. It mainly afflicts people who are in the economically productive years of their lives (15–54 years), thereby causing huge social and economic disruption. This, in turn, hampers the development of the country.

An adult suffering from TB loses three to four months of working time, on an average. This translates to 20–30% of the household's annual income — a crippling loss for families (that are already battling poverty and underdevelop-

TB affects mostly young adults



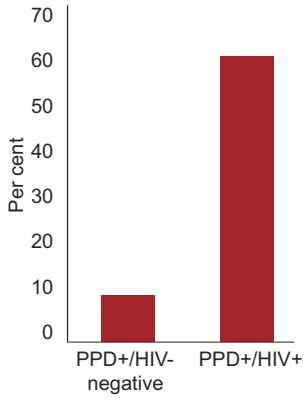
ment). The annual cost to the country has been pegged at US$ 300 million in direct costs and at US$ 3 billion in indirect costs.

Social burden of tuberculosis

TB kills more women in India than any other infectious disease, and this is more than the combined figure from all other causes of maternal mortality. It also adversely affects child-care. Children of infected mothers often drop out of school in order to supplement the family income and to help take care of siblings. A substantial proportion of female infertility is also caused by tuberculosis.

The stigma attached to TB adds to the burden of disease for both men and women, and even more so if they are of marriageable age. While men have to deal with the stigma at their work place and at the community level, women are faced with ostracism within the household and in the immediate neighbourhood.

Lifetime risk of developing TB disease



Studies indicate that 100,000 women are rejected by their families each year on account of TB. Women are inhibited in discussing their illness and participating in social functions due to fear of becoming an outcast.

Tuberculosis and HIV

India, with an estimated 5.1 million HIV (Human Immuno-deficiency Virus) infected persons, has the second highest HIV-infected population in the world. Approximately two million Indians are estimated to be co-infected with TB and HIV.

HIV infection has a marked impact on the control of TB as the two diseases are closely linked. TB is the most common opportunistic disease that affects people infected with HIV. As HIV debilitates the immune system, vulnerability to TB is increased many fold. Without HIV, the lifetime risk of TB-infected people developing tuberculosis is only 10%, compared to over 50% in the case of people co-infected with HIV and TB. HIV is also the most powerful risk factor for the progression of TB-infection to the disease. In a reciprocal manner, TB accelerates the progression of HIV into AIDS, thus shortening the survival of patients with HIV infection.

TB is a curable disease even among the HIV-infected people. The Directly Observed Treatment, Short-course (DOTS) is as effective among HIV-infected TB patients as among those who are HIV-negative. More than 90% of HIV-infected TB patients who complete treatment can be cured of TB and can live longer, healthier lives.

Globally one-fifth of new tuberculosis cases are from India.

Chapter 2

DOTS: Its Advantages

"In our fight against tuberculosis, we have a powerful weapon. The DOTS strategy for controlling TB is not only highly effective, it is also one of the most cost-effective public health interventions in the world. Today, DOTS covers nearly 70% of the world's population."

Dr. Kofi Annan, Secretary-General, United Nations
(Excerpt from statements to the STOP TB Partners Forum, March 2004)

DOTS in India

DOTS (Directly Observed Treatment, Short course) is an internationally recommended strategy for TB control adopted in the Revised National Tuberculosis Control Programme (RNTCP) in India. DOTS has proved to be an effective tool in controlling TB on a mass basis and is being used in over 180 countries. India has adapted and implemented DOTS in different parts of the country since 1993. A full-fledged DOTS programme was begun in India in 1997 and it has been expanded in a phased manner throughout the country.

Currently, DOTS is being implemented in 547 districts of India covering a population of 947 million. It is expected that by the 2nd quarter of

Five components of DOTS

1. Political and administrative commitment
2. Good quality diagnosis, through sputum microscopy
3. Uninterrupted supply of good quality drugs
4. Directly observed treatment
5. Systematic monitoring and accountability

Five components of DOTS

2005, almost the entire population (over 1.11 billion people) would be covered by DOTS. The RNTCP aims to detect at least 70% of new smear positive TB cases and cure at least 85% of them.

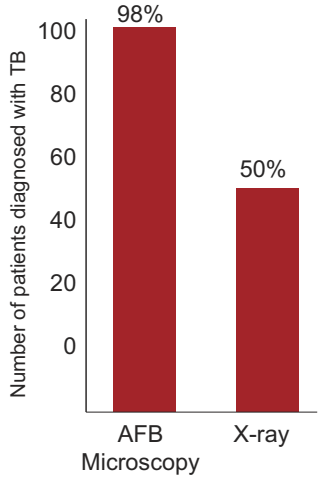
Political and administrative commitment

Since TB can be cured and the epidemic reversed, it warrants the topmost priority, which has been accorded by the Government of India. This priority should be continued and expanded at the state, district and local levels. The government's commitment is measured in terms of funds granted, human resources and administrative support. The success of the RNTCP bears testimony to the commitment of the government.

Good quality diagnosis through sputum miscroscopy

Top quality microscopy allows health workers to detect the TB bacilli and is essential for identifying the infectious patients who need treatment the most. Sputum microscopy is the best tool for detection as it provides information on the infectiousness of the patient, helps in categorisation of the patient for treatment and is an objective method to monitor the patient's progress. Other advantages of this method are that it is relatively easy to perform and less expensive compared to X-ray. The result is available within two days and correct treatment can be started without delay.

Smear microscopy gives more accurate diagnosis



Uninterrupted supply of good quality drugs

An uninterrupted supply of good quality anti-TB drugs must be available. In the RNTCP, an individual box of medications for the entire treatment is earmarked for every patient registered, ensuring the availability of the full course of treatment to the patient the moment he/she is registered for treatment. Hence DOTS ensures patient adherence, and prevents development of multi-drug resistance (MDR).

Directly observed treatment

The heart of the DOTS programme is "directly observed treatment", in which a health worker or another trained person who is not a family member, watches as the patient swallows the anti-TB medicines in their presence. RNTCP uses short-course chemotherapy (SCC) regimens, which reduces the duration of treatment and facilitates directly observed treatment.

Under optimal conditions, results of treatment without observation can give 50–60% success rate, whereas direct observation results in 85–95% success rate. In this way, DOT ensures that the patient adheres to the treatment. The responsibility for this falls on the health provider, who ensures that the right drugs in the right doses are taken at right intervals for the right duration.

Systematic monitoring and accountability

The programme is accountable for the outcome of every patient put on treatment. The cure rate and other key indicators are monitored at every level of the health system, and if any area is not meeting expectations, supervision is intensified.

Category of treatment	Type of patient	Regimen
Category I	New sputum smear-positive Seriously ill sputum smear-negative* Seriously ill 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	$2S_3H_3R_3Z_3E_3/1H_3R_3Z_3E_3/5H_3R_3E_3$
Category III	New sputum smear-negative, not seriously ill Extra-pulmonary, not seriously ill	$2H_3R_3Z_3/4H_3R_3$

H: isoniazid; R: rifampicin; Z: pyrazinamide; S: streptomycin; E: ethambutol
Note: The number preceding the letters refers to the number of months of treatment. Subscripts refer to the number of doses per week

*Any patient, pulmonary or extrapulmonary, who is known to be HIV positive based on voluntary disclosure of HIV serostatus is considered as seriously ill.

RNTCP shifts the responsibility for cure from the patient to the health system.

Anti TB treatment

RNTCP uses short-course chemotherapy regimens, as recommended by the World Health Organization, to reduce the treatment duration and facilitate direct observation. Treatment is divided into two phases: intensive and continuation.

In India, the following schedule is followed:

- In the intensive phase (two to three months), each dose is administered three times a week, under direct observation.
- In the continuation phase (four to five months), at least one of the three-times-a-week doses is administered under direct observation.

The treatment category and regimen depend on the type of patient.

Under the RNTCP, all sub-centres, rural health centres, community health centres, primary health centres and other health faculties provide DOTS services to patients. The progress of the patient is monitored through sputum testing. As TB patients may also seek treatment from private physicians, the government has taken initiatives to integrate DOTS into private sector health delivery.

Advantages of DOTS

- Accuracy of TB diagnosis is more than doubled.
- Treatment success rate up to 95%.
- Prevents the spread of the tuberculosis bacillus, thus reducing the incidence and prevalence of TB.
- Helps alleviate poverty by saving lives, reducing duration of illness and preventing spread of infection.
- Improves quality of healthcare and removes stigma associated with TB.
- Prevents failure of treatment and the emergence of MDR-TB by ensuring patient adherence and uninterrupted drug supply.
- Lends credibility to TB control efforts.
- Provides a model for strengthening health services.

Person cured with DOTS with her children in a media workshop in Gujarat

Chapter 3

RNTCP: Implementation Status and Expansion

"India can be very proud of the recent achievements in TB control on a massive scale, with three-quarters of the population now covered by DOTS."

Dr. LEE Jong-wook, Director General, World Health Organization, March 2004

In October 1993, the Revised National Tuberculosis Control Programme (RNTCP), based on the internationally recommended Directly Observed Treatment, Short-course (DOTS) strategy, was implemented in five pilot sites covering a population of 2.35 million. By mid-1998, it had steadily expanded to cover a population of 18 million. RNTCP thereafter expanded rapidly thereafter, to cover 30% of the population by 2000, 50% of the population by end 2002 and 87% of the population (approximately 947 million people) as of end 2004. This is spread across 547 districts of the 31 states and Union Territories (UTs) in India, with 26 states and UTs being fully covered.

The large increase in diagnostic facilities, to over 10,000 laboratories across the country, has doubled the proportion of confirmation of sputum-positive cases (over the earlier National Tuberculosis Programme) and brought the efficacy of the RNTCP on par with global standards. It is noteworthy that this rapid expansion has not come at the expense of overall performance and the treatment success rate has more than trebled, from 25% to 86%, during this period.

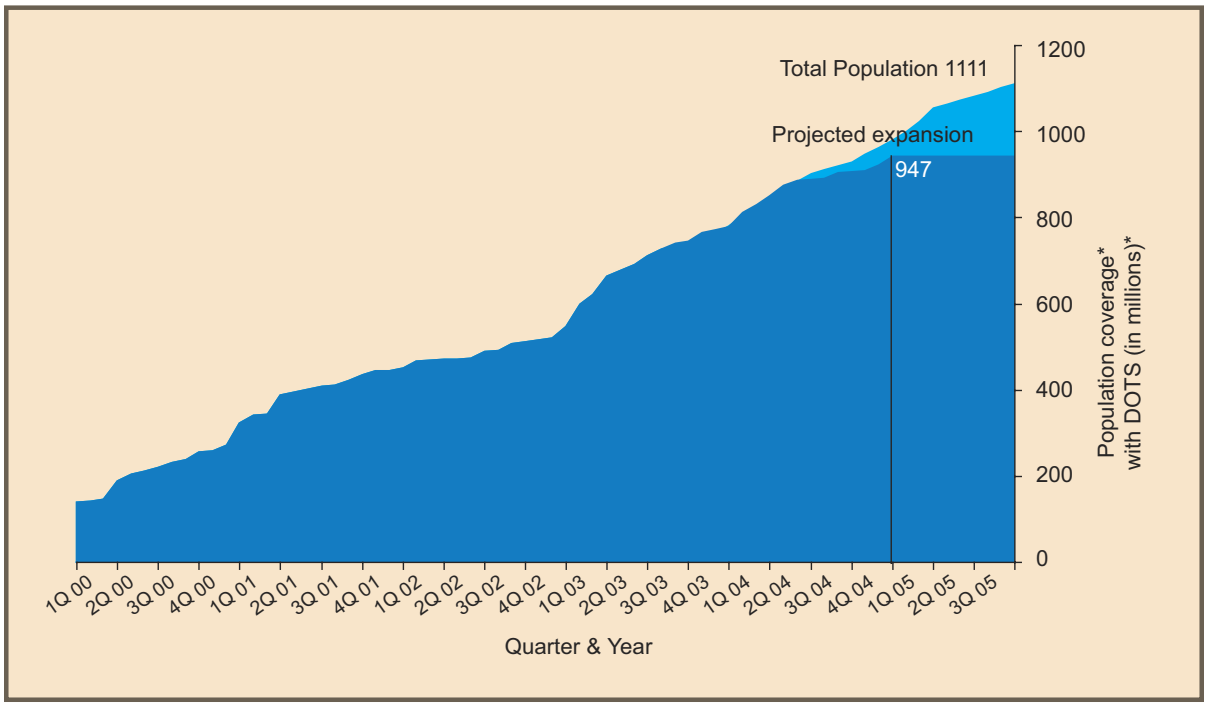
Laboratory technician examining smear under the microscope for detection of TB bacteria

Progress over the years: TB control in India

1993–96: RNTCP's pilot phase was implemented in a population of 2.35 million in five sites across different states: Delhi, Gujarat, Kerala, Maharashtra and West Bengal. It was expanded to cover 13.85 million people in 1995 and 16 million in 1996.

1996–97: Having confirmed the technical and operational feasibility of the revised programme, a soft loan of US$ 142 million was negotiated with the World Bank in December 1996. India planned to initially implement the RNTCP in 102 districts (271 million population) in a phased manner. It was envisaged that another 203 short-course chemotherapy (SCC) districts, having a population of 447 million, would be strengthened as a transitional step for introduction of revised strategy at a later stage.

Multiyear DOTS expansion plan for India
(31st December 2004)



* Projected population based on 2001 census.

1998–2004: Rapid scale-up began in late 1998; soon another 100 million people were covered (*see table*).

Expansion during 2004

The expansion of the RNTCP in India has been extremely encouraging and it has contributed significantly to the progress in global TB control.

Progress in 2004

- Increase in population coverage from 778 million (at the end of 2003) to 947 million by 2004 end.
- Monthly initiation of approximately 100,000 patients on treatment.
- Increase in new smear-positive detection in DOTS area from 69% in 2003 to >72% in 2004.
- Achieved treatment success rate of 86%.
- Training of over 50,000 health workers completed.

Rapid scale-up of RNTCP coverage, 1998 through 2004

Year	Population covered (millions)
1998	18
1999	130
2000	287
2001	450
2002	530
2003	778
2004	947

Expansion of DOTS coverage in 2004

Period	Increase in coverage (millions)	Increase in districts (number)	Success rate
Quarter 1	59.4	40	86%
Quarter 2	36.0	31	86%
Quarter 3	19.2	21	86%
Quarter 4	41.9	26	86%

External Quality Assessment (EQA)/Drug Resistance Surveillance (DRS)

Revised in accordance with new international guidelines released in 2002, the RNTCP EQA guidelines now incorporate the following methods for quality assurance of sputum microscopy.

- On-site evaluation
- Panel testing
- Blinded rechecking

The modified guidelines allow participant laboratories to assess their capabilities by comparing results with those of others through panel testing and blinded rechecking. On-site laboratory evaluation helps review performance quality.

Capacity building and monitoring

It is essential to have adequate staff with the right skills, knowledge and attitude to successfully implement and sustain the RNTCP. The process of capacity building involves training, monitoring and supervision. Training involves initial training, retraining and updates. Training has been decentralised to the state and district levels and consequently, the training facilities at the state, district and sub-district have been upgraded. State TB cells are being trained and encouraged to analyse performance data each quarter and send regular feedback to districts to highlight their strengths and weaknesses so that corrective action can be initiated. An exhaustive document on supervision and monitoring strategy has also been developed and will be used in the field from early 2005.

Public-Private Mix (PPM)

The magnitude of TB in India requires a concerted mobilisation of efforts and resources to combat its spread. Traditionally, TB control was considered the responsibility solely of the public health sector. TB control programmes were thus designed for implementation through the available public health network only. TB is encountered at all levels from primary healthcare services to highly specialised hospitals. RNTCP recognised the importance of involvement of private sector and has taken steps for its involvement, including development of different schemes.

RNTCP and the success of DOTS have convinced other sectors to collaborate in the overall programme, resulting in a significant increase in case detection and successful treatment outcome. Partnerships hold tremendous potential and can offer many advantages to all involved agencies. The focus is on creating sustainable partnerships and lasting alliances. Public-private mix (PPM) includes public-public, public-private as well as private-private partnerships. RNTCP recognises the value of partnership with the private sector.

Public–private partnerships have demonstrated good patient adherence, conversion and cure rates. Today RNTCP has reached a stage where diagnostic and treatment services are being provided by a mixture of public and private providers.

Encouraged by the success of PPM in RNTCP, an intensive PPM project has been launched in 12 cities with technical support from WHO.

Over 1000 non-governmental organisations (NGOs), 5000 private practitioners (PP), 200

RNTCP and the success of DOTS have convinced other sectors to collaborate in the overall programme, resulting in a significant increase in case detection and successful treatment outcome.

medical colleges and 100 corporate health facilities are involved in RNTCP activities.

Government agencies

Co-ordination across various agencies and departments of the government is a tough task. However, once it is streamlined, it can deliver enormous benefits. Keeping this in mind, the Ministry of Health and Family Welfare has successfully engaged various ministries and other organisations like the Employees State Insurance (ESI) Scheme, Railways, Central Government Health Services (CGHS) and the Armed Forces Health Establishments for participating in RNTCP. The various ministries have issued directives to their respective health establishments to adopt DOTS as a standard treatment for TB.

This kind of mass mobilisation helps to create the requisite epidemiological impact, as all the cases receive uniform and standardised treatment with quality drugs.

Medical colleges

Medical colleges play a crucial role in TB control due to the large number of TB patients that they treat as well as their role in imparting knowledge and skill to students. Since 1997, there have been determined efforts to involve medical colleges and their hospitals in the RNTCP. As of end 2004, 206 out of 213 medical colleges in the RNTCP implementation districts have participated in the programme.

Dr. S.K. Sharma, Chairman, National Task Force on Medical Colleges; Dr. S.J. Habayab, WR-India; Dr. S.P. Agarwal, DGHS; Dr. V.K. Arora, Additional DG; Dr. L.S. Chauhan, DDGTB

Dr. S.P. Agarwal, DGHS addressing the third workshop of National Task Force for the involvement of Medical Colleges in RNTCP

Seven premier medical colleges across different national zones were identified in 2002 as nodal centres to take this initiative forward. Following this, one national task force, five zonal task forces (ZTFs) and several state task forces (STFs) were set up. All task forces have well-defined roles and representation from different levels of the programme as well as from the medical college faculties.

Private sector

India's private healthcare sector is among the largest in the world with around 8 million practitioners. These are often the first points of contact for a significant percentage of TB suspects and patients. To gain advantage of this comprehensive outreach and widen access to quality TB care, the RNTCP is developing partnerships with the private health sector. As of December 2004, over 5000 private practitioners officially provide RNTCP services.

The Government of India (GoI) has prepared a number of policies, guidelines and schemes to involve the private sector. In a groundbreaking initiative, the GoI has initiated PPM DOTS projects in 12 large urban areas with technical assistance from the WHO. Promising results

have been achieved in Delhi, Hyderabad, Kannur, Pune, and Thane.

Corporate sector

With the increasing global recognition of corporate social responsibility, it is opportune to involve the corporate sector in programmes of social upliftment. Through central and local initiatives, many occupational physicians as well as the management of large corporate houses have been sensitised to the necessity and benefits of promoting DOTS and RNTCP.

Over 100 corporate units have joined hands with the RNTCP. These include sugar mills in Uttar Pradesh, tea gardens in West Bengal and Assam, Coal India in West Bengal, Rourkela steel plant, BHEL, Bhopal and Tata Tea in Munnar. The participation of tea estates in Dibrugarh (Assam) and Jalpaiguri (West Bengal) have yielded particularly encouraging results.

Associations such as the Confederation of Indian Industry and the Federation of Indian Chambers of Commerce and Industry have shown interest in promoting the RNTCP.

NGOs

For the success of any broad-based scheme, it is important to mobilise people at the grassroots level. NGOs are actively involved with the communities because of the broad range of services that they deliver. RNTCP proactively solicits the involvement of NGOs and as of end 2004, is collaborating with over 1000 NGOs across the country.

Cured lady with members of 'TB care group' of the NGO World Vision in Mahaboob Nagar District, Andhra Pradesh

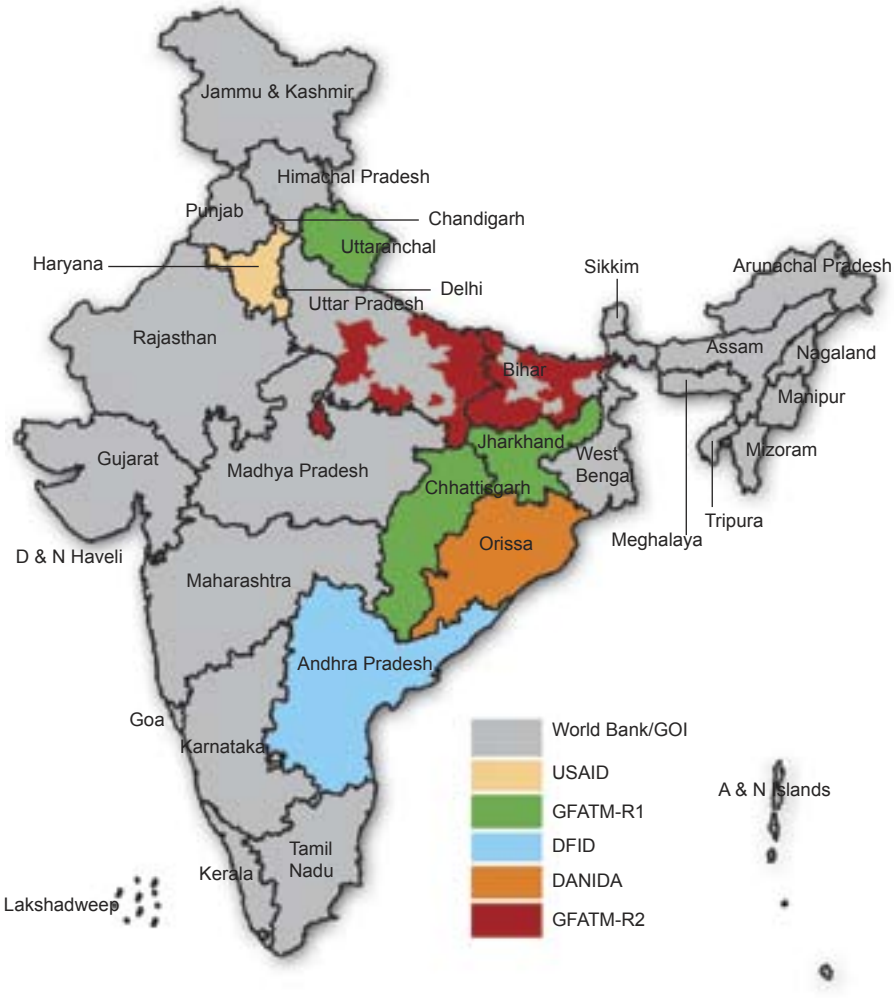
TB/HIV: co-infection, joint action

TB is the most common and opportunistic disease that affects people infected with HIV-AIDS. Only around 10% of the people who are infected with TB actually develop the disease in their lifetime. However, in the case of people co-infected with HIV and TB, the lifetime risk of developing TB rises to at least 50%. Considering that the two epidemics are closely inter-linked, a synergistic strategy is required to tackle the two epidemics. Recognising this, the GoI has taken important steps to co-ordinate initiatives for TB and HIV control and has launched the TB-HIV Action Plan.

The government's joint action plan makes for an effective partnership between the RNTCP and the National AIDS Control Organisation (NACO). The joint action plan focuses on the following areas:

- Sensitisation of key policy-makers to the important linkage between TB and HIV.
- Service delivery coordination and cross-referral through training, provision of additional services, and local-level co-ordination.
- Optimal use of community outreach of the two programmes through sensitisation and involvement of NGOs and private practitioners.
- Infection control, to prevent the spread of TB in treatment facilities for HIV-infected persons, and to prevent the spread of HIV (through safe injection practices) in the RNTCP.
- Joint efforts in information, education and communication (IEC) activities, to remove the stigma associated with TB and HIV, raise awareness about the curability of TB and the

Financial Support for RNTCP



*GDF supports drugs for Orissa and 200 million population

RNTCP Implementation Timeline

Year	Milestone achieved
1992	National review of the NTP; DOTS adopted and RNTCP developed
1993	RNTCP pilot tested
1997	Soft loan of Rs 604 crore (US$ 142 million) obtained from the World Bank to implement RNTCP in one-third of the country and to prepare the rest of the country for adopting RNTCP at a later date
2000	RNTCP expanded fifteen-fold (from 1997) to become the second largest programme in the world, covering 287 million people.
2001	450 million population covered under the RNTCP
2002	More than half the country (530 million) covered
2003	Around 75% (778 million) of the country covered
2004	947 million (87%) of the population covered
2005	Entire country planned to be covered under the RNTCP

effectiveness of DOTS in prolonging the life of HIV patients, and the maintenance of the confidentiality of HIV and TB-related information.

- Monitoring and evaluation at the district, state and national levels to assess coordination across the two programmes.

Information, Education & Communication (IEC)

IEC strategy focuses on advocacy, communication and social mobilisation. Having achieved remarkable expansion, RNTCP now focuses on increasing reach of information and supportive communication.

Regular planning and implementation of IEC activities at the national, state and district levels form an integral part of the planning and implementation of the RNTCP programme.

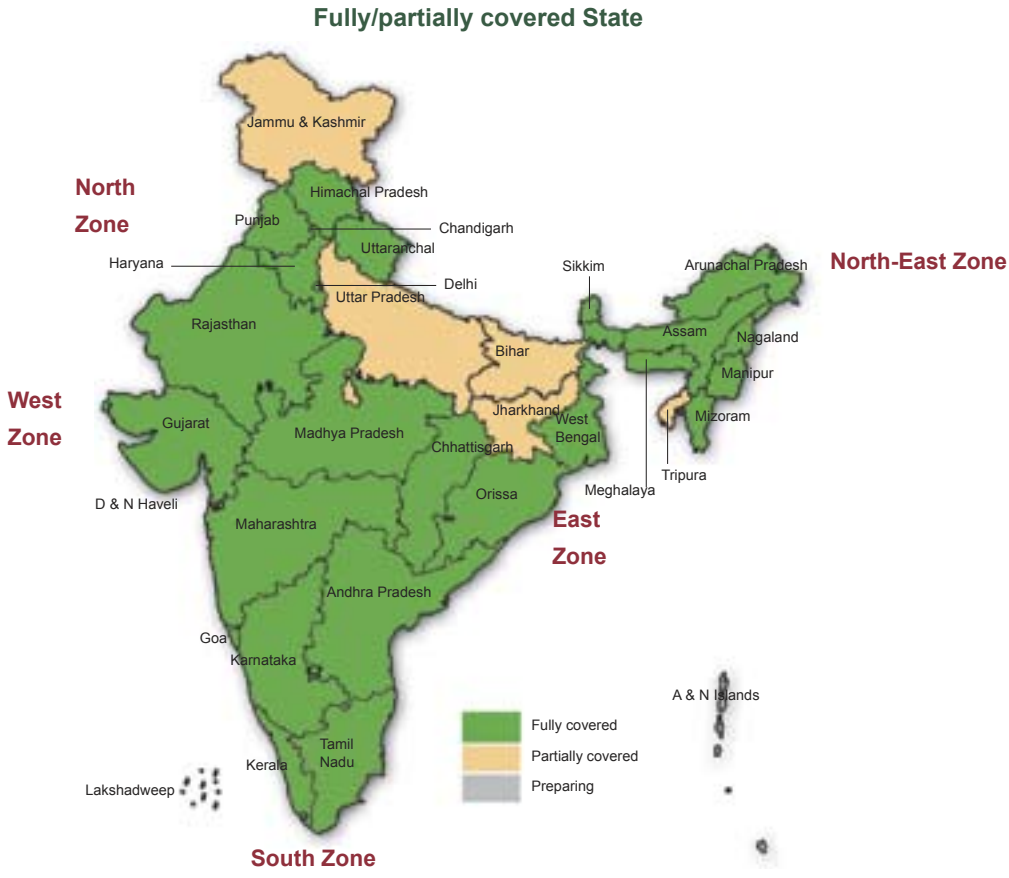
RNTCP's IEC strategy

- To create awareness about the symptoms of TB, curability of the disease and availability of free diagnosis and treatment services in a patient-friendly environment.
- To create awareness about standardised treatment regimens among health care providers.
- To address opinion leaders, influencers and other stakeholders regarding the magnitude of TB.

The major target groups for IEC are patients (including families and the community), health providers and opinion-makers. Standardised messages are beamed out to them through appropriate media options.

States that have achieved full coverage

Thirteen more states/UTs, namely Andhra Pradesh, Assam, Chhattisgarh, Goa, Gujarat, Haryana, Karnataka, Madhya Pradesh, Nagaland, Orissa Pondicherry, Punjab and Uttaranchal, achieved complete coverage during 2004. With this, the number of states/ UTs with complete coverage in the country has increased to 26. Twelve of these 26 states have a detection rate of over 70% for new smear-positive (NSP) cases and eleven states out of 24 reporting states had a cure rate of 85% and above in 2003.



1. Andhra Pradesh

Total population 78.7 million; 24 districts

- June 1995 – began implementation
- January 2004 – achieved full coverage
- NSP case detection has improved from 61% (46/lakh) in 2002 to 77% (57/lakh) in 2004 but the cure rate at 84% remained marginally low.

Special Features

- Regular review at the highest political level has been the corner stone for effective implementation. Andhra Pradesh was the first to come out with 'Quarterly Focus' containing all the quarterly data. However, involvement of Medical Officer-TB Centres (MO-TCs) and other MOs is not satisfactory.

2. Arunachal Pradesh

Population 1.1 million; 15 districts

- September 2002 – began implementation in all districts and achieved full coverage.
- NSP case detection is continuously improving. Detection during 2004 was 81% (61/lakh) and the cure rate at 85% in 2003 remained satisfactory.

Special features

- Six District TB Centres (DTCs) covering all 15 districts.
- Difficult and wide spread hilly terrain, with poor communicability and low population density, makes supervisory activities difficult.
- State Government. is not in a position to fill up vacant posts.

3. Assam

Total population 28.1 million; 23 districts

- November 1998 – began implementation

- July 2004 – achieved full coverage
- NSP case detection was 70% (52/lakh) in 2004 and the cure rate was 80% in 2003 with both remaining low.

Special features

- 497 tea estates, 12 ESI and 19 Railway hospitals are involved in the programme. All the 3 medical colleges are also involved. Guwahati medical college has been identified as the nodal centre for the North Eastern Zone.
- Monitoring and supervision activities need to be intensified at all levels.

4. Union Territory of Chandigarh

Population 1.0 million; 1 district

- January 2002 – began implementation and achieved full coverage
- NSP case detection has steadily increased from 52% (49/lakh) in 2002 to 76% (72/lakh) in 2004. The cure rate in NSP patients has increased from 79% in 2002 to 85% in 2003.

Special features

- Good infrastructure with 2 TB Units (TUs), 13 designated microscopy centres (DMCs) and 75 DOTS centres.
- Municipal Corporation provides continued assistance including funds for Community Health Volunteers (CHVs) and IEC activities.
- Chandigarh is the nodal centre for the North Zone medical colleges.
- Slum and migratory people constitute more than 65% of the population and nearly 85% of TB patients.

5. Chhattisgarh

Population 21.9 million; 16 districts

- August 2002 – began implementation
- August 2004 – achieved full coverage
- NSP case detection was 62% (49/lakh) in 2004 and the cure rate was 83.5% in 2003 with both remaining low.

Special features

- 44% of the area is covered with forests (poor communicability) and 34% population is tribal.
- Hamlets are far apart and tribals have to travel long distances for DOTS.
- Districts do not have full time District Tuberculosis Officer (DTO). The State TB Officer (STO) & Deputy STO also do not work full time.

Snapshots from different states

- Fully equipped labs in medical colleges needed for culture/sensitivity work.

6. Delhi

Population 15.4 million; 21 districts (reporting units)

- October 93 – pilot project began in Gulabi Bagh followed by LRS, Nehru Nagar and Motinagar in 1995/1996
- January 1999 – achieved full coverage
- NSP case detection remains good at 81% (77/lakh) and the cure rate has also improved to 85% in 2004.

Special features

- Political will and commitment, as well as decentralised DOTS services, makes it patient friendly. Number of District Medical Centres (DMCs) and DOTS Centres have increased to 162 and 357 respectively in 2004.
- All the medical colleges of Delhi are participating as DMC/DOTS Centres.
- Migration from other states continues to remain a problem area.

7. Goa

Population 1.4 million; 2 districts

- September 2004 – began implementation and achieved full coverage.
- In the first quarter of implementation, NSP case detection was 65% (52/lakh).

Special features

- Goa has good health infrastructure but the performance is not good. Supervision and monitoring need to be intensified.

8. Gujarat

Population 53.8 million; 25 districts (27 reporting units)

- October 1998 – began implementation
- April 2004 – achieved full coverage
- NSP case detection has steadily increased from 60% (48/lakh) in 2002 to 72% (58/lakh) in 2004. Cure rate has also increased from 81% in 2001 to 85% in 2003.

Special features

- 164 NGOs, 1796 PPs, all 13 medical colleges, 98 ESI hospitals/dispensaries are participating.
- In spite of a devastating earthquake in January 2001 and socio-political disturbance in 2002 the state has shown continuous progress.

9. Haryana

Population 22.7 million; 19 districts

- April 2000 – began implementation
- February 2004 – achieved full coverage
- NSP case detection is slowly improving and reached at 70% (67/lakh) in 2004 and the cure rate is also low at 83% in 2003.

Special features

- Haryana showed fast expansion during 2003 due to a high level of commitment from the political/administrative circles.
- 150 community volunteers, 209 private practitioners and 500 Anganwadi Workers are involved in the programme.
- Haryana does not have a full time STO.

10. Himachal Pradesh

Population 6.4 million; 12 districts

- October 1995 – pilot project started in Hamirpur
- July 2000 – began implementation in 3 districts
- December 2001 – achieved full coverage
- NSP case detection remained at 82% (78/lakh) in 2004 and the cure rate at 87% during 2003.

Special features

- Chief Minister looks after the Health Dept. and reviews the programme personally.

- Well-developed health infrastructure.
- DOT rate 95% as found on internal evaluation of Solan.
- DOT at convenient distance still a challenge due to difficult and hard areas of hilly terrain.

11. Karnataka

Population 55.3 million; 28 districts

- October 1998 – began implementation
- August 2004 – achieved full coverage
- NSP case detection was 65% (49/lakh) in 2004 and the cure rate was 80% in 2003, both remaining low.

Special features

- State has no separate building for State TB Training and Demonstration Centre (STDC) and the state drug store is not functioning due to non-availability of building.
- All 26 medical colleges are involved in RNTCP. However, referral from bigger hospitals is still low.

12. Kerala

Total population 32.7 million; 14 districts

- February 1994 – pilot project started in Pathnamthitta
- February/October 1998 – began implementation in 5 districts
- December 2000 – achieved full coverage
- NSP case detection was 45% (34/lakh) in 2004 remaining very low. However, the cure rate at 88% remained satisfactory.

Special features

- Basic health infrastructure is good.
- State is implementing innovative IEC plan including Tuberculosis-Communication for Behavioural Impact (TB-COMBI).
- Medical college involvement is poor.
- Regular STO is not in place.

13. Madhya Pradesh

Population 64.5 million; 45 districts

- November 1998 – began implementation
- December 2004 – achieved full coverage.
- NSP case detection was 60% (48/lakh) in 2004 and the cure rate was 80.5% in 2003 remaining low.

Special features

- The STO is not full time and the STC staff makes very few field visits. The DTOs are changed frequently and do not tour as per guidelines.
- About 20% of DMCs are not functional due to non-availability of Laboratory Technicians (LTs).

14. Maharashtra

Population 102.8 million; 48 districts

- October 1993 – pilot project started
- November 1998 – began implementation in 5 districts
- October 2003 – achieved full coverage
- NSP case detection has gradually improved to 67% (53/lakh) in 2004 but is still low. The cure rate has further improved to 86% in 2003.

Special features

- All 38 medical colleges in the state are involved. DRS is implemented through medical colleges and STDC.
- 92 NGOs and 814 PPs are participating in the programme.
- STDC at Nagpur has been upgraded to undertake training in RNTCP and strengthened to implement EQA and DRS.
- There is no Dy. STO.
- The presence of temporary Medical Officers (MOs) in the districts results in an increase in the number of untrained manpower.

Snapshots from different states

15. Manipur

Population 2.5 million; 9 districts

- September 1998 – began implementation
- January 2002 – achieved full coverage
- NSP case detection shows a downward trend and has come down to 68% (51/lakh) in 2004. The cure rate at 84.3% in 2003 also remained marginally low.

Special features

- Supervisory activities in the state are not efficient due to deterioration in the law and order situation as well as the ethnic problems in the state. However, the state has good infrastructure and a dedicated staff.

16. Meghalaya

Population 2.5 million; 7 districts (only 5 DTC)

- October 2003 – began implementation in all the districts and achieved full coverage
- NSP case detection has increased from 57% (43/lakh) in 2003 to 67% (50/lakh) in 2004 but is still low. The cure rate at 75% in 2003 is also low.

Special features

- State has dedicated DTOs and Senior Treatment Supervisors (STSs)/Senior Treatment Laboratory Supervisors (STLSs).
- STO is not yet trained in RNTCP. There is also no 2nd MO in STC. There is poor technical support from the state.

17. Mizoram

Population 1.0 million; 8 districts

- March 2003 – began implementation in all the districts and achieved full coverage.
- NSP case detection was 82% (61/lakh) in 2004 and the cure rate was 85.1% in 2003.

Special features

- State has only 2 regular posts of DTOs for 8 districts.
- There is only one language in the state, which simplifies IEC activities.

18. Nagaland

Population 2.3 million; 8 districts

- December 2002 – began implementation
- December 2004 – achieved full coverage
- NSP case detection at 55% (41/lakh) is low. The cure rate has also dropped from 89% in 2002 to 82% in 2003.

Special features

- Due to a tense law and order situation the programme is not adequately supervised.
- A fairly large percentage of MOs are not trained in RNTCP.

19. Orissa

Population 38.4 million; 31 districts

- October 1997 – began implementation
- December 2004 – achieved full coverage
- NSP case detection rate has gradually improved to 65% (55/lakh) in 2004 but is still low. The cure rate at 80% in 2003 is also low and has a downward trend.

Special features

- Only 3 old districts have a regular DTO.
- All MO RNTCP (27 districts) have been declared as DTOs along with administrative and financial powers. Assistant Distric Medical Officer (ADMOs) have been now de-linked from the programme.
- Contractual STS and accountants cum DEO have been appointed in 28 districts.
- Core committees have been formed in all 3 medical colleges. MC and DOTS centres have been established in all medical colleges.
- State level supervision remains weak.

20. Pondicherry

Population 1.0 million; 1 district

- February 2004 – began implementation in entire Pondicherry.
- In first year of implementation itself this Union Territory had good NSP case detection of 98% (74/lakh).

Special features

- Good health infrastructure, with 5 medical colleges. All medical colleges are involved in RNTCP.
- The district is divided into four pockets far away from each other and therefore, supervision and monitoring from one central place is difficult.

21. Punjab

Population 25.6 million; 17 districts

- March 2001 – began implementation
- December 2004 – achieved full coverage
- NSP case detection is slowly improving but is still low at 50% (47/lakh) in 2004. The cure rate at 81% in 2003 is low and shows a downward trend.

Special features

- State has good health infrastructure. Many district civil surgeons have provided transport from their pool to the programme. The DTOs and MO-TCs have been exempted from other duties. The Director of Health Services (DHS) has issued directions to civil surgeons that RNTCP staff, transferred by mistake, should not be relieved.
- Of late the implementing districts do not have contractual staff.
- State drug store is not in place.
- Not much work has been done to involve NGOs, PPs and community volunteers.

22. Rajasthan

Population 60.9 million; 32 districts

- April 1995 – began pilot project in Jaipur
- November 1998 – began implementation in two full districts.
- January 2001 – achieved full coverage
- NSP case detection has steadily increased to 81% (65/lakh) in 2004 and the cure rate has remained satisfactory at 87% in 2003.

Special features

- Chief Minister has made an appeal to all Sarpanchs (PRI) and NGOs/PPs of the state requesting their involvement.
- Core Committee has been formed in all the medical colleges.
- STDC is taking part in supervision and monitoring.
- All auxiliary nurse and midwives (ANMs) are actively involved as DOTS providers.
- All ESI and Railways hospitals are involved as DMC and/or DOTS centres.

23. Sikkim

Population 0.6 million; 4 districts.

- March 2002 – began implementation in all the 4 districts and achieved full coverage.
- NSP case detection and cure rate, are both steadily improving. Detection at 125% (93/lakh) in 2004 and cure rate at 88.5% in 2003 are good.

Special features

- The state has good health infrastructure, positive and committed leadership to the programme and good teamwork.
- Meagre population is scattered thinly over wide geographical areas in hilly and difficult terrain.

24. Tamil Nadu

Population 64.1 million; 29 districts

- January/February 1999 – implementation began in two districts (Chennai and Cuddalore)
- January 2002 – achieved full coverage
- NSP case detection has improved to 82% (62/lakh) in 2004. The cure rate has also increased from 82% in 2002 to 88% in 2003.

Special features

- With the exception of the STO there is no other MO in the STC resulting in poor supervision and monitoring.
- STS are not full time on TB and are not under the administrative control of the DTOs.

25. Uttaranchal

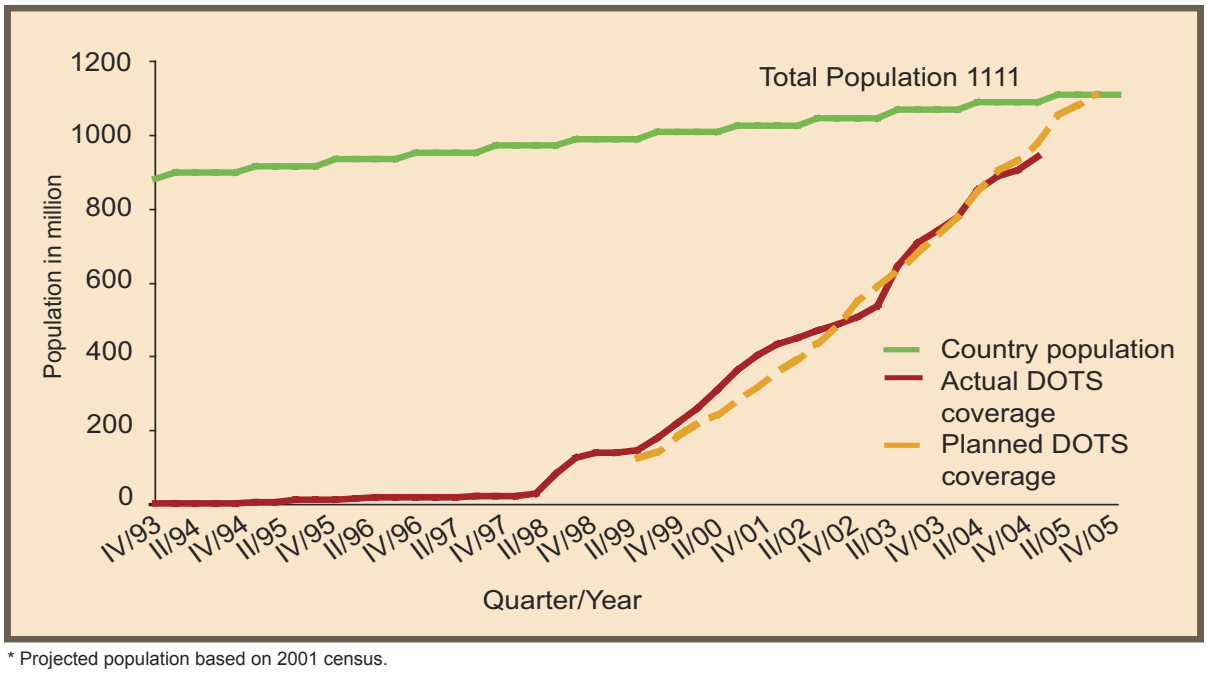
Population 8.9 million; 13 districts

- December 2002 – began implementation
- August 2004 – achieved full coverage
- NSP case detection is gradually improving but is still low at 61% (58/lakh). The cure rate at 92% in 2003 remained good.

Special features

- The State has many remote and inaccessible areas.
- Being a new state it is in the process of strengthening infrastructure and human resources.
- Anganwadi workers and a good number of ISM practitioners are doing good work as DOT providers.

DOTS Expansion in India (1993-2005)



* Projected population based on 2001 census.

26. West Bengal

Population 84.3 million; 19 districts

- March 1994 – pilot project began in Kolkata and Murshidabad
- 1998 – began implementation
- December 2003 – achieved full coverage
- NSP case detection and cure rates both continue to improve. NSP case detection at 70% (53/lakh) in 2004 and cure rate at 86.5% in 2003 are satisfactory.

Special features

- Not all the planned DMCs are operational and the required percentage of MOs has not yet been trained in many districts.
- State has good support from network of NGOs like CARE, GLRA (ILEP) and SHIS.
- Involvement of ESIS remains a challenge.

RNTCP accomplishments

There has been a rapid expansion (over 30-fold) of DOTS in the four years since 2001, and the RNTCP coverage has increased over 50-fold since 1998. More than 85% of India's population now has access to DOTS.

1. RNTCP is the largest and the fastest expanding programme of its kind in the world in terms of patients treated. The quality of services has been sustained despite its rapid expansion.
2. The Indian expansion of the RNTCP accounted for one-third of the global increase in DOTS coverage in 1999 and over half the global increase in 2000 and 2001, respectively.
3. Modular and comprehensive training material has been developed for all staff categories that ensures training of a consistent standard and avoids subjectivity and trainer bias.
4. Diagnostic facilities have been established in 10,000 laboratories across the country. As a result, the proportion of sputum-positive cases confirmed in the laboratory has doubled as compared to the earlier programme and come at par with international standards.
5. Treatment success rates have trebled from 25% to 86%. Death rates have been brought down seven-fold from 29% to 4%.
6. Treatment has been initiated for over 3.8 million patients, thus saving more than 6 lakh lives.
7. New sputum-positive case detection rate is greater than 70% in 2004 (against 69% in 2003).

Future directions

1. Expand the RNTCP to cover the entire country, while maintaining quality.
2. Further improve reach and quality of the programme in order to achieve and sustain the case detection and treatment success targets.
3. Implement and evaluate public–private mix projects in 14 urban sites.
4. Implement revised EQA guidelines for sputum smear microscopy.
5. Continue quality assurance of drugs through

Country level achievements

- Over 30-fold expansion of DOTS since 2001
- Second largest programme in the world in terms of population coverage and largest in terms of number of patients initiated on treatment annually
- Fastest expansion of any DOTS programme in the world
- By the end of 2004, RNTCP has placed more than 3.8 million patients on treatment and averted 600,000 additional deaths.
- Every month an additional 10–15 million people are covered under the RNTCP

an independent agency, and analyse and publicise the results of drug quality control testing.

6. Strengthen ongoing and refresher training under the overall human resource development plan.
7. Sustain effective political commitment.
8. Establish the functions of the State TB Training and Demonstration Centres in all states.
9. Build and strengthen partnerships/ collaborations with all large healthcare providers: private sector, medical colleges, ESIs, Railways, TB hospitals, etc.
10. In collaboration with NACO, strengthen TB-HIV co-ordination activities in the 14 states where the programme has been started.
11. Intensify IEC activities to match programme coverage with information coverage.
12. Strengthen capacity of states for decentralised management.
13. Address issues related to management of pediatric and extra-pulmonary TB under RNTCP.
14. Conduct operational research on an ongoing basis to continuously improve the programme.
15. Strengthen one lab in each large state to have culture and Drug Sensitivity Testing (DST) and DOTS Plus sites.

Success Stories

The success of RNTCP is greatly dependent upon the dedicated efforts of frontline TB care providers, outstanding contribution of ordinary people and committed and motivated opinion leaders. There are a number of success stories from the field. Some of these are mentioned below.

TB - The Dreadful Foe

Of all dreadful foes to human lives,
Gruesome most is the one called TB;
With cough, sputum and low-grade fever,
Slaughter many a precious life.
I plead to all mankind to rise up,
To combat the dreadful foe - TB;
With RNTCP-our armour,
Victory surely will be ours.

Give heed to this dreadful enemy,
That spares no life it afflicted;
Young or old, weak or sturdy,
Leads them all to highway of Death.
Akin to an old saying of yore,
So intense is the bond between twins;
Such is TB and HIV-combination,
The twin enemies they become.
Be not frightened nor discouraged,
To combat TB/HIV;
With the best weapon RNTCP
In our hands-we'll conquer.
Lay your trust on RNTCP,
Getting treatment from the learned;
With patience, obedience and endurance,
'CURE' - the victory - will be yours.

(Translation of a song composed by STO, Mizoram in Mizo language. This song has become so popular with children that they sing it while playing Hopscotch.)

Total commitment despite physical handicap

Indore, Madhya Pradesh

Dr. Singhal, 57 years, is an epidemiologist at the Regional Family and Health Welfare Training Centre (RFHWTC). He has a string of degrees behind his name and a never-say-die spirit. At the age of 14 he developed retinitis pigmentosa, leading to complete blindness, while he was pursuing his studies. Despite these setbacks, he has triumphed over adversity and has completed his M.B.B.S and PG Diploma in Health Education.

He was trained as a Master Trainer under RNTCP in June 2003. Dr. Mahadev, the facilitator from National TB Institute (NTI), was amazed at his interest and dedication. Dr. Singhal has been involved as a member of the facilitator team at RFHWTC, Indore and has trained more than 1000 Medical Officers (MOs) under RNTCP.

His wife used to read out to him the training modules at his residence. He has managed to convert many of the articles and modules into Braille. He has uploaded a CD of RNTCP in his computer and reads it through a screen reading software.

He is considered one of the best trainers in the RNTCP and his dedication to the programme is a shining example for everyone to follow.

Participation of community volunteers

Karnal, Haryana

There has been an increased focus on involving community volunteers in the RNTCP in Haryana. There are about 150 community volunteers involved in the programme in this state and they fall into different categories such as housewives, shopkeepers, shoemakers, STD booth owners, jewellers, priests, teachers, etc. These volunteers work without any monetary benefit or incentive and are totally dedicated to the cause of RNTCP. Teams from WHO/USAID visited Karnal and Gurgaon in Haryana and were very impressed with the work being carried out. At the 2nd World TB Forum held at Delhi, Mr. Bansilal, a shoemaker from Karnal, was honoured for his services as a DOT Provider in Delhi.

Smt. Neelam Rani a housewife is a dedicated DOT provider

Smt. Neelam Rani is the wife of a TB patient undergoing treatment. Since the last 2 years, she has been playing a very important role as a DOT provider in the service delivery of TB medicines. She administers the medicines from her residence which is situated in a densely populated area. Local patients are happy as they do not have to travel long distances for their treatment. She has successfully given DOTS to 86 patients under her supervision. She was inspired to provide treatment for TB patients by the plight of her husband and wants to ensure that all her patients are cured completely. She is dedicated to the RNTCP and has converted her house into a DOT centre.

Community involved is community inspired

Kendrapara District, Orissa

On September 19, 2004 Rural Women's Day was celebrated in Kendrapara District of Orissa.

Over 300 women walked up to the meeting venue braving the incessant rain. The meeting was primarily organised to address strategic needs in RNTCP and alleviate the health status of women. Representatives from district TB centre and Danida Assisted Revised National Tuberculosis Control Programme (DANTB) were there to acquaint the women on health issues and to sensitise them on the causes of TB, its diagnosis and treatment. A street theatre dealing with gender and TB issues was also organised.

A large number of women were able to voice their concerns in the forum. It was heartening to see the enthusiasm with which women registered themselves for the meeting and collected IEC materials. The drive, to inculcate gender understanding and spread the awareness on DOTS, was highly successful.

NGO participation

Kendrapara, Orissa

Jayabharati Sathi Samaj (JSS) works for women & child development in Derabish, one of the largest blocks in the district of Kendrapara, Orissa. Sixty four self-help groups come under the operational area of JSS. The JSS members participate in the regular Mahila Mandal meetings with the SHGs, where the women would often raise the issue of people defaulting on the TB medicine/ treatment. The importance of continuous medicine intake was stated vigorously by JSS members in all the SHG meetings and motivation camps were organised with support from DANTB. Within a month these effects have borne fruit and 5 defaulters have reverted to DOTS.

From patient to counsellor

Keonjhar, Orissa

A poor forty-year old woman belonging to the scheduled caste and hailing from Keonjhar district in Orissa. She lost her husband to TB in the early 1990's and was offered a job as a helper in the Balwari premises to enable her to look after her small children.

Recently, she felt a severe pain in her rib cage and was bedridden for a week. The Balwari teacher took her to the doctor who confirmed that it was TB. She was administered DOTS under the teacher's supervision, who also gave her supplementary nutrition as she was unable to afford it. Continuous intake of medicine completely cured her and she was once again able to look after her family. She has now taken on the responsibility of spreading awareness of TB amongst the villagers. Thanks to her initiative, some members of her community were diagnosed of TB and are being administered DOTS under her able supervision.

Small lady, immense stature

Villupurum, Tamil Nadu

Selvi M. Dharani is a resident of Villupuram district, Tamil Nadu who is proud to be of service to her fellow neighbours. She works at the TB centre as a part-time clerk and also assists with the laboratory and treatment work. She administers DOTS to TB patients.

She is 21 years old, two feet in height and is doing her IInd year B.Com through correspondence.

The smallest lady of Villupuram district Selvi. Dharani giving DOTS

RNTCP in Jammu & Kashmir

Ladakh, Jammu and Kashmir

RNTCP programme has been implemented in three districts of J&K provinces and it would be implemented in Ladakh soon. The Union Secretary of Health and Family Welfare, Mr. J.V.R. Prasada Rao has urged the medical authorities to ensure the involvement of the community, para military forces, legislators and educationists in the programme. Wide publicity through electronic and print media, regarding the availability of free medicines under RNTCP is being proposed. For the convenience of people living in border areas, local doctors are preferred for implementing the programme.

The magic of DOTS

Khunti, Ranchi in Jharkhand

Moka Nayak, son of Shricharan Nayak, is a poor rickshaw puller from Khunti in Ranchi. He was suffering from cough, fever and chest pain for over a month. He was diagnosed with TB and put on treatment at the sub-divisional hospital at Khunti. The community DOT provider, Ramesh Nayak, administered DOTS to him regularly and after six months of treatment, he has been completely cured.

He now spreads the message of DOTS to all passengers using his rickshaw.

Moka Nayak, rickshaw puller, after six months of regular and complete treatment under DOTS

Jagan Singh, inmate of Bilaspur Central Prison, extols the benefits of DOTS

Prison walls are no barrier for DOTS

Bilaspur, Madhya Pradesh

Jagan Singh is a convict residing in the Central Jail, Bilaspur since October 1999. While in prison, the doctor from the local TB centre had diagnosed him with TB. He underwent six months of DOTS treatment under the supervision of the prison pharmacy dispensary and is now completely cured.

On the occasion of World TB day, 2004, a small function was held in the prison at which Jagan Singh gave a talk to his fellow inmates and recounted his experiences under the RNTCP. Jagan Singh's message was simple - "DOTS is a true friend of the TB patient and all TB patients need to accept DOTS for their complete cure".

Private practitioner as a DOT provider

Raipur, Chhattisgarh

Dr. N.C. Dahariya (B.A.M.S.) is a practitioner of the Indian System of Medicine and runs a small clinic in a slum of Raipur in Chhattisgarh. He is

Dr. Dahariyar, a general practitioner in a slum of Raipur providing DOTS to a patient

very committed to the cause of TB and its control and provides DOTS free of cost to patients. He has referred around ten patients to the District TB centre and is administering DOTS to six TB patients.

He is a contented man with the service he is rendering to the TB patients in the slum.

SHGs, Chhattisgarh

Rajnandgaon, Chhattisgarh

Members of the SHGs in Rajnandgaon district of Chhattisgarh are concerned not only about strengthening their groups but also about the health of their fellow villagers. Some of them work as community health workers while others are DOT providers.

Ma Bamleshwari is one of the many SHGs working at both the village and Panchayat levels. Mrs. Panchobai is a member of this SHG working as an Anganwadi worker in Deewanbheri village. On learning about DOTS, she was determined to make it available at her village and thus became a DOT provider.

She has been a DOT provider for three TB patients. There are others like her in the SHG who are making a great contribution to the control of TB in their state by being DOT providers to their neighbourhood TB patients.

The convenience of DOTS

Rampur in Dehradun, Uttaranchal

Sunita is 21 years old, hails from Rampur in Dehradun and is a student of law. She was suffering from cough and other associated symptoms, due to which she could not attend her classes. She was guided by her neighbour, who had got cured by DOTS from the District TB Clinic (DTC).

She was diagnosed of TB and is undergoing treatment at a DOTS centre near the college. After undergoing treatment for three months, she has gained weight, all her symptoms have subsided and she is now attending classes regularly.

Supportive spouse

Uttaranchal

Deep Chand was 28 years old when he collapsed one day and was admitted to the emergency ward of the District Hospital. He had been suffering for some time and was unable to work properly. He was the sole breadwinner of the family.

After the initial emergency treatment, he was diagnosed as having TB and was put on DOTS for six months. His wife played a major role in motivating him to come to the DOTS centre. His condition improved after the treatment and he has started a new livelihood as a roadside vendor.

A conscientious worker

Chandigarh

Balraj works as a multi purpose health worker (MPHW) at Chandigarh, Mauli Jagran and is a DOT provider. Mauli Jagran caters to people living in urban slum colonies who are migrants and are below the poverty line. They are uneducated and superstitious and do not understand the cause of the disease or the need to complete the treatment.

Mr. Balraj providing DOTS to a seriously ill patient

A defaulter patient is taking DOTS under direct supervision by Dr. Neena Chaudhary

Balraj has made untiring efforts to bring back the defaulting patients into the fold by convincing them about the efficacy of the RNTCP treatment for the cure and control of TB. He interacts with the patients and educates them on the symptoms, diagnosis and treatment of TB.

Balraj has been instrumental in involving private practitioners, Sarpanches, Anganwadi workers, schoolteachers, NGOs and cured patients in the RNTCP programme.

In recognition of his outstanding efforts in combating the spread of TB, Balraj was awarded the Merit Certificate on the occasion of World TB Day 2004 by Chandigarh TB control society.

A doctor who is worshipped

Ramdarbar, Chandigarh

Dr. Chaudhury, medical officer of the Civil Dispensary, Ramdarbar, has succeeded in making the people of the area aware of the symptoms of TB and the benefits of an early diagnosis through her interaction with patients and families. Keeping in view the difficulty that daily wage earners face, a few DOT providers were identified by her to provide DOTS in the early morning and late evenings.

She makes frequent visits to the field to check the work of sub-centres, DOT centres and DOT providers. Her regular field visits have made her popular among staff and patients.

The cured patients are always ready to be DOT providers with her support.

Success story of Treatment Organiser (TO)

Wayanad, Kerala

Manoj, a taxi driver was diagnosed with sputum positive TB and was started on DOTS treatment. He didn't want others to know about his condition as he was afraid of losing his job. However, the news about him taking anti-TB treatment (ATT) became known to some of his fellow workers and he lost his job. He became very upset, did not allow anybody to visit his house and stopped taking DOTS.

Mr. Sasikumar, the TB officer attached to the DTC was entrusted with the task of bringing Manoj back into the programme. His first two attempts proved unsuccessful as Manoj refused to meet him. The third time, he started playing with his child and informed him that by not continuing the treatment, he was putting his wife and child at risk. Sasikumar spent over two hours explaining the details of the treatment and at the end of it, Manoj agreed to continue the treatment.

He has improved his health and is back on his old job and his co-workers are also very happy. The TO's efficient handling of this patient has saved his family and is a riveting success story.

Implementation of RNTCP in Kachchh

Kachchh, Gujarat

Kachchh is the largest district of Gujarat. On 26 January 2001, it was hit by one of the most destructive earthquakes in history that devastated large parts of the district. Kachchh went through a very difficult post earthquake period, with the damaged health care facilities functioning from pre-fabricated structures and temporary premises.

RNTCP programme was launched in Kachchh on 24 March 2004. Despite several adversities, it has achieved the following successes:

1. Portable laboratory tables: These were necessary to restore activities in the damaged health care centres. Sputum microscopy services are made available through these tables in the outreach areas of Kachchh.

2. Maulana (Community leader) as DOT provider: In the Khawda area of Bhuj, there were no persons to be found with the proper education. Therefore, the Maulanas of the village had to be first convinced, and then educated, to provide DOTS to TB patients.

3. Implementation of RNTCP programme in outreach areas: With the assistance of the district health authorities and the RNTCP contractual staff, more than 1200 TB patients have been treated with DOTS till the end of 2004.

A lifeline for TB patients

Jamnagar, Gujarat

Mr Kasambhai Osamanbhai Sanghar, a 45-year old resident of Jamnagar had given up on life. He was a defaulter TB patient and had been informed by a private physician that he had only a slim chance of survival.

Fortunately, he met a TB supervisor of the RNTCP programme and was admitted to the programme under category II. He availed of the DOTS treatment and was completely cured. He then took a pledge to serve the TB patients as a community DOT provider on a voluntary basis.

Since 1998, Kasambhai has provided DOTS treatment to 186 patients, and has been awarded the best DOT provider by the State TB Association of Gujarat in 2002.

Mobile DOTS centre

Delhi

Tuberculosis case detection is carried out by the Mobile TB Van donated by the Rotary Club of Delhi South in urban slums and other vulnerable communities like *Jhuggi Jhompri* or Squatter settlements (JJ Colonies) and pavement dwellers. The TB Van is fitted with a X-ray unit and a small laboratory for sputum examination. The confirmed cases are usually referred to the nearest DOTS Centre for treatment and follow-up examination. The pavement dwellers in Chandini Chowk area are provided these services by the Mobile DOTS Centre run by Delhi TB Association.

RNTCP Activities in 2004

"Web-based Resource Centre for Tuberculosis Control Programme is one of the first ever moves of its kind for any disease in the world. This would help in increasing the success rate in treating TB. So far we have been concentrating on the curative part, while prevention is equally important."

The Union Health Minister, Dr. A. Ramadoss
(Excerpts from his speech on the occasion of launch of web-based Resource Centre)

Rapid expansion of RNTCP has been achieved from 1998 to 2003 which has been acknowledged as the fastest expansion in the history of DOTS. It has also maintained a high level of treatment success. It has demonstrated that it is feasible to run a successful TB control programme based on the DOTS strategy in a populous and diverse country like India. There have been significant initiatives at central, state and local levels, which have expanded the reach and spectrum of RNTCP activities.

Monitoring strategy and supervision

RNTCP aims to have nationwide coverage by the end of phase II of the implementation. In view of this, there is a need to re-orient the programme from an "expansion/ preparatory" mode

Dr. Anbumani Ramadoss, Minister of Health and Family Welfare addressing the gathering during the launch of web-based IEC Resource Centre

to a "maintenance/ consolidation" mode. It is necessary to put in place an intensive as well as dynamic supervision and monitoring strategy to ensure that good quality services continue to be provided in the coming years on a sustainable basis. An exhaustive document on supervision and monitoring strategy has already been drafted.

Recording and reporting

RNTCP has a robust recording and reporting system based on quarterly and annual cohorts of TB patients. It allows systematic cohort analysis of detection, conversion and outcomes.

To further strengthen the surveillance system the following activities have been carried out:

- Treatment cards, laboratory registers, TB registers and quarterly reporting formats have been modified.
- Additional records have been added to document referrals for treatment after diagnosis.
- New and revised reporting formats will be used from first quarter of 2005.

Monitoring indicators

Programme managers use monitoring indicators to identify areas of strengths and weaknesses. RNTCP surveillance system collects routine information to measure treatment success and case detection. Millennium Development Goals (MDGs) have provided a vision of halting and reversing the incidence of TB by 2015. Exhaustive monitoring indicators have been developed for all levels of supervision and monitoring.

Process of monitoring

- Capacity building of the different states is being done to enable them to analyse and provide feedback to the districts. The Central TB Division (CTD) provides feedback to the states and monitors the state's feedback to the districts.

National review meeting of STOs and RNTCP consultants led by Ms R Teaotia, Joint Secretary, Ministry of Health and Family Welfare

- Various constraints due to workload, lack of time, pre-occupation with clinical work, absence of District TB Centre–Medical Officer (DTC-MO), are being actively addressed. A supervision register has been planned in all RNTCP facilities.
- Regular review meetings are being held at all levels. The Peripheral Health Institutions (PHIs) and District Medical Centres (DMCs) are conducting weekly meetings with all staff involved in RNTCP. The MO-TC formally reviews the activities of Senior Treatment Supervisor (STS)/Senior Treatment Laboratory Supervisor (STLS) fortnightly. The District TB Officer (DTO) reviews the activity reports of all Medical Officer TB Centres (MOTCs), STS & STLS on a monthly basis. The Chief Medical Officer (CMO) and District Magistrate (DM) also review the programme on a regular basis. State level review meetings are being held at the end of each quarter, chaired by the Secretary. The STO reviews the monthly activity reports of DTOs. The CTD holds review meetings of State TB Officers (STOs) twice in a year, chaired by the Union Secretary, Health.
- The states conduct an internal evaluation of two districts per quarter. Issues like delays in reporting, influencing the report, not taking remedial action, problems in implemen-

tation, etc. are being addressed on a war footing. In addition to the internal evaluations conducted by the state, evaluations are also being conducted by CTD for selected districts with very poor or very high performance. External evaluations have been planned every 2-3 years, by a panel of international and national experts, including the WHO.

Progress in other sectors

The expansion of RNTCP has been achieved through greater involvement of NGOs, medical colleges, private and corporate sectors. The health facilities of government departments other than the Health Department like Employee State Insurance (ESI), Railways, Central Government Health Services (CGHS), etc. have contributed to making the RNTCP a huge success. The TB-HIV joint action plan has played a major role in providing access to DOTS services for people living with HIV/AIDS.

PPM

Inter-sectoral collaboration has been recognised as an important component in the DOTS strategy. RNTCP is further building and fostering partnerships for widening DOTS services to provide access for more people. Some salient features of Public-private Mix (PPM):

- PPM has strengthened the government health sector, which has led to an increase in case detection. The state government health sector remains the largest contributor in urban PPM sites.
- A larger proportion of cases from medical colleges has underlined the need for prioritisation.
- The NGO sector has proved to be important in select areas.
- There are many innovative models of PPM for example - Network of providers in Pune, Microscopy centre in the Railway hospital at Lucknow.
- All the sectors of health care are being encouraged to practise DOTS strategy.

The PPM models and initiatives in RNTCP have proved that systematic involvement of all major health care providers is important for achieving global targets of TB control in India. The successful PPM initiatives have generally had the crucial presence of a strong public sector. Societal and public sector costs per patient cured has been lower in PPM DOTS compared to public sector DOTS. Continuing dialogue, sharing of credit and recognition have been the key factors behind the various successful PPM initiatives.

Government agencies

Efforts are being made to involve the health facilities of departments outside the Ministry of Health like Employees State Insurance (ESI), Railways, Defence, Steel, Coal, Petroleum and Natural Gas, Shipping, Power, Chemicals and Fertilizers.

The Northern Railway divisional hospital in Lucknow, Uttar Pradesh, has started a Microscopy cum DOT centre from April 2004. It offers secondary health care and has 275 beds catering to a population of 2.5 lakhs. It examines the TB suspects referred from various divisional health units. South-Eastern Railways has initiated RNTCP from April 2003. Eastern Railways runs a DMC for 10,000 of its staff members.

The ESI department has stopped its purchase of anti-TB drugs and implements the RNTCP exclusively. In Kerala, all 18 ESI hospitals have been identified as Designated Microscopy Centres (DMCs) while 125 dispensaries are designated as DOTS centres. In West Bengal, 9 out of 14 ESI hospitals are involved in the RNTCP.

Medical colleges

The involvement of medical colleges in the TB control programme has begun to show very

Dr. L.S. Chauhan (DDGTB) at workshop for the involvement of Medical College in RNTCP – 2004

encouraging results. In order to streamline the activities of the medical colleges a National Task Force (NTF), five Zonal Task Forces (ZTFs) and several State Task Forces (STFs) were set up.

The NTF comprises representatives from zonal nodal centres, central TB Institutes, the WHO and the Ministry of Health and Family Welfare (MoHFW). Its main responsibilities are:

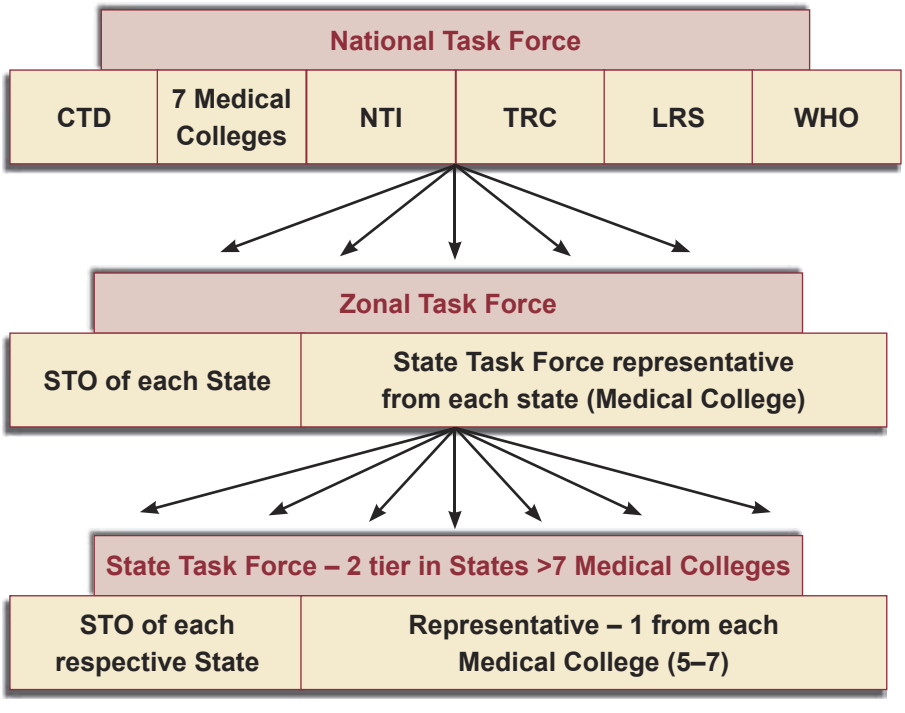
- Provide leadership and advocacy for the RNTCP
- Co-ordinate between various departments
- Monitor the activities of the ZTFs.

The role of ZTFs is:

- To help establish STFs in their zone
- To co-ordinate between the national and state task forces
- To monitor the activities of the STFs.

STF is the ground-level implementing unit of the RNTCP, which facilitates the establishment of DOTS centres and undertakes other activities in all the medical colleges in the state. Each state forms a STF and each medical college, sets up a core committee with representatives from its faculty and RNTCP programme staff. Regular meetings are held at the national, zonal and state levels to review progress and performance as well as to draw up action plans.

Structure and composition of the RNTCP–Medical College Task Forces



Referral of patients between various departments of the college, as well as from outside the hospital, are being improved. The CTD is piloting a 'referral for treatment' mechanism in 12 districts with large medical colleges, aimed at developing a seamless RNTCP service between medical colleges and general health services.

In 2004, 18% of new smear-positive cases were detected in 12 districts by medical colleges. The focus on medical colleges yielded greater detection later in 2004. In Gujarat, medical colleges detected over 11% of the chest symptomatics examined through sputum microscopy.

RNTCP provides the human resources and logistics support needed to implement and coordinate activities in medical college hospitals. Laboratory consumables and drugs as well as funds for facility upgradation are being made available. Medical colleges provide the necessary space, designate faculty members for supervision, and avail of staff sensitisation programmes.

By making DOTS the standard of care for TB patients in all medical colleges and their hospitals, the RNTCP is hoping to influence private practitioners as well as future physicians. Thus, it can ensure that all TB patients, irrespective of the place from where they seek care, receive the best available care, free of cost. This exemplary collaboration between the RNTCP and medical colleges can become truly effective if all clinical departments of the colleges, in addition to departments that run DOTS centres, get involved and manage their patients as per the RNTCP guidelines.

Major RNTCP-related activities undertaken by Medical Colleges

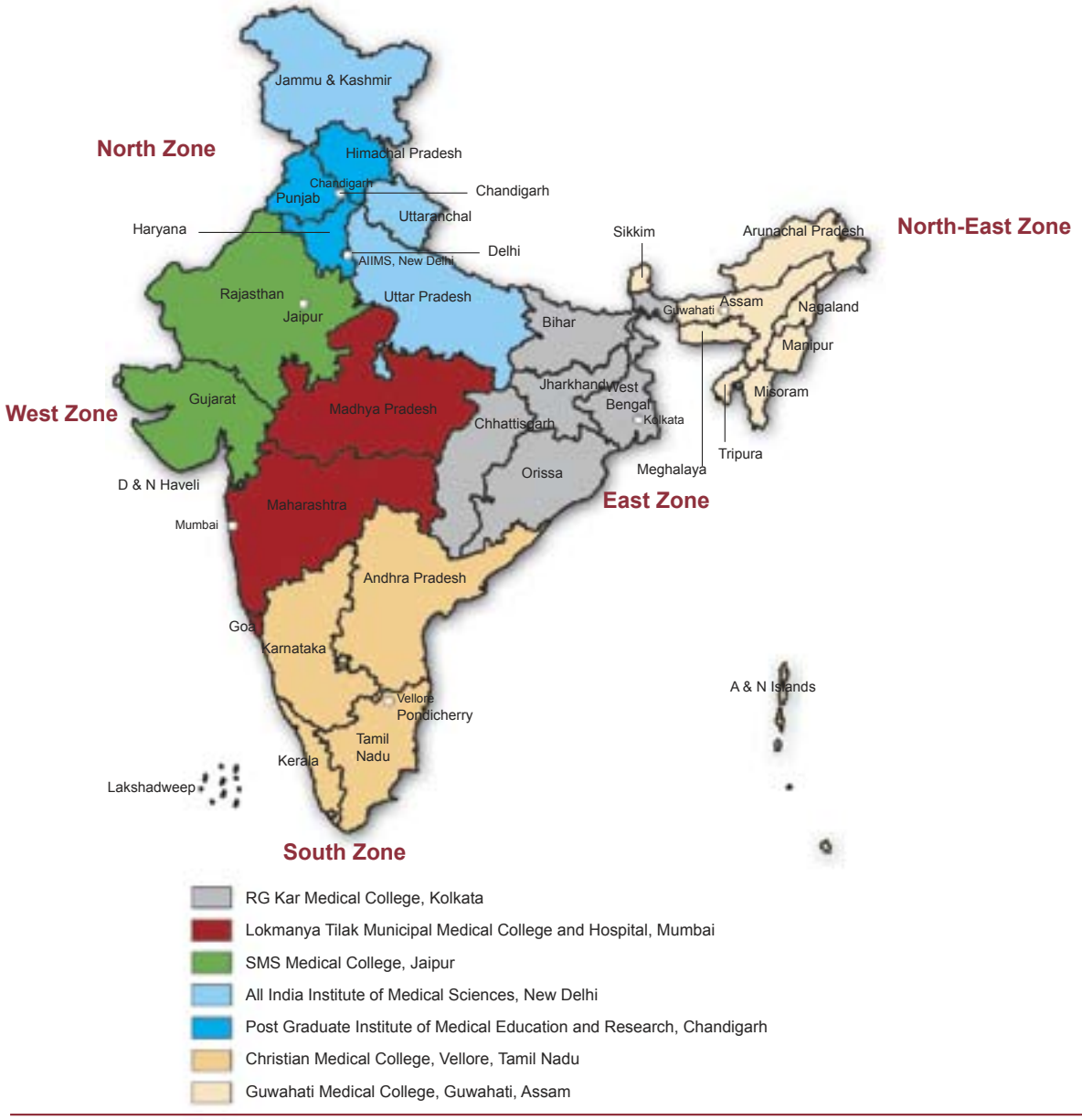
1. Training/ teaching
   - Faculty members
   - Undergraduates, postgraduates
   - Residents, interns
   - Paramedical staff (laboratory technicians, nursing staff)

2. Active engagement
   - Establishment of microscopy and DOTS centres in all medical colleges
   - Strengthening of laboratory infrastructure
   - Involvement in quality assurance of the smear microscopy network
   - Consultation and management of difficult cases

3. Advocacy
   - Sensitisation and training through professional bodies, such as the Indian Medical Association
   - Workshops and CMEs for medical colleges and private practitioners
   - Use of newsletters, press and other media for awareness generation
   - Involvement of the Medical Council of India to prioritise TB and RNTCP in the medical curriculum

4. Operational research
   - To increase case detection of smear-positive cases
   - To improve DOTS services
   - To inform the further development of consensus guidelines for diagnosis and management of childhood TB and extra-pulmonary TB
   - To manage multi-drug resistant TB
   - To evaluate profile and treatment outcomes of hospitalised patients
   - To diagnose and manage HIV-infected TB patients

Medical colleges designated as RNTCP nodal centres



With the widening scope of services in the RNTCP, medical colleges are becoming increasingly pertinent in areas such as TB/HIV coordination, external quality assurance of the sputum microscopy network, drug resistance surveillance and management of multi-drug resistant TB patients.

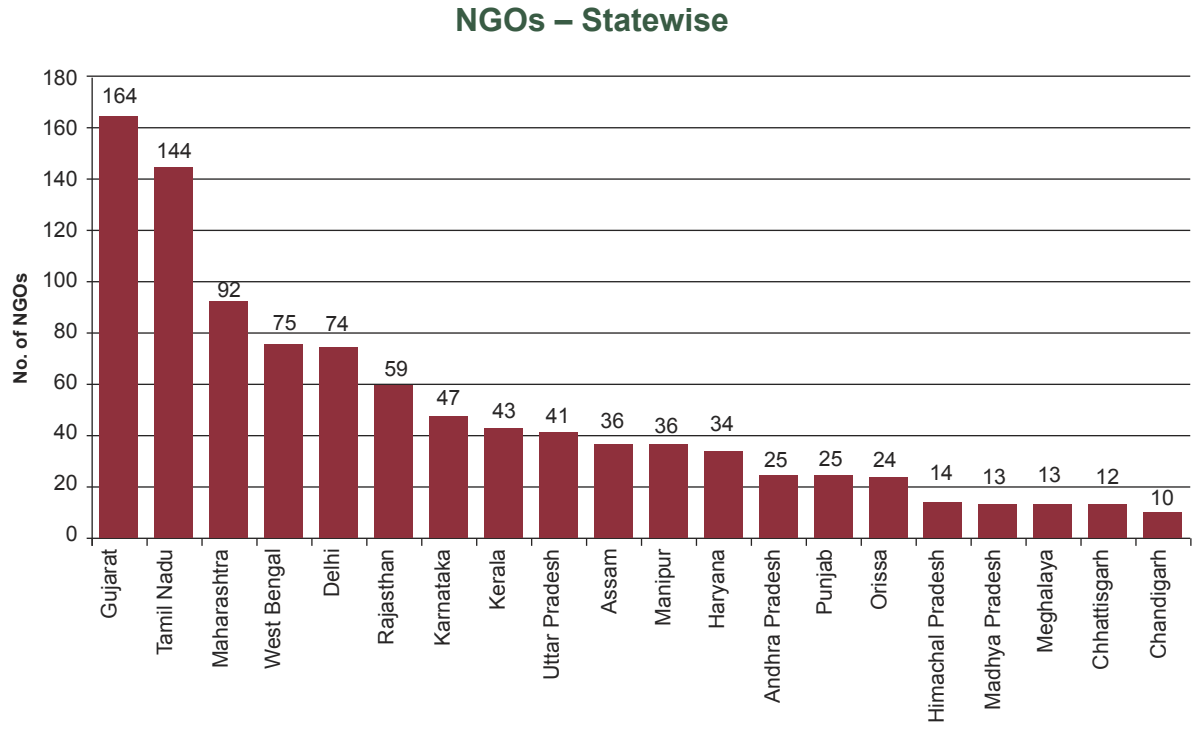
Private sector

The Government of India has approved six Private Practitioner's schemes in RNTCP. This has then been decentralised to the district level.

Corporate sector

The Indian Business Alliance is a coalition comprising the Global Health Initiative of the World Economic Forum, Stop TB Partnership, WHO, CII, Reliance Industries, Larsen & Toubro, Aditya Birla group, Tatas, HLL, Lupin and Novartis alongwith other corporate houses. This alliance is involved in bringing companies together to strengthen state efforts at TB control.

The involvement of the Corporate sector also includes managing TB in the workplace using



either public or private undertakings. Patients are referred to the public sector DMC/TU or recognised private sector DMC/TU. In some cases the corporate houses run their own DMC/TU following RNTCP policies and guidelines. The drugs, laboratory consumables, printed material and training are provided by the RNTCP.

Reliance microscopy cum DOT centre, Surat, Gujarat

Reliance Industries have set an excellent example of corporate sector involvement in RNTCP by starting a Microscopy cum DOT centre in collaboration with Lok Vikas Sanstha, a local NGO of Mora village, Surat. This region has a population of 1.5 lakh consisting of mainly migratory labourers. This centre also provides services for detection, prevention and control of HIV in high-risk groups. The centre has put 52 TB patients on DOTS till date.

The DOT Centre at Mora village

NGOs

There has been a substantial increase in the involvement of Non-Governmental Organisations in RNTCP. As of end 2004, more than 1000 NGOs in the country are involved in the programme.

Strengthening of laboratory network

EQA/DRS

A DMC is established for approximately 100,000 population (50,000 in tribal and mountainous areas) under the RNTCP programme. Each DMC has a trained laboratory technician, upgraded laboratory facilities, binocular microscope and laboratory consumables. RNTCP has accorded high priority to ensuring the quality of sputum smear microscopy services in order to achieve the objectives of the RNTCP programme.

RNTCP has modified the laboratory network structure as follows:

- National Reference Laboratories (NRLs): Three in number - Tuberculosis Research Centre (TRC) Chennai, NTI Bangalore, Lala Ram Sarup Institute of Tuberculosis and Respiratory Diseases (LRS) Delhi.
- Intermediate Reference Laboratories (IRLs): the STDCs (State TB Training and Demonstration Centres). These number sixteen.
- Peripheral laboratories: DMCs at the peripheries. As of end 2004, there were 10,000 peripheral laboratories/DMCs.

All the districts conduct on-site evaluation of peripheral laboratories. In 2004, the Lot Quality Assurance Sampling (LQAS) system of blinded rechecking was pilot tested in three districts: Tiruvullar, Gondia and Bhandara. Based on the results of the pilot test, necessary changes were made in the EQA protocol and the revised RNTCP EQA guidelines have been finalised.

Phased implementation of the LQAS system of random blinded rechecking is planned for the entire country by end-2005, after capacity building of STDCs. The strengthening of STDCs and NRLs for undertaking site evaluation and panel testing has been planned through technical training.

Surveillance of drug resistance levels amongst TB patients is important to monitor effectiveness of TB control activities and inform on appropriate treatment regimes. The aim of Drug Resistance Surveillance (DRS) is to determine the presence of anti- mycobacterial drug resistance among new sputum-positive PTB patients and also previously treated sputum smear-positive PTB patients. RNTCP aims to have a network of RNTCP accredited quality Intermediate Reference Laboratories (IRLs, with one in each large state.

Pediatric TB

The existing RNTCP guidelines for the diagnosis and treatment of pediatric cases were modified after a workshop on 'Management of Pediatric TB under RNTCP' conducted in August 2003 at Delhi. A consensus statement from RNTCP and Indian Academy of Pediatricts (IAP) in relation to diagnosis and treatment of Pediatric TB subsequently was published in the Journal of Indian Pediatrics in early 2004. Development work on Pediatric Patient-wise Boxes (PWBs) has been completed and recommendations have been made.

The treatment is based on the child's body weight and by weight bands. There are two generic Pediatric PWBs—6-10 kgs and

Salient features of the Pediatric TB programme

- Children <6 years of age, who are contacts of sputum smear positive PTB cases, will continue to receive 6 months chemoprophylaxis with isoniazid.
- For diagnosis of pulmonary and extra pulmonary TB in children, the existing facilities, in terms of laboratory, X-ray and staff, in the respective districts would be utilised.
- Tuberculin will be supplied to the districts by RNTCP for diagnosis.
- Tuberculin will be procured from the open market by RNTCP and supplied to the respective districts.
- The cold chain system already available with the districts will be utilised for storage.
- The BCG Laboratory at Guindy would provide QC services to RNTCP in relation to procurement of said tuberculin from the open market.

Child cured with DOTS

11-17 kgs weight bands. This is a unique global achievement for RNTCP, as no other DOTS programme in the world has such PWBs for the treatment of children with Tuberculosis.

The initial RNTCP training material has been revised to include details of new pediatric guidelines and revised records and reports. Staff already trained under RNTCP, are being given updates on the revised diagnostic and treatment guidelines, and the recording and reporting formats.

Drug procurement & logistic management

The success of the RNTCP depends, to a great extent, on robust drug procurement and logistics management. Over the past few years, significant improvements have been made in drug inspection, supply, storage and quality control practices and procedures.

The CTD procures anti-TB drugs through an independent procurement agency. It calculates drug requirements, delivery schedules, technical specifications and consignee details, which are approved by a technical committee. All drugs procured for the RNTCP, irrespective of the procuring agency, are packaged and delivered in similar patient-wise boxes.

Distribution and monitoring

Drugs are primarily supplied from manufacturers to the district TB centres, state drug stores operational in Arunachal Pradesh, Bihar, Delhi, Himachal Pradesh, Kerala, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Rajasthan, Sikkim and Tamil Nadu as well as to government medical store depots (GMSDs) at Calcutta, Chennai, Guwahati, Hyderabad, Karnal and Mumbai.

Drug requirement, consumption and district drug stock positions are closely monitored. The information is verified through quarterly reports, with details of the number of patients put on treatment during the quarter, quantity of drugs consumed, stocks received, closing stock levels and calculated drug requirement of the district. A buffer stock level of three months is maintained at each district across the nation. The monitoring system makes this possible by projecting future drug utilisation and supply requirements.

Quality assurance

The following steps have been undertaken to ensure the quality of all anti-TB drugs used under the RNTCP.

- Samples from each batch of anti-TB drugs are tested before being cleared for dispatch.
- The GMSDs take random samples from their inventory for quality checks.
- Central and state drug inspectors periodically test drug samples from the districts.
- An independent laboratory has been selected for quality assurance testing of anti-TB drugs. Drug samples to be tested are collected by the programme officials every quarter and sent to this laboratory via yet another independent channel.

Global Tuberculosis Drug Facility

The Global Drug Facility (GDF) was established in order to assist countries in the fight against TB by supplying high quality anti - TB drugs and thus support DOTS programme. GDF had agreed to support the Indian DOTS programme for an initial 3-year period (for a population of 200 million), subject to availability of resources in the country and compliance with GDF conditions. The supply of drugs for the first two years has been received by India (the third year's supply is awaited), and the country has used it very effectively in expanding the DOTS programme. India has requested GDF to extend its support for one more year to cover an additional population of 125 million.

In addition to the above assistance from GDF, Orissa has also been sanctioned a three year supply of anti-TB drugs (first year's supply has been received) from GDF.

The initial supply of drugs from the GDF to India was in the form of a grant. After India put in the requisite procurement, supply chain and delivery systems for the drugs, GDF is now offering these services to state governments and their partner organisations that finance their own TB drug purchases. Drugs for the RNTCP in Haryana are now being procured through GDF.

Strengthening of STDCs

While the RNTCP is expanding rapidly, its implementation and monitoring should be effectively decentralised. Once the entire country is covered under the RNTCP, it will be difficult to monitor all activities from the centre. Neither would an STO with his limited staff be able to monitor and supervise the programme in the entire state. Hence, the State TB Training and Demonstration Centres (STDCs) will play an important role in the future success of the RNTCP, once the state is fully covered and other components of quality assurance (QA) are fully established. The STDCs' role incorporates training, supervision, monitoring and evaluation, QA of sputum microscopy, advocacy, IEC, operational research and culture and sensitivity facilities for *Mycobacterium tuberculosis*.

As of end 2004, 16 STDCs exist - in Andhra Pradesh, Madhya Pradesh, Gujarat, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal and Bihar (two). The three Central institutes—TRC, NTI and LRS—assist the respective states in various activities in addition to regular functions. Several steps have been taken and future plans have been laid for the strengthening of STDCs:

- Revised document on STDC functioning has been developed in co-ordination with NTI.
- Quarterly reporting format for STDCs have been developed and states are required to send regular performance reports.
- Phased training of STDC staff on training, monitoring and supervision has been planned.
- Onsite evaluation of three state-level laboratory facilities has been done by teams comprising CTD, Central Institutes and WHO representatives (February 2004).
- Phased training on EQA has been given to STDC staff. Two STDCs have been strengthened, on a pilot scale, for undertaking laboratory EQA by June 2004.
- Facilities for culture and drug sensitivity testing for state-level reference labs have been established; Procurement process for two states has already begun.
- Phased training of STDC staff on DRS has also been planned. This would depend on the implementation of EQA protocol, complete coverage and establishment of culture and sensitivity facilities.

Trainining of MPW in April, 2004 at DTC Kokrajhar

Human resource development activities–training

The objective of RNTCP is to have, at all times, adequate number of skilled staff with the necessary knowledge and attitude to successfully implement and sustain TB control activities based on the DOTS strategy. This would include the implementation of new and revised techniques using appropriate tools.

RNTCP programme has embarked on many new activities such as, case finding by microscopy, directly observed treatment with standardised Short Course Chemotherapy (SCC) and improved recording and reporting. Hence, Human Resource Development (HRD) and high-quality training are critical for the successful implementation of the RNTCP.

The current status of training under the RNTCP is shown in the table on page 47.

In collaboration with NACO, the CTD has developed training packages on TB-HIV issues, targeted at various levels of health workers, from medical officers to VCTC counsellors

It is necessary to train all the health personnel involved in RNTCP implementation. Since training on such a large scale cannot be organised by the central institutes alone, it has been decentralised to the state and district levels as well. For this purpose, training facilities available at the state, district and sub-district levels have been strengthened. According to the category of personnel, the training venue may be the central institutes (for STOs/DTOs); the STDCs (for MOTC/STS/STLS) or district-level nodes (for MO/LT/MPHS/MPW).

Improvement of existing training programmes

RNTCP has a series of modular training courses with printed material for all levels of staff, ranging from the STOs to the community DOT providers. A number of modules and courses have been added to the existing training packages. The existing modules, reviewed and updated, are being used from January 2005 for training new participants. RNTCP modules on EQA of sputum microscopy services and DRS have been finalised and are being published. As part of the PPM project for private providers and DTOs, training modules on PPM are also under development.

In collaboration with NACO, the CTD has developed training packages on TB-HIV issues, targeted at various levels of health workers, from medical officers to Voluntary Counselling and Testing Centre (VCTC) counsellors, as well as NGOs. By training HIV/AIDS programme staff on RNTCP and vice versa, efforts to combat the two deadly diseases are synergised.

TB/HIV

TB-HIV joint action plan of the government consists of two phases. Phase I has been completed successfully and Phase II is being implemented across the states.

Training status as of December 2004

Staff category	Sanctioned	In place	Total trained in RNTCP	Trained (%)
State Tuberculosis Officer (STO)	35	35	32	92
District Tuberculosis Officer (DTO)	544	465	443	95
Statistical assistant		239	177	74
Medical Officer, DTC (District Tuberculosis Centre)	568	482	446	93
MO-TC (Medical Officer - Tuberculosis Centre)	1946	1779	1645	92
STS	1944	1866	1799	96
STLS (Senior Tuberculosis Laboratory Supervisor)	2034	1963	1905	97
LT (Laboratory Technician)	18652	16437	13334	81
TO	1400	722	608	84
MO (BPHC/ CHC (Community Health Centre) /PHC (Primary Health Centre) /Other)	57308	52051	43406	83
Pharmacist	25934	22048	15018	68
LHV	18254	15929	11589	73
Staff nurse	34165	30845	13116	43
Health assistant	25898	23250	19334	83
MPHS	32836	27883	22532	81
MPW or equivalent	174223	154738	130106	84
Health visitor	3071	2012	1868	93
Anganwadi worker	242419	201804	123874	61
Trained midwife	76179	80411	2488	3
Community volunteer		33555	30459	91
Total	716866	488514	422182	86

Progress in 2003/04

Phase I of the joint action programme addressed the six states where there is a high prevalence of HIV: Andhra Pradesh, Karnataka, Maharashtra, Manipur, Nagaland and Tamil Nadu.

Sensitisation workshops were held in the six states and the following milestones were achieved:

- Cross-referral linkages have been established in 242 VCTCs; 209 have Designated Microscopy Centres (DMCs) and 150 have DOTS centres in the same location.
- HIV surveillance in TB patients has been

Dr. N.S. Dharamshaktu, Additional Project Director, NACO; Dr. S.Y. Quraishi, Additional Secretary and Director General NACO and Dr. L.S. Chauhan, DDGTB at National Review Meeting of HIV-TB Coordination

carried out in one district each in the states of Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu.

With the success in these states, Phase II of the joint- action plan has been extended to eight additional states: Delhi, Gujarat, Himachal Pradesh, Kerala, Orissa, Punjab, Rajasthan and West Bengal. Thus, as of 2004, 14 states have commenced TB-HIV co-ordination activities. Regular meetings on TB-HIV are being held by the NACO to review ongoing collaborations and plan phased upscaling.

In addition, as part of the monitoring and evaluation of TB-HIV activities, the new monthly reporting format of VCTC-RNTCP cross-referrals has been incorporated in the RNTCP quarterly district-level reports.

Achievements

- Six WHO-RNTCP TB-HIV consultants have been appointed by the WHO to facilitate collaborative activities (one each at NACO and CTD, and one each in Andhra Pradesh, Maharashtra, Tamil Nadu and the Northeast).
- Over 900 National AIDS Control Programme (NACP) staff members and 2000 RNTCP staff members have been trained in TB-HIV-related issues.
- District-level linkages between AIDS and TB control programmes have been established (as referral linkages between VCTCs and sputum microscopy centres). A successful pilot was conducted on cross-referrals in Maharashtra.
- Treatment guidelines for TB in HIV-infected patients have been jointly developed by NACO and CTD.

RNTCP also coordinates TB-related and HIV-AIDS training with NACO. Appropriate training materials have been developed in consultation with the CTD and NACO and these are regularly updated. Various staff categories of RNTCP, NACP and NGOs have been trained in the 14 states implementing the TB-HIV Action Plan. It has been proposed to include TB-HIV in the curriculum of the induction training of RNTCP and NACP programme staff.

The purpose of the Stop TB Partners' Forum is to promote and accelerate action to curb TB, through networking and exchange of relevant information.

STOP TB partners' forum

The Stop TB Initiative and WHO have brought together high TB burden countries and donor agencies to bring about a firm global commitment and to provide an impetus to TB control activities. The Stop TB Partnership convened a conference on TB control at Amsterdam in March 2000. As a result of the "Amsterdam declaration to Stop TB" major initiatives were launched.

The purpose of the Stop TB Partners' Forum is to promote and accelerate action to curb TB, through networking and exchange of relevant information. It is the main co-ordinating body of the Stop TB Partnership and consists of an assembly of interested global stakeholders. The first Stop TB Partners' Forum was convened in October 2001 at Washington DC.

In recognition of the rapid DOTS expansion in India, the 2nd Stop TB Partners Forum was held in New Delhi from 24 to 26 March 2004 in collaboration with the Ministry of Health & Family Welfare. This was inaugurated by the Prime Minister of India. Several high profile delegates, including health and finance ministers from the

22 high-burden TB countries, the Director General of WHO, representatives of international donor agencies, and national and international experts, attended the session.

It provided an excellent opportunity to showcase the progress achieved by the RNTCP in India. New approaches like TB-HIV co-ordination, PPM, etc were highlighted during the session. A photo exhibition was also held by the Stop TB Partners Forum.

Photo exhibitions and media workshops

Central TB Division in collaboration with the respective state and media agency has been organising photo exhibitions in states with a high-burden of TB with the help of a media outfit. Around twenty exhibits depicting different aspects of TB and the ways to control it are put up. In order to add value to the participants/ visitors and to ensure adequate press coverage, media workshops are being organised along with the exhibitions. These give an ideal opportunity to the different states to develop a rapport with the media and showcase the state-level achievements of the RNTCP programme.

The media agency is responsible for, organising the exhibition and workshop, inviting media persons and providing media kits or material to the invitees. The state helps in arranging the venue, inviting the chief guest and ensuring local support.

Four exhibitions and media workshops have been organised in Gujarat , Rajasthan and Tamil Nadu between July 2004 and February 2005. These were inaugurated by the Health Commissioner in Gujarat and the state Health Ministers of Rajasthan and Tamil Nadu.

Information, Education and Communication (IEC)

Numerous IEC initiatives have been taken during 2004, focusing on dissemination of information, awareness generation among masses, advocacy and sensitisation of health providers on a stand-

Snapshot of Media Workshops organised in Gujarat and Rajasthan

The IEC strategy focused on mass media activities in the electronic and print media.

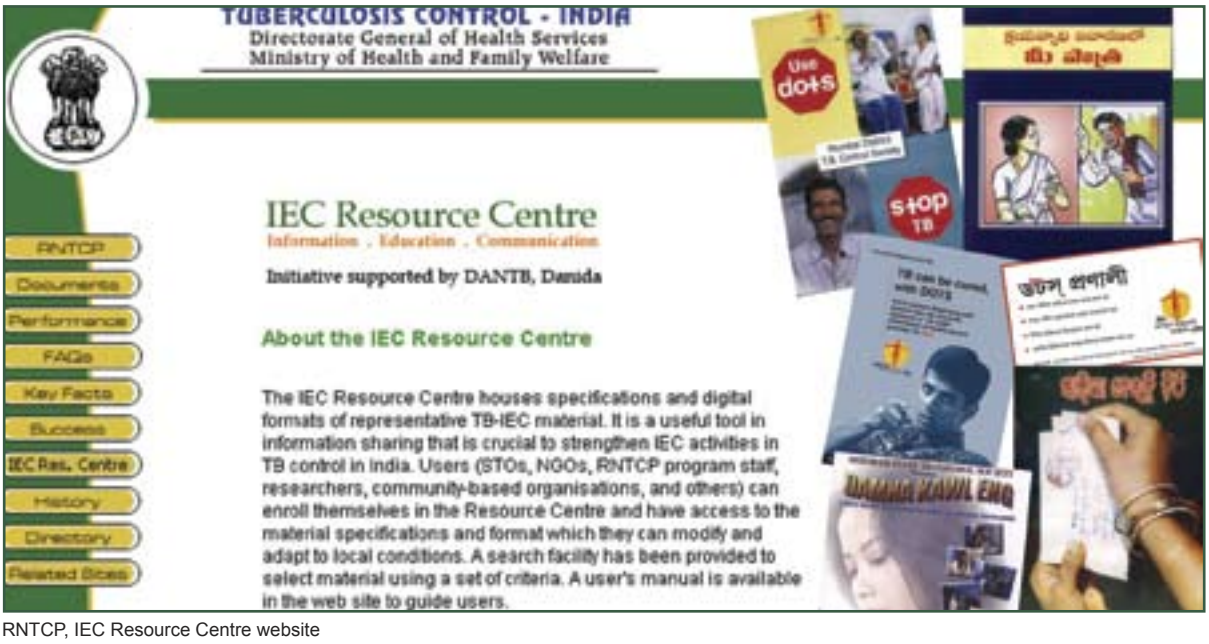
ardised treatment regimen. Most communication efforts have focused on sharing of information and knowledge. Roles and responsibilities have been defined at the centre, state, and district levels to bring synergy to the campaign.

The following IEC activities have been carried out:

- The IEC strategy focused on mass media activities in the electronic and print media. A lot of work has been done in the areas of TV production and radio spots and these have been shared with the states and districts. An awareness generation programme, targeting both the masses as well as the healthcare providers, was telecast on Doordarshan, regional and cable channels.
- Promotional materials such as posters, leaflets, T-shirts, badges and caps have been prepared and made available to states and districts. Along with this, printable CDs have also been made available at the district level. The material is available in nine regional languages, besides Hindi, English and Urdu.
- The states and districts have prepared annual state-level IEC action plans for the activities to be undertaken. These include: sensitisation meetings, media activities, street plays, mike publicity, display of posters and banners at health centres and patient provider meetings.
- A checklist has been developed for monitoring IEC activities at the state and district levels regularly.

Web-based resource centre for IEC activities

The Internet can play a big role in the effective implementation of the RNTCP initiatives. A Web-based resource centre for IEC has been developed with the help of the Danish International Development Agency (Danida). It is a unique and useful initiative in the context of TB control in India. The material can be accessed by all those involved in TB control: states, districts, NGOs, etc. It stores information about each IEC material, specifying its nature, language, target audience, usage type and other relevant information. All vernacular material is accompanied with a translation and synopsis in English and Hindi.



RNTCP, IEC Resource Centre website

Chapter 6

Research Activities

The RNTCP encourages operational research (OR) and has provision for funding such studies. In 2002, the programme identified priority areas for OR and seeks proposals from the wider medical fraternity for funding. Funds have also been made available to States for inviting proposals and funding research activities in their respective States. The OR priority areas as well as formats for the proposals are available on the RNTCP website www.tbcindia.org. Generic protocols are being developed by the national TB institutes and Medical Colleges' NTF for use by the interested institutes.

A very crucial study published in 2004 was the recent country wide annual risk of TB survey. A nation wide cross-sectional study was conducted by the National by the National Tuberculosis Institute, Bangalore (NTI) and Tuberculosis Research Centre (TRC), Chennai, in different parts of India to assess the prevailing epidemiological situation of TB in the country estimating the Annual Risk of TB Infection (ARTI) during 2000-03. The survey was designed to estimate the average ARTI in each of the four zones of the country. The estimated total new-smear positive cases in all the States have been adjusted using this recently for available data on ARTI. Hence the estimated new smear-positive cases for states in the North zone is now 95/100,000 population; East zone is 75/100,000; South zone is 75/100,000 and West zone is 80/100,000 population. The zonal ARTI estimates derived from the study were also used to estimate a National ARTI of 1.5% (= estimated new smear positive cases = 75/100,000).

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Chapter 7

Performance of RNTCP

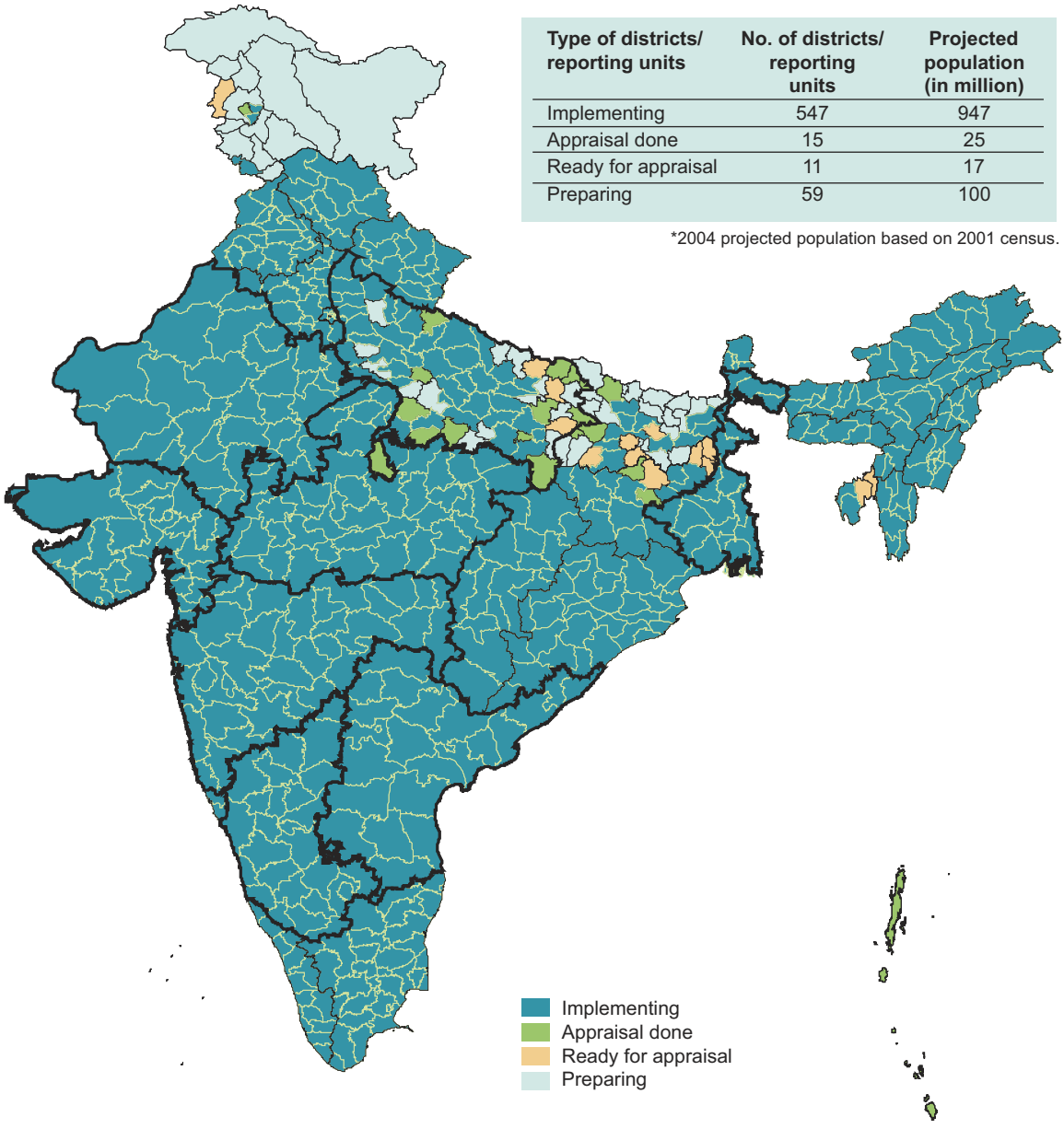
"RNTCP is the flagship programme of this Ministry (Health)."

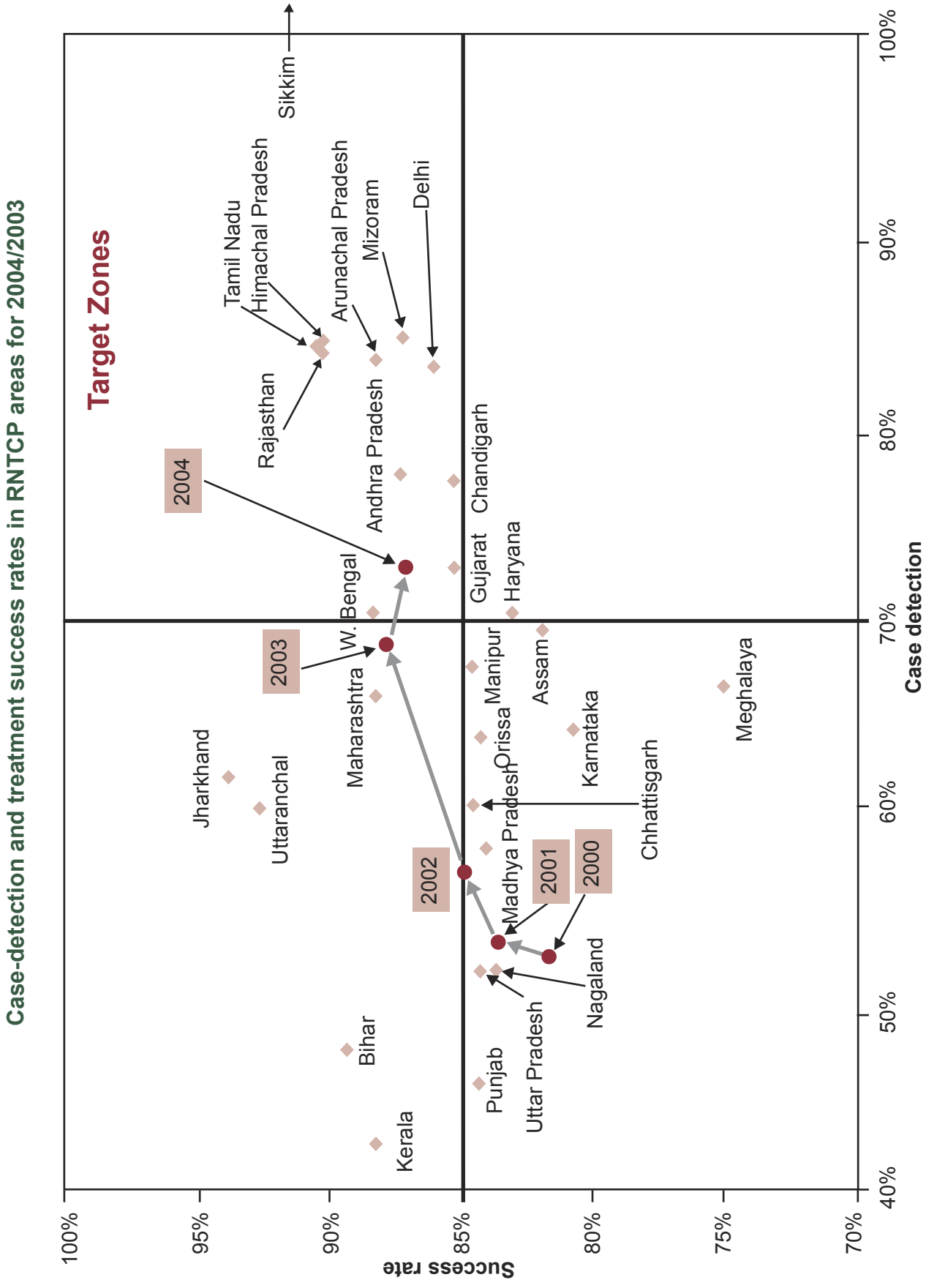
Dr. S.P. Agarwal, Director General of Health Services,
Ministry of Health and Family Welfare,
(speaking during the Expert Committee Meeting on RNTCP II Project, February 2005)

India: DOTS implementation status by District, 31st December 2004

Type of districts/ reporting units	No. of districts/ reporting units	Projected population (in million)
Implementing	547	947
Appraisal done	15	25
Ready for appraisal	11	17
Preparing	59	100

*2004 projected population based on 2001 census.




Case-detection and treatment success rates in RNTCP areas for 2004/2003
Target Zones
Success rate
Case detection
100%
95%
90%
85%
80%
75%
70%
40%
50%
60%
70%
80%
90%
100%
Sikkim
Tamil Nadu
Himachal Pradesh
Arunachal Pradesh
Mizoram
Delhi
Rajasthan
Andhra Pradesh
Chandigarh
Gujarat
Haryana
2004
2003
W. Bengal
Maharashtra
Manipur
Assam
Jharkhand
Uttaranchal
Orissa
Karnataka
Meghalaya
Madhya Pradesh
Chhattisgarh
2002
2001
2000
Nagaland
Bihar
Punjab
Uttar Pradesh
Kerala

Annual Performance of RNTCP Case Detection (2004), Smear Conversion (4th quarter, 2003 and 1-3 quarter, 2004), and Treatment Outcomes (2003)

Implementing states	Population (in lakh) covered by RNTCP * (%) till 31st Dec'04	Total patients initiated on treatment	Annual total case detection rate †	New smear positive patients initiated on treatment	Annual new smear positive case detection rate (%) †	% sputum positive of total new pulmonary cases	3 month conversion rate of new smear positive patients§	Cure rate of new smear positive patients ¶	Success rate of new smear +ve patients ¶	No of new smear negative cases initiated on treatment	No of new EP cases initiated on treament	% of new EP cases out of all new cases	No of smear positive retreatment cases initiated on treatment	% of retreatment cases out of all smear positive cases
Andhra Pradesh	787 (100)	105932	136	44668	57 (77)	53%	91%	84%	86%	39742	7601	8%	12105	21%
Arunachal Pradesh	12 (100)	2057	176	709	61 (81)	52%	94%	85%	87%	650	268	16%	317	31%
Assam	281 (100)	26422	136	10111	52 (70)	50%	81%	80%	82%	10177	1752	8%	3102	23%
Bihar	239 (27)	14593	98	4816	32 (49)	41%	91%	87%	90%	6960	857	7%	1075	18%
Chandigarh	10 (100)	2164	217	722	72 (76)	60%	92%	85%	85%	486	589	33%	247	25%
Chhattisgarh	219 (100)	19695	121	8046	49 (62)	50%	89%	83%	85%	8048	1491	8%	1549	16%
Delhi	154 (100)	43809	284	11926	77 (81)	56%	89%	85%	85%	9488	11744	35%	6269	34%
Goa	14 (100)	509	145	182	52 (65)	55%	94%			151	95	22%	70	28%
Gujarat	538 (100)	79784	151	30614	58 (72)	62%	91%	85%	85%	18383	8676	15%	16206	35%
Haryana	227 (100)	33606	165	13624	67 (70)	63%	85%	83%	83%	8140	4261	16%	6378	32%
Himachal Pradesh	64 (100)	13458	211	4954	78 (82)	63%	92%	87%	88%	2895	2747	26%	2363	32%
Jammu & Kashmir	37 (34)	988	73	379	28 (29)	54%	90%			317	207	23%	81	18%
Jharkhand	214 (75)	17356	118	6950	47 (63)	50%	93%	91%	93%	7015	1041	7%	1763	20%
Karnataka	553 (100)	64432	122	25734	49 (65)	57%	87%	80%	81%	19187	9418	17%	7915	24%
Kerala	327 (100)	25439	78	11073	34 (45)	65%	89%	88%	89%	6001	5740	25%	2101	16%
Madhya Pradesh	645 (100)	63292	128	23661	48 (60)	50%	86%	81%	84%	24103	4720	9%	8445	26%
Maharashtra	1028 (100)	143766	140	54875	53 (67)	54%	91%	86%	87%	46543	20212	17%	15184	22%
Manipur	26 (100)	5042	195	1326	51 (68)	43%	88%	84%	85%	1723	941	24%	462	26%
Meghalaya	25 (100)	3800	152	1256	50 (67)	56%	82%	75%	76%	997	716	24%	492	28%
Mizoram	10 (100)	2035	212	591	61 (82)	48%	90%	85%	86%	634	513	30%	185	24%
Nagaland	23 (100)	2239	115	798	41 (55)	66%	89%	82%	84%	415	516	30%	315	28%
Orissa	384 (100)	43238	123	19329	55 (65)	60%	84%	80%	84%	12681	6029	16%	3254	14%
Pondicherry	10 (100)	1203	156	569	74 (98)	69%	82%			257	174	17%	203	26%
Punjab	256 (100)	20148	129	7370	47 (50)	56%	87%	81%	85%	5869	3643	22%	2679	27%
Rajasthan	609 (100)	105596	174	39655	65 (81)	54%	92%	87%	88%	33185	10296	12%	19932	33%
Sikkim	6 (100)	1724	293	550	93 (125)	57%	90%	88%	89%	407	429	31%	191	26%
Tamil Nadu	641 (100)	96639	151	39438	62 (82)	56%	93%	88%	88%	31600	15604	18%	8197	17%
Tripura	24 (72)	122	20	56	9 (12)	60%	97%			38	11	10%	14	20%
Uttar Pradesh	1177 (66)	136632	132	53505	52 (54)	50%	89%	83%	84%	53979	11471	10%	17017	24%
Uttaranchal	89 (100)	8429	146	3362	58 (61)	58%	91%	92%	92%	2459	775	12%	1718	34%
West Bengal	843 (100)	103204	122	44482	53 (70)	61%	90%	87%	87%	28851	11838	14%	10468	19%
Grand Total	**9472 (87)**	**1,187,353**	**138**	**465,331**	**54 (72)**	**55%**	**90%**	**85%**	**86%**	**381,381**	**144,375**	**15%**	**150,297**	**24%**

NR - Not reported till 10th February 2005; Values for blank areas are not expected

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

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, Kerala, 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

§ Smear conversion rate not expected for states that began implementing RNTCP during 4th quarter 2004

¶ Cure rate and success rate are not expected for states that began implementing RNTCP after 4th quarter of 2003

Treatment outcome of New cases for 2003

Implementing states	New Smear Positive *							New Smear Negative #						New Extra Pulmonary #					
	Regis-tered	Cure	Comp-leted	Died	Failure	Defa-ulted	Trans out	Regis-tered	Comp-leted	Died	Failure	Defa-ulted	Trans out	Regis-tered	Comp-leted	Died	Failure	Defa-ulted	Trans out
Andhra Pradesh	38632	84.1%	2.2%	6.0%	2.6%	4.8%	0.3%	36641	87.1%	5.0%	1.0%	6.3%	0.3%	5911	90.6%	3.6%	0.3%	5.1%	0.4%
Arunachal Pradesh	752	85.2%	1.3%	4.0%	2.9%	6.1%	0.4%	535	86.0%	5.0%	1.1%	7.3%	0.4%	172	89.0%	0.0%	0.6%	10.5%	0.0%
Assam	3781	80.1%	2.1%	6.3%	2.4%	8.2%	0.8%	2749	85.0%	4.2%	1.2%	8.9%	0.4%	747	92.1%	1.9%	0.1%	5.6%	0.3%
Bihar	4201	87.2%	2.4%	2.9%	0.9%	6.5%	0.1%	4465	91.6%	1.6%	0.2%	6.6%	0.0%	600	94.0%	0.3%	0.2%	5.5%	0.0%
Chandigarh	701	85.4%	0.0%	3.3%	5.1%	4.4%	1.7%	412	88.8%	2.4%	1.9%	5.1%	1.5%	483	94.2%	2.1%	0.0%	2.5%	1.0%
Chhattisgarh	3543	83.5%	1.3%	5.0%	2.5%	7.3%	0.4%	3978	86.7%	4.1%	0.7%	8.1%	0.4%	935	92.8%	2.5%	0.1%	4.4%	0.2%
Delhi	11352	85.1%	0.3%	2.6%	4.0%	6.8%	1.2%	8540	91.0%	1.6%	0.9%	5.9%	0.7%	9863	95.9%	0.6%	0.1%	3.0%	0.4%
Goa																			
Gujarat	26425	84.9%	0.4%	4.8%	3.4%	6.1%	0.5%	17045	85.8%	3.7%	1.5%	8.5%	0.5%	7636	91.0%	2.1%	0.2%	6.4%	0.3%
Haryana	4328	82.9%	0.6%	4.1%	2.9%	9.1%	0.4%	3418	82.8%	4.3%	1.8%	11.0%	0.0%	1549	90.9%	1.4%	0.4%	7.2%	0.1%
Himachal Pradesh	4831	87.3%	1.2%	3.9%	2.4%	5.2%	0.0%	2976	87.9%	4.9%	1.1%	5.8%	0.1%	2734	92.2%	3.5%	0.3%	3.5%	0.2%
Jammu & Kashmir																			
Jharkhand	3626	90.8%	2.1%	2.9%	0.6%	3.4%	0.1%	3740	93.0%	2.0%	0.5%	4.4%	0.0%	570	96.1%	1.8%	0.0%	1.9%	0.2%
Karnataka	21669	79.6%	1.8%	5.9%	2.9%	9.6%	0.2%	15480	83.0%	5.8%	1.1%	9.7%	0.3%	6404	89.7%	3.8%	0.1%	6.2%	0.1%
Kerala	10860	87.7%	0.9%	4.1%	2.9%	4.1%	0.2%	6391	88.6%	5.0%	0.6%	5.6%	0.3%	5051	93.8%	2.5%	0.1%	2.9%	0.1%
Madhya Pradesh	12799	81.4%	2.6%	5.3%	3.0%	7.3%	0.3%	11973	84.5%	3.8%	1.0%	7.5%	0.2%	2275	90.1%	2.1%	0.2%	5.8%	0.4%
Maharashtra	46189	85.9%	0.7%	5.3%	2.7%	4.8%	0.5%	43049	87.6%	4.5%	1.1%	6.4%	0.4%	17916	90.9%	3.3%	0.3%	5.1%	0.4%
Manipur	1453	84.3%	0.4%	4.4%	1.9%	8.4%	0.6%	1892	85.9%	3.0%	0.1%	10.9%	0.2%	810	88.5%	3.5%	0.1%	7.8%	0.1%
Meghalaya	259	74.9%	0.8%	3.9%	6.6%	13.1%	0.8%	201	79.6%	6.5%	1.0%	12.9%	0.0%	184	91.8%	5.4%	0.0%	2.7%	0.0%
Mizoram	518	84.9%	1.0%	3.5%	3.9%	5.8%	1.0%	448	82.8%	7.6%	0.4%	8.3%	0.9%	355	89.9%	3.9%	0.0%	5.6%	0.6%
Nagaland	655	82.4%	1.5%	4.3%	4.4%	6.1%	0.3%	334	78.1%	4.5%	6.3%	11.1%	0.0%	246	80.9%	4.5%	2.0%	12.6%	0.0%
Orissa	11710	79.9%	4.4%	6.0%	1.0%	8.5%	0.1%	6704	86.9%	4.9%	0.4%	7.8%	0.1%	2950	89.4%	2.8%	0.1%	7.7%	0.1%
Pondicherry																			
Punjab	5831	81.2%	3.4%	4.4%	2.9%	7.7%	0.5%	4325	85.7%	4.2%	1.3%	8.3%	0.5%	2757	91.8%	2.6%	0.1%	4.8%	0.6%
Rajasthan	37470	86.7%	1.5%	3.4%	1.7%	6.5%	0.1%	28881	88.1%	2.9%	1.0%	7.7%	0.1%	10005	92.2%	1.7%	0.2%	5.6%	0.1%
Sikkim	443	88.5%	0.7%	2.3%	5.6%	2.3%	0.2%	332	93.7%	3.3%	1.5%	0.6%	0.6%	323	94.4%	1.5%	0.3%	3.1%	0.6%
Tamil Nadu	34762	88.1%	0.1%	4.9%	2.1%	4.5%	0.3%	32015	89.8%	4.0%	0.6%	5.3%	0.2%	13620	93.4%	2.6%	0.1%	3.7%	0.2%
Tripura																			
Uttar Pradesh	31692	82.8%	1.7%	4.9%	1.9%	8.4%	0.1%	26322	88.5%	3.1%	1.0%	7.2%	0.1%	6152	93.4%	1.5%	0.0%	4.5%	0.1%
Uttaranchal	827	91.7%	0.2%	3.1%	1.1%	3.7%	0.1%	597	95.0%	3.2%	0.5%	1.3%	0.0%	257	94.9%	3.5%	0.0%	1.6%	0.0%
West Bengal	38887	86.5%	0.7%	4.0%	2.5%	6.0%	0.2%	26484	86.7%	4.6%	1.0%	7.5%	0.2%	8992	92.6%	2.5%	0.3%	4.4%	0.2%
Grand Total	**358,196**	**84.9%**	**1.3%**	**4.7%**	**2.5%**	**6.2%**	**0.3%**	**289,927**	**87.4%**	**4.1%**	**1.0%**	**7.0%**	**0.3%**	**109,497**	**92.2%**	**2.5%**	**0.2%**	**4.8%**	**0.3%**

* - Treatment success for New Smear Positive is cured and treatment completed.
# - Treatment success for New Smear Negative and New Extra Pulmonary are treatment completed.

Outcome of Smear Positive Retreatment cases for India, for 2003 (excluding "Others")

Type of retreatment case	Cured	Success	Died	Failure	Defaulted	Transferred out	No. registered
Relapse	71%	75%	7%	5%	12%	0.5%	46419
Failure	56%	60%	9%	14%	16%	0.6%	11620
Treatment after default	64%	69%	8%	5%	18%	0.6%	54265
Total	**66%**	**70%**	**8%**	**6%**	**15%**	**0.6%**	**112304**

State-wise outcome of Smear Positive Retreatment cases for 2003, (excluding "Others")

Implementing states	Cured	Success	Died	Failure	Defaulted	Transferred out	No. registered
Andhra Pradesh	64%	71%	9%	6%	14%	0.6%	7507
Arunachal Pradesh	72%	73%	5%	11%	11%	0.4%	264
Assam	63%	69%	9%	6%	16%	1.3%	1146
Bihar	74%	81%	5%	3%	11%	0.0%	803
Chandigarh	75%	76%	5%	8%	9%	2.2%	223
Chhattisgarh	63%	67%	9%	7%	16%	0.5%	775
Delhi	69%	70%	6%	8%	15%	1.4%	5411
Goa							
Gujarat	60%	64%	8%	7%	21%	0.9%	13667
Haryana	59%	64%	8%	7%	21%	0.4%	1971
Himachal Pradesh	75%	78%	7%	7%	8%	0.2%	2094
Jammu & Kashmir							
Jharkhand	80%	85%	6%	2%	8%	0.2%	813
Karnataka	59%	64%	9%	7%	21%	0.3%	6089
Kerala	65%	69%	6%	8%	16%	0.7%	1748
Madhya Pradesh	65%	70%	10%	6%	13%	0.4%	3876
Maharashtra	63%	66%	9%	7%	17%	1.0%	14220
Manipur	70%	73%	7%	8%	16%	0.2%	421
Meghalaya	51%	57%	12%	18%	12%	1.0%	100
Mizoram	55%	64%	6%	14%	16%	0.6%	160
Nagaland	68%	73%	8%	11%	8%	0.4%	237
Orissa	65%	72%	9%	2%	16%	0.2%	1712
Pondicherry							
Punjab	63%	72%	9%	5%	13%	0.7%	2177
Rajasthan	73%	78%	6%	4%	13%	0.1%	19592
Sikkim	66%	69%	6%	20%	4%	0.0%	186
Tamil Nadu	64%	67%	8%	7%	17%	0.8%	7476
Tripura							
Uttar Pradesh	71%	74%	8%	4%	13%	0.1%	10347
Uttaranchal	80%	80%	7%	7%	6%	0.0%	361
West Bengal	68%	71%	8%	7%	14%	0.5%	8928
Grand Total	**66%**	**70%**	**8%**	**6%**	**15%**	**0.6%**	**112304**

Annual Performance of districts - Case finding (2004), Smear Conversion(quarter 4, 2003 and quarter 1-3, 2004), Treatment Outcome (2003)

District	Population covered in 100,000 by 31.12.04	Total patients initiated on treatment	Annual total case detection rate †	New smear positive patients initiated on treatment	Annual new smear positive case detection rate (%)†	% new sputum positive out of total new pulmonary cases	3 month conversion rate of new smear positive patients§	Cure rate of new smear positive patients¶	Success rate of new smear positive patients¶
Andhra Pradesh									
Adilabad	26	2649	103	1405	55 (73)	63%	87%	59%	70%
Anantapur	38	5281	140	2388	63 (84)	59%	92%	86%	86%
Bhadrachalam	8	1705	211	944	117 (155)	75%	89%	69%	76%
Chittoor	39	4432	114	1925	50 (66)	57%	90%	84%	84%
Cuddapah	27	4624	173	1733	65 (86)	47%	89%	82%	85%
East Godavari	51	6253	123	2173	43 (57)	46%	91%	84%	84%
Guntur	46	7004	153	2768	60 (81)	50%	92%	86%	88%
Hyderabad	38	5716	149	2338	61 (81)	59%	95%	90%	90%
Karimnagar	36	2700	100	1133	42 (56)	56%	85%		
Khammam	19	3308	178	1477	80 (106)	54%	94%	86%	89%
Krishna	44	5125	117	2075	47 (63)	51%	90%	84%	85%
Kurnool	37	5372	147	2148	59 (78)	47%	92%	77%	80%
Mahbubnagar	36	4254	117	1988	55 (73)	55%	89%	82%	83%
Medak	28	3024	109	1184	43 (57)	50%	94%	87%	90%
Nalgonda	34	5132	152	2460	73 (97)	59%	87%	76%	81%
Nellore	28	3797	137	1530	55 (74)	58%	92%	84%	87%
Nizamabad	24	2981	122	1325	54 (73)	48%	94%	84%	86%
Prakasam	32	3940	124	1717	54 (72)	51%	93%	82%	87%
Rangareddi	36	4359	120	1770	49 (65)	54%	91%	87%	88%
Srikakulam	26	4377	166	1735	66 (88)	46%	93%	91%	92%
Visakhapatnam	39	5386	137	2414	61 (82)	53%	95%	88%	88%
Vizianagaram	23	3976	170	1690	72 (97)	56%	93%	90%	90%
Warangal	34	4915	146	1931	57 (77)	47%	81%	72%	84%
West Godavari	39	5622	142	2417	61 (82)	53%	94%	87%	87%
Arunachal Pradesh									
Bomdila DTC	1.8	355	199	141	79 (105)	56%	94%	90%	93%
Deomali DTC	2	209	87	75	31 (41)	54%	86%	77%	79%
Pasighat DTC	1.3	336	260	128	99 (132)	51%	99%	94%	94%
Tezu DTC	2	349	162	157	73 (97)	69%	94%	87%	87%
Ziro DTC	3	663	225	155	53 (70)	39%	91%	77%	79%
Assam									
Barpeta	17	1608	93	509	29 (39)	40%	91%	81%	85%
Bongaigaon	10	924	194	354	74 (99)	47%	70%		
Cachar	15	1122	74	393	26 (35)	46%	80%	66%	73%
Darrang	16	1518	192	521	66 (88)	43%	76%		
Dhemaji	6	445	148	251	84 (112)	64%	71%		
Dhubri	17	1598	186	683	79 (106)	54%	63%		
Dibrugarh	12	1981	160	781	63 (84)	63%	90%	85%	86%
Goalpara	9	728	168	336	78 (103)	57%	73%		
Golaghat	10	715	144	231	46 (62)	42%	75%		
Hailakandi	6	372	130	132	46 (62)	44%	66%		
Jorhat	11	1225	115	495	47 (62)	55%	86%	76%	80%
Kamrup	26	2916	110	921	35 (46)	49%	81%	75%	77%
Karbi Anglong	9	869	406	275	129 (171)	40%	75%		
Karimganj	11	848	160	293	55 (74)	41%	74%		
Kokrajhar	10	805	164	356	73 (97)	49%	79%		
Lakhimpur	9	1203	128	466	50 (66)	51%	91%	83%	83%
Marigaon	8	771	189	310	76 (101)	48%	87%		
Nagaon	24	1477	121	739	61 (81)	59%	80%		

District	Population covered in 100,000 by 31.12.04	Total patients initiated on treatment	Annual total case detection rate †	New smear positive patients initiated on treatment	Annual new smear positive case detection rate (%)†	% new sputum positive out of total new pulmonary cases	3 month conversion rate of new smear positive patients§	Cure rate of new smear positive patients¶	Success rate of new smear positive patients¶
Nalbari	12	1103	184	483	81 (107)	55%	83%		
North Cachar Hills	2.0	206	105	89	45 (61)	55%	91%	87%	87%
Sibsagar	11	540	97	194	35 (47)	64%	56%		
Sonitpur	18	2492	141	868	49 (65)	42%	87%	86%	87%
Tinsukia	12	956	158	431	71 (95)	62%	79%		
Bihar									
Katihar	26	1404	73	640	33 (44)	50%	85%		
Munger	12	837	91	152	17 (22)	23%	71%		
Muzaffarpur	40	4158	103	1313	33 (43)	38%	93%	88%	92%
Patna	51	5311	105	1895	37 (50)	46%	91%	86%	88%
Vaishali	29	2883	99	816	28 (37)	37%	93%	88%	90%
Chandigarh									
Chandigarh	10	2164	217	722	72 (76)	60%	92%	85%	85%
Chhattisgarh									
Bastar	14	1047	153	411	60 (75)	51%	82%		
Bilaspur-CG	21	2472	118	1000	48 (60)	49%	92%	87%	88%
Dantewada	8	331	175	212	112 (140)	83%	74%		
Dhamtari	7	594	107	319	58 (72)	70%	87%		
Durg	29	2965	101	1086	37 (46)	44%	91%	82%	85%
Janjgir	14	1245	120	460	44 (55)	41%	90%		
Jashpur	8	474	122	217	56 (70)	55%	89%		
Kanker	7	810	158	401	78 (98)	62%	91%		
Kawardha	6	593	129	222	48 (60)	47%	75%		
Korba	11	707	133	399	75 (94)	73%	86%		
Koriya	6	329	214	105	68 (85)	40%	85%		
Mahasamund	9	641	95	305	45 (56)	57%	89%		
Raigarh-Cg	13	1854	186	769	77 (96)	50%	86%		
Raipur	32	3390	107	1362	43 (54)	48%	90%	83%	84%
Rajnandgaon	13	1727	128	625	46 (58)	50%	88%	81%	81%
Surguja	21	516	100	153	30 (37)	38%	88%		
Delhi									
BJRM Chest Clinic	4	1257	288	382	88 (92)	58%	92%	89%	89%
DDU Chest Clinic	8	4013	512	965	123 (130)	48%	90%	85%	85%
GTB Chest Clinic	7	1696	244	463	67 (70)	69%	88%	81%	81%
Gulabi Bagh	10	1604	159	463	46 (48)	61%	92%	90%	90%
Hedgewar C Clinic	5	1829	366	361	72 (76)	44%	90%		
Jhandewalan	6	1352	242	365	65 (69)	57%	91%	84%	84%
Karawal Nagar	8	3523	436	1004	124 (131)	63%	86%	81%	81%
Kingsway	4	1227	274	341	76 (80)	51%	95%	88%	88%
LN Chest Clinic	3	495	147	142	42 (45)	69%	93%	92%	92%
LRS	18	4248	237	1155	64 (68)	57%	91%	87%	87%
Moti Nagar	6	1385	247	313	56 (59)	48%	90%	80%	80%
Narela	6	1320	236	412	74 (77)	55%	91%	85%	85%
NDMC	4	797	178	274	61 (64)	69%	85%	86%	86%
NDTC	2	771	344	173	77 (81)	56%	89%	87%	87%
Nehru Nagar	20	3556	176	1116	55 (58)	60%	86%	80%	80%
Patparganj	8	2466	315	728	93 (98)	62%	89%	81%	83%
RK Mission	9	1672	187	540	60 (63)	59%	86%	89%	89%
RTRM Chest Clinic	4	1433	320	432	96 (102)	61%	89%	90%	91%
SGM Chest Clinic	9	5147	575	1276	142 (150)	49%	92%	88%	88%
Shahadra	7	2662	383	604	87 (91)	47%	89%	81%	84%

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SPM Marg	6	1356	242	417	74 (78)	59%	92%	89%	89%
Goa									
North Goa	8	284	144	108	55 (68)	57%	100%		
South Goa	6	225	147	74	48 (60)	52%	89%		
Gujarat									
Ahmadabad	24	3227	132	1212	50 (62)	57%	90%	85%	85%
AMC	37	8443	226	2390	64 (80)	63%	87%	84%	84%
Amreli	15	1432	97	685	46 (58)	74%	91%	85%	86%
Anand	20	3161	160	1317	67 (83)	66%	94%	87%	87%
Banas Kantha	27	4651	175	1442	54 (68)	49%	90%	84%	85%
Bharuch	20	2775	139	1267	63 (79)	65%	92%	79%	80%
Bhavnagar	26	3863	147	1222	47 (58)	60%	90%	86%	86%
Chhota Udepur	10	958	198	454	94 (117)	75%	88%		
Dahod	17	3477	200	1538	88 (111)	74%	93%	85%	85%
Gandhinagar	14	1973	139	832	59 (73)	67%	91%	87%	87%
Jamnagar	20	2405	118	860	42 (53)	61%	91%	88%	90%
Junagadh	32	3692	116	1368	43 (54)	58%	92%	87%	87%
Kachchh	16	1126	93	421	35 (43)	70%	77%		
Kheda	22	3481	162	1420	66 (83)	69%	91%	86%	86%
Mahesana	20	3001	154	1355	69 (87)	63%	94%	88%	88%
Panch Mahals	22	5004	233	2002	93 (116)	59%	92%	82%	82%
Patan	13	1819	145	712	57 (71)	60%	89%	83%	83%
Rajkot	34	3569	106	1442	43 (54)	64%	92%	86%	87%
Sabar Kantha	22	3813	172	1463	66 (83)	58%	92%	84%	84%
Surat	16	2130	132	873	54 (68)	65%	88%	80%	81%
Surat Municipal Corp	26	3731	144	1233	48 (60)	65%	88%	86%	86%
Surendranagar	16	2002	124	822	51 (64)	65%	92%	87%	88%
The Dangs	2.0	248	125	116	58 (73)	66%	95%	94%	94%
Vadodara	15	2036	135	874	58 (72)	62%	90%	81%	82%
Vadodara Corp	14	2259	163	867	62 (78)	63%	92%	86%	86%
Valsad	28	3371	120	1539	55 (69)	67%	90%	86%	86%
Vyara(Surat)	11	2137	192	888	80 (100)	55%	91%	84%	85%
Haryana									
Ambala	11	1368	125	461	42 (44)	56%	82%	62%	62%
Bhiwani	15	2396	208	1000	87 (91)	57%	86%		
Faridabad	24	3634	154	1249	53 (56)	51%	88%	82%	82%
Fatehabad	9	1278	147	629	72 (76)	75%	79%		
Gurgaon	18	2870	161	1010	57 (60)	59%	84%	79%	79%
Hisar	17	2622	211	1256	101 (107)	74%	79%		
Jhajjar	10	1083	151	456	64 (67)	62%	84%		
Jind	13	1898	148	899	70 (74)	76%	89%	86%	87%
Kaithal	10	1281	168	566	74 (78)	61%	78%		
Karnal	14	1999	146	827	60 (63)	62%	90%	88%	88%
Kurukshetra	9	1042	156	422	63 (66)	62%	80%		
Mahendragarh	9	1351	154	481	55 (58)	55%	93%	80%	80%
Panchkula	5	943	187	358	71 (75)	65%	81%	76%	76%
Panipat	10	1564	200	589	75 (79)	58%	83%		
Rewari	8	954	116	372	45 (48)	69%	83%	67%	67%
Rohtak	10	1775	234	863	114 (120)	79%	90%		
Sirsa	12	1638	183	693	77 (81)	76%	76%		
Sonipat	14	2344	170	789	57 (60)	50%	89%	84%	86%
Yamunanagar	11	1566	148	704	67 (70)	63%	86%	79%	79%

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Himachal Pradesh									
Bilaspur-HP	4	659	184	284	79 (84)	66%	95%	89%	90%
Chamba	5	1096	227	423	88 (92)	61%	95%	89%	90%
Hamirpur-HP	4	772	179	290	67 (71)	63%	94%	91%	91%
Kangra	14	2711	193	942	67 (71)	59%	91%	88%	88%
Kinnaur	0.9	143	162	49	56 (59)	46%	88%	83%	88%
Kullu	4	1563	392	453	114 (120)	49%	93%	87%	87%
Lahul & Spiti	0.3	60	172	13	37 (39)	48%	94%	94%	94%
Mandi	9	2279	241	807	85 (90)	66%	88%	83%	86%
Shimla	8	1416	187	466	62 (65)	64%	93%	89%	90%
Sirmaur	5	1035	215	415	86 (91)	71%	89%	87%	89%
Solan	5	980	187	472	90 (95)	83%	91%	89%	89%
Una	5	744	158	340	72 (76)	69%	92%	89%	90%
Jammu & Kashmir									
Jammu	17	861	101	334	39 (41)	53%	91%		
Pulwama	7	63	37	23	13 (14)	66%	86%		
Srinagar	13	64	19	22	7 (7)	65%	88%		
Jharkhand									
Deoghar	12	1051	85	422	34 (46)	49%	93%	90%	91%
Dhanbad	25	2455	96	896	35 (47)	47%	89%		
Dumka	12	108		69		84%			
Garhwa	11	210		99		57%			
Gumla	9	441	100	188	43 (57)	60%	88%		
Hazaribagh	33	3063	94	1228	38 (50)	48%	93%	84%	91%
Jamtara	7	736	212	259	75 (99)	40%	85%		
Lathehar	6	164	27	91	15 (20)	64%	91%	91%	96%
Lohardaga	4	168	87	86	44 (59)	61%	86%		
Palamu	16	3448	214	1378	86 (114)	48%	95%	94%	95%
Pashchimi Singhbhum	14	106		43		53%			
Purbi Singhbhum	21	1307	124	544	52 (69)	49%	86%		
Ranchi	30	3663	124	1455	49 (65)	52%	95%	92%	92%
Saraikela-Kharsawan	8	316	76	148	36 (48)	63%	92%		
Simdega	6	120		44		48%			
Karnataka									
Bagalkot	17	1858	107	817	47 (63)	53%	86%	77%	85%
Bangalore City	44	5798	132	1928	44 (59)	60%	86%	84%	84%
Bangalore Rural	20	2354	120	1030	52 (70)	61%	86%	74%	76%
Bangalore U	25	2864	116	1134	46 (61)	63%	89%	80%	81%
Belgaum	44	5073	115	2099	48 (63)	56%	87%	72%	76%
Bellary	21	2972	140	1341	63 (84)	61%	89%	85%	86%
Bidar	16	1492	95	594	38 (50)	55%	84%	71%	73%
Bijapur	19	2040	108	785	41 (55)	50%	85%	78%	80%
Chamarajanagar	10	1410	186	603	79 (106)	67%	87%		
Chikmagalur	12	1500	126	567	47 (63)	62%	90%	86%	87%
Chitradurga	16	2351	148	1096	69 (92)	55%	86%	84%	84%
Dakshina Kannada	20	1829	92	785	39 (53)	63%	89%	85%	86%
Davanagere	19	2787	148	1005	54 (71)	51%	87%	72%	80%
Dharwad	17	1831	109	691	41 (55)	64%	86%	76%	76%
Gadag	10	1252	123	527	52 (69)	65%	81%	66%	70%
Gulbarga	33	3420	104	1197	37 (49)	48%	82%	67%	73%
Hassan	18	2026	112	740	41 (55)	61%	92%	83%	83%
Haveri	15	666	177	268	71 (95)	61%	86%		

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Kodagu	6	429	150	175	61 (82)	57%	89%		
Kolar	26	3052	115	1323	50 (67)	59%	90%	82%	83%
Koppal	13	1884	150	731	58 (78)	52%	92%	86%	86%
Mandya	18	2444	132	1067	58 (77)	59%	92%	84%	84%
Mysore	28	3601	131	1364	50 (66)	57%	90%	79%	81%
Raichur	17	2850	165	1181	68 (91)	53%	90%	88%	88%
Shimoga	17	1961	114	656	38 (51)	43%	88%	79%	80%
Tumkur	27	3165	117	1354	50 (67)	64%	85%	77%	77%
Udupi	12	937	107	441	51 (67)	74%	86%		
Uttar Kannada	14	586	83	235	33 (44)	57%	74%		
Kerala									
Alappuzha	22	2044	95	792	37 (49)	54%	89%	85%	88%
Ernakulam	32	2599	82	1178	37 (49)	66%	87%	88%	89%
Idukki	12	632	55	282	24 (32)	72%	90%	87%	88%
Kannur	25	1917	77	810	33 (44)	70%	91%	89%	89%
Kasaragod	12	997	81	425	34 (46)	64%	85%	83%	83%
Kollam	27	2297	87	1069	40 (54)	61%	91%	89%	89%
Kottayam	20	1879	94	899	45 (60)	74%	87%	88%	89%
Kozhikode	30	2311	78	954	32 (43)	68%	88%	88%	89%
Malappuram	37	2359	63	895	24 (32)	55%	88%	89%	91%
Palakkad	27	2135	79	977	36 (48)	70%	90%	86%	87%
Pathanamthitta	13	882	70	450	36 (47)	75%	92%	89%	90%
Thiruvananthapuram	33	2230	67	882	27 (35)	59%	92%	87%	88%
Thrissur	31	2354	77	1175	38 (51)	77%	89%	88%	89%
Wayanad	8	803	99	285	35 (47)	48%	91%	92%	92%
Madhya Pradesh									
Balaghat	15	1753	114	593	38 (48)	46%	85%	79%	86%
Barwani	12	988	86	453	39 (49)	61%	79%	77%	79%
Betul	15	103		50		63%			
Bhind	15	518		157		36%			
Bhopal	20	3523	180	1138	58 (73)	44%	92%	89%	89%
Chhatarpur	16	1536	98	679	43 (54)	58%	81%	72%	74%
Chhindwara	20	1690	86	695	35 (44)	54%	81%	71%	78%
Damoh	12	2284	198	1096	95 (119)	62%	88%	84%	88%
Datia	7	455	272	168	100 (125)	49%	67%		
Dewas	14	1394	100	487	35 (44)	48%	91%	85%	85%
Dhar	19	2139	115	839	45 (56)	50%	89%	86%	86%
Dindori	6	377	61	177	29 (36)	72%	64%	52%	82%
Guna	18	2487	140	1056	59 (74)	54%	83%	80%	81%
Gwalior	17	1348	155	527	61 (76)	58%	81%		
Harda	5	375	74	128	25 (32)	46%	82%	79%	82%
Hoshangabad	12	1694	146	637	55 (69)	55%	95%	92%	93%
Indore	28	2774	101	933	34 (42)	58%	84%	76%	77%
Jabalpur	23	3151	136	1258	54 (68)	51%	70%	66%	72%
Jhabua	15	1551	104	650	44 (54)	55%	96%	90%	91%
Katni	11	1761	155	620	55 (68)	43%	89%	81%	82%
Khandwa	18	1806	99	715	39 (49)	46%	92%	87%	87%
Khargone	16	2033	124	826	51 (63)	54%	92%	80%	81%
Mandla	10	1033	108	473	50 (62)	63%	78%	70%	85%
Mandsaur	13	1615	128	655	52 (65)	48%	89%	83%	88%
Morena	17	947		396		55%			
Narsinghpur	10	1113	109	442	43 (54)	58%	80%	78%	79%

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Neemuch	8	1207	156	403	52 (65)	45%	88%	82%	82%
Panna	9	429	94	136	30 (37)	55%	89%		
Raisen	12	1533	128	388	32 (41)	33%	89%	84%	89%
Rajgarh	13	2036	152	676	51 (63)	47%	90%	82%	85%
Ratlam	13	1633	126	438	34 (42)	46%	87%	68%	74%
Rewa	21	3		1		100%			
Sagar	22	3025	140	963	45 (56)	37%	90%	80%	87%
Satna	20	2588	130	794	40 (50)	40%	90%	84%	86%
Sehore	12	1152	100	343	30 (37)	40%	87%	84%	86%
Seoni	12	281	90	127	41 (51)	67%	83%		
Shahdol	17	975	116	446	53 (66)	57%	81%		
Shajapur	14	647	188	246	71 (89)	53%	95%		
Sheopur	6	28		14		100%			
Shivpuri	15	827	215	429	112 (139)	60%	76%		
Sidhi	20	3		1		50%			
Tikamgarh	13	1468	114	613	48 (60)	49%	82%	65%	65%
Ujjain	18	2089	114	783	43 (54)	50%	88%	79%	81%
Umaria	6	369	67	136	25 (31)	53%	69%	79%	79%
Vidisha	13	2551	197	876	68 (84)	45%	91%	84%	86%
Maharashtra									
Ahmadnagar	43	3971	91	1489	34 (43)	49%	93%	85%	85%
Akola	17	2140	124	900	52 (65)	57%	92%	82%	86%
Amravati Mun Corp	6	862	148	292	50 (63)	55%	92%	82%	82%
Amravati Rural	22	2780	127	980	45 (56)	54%	86%	77%	81%
Aurangabad Muni Corp	9	879	95	371	40 (50)	67%	92%	88%	89%
Aurangabad-MH	22	2269	104	935	43 (54)	51%	96%	93%	93%
Bhandara	12	1554	129	616	51 (64)	56%	89%	87%	87%
Bid	23	2160	94	968	42 (53)	61%	91%	86%	86%
Buldana	24	3116	132	1160	49 (61)	53%	92%	85%	86%
Chandrapur	22	2960	134	1156	52 (65)	53%	91%	87%	87%
Dhule	18	2969	163	1075	59 (74)	47%	90%	83%	87%
Gadchiroli	10	1156	112	491	48 (60)	55%	90%	88%	89%
Gondiya	13	2013	158	746	58 (73)	52%	90%	86%	86%
Hingoli	10	1413	135	536	51 (64)	52%	92%	85%	89%
Jalgaon	39	5066	130	2214	57 (71)	52%	92%	86%	86%
Jalna	17	2203	129	787	46 (57)	47%	82%	78%	82%
Kalyan Dombivli MC	13	1832	144	673	53 (66)	55%	86%	74%	77%
Kolhapur	32	3540	110	1652	51 (64)	59%	92%	89%	89%
Kolhapur Mun Corp	5	670	130	248	48 (60)	53%	91%	85%	85%
Latur	22	2018	91	943	43 (53)	63%	90%	87%	88%
Mumbai	127	25888	204	8025	63 (79)	52%	90%	86%	86%
Nagpur Muni Corp	22	3519	161	1243	57 (71)	65%	90%	83%	83%
Nagpur Rural	21	2400	113	1229	58 (72)	64%	96%	90%	91%
Nanded	26	3194	123	1210	47 (58)	50%	91%	87%	87%
Nanded Waghela MC	5	757	165	243	53 (66)	47%	83%	60%	70%
Nandurbar	14	1981	142	731	53 (66)	46%	91%	84%	88%
Nasik	42	6459	155	2664	64 (80)	52%	92%	87%	87%
Nasik Corp	11	1370	120	426	37 (47)	48%	87%	83%	83%
Navi Mumbai	7	1556	208	497	66 (83)	56%	90%	84%	84%
Osmanabad	16	1785	114	654	42 (52)	45%	93%	87%	87%
Parbhani	16	1796	113	652	41 (51)	45%	89%	85%	86%
Pimpri Chinchwad	11	1745	163	649	61 (76)	65%	94%	88%	88%

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Pune	27	3852	143	1456	54 (67)	61%	91%	89%	89%
Pune Rural	39	4416	113	1899	49 (61)	62%	92%	85%	85%
Raigarh-Mh	23	3540	151	1447	62 (77)	55%	93%	88%	88%
Ratnagiri	18	2783	154	1046	58 (73)	51%	91%	87%	89%
Sangli	23	2768	121	1179	52 (65)	62%	89%	87%	87%
Sangli Muni Corp	5	697	150	293	63 (79)	67%	97%	92%	92%
Satara	30	4145	139	1739	58 (73)	56%	91%	86%	88%
Sindhudurg	9	1145	125	398	43 (54)	48%	89%	87%	89%
Solapur	32	3311	104	1666	53 (66)	60%	91%	88%	88%
Solapur Muni Corp	9	1350	145	532	57 (72)	54%	93%	85%	85%
Thane	48	7085	148	3033	63 (79)	57%	94%	90%	90%
Thane Muni Corp	13	2793	208	872	65 (81)	63%	90%	85%	85%
Ulhasnagar Mun Corp	5	892	177	311	62 (77)	49%	92%	90%	90%
Wardha	13	1870	143	741	57 (71)	53%	91%	87%	87%
Washim	11	1583	146	546	50 (63)	47%	87%	88%	88%
Yavatmal	26	3515	134	1262	48 (60)	50%	90%	82%	84%
Manipur									
Bishnupur	2	376	169	136	61 (81)	59%	94%	89%	91%
Chandel	1.3	225	169	61	46 (61)	44%	87%	88%	88%
Churachandpur	2	947	383	175	71 (94)	30%	82%	85%	86%
Imphal East	4	869	204	205	48 (64)	39%	88%	76%	76%
Imphal West	5	1090	229	311	65 (87)	46%	92%	86%	86%
Senapati	4	516	126	159	39 (52)	53%	92%	83%	83%
Tamenglong	1.2	99	82	36	30 (40)	54%	80%	94%	94%
Thoubal	4	680	172	185	47 (62)	42%	82%	86%	86%
Ukhrul	1.5	240	157	58	38 (51)	60%	80%	88%	88%
Meghalaya									
E Khasi Hills&Ri B	9	1739	188	399	43 (58)	48%	84%	70%	70%
East Garo Hills	3	251	94	122	46 (61)	67%	83%	81%	81%
Jaintia Hills	3	302	94	116	36 (48)	57%	81%	77%	77%
W & S Garo Hills	7	885	133	395	59 (79)	63%	75%	77%	79%
West Khasi Hills	3	623	196	224	70 (94)	55%	92%	86%	86%
Mizoram									
Aizawl	4	944	257	252	69 (92)	50%	86%	87%	89%
Champhai	1.1	139	127	36	33 (44)	49%	88%	96%	96%
Kolasib	0.7	200	304	80	122 (162)	56%	99%	93%	93%
Lawngtlai	0.8	87	110	28	35 (47)	62%	81%	68%	71%
Lunglei	1.5	358	242	109	74 (98)	41%	91%	83%	83%
Mamit	0.7	45	67	26	39 (52)	74%	85%	82%	82%
Saiha	0.7	212	323	47	72 (95)	39%	100%	80%	80%
Serchhip	0.6	50	83	13	22 (29)	39%	100%	77%	77%
Nagaland									
Dimapur	4	21		11		92%			
Kohima	4	408	112	151	41 (55)	74%	87%	69%	74%
Mokokchung	3	257	97	103	39 (52)	75%	92%	89%	89%
Mon	3	391	130	163	54 (72)	78%	94%	91%	91%
Phek	1.7	134	78	45	26 (35)	75%	56%	64%	70%
Tuensang	5	836	174	231	48 (64)	52%	93%	87%	87%
Wokha	1.9	104	56	56	30 (40)	67%	77%	87%	87%
Zunheboto	1.8	88	49	38	21 (28)	64%	97%	80%	80%
Orissa									
Anugul	12	1182	99	533	45 (53)	69%	77%	59%	70%

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Balangir	14	2333	223	860	82 (97)	43%	86%		
Baleshwar	21	2068	98	852	40 (47)	57%	75%	69%	69%
Bargarh	14	1650	156	727	69 (81)	54%	92%		
Baudh	4	579	148	270	69 (81)	66%	88%	90%	91%
Bhadrak	14	811	58	355	25 (30)	70%	81%	71%	75%
Bhubaneshwar Corp	7	0		0					
Cuttack	24	1799	74	776	32 (37)	66%	72%	61%	80%
Debagarh	3	259	90	112	39 (46)	56%	92%	84%	89%
Dhenkanal	11	1323	119	508	46 (54)	50%	85%	79%	84%
Gajapati	5	963	178	453	84 (98)	61%	75%	66%	81%
Ganjam	33	4308	175	1917	78 (92)	62%	70%		
Jagatsinghapur	11	502	45	223	20 (24)	73%	78%	79%	79%
Jajapur	17	1301	102	577	45 (53)	64%	83%		
Jharsuguda	5	689	129	279	52 (62)	57%	92%	86%	89%
Kalahandi	14	2086	150	1160	83 (98)	73%	87%	85%	86%
Kandhamal	7	754	111	428	63 (74)	82%	84%	81%	86%
Kendrapara	14	847	62	285	21 (25)	51%	92%	91%	93%
Kendujhar	16	2196	135	965	59 (70)	61%	92%	87%	89%
Khordha	13	885	92	322	33 (39)	47%	63%		
Koraput	12	1356	110	712	58 (68)	75%	91%	87%	89%
Malkangiri	5	778	155	495	99 (116)	76%	78%	73%	78%
Mayurbhanj	23	4715	203	2201	95 (111)	57%	89%	81%	85%
Nabarangapur	11	1008	95	522	49 (58)	62%	91%	89%	89%
Nayagarh	9	521	77	202	30 (35)	64%	72%		
Nuapada	6	968	175	312	56 (66)	39%	63%	45%	56%
Puri	16	1298	83	426	27 (32)	61%	84%	72%	85%
Rayagada	9	1264	147	764	89 (104)	74%	89%	86%	89%
Sambalpur	10	1227	126	502	52 (61)	56%	84%	76%	85%
Sonapur	6	557	131	236	56 (65)	53%	74%		
Sundargarh	19	3011	157	1355	71 (83)	62%	91%	82%	86%
Pondicherry									
Pondicherry	10	1203	156	569	74 (98)	69%	82%		
Punjab									
Amritsar	32	4305	133	1710	53 (55)	64%	90%	83%	87%
Bathinda	12	1446	116	515	41 (43)	55%	88%	81%	82%
Faridkot	6	32		10		56%			
Fatehgarh Sahib	6	645	113	262	46 (48)	65%	80%	81%	82%
Firozpur	18	1		0					
Gurdaspur	22	27		11		65%			
Hoshiarpur	16	1610	103	713	46 (48)	68%	83%	78%	80%
Jalandhar	21	31		15		71%			
Kapurthala	8	15		4		57%			
Ludhiana	32	4969	155	1582	49 (52)	45%	88%	80%	83%
Mansa-PN	7	45		6		21%			
Moga	9	31		10		38%			
Muktsar	8	23		11		69%			
Nawanshahr	6	605	98	210	34 (36)	49%	83%	79%	88%
Patiala	19	2601	134	951	49 (52)	61%	87%	81%	85%
Rupnagar	12	1370	117	554	47 (50)	64%	89%	84%	86%
Sangrur	21	2392	113	806	38 (40)	47%	86%	81%	86%
Rajasthan									
Ajmer	24	5514	235	1810	77 (96)	50%	92%	85%	86%

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Alwar	32	4955	154	1721	53 (67)	50%	90%	86%	87%
Banswara	16	2883	178	1344	83 (104)	64%	92%	86%	92%
Baran	11	2662	242	1144	104 (130)	59%	92%	86%	87%
Barmer	21	2830	134	1075	51 (63)	47%	94%	89%	89%
Bharatpur	23	3235	143	1185	52 (66)	49%	89%	85%	86%
Bhilwara	22	5040	233	1935	89 (112)	61%	95%	89%	89%
Bikaner	20	2821	138	1042	51 (64)	59%	91%	85%	87%
Bundi	10	1804	174	700	68 (84)	52%	90%	86%	88%
Chittaurgarh	19	3079	158	1310	67 (84)	66%	92%	87%	91%
Churu	18	3585	196	1287	70 (88)	55%	91%	84%	85%
Dausa	14	2380	168	889	63 (78)	56%	91%	87%	88%
Dhaulpur	11	1797	170	576	54 (68)	49%	90%	85%	86%
Dungarpur	12	2528	212	1168	98 (122)	60%	90%	89%	91%
Ganganagar	19	3033	157	1129	59 (73)	53%	93%	89%	90%
Hanumangarh	16	3094	189	1276	78 (98)	68%	92%	86%	88%
Jaipur	57	11325	200	3571	63 (79)	50%	91%	89%	89%
Jaisalmer	5	745	136	305	56 (70)	59%	94%	87%	88%
Jalore	16	1899	122	613	39 (49)	46%	91%	83%	83%
Jhalawar	13	2056	162	822	65 (81)	57%	90%	85%	85%
Jhunjhunun	21	2631	128	890	43 (54)	52%	89%	84%	85%
Jodhpur	31	3856	124	1407	45 (57)	44%	89%	86%	87%
Karauli	13	2575	198	1113	86 (107)	58%	96%	91%	92%
Kota	17	2805	166	1097	65 (81)	55%	95%	91%	93%
Nagaur	30	3813	128	1313	44 (55)	48%	94%	86%	89%
Pali	20	3689	188	1334	68 (85)	48%	94%	89%	89%
Rajsamand	11	1820	171	712	67 (84)	56%	91%	84%	87%
Sawai Madhopur	12	2507	208	982	82 (102)	61%	94%	89%	90%
Sikar	25	3598	146	1208	49 (61)	51%	92%	90%	91%
Sirohi	9	1491	163	631	69 (86)	57%	91%	85%	85%
Tonk	13	3538	271	1497	115 (143)	58%	92%	87%	90%
Udaipur	28	6008	212	2569	91 (113)	64%	87%	83%	87%
Sikkim									
East	3	882	331	256	96 (128)	56%	87%	88%	89%
North	0.4	138	309	41	92 (122)	49%	85%	92%	92%
South	1.4	412	288	144	101 (134)	59%	94%	86%	88%
West	1.3	292	218	109	81 (108)	64%	94%	90%	90%
Tamil Nadu									
Chennai	44	7366	169	2746	63 (84)	59%	94%	89%	89%
Coimbatore	44	5601	128	2620	60 (80)	63%	92%	88%	88%
Cuddalore	24	3565	151	1399	59 (79)	53%	94%	88%	88%
Dharmapuri	29	3402	116	1512	52 (69)	65%	95%	88%	88%
Dindigul	20	3725	188	1554	78 (105)	57%	91%	88%	88%
Erode	27	3308	124	1544	58 (77)	58%	93%	88%	88%
Kancheepuram	30	4996	169	2118	71 (95)	66%	95%	90%	90%
Kanniyakumari	17	2490	144	1021	59 (79)	52%	92%	92%	92%
Karur	10	1440	149	613	64 (85)	54%	93%	87%	90%
Madurai	26	4393	166	1643	62 (83)	48%	93%	88%	88%
Nagapattinam	15	2014	131	800	52 (69)	49%	91%	85%	85%
Namakkal	15	2440	158	904	59 (78)	54%	94%	88%	88%
Perambalur	12	1475	121	696	57 (76)	65%	92%	88%	88%
Pudukkottai	15	2175	145	1005	67 (89)	57%	91%	86%	86%
Ramanathapuram	12	1891	155	818	67 (89)	54%	94%	86%	86%
Salem	31	4587	148	1625	53 (70)	50%	92%	88%	88%

District	Population covered in 100,000 by 31.12.04	Total patients initiated on treatment	Annual total case detection rate †	New smear positive patients initiated on treatment	Annual new smear positive case detection rate (%)†	% new sputum positive out of total new pulmonary cases	3 month conversion rate of new smear positive patients§	Cure rate of new smear positive patients¶	Success rate of new smear positive patients¶
Sivaganga	12	1792	151	703	59 (79)	50%	92%	87%	87%
Thanjavur	23	3278	144	1307	57 (77)	55%	93%	89%	89%
The Nilgiris	8	610	77	252	32 (43)	61%	93%	90%	90%
Theni	11	2379	211	744	66 (88)	39%	90%	87%	87%
Thiruvallur	28	4491	159	1820	64 (86)	60%	92%	87%	87%
Thiruvarur	12	1615	134	677	56 (75)	57%	91%	88%	88%
Tiruchirappalli	25	3569	145	1511	61 (82)	57%	91%	89%	89%
Tirunelveli	29	5312	184	1725	60 (80)	44%	92%	85%	86%
Tiruvanamalai	23	2598	115	1476	66 (87)	70%	93%	91%	91%
Toothukudi	16	2441	151	1046	65 (86)	53%	93%	85%	85%
Vellore	36	5554	154	2458	68 (91)	55%	95%	90%	90%
Viluppuram	30	4280	141	1850	61 (81)	59%	92%	88%	88%
Virudhunagar	18	3852	213	1251	69 (92)	50%	92%	88%	88%
Tripura									
South Tripura	8	122	61	56	28 (37)	60%	97%		
West Tripura	16	0		0					
Uttar Pradesh									
Agra	39	4886	126	1566	40 (43)	55%	83%	65%	66%
Aligarh	32	3067	96	1302	41 (43)	50%	87%	77%	78%
Allahabad	53	4173	105	1731	44 (46)	53%	87%		
Baghpat	12	2114	169	742	59 (63)	48%	93%	87%	88%
Bahraich	26	4789	187	1788	70 (74)	47%	91%	89%	91%
Barabanki	29	3826	134	1819	64 (67)	62%	90%	87%	88%
Bareilly	39	7586	197	2411	63 (66)	39%	88%	80%	82%
Basti	22	2128	96	584	26 (28)	35%	83%	76%	76%
Bijnor	34	3318	99	1038	31 (33)	42%	88%	78%	81%
Budaun	33	4769	145	2210	67 (71)	53%	87%	75%	80%
Bulandshahar	31	3507	112	1290	41 (43)	47%	90%	83%	85%
Etah	30	3108	104	1345	45 (47)	61%	86%	75%	77%
Etawah	14	1435	100	499	35 (37)	40%	82%	100%	100%
Faizabad	22	1978	118	836	50 (52)	51%	87%		
Farrukhabad	17	354		157		58%			
Fatehpur	25	2423	98	842	34 (36)	46%	86%	70%	80%
Gautam Budh Nagar	13	2433	191	866	68 (71)	56%	89%	85%	86%
Ghaziabad	35	7598	216	3075	87 (92)	58%	93%	90%	90%
Hamirpur-UP	11	1496	134	494	44 (47)	40%	87%	75%	83%
Hardoi	36	587		304		77%			
Jaunpur	42	3331	79	1349	32 (34)	47%	90%	81%	81%
Jhansi	19	2091	112	835	45 (47)	52%	87%	71%	71%
Kanpur Nagar	44	3128	94	1360	41 (43)	59%	88%		
Kheri	34	2947	172	1160	68 (71)	49%	81%		
Lucknow	39	5810	147	2407	61 (64)	61%	90%	88%	88%
Mainpuri	17	1925	113	863	51 (53)	49%	90%	84%	86%
Mathura	22	1766	80	833	38 (40)	43%	88%	82%	83%
Meerut	32	6566	204	2803	87 (92)	54%	94%	92%	92%
Mirzapur	23	1557	92	750	44 (46)	50%	77%		
Moradabad	40	5634	140	2225	55 (58)	43%	89%	82%	83%
Muzaffarnagar	38	5867	155	2437	64 (68)	55%	86%	77%	79%
Pratapgarh	29	332		89		35%			
Rae Bareli	31	3783	123	1600	52 (55)	47%	87%	82%	89%
Rampur	21	3081	150	1146	56 (59)	52%	88%	76%	77%
Saharanpur	31	4614	151	1841	60 (64)	52%	93%	89%	90%

District	Population covered in 100,000 by 31.12.04	Total patients initiated on treatment	Annual total case detection rate †	New smear positive patients initiated on treatment	Annual new smear positive case detection rate (%)†	% new sputum positive out of total new pulmonary cases	3 month conversion rate of new smear positive patients§	Cure rate of new smear positive patients¶	Success rate of new smear positive patients¶
Shahjahanpur	27	2559	94	916	34 (35)	44%	87%	84%	84%
Sitapur	39	5069	131	1878	48 (51)	47%	88%	85%	86%
Sultanpur	34	2975	116	1196	47 (49)	45%	90%		
Unnao	29	4217	146	1402	48 (51)	40%	93%	89%	89%
Varanasi	34	3805	113	1516	45 (47)	57%	92%	77%	77%
Uttaranchal									
Almora	7	603	91	224	34 (35)	58%	96%	93%	93%
Bageshwar	3	70	106	33	50 (53)	69%	79%		
Chamoli	4	338	347	119	122 (129)	50%	89%		
Champawat	2	103	174	38	64 (68)	51%	92%		
Dehradun	13	2169	161	757	56 (59)	52%	96%	91%	92%
Garhwal	7	248	135	114	62 (65)	72%	93%		
Hardwar	15	1570	138	640	56 (59)	56%	85%		
Nainital	8	1091	181	416	69 (73)	61%	91%		
Pithoragarh	5	232	191	119	98 (103)	77%	93%		
Rudraprayag	2	220	122	115	64 (67)	76%	82%		
Tehri Garhwal	6	196	123	89	56 (59)	62%	96%		
Udhamsingh Nagar	13	1301	133	583	60 (63)	58%	91%		
Uttarkashi	3	288	186	115	74 (78)	59%	92%		
West Bengal									
Bankura	34	4531	135	2127	63 (85)	63%	93%	89%	91%
Barddhaman	73	10067	138	3910	54 (72)	54%	91%	88%	88%
Birbhum	32	4279	135	2308	73 (97)	68%	90%	86%	86%
Dakshin Dinajpur	16	2434	154	1288	82 (109)	71%	86%	79%	80%
Darjeeling	17	2807	166	1029	61 (81)	59%	78%	100%	100%
Haora	45	5983	133	2270	51 (67)	59%	89%	85%	86%
Hugli	53	6894	130	2711	51 (68)	56%	90%	89%	90%
Jalpaiguri	36	6251	175	2969	83 (111)	69%	90%	87%	87%
Koch Bihar	26	2777	107	1251	48 (64)	62%	91%	88%	88%
Kolkata	48	6601	137	2844	59 (79)	72%	89%	87%	87%
Maldah	35	5340	155	2390	69 (92)	57%	86%	81%	82%
Medinipur East	46	2427	52	951	20 (27)	57%	87%	81%	83%
Medinipur West	55	6814	124	2509	46 (61)	52%	89%	83%	86%
Murshidabad	62	7603	123	3440	56 (74)	59%	93%	88%	89%
Nadia	48	5410	112	2128	44 (59)	54%	91%	88%	88%
North 24 Parganas	94	9346	100	4102	44 (58)	68%	92%	90%	90%
Puruliya	27	4217	158	1803	68 (90)	54%	92%	89%	90%
South 24 Parganas	73	6523	90	3141	43 (58)	67%	93%	88%	89%
Uttar Dinajpur	26	2900	113	1311	51 (68)	62%	87%	78%	79%
Total	**9472**	**1,187,353**	**138**	**465,331**	**54 (72)**	**55%**	**90%**	**85%**	**86%**

NR - Not reported till 10th February 2005; Values for blank areas are not expected

* Projected population based on census population of 2001 is used for calculation of case-detection rate. 1 lakh = 100,000 population
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, Kerala, 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
§ Smear conversion rate not expected for states that began implementing RNTCP during 4th quarter 2004
¶ Cure rate and success rate are not expected for states that began implementing RNTCP after 4th quarter of 2003

Abbreviations

ADMO	Assistant District Medical Officer
ARTI	Annual Risk of TB Infection
ATT	Anti-TB Treatment
BPHC	Block Primary Health Centre
CGHS	Central Government Health Services
CHC	Community Health Centres
CHVs	Community Health Volunteers
CII	Confederation of Indian Industry
CMO	Cheif Medical Officer
CTD	Central TB Division
DANIDA	Danish International Development Agency
DANTB	Danida Assisted Revised National Tuberculosis Control Programme
DEO	Data Entry Operator
DG	Director General
DGHS	Directorate General of Health Services
DHS	Director of Health Services
DMC	Designated Microscopy Centres
DOTS	Directly Observed Treatment Short Course
DRS	Drug Resistance Surviellance
DST	Drug Sensitivity Testing
DTO	District Tuberculosis Officer
EQA	External Quality Assessment
ESI	Employee State Insurance
GDF	Global Drug Facility
GMSD	Government Medical Store Depots
GOI	Government of India
HIV	Human Immuno-deficiency Virus
HRD	Humer Resource Development
IAP	Indian Acedamy of Pediatrics
IEC	Information, Education and Communication
ISM	Indian System of Medicine
LQAS	Lot Quality Assurance Sampling

LRS	Lala Ram Sarup Insitute of Tuberculosis and Respiratory Diseases
LT	Laboratory Technician
MDGs	Millenium Development Goals
MDR	Multi-drug Resistance
MO–TCs	Medical Officer–Tuberculosis Centres
MoHFW	Ministry of Health and Family Welfare
MPHS	Multi-purpose Health Supervisors
MPHW	Multi Purpose Health Workers
MPW	Multi-purpose Workers
NACO	National AIDS Control Organisation
NACP	National AIDS Control Programme
NGOs	Non-Government Organisations
NSP	New Smear-positive
NTF	National Task Force
NTI	National TB Institute
PHC	Primary Health Centres
PHI	Peripheral Health Institution
PP	Private Practitioners
PPM	Public-private Mix
PTB	Pulmonary Tuberculosis
PWBs	Pediatric Patient-wise Boxes
RFHWTC	Regional Family and Health Welfare Training Centre
RNTCP	Revised National Tuberculosis Control Programme
SCC	Short-course Chemotherapy
SHGs	Self-help Groups
STDC	State TB Training and Demonstration Centre
STFs	State Task Forces
STLS	Senior Treatment Laboratory Supervisor
STO	State TB Officer
STS	Senior Treatment Supervisor
TB	Tuberculosis
TB-COMBI	Tuberculosis–Communication for Behaviour Impact
TRC	Tuberculosis Research Centre
USAID	United States Agency for International Development
UTs	Union Territories
VCTC	Voluntary Counselling and Testing Centre
WHO	World Health Organization
ZTFs	Zonal Task Forces