*Towards Freedom from TB...*

Sputum test
is done through
microscopy.

Medicines are given
under observation of
a Health Service Provider

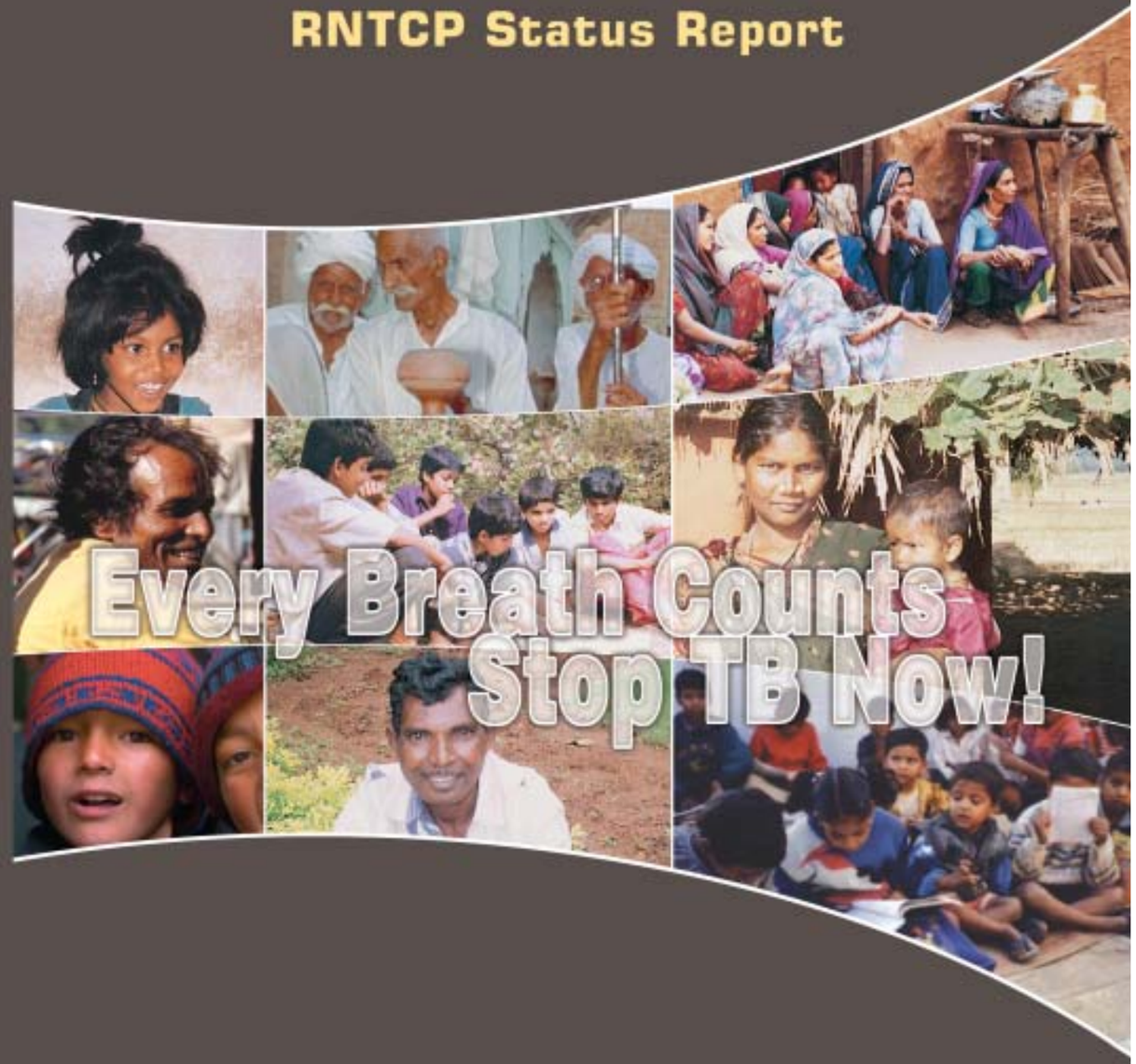
Treatment
is completely
free

Complete record
of the patient's treatment
is kept

DOTS-
sure cure for TB.

# TB India 2004

## RNTCP Status Report




Central TB Division, Directorate General of Health Services
Ministry of Health and Family Welfare, Nirman Bhavan, New Delhi 110 011
http://www.tbcindia.org

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# DID YOU KNOW?

1 | Tuberculosis (TB) is an infectious disease caused by a bacterium--*Mycobacterium tuberculosis*. It is spread through the air by a person suffering from Pulmonary TB. A single patient can infect 10 or more people in a year.

2 | More adults die from TB than from any other infectious disease in India —more than 1,000 every day, more than 400,000 every year.

3 | TB is a major barrier to economic development costing India Rs12,000 crore (US$ 3 billion) a year.

4 | Directly Observed Treatment, Short course (DOTS), is a comprehensive and cost-effective strategy for TB control. This strategy has proven effective in controlling TB on a mass basis.

5 | DOTS is the strategy adopted in the Revised National Tuberculosis Control Programme (RNTCP) in India. RNTCP covered more than 778 million people, or 75 per cent of the country's population by 31st December 03. The programme has initiated more than 25,00,000 patients on treatment, saving 4,50,000 additional lives.

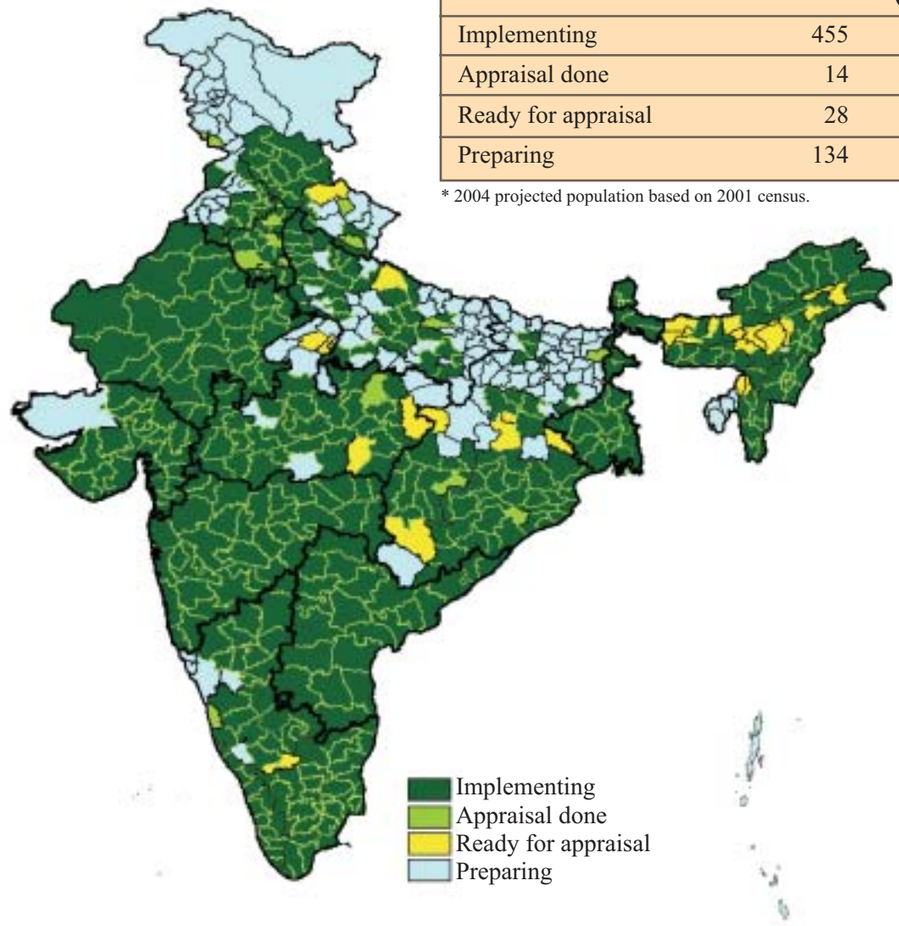
6 | For more information, visit our website:www.tbcindia.org

## India: DOTS Implementation Status by District, 29th Feb 2004

DOTS= Directly Observed Treatment, Short-course

| Type of districts / reporting units | No. of districts/ reporting units | Projected population (in million)* |
|---|---|---|
| Implementing | 455 | 829 |
| Appraisal done | 14 | 20 |
| Ready for appraisal | 28 | 33 |
| Preparing | 134 | 207 |

* 2004 projected population based on 2001 census.

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# CONTENTS



"I am pleased to note the remarkable expansion and progress made by the Indian DOTS programme which reflects the strong commitment of Government of India for TB control and sets an example for other countries."

**Dr. JW Lee,**
**Director General of WHO**

**(March 2004)**



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स्वास्थ्य एवं परिवार कल्याण तथा
संसदीय कार्य मंत्री
भारत सरकार
नई दिल्ली – 110 011

सुषमा स्वराज
Sushma Swaraj

Minister of
Health and Family Welfare
and
Parliamentary Affairs
Government of India
New Delhi - 110 011

# Foreword

TB is a disease with devastating social and economic costs. TB perpetuates poverty by affecting the economically productive age groups. With 18 lakh new cases occurring each year in the country, the disease poses a formidable challenge. The Government of India is all geared up to face this challenge.

For control of Tuberculosis, India has been implementing Revised National TB Control Programme (RNTCP) incorporating the DOTS strategy since 1997. The basic tenets of the strategy were discovered in India itself. The Programme is being expanded in a phased manner to cover the entire country by 2005. Till date commendable progress has been made by RNTCP achieving cure rates and case detection rates that are among the best in high burden countries. Recent progress in providing quality diagnosis and treatment of tuberculosis in India is being emulated by the international community. Each month more than 80,000 patients are being initiated for treatment under the RNTCP. During 2002, over 620,000 TB cases were initiated on treatment. In the year 2003, more than 9 lakh patients were initiated on treatment under DOTS. Since its inception,the Programme has initiated over 30 lakh patients on treatment, thus saving more than 500,000 additional lives and the misery that the disease would have otherwise caused.

A Joint Monitoring Mission comprising of national and international experts reviewed the programme in 2003. The mission has concluded that with the rapid expansion of DOTS-based programme, the quality of services has been maintained. Considering the per capita expenditure of US$ 5 cents, this is also a very cost-effective programme. As a mark of appreciation of India's efforts in TB control, the Stop TB partnership has decided to hold the 2nd Stop TB partnership Forum Meeting in New Delhi from 24th – 26th March 2004. The Forum would highlight the success of DOTS in India and other high TB burden countries would be motivated to follow India's example.

However, we cannot afford to be complacent despite the progress made till now. There are many challenges that lie ahead. There is a need to maintain momentum to achieve the ambitious goal of providing DOTS coverage for all by 2005 while continuing to maintain and improve quality of services. A significant proportion of the TB patients seek health care from the private and other non-government sector. It is at least as critical as all major providers of health care are part and parcel of the programme. We need to bring this section under the fold of RNTCP.



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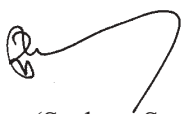
The theme for this year World TB Day is "Every Breath Counts - Stop TB Now!" The theme highlights that there is an inseparable link between the act of breathing, and life itself. Indeed, breath and breathing, are also closely associated with Tuberculosis.

TB is a curable disease and controlling TB is a winnable battle. To achieve this, we need to strengthen the managerial capacity for planning, implementation, supervision, monitoring and financial management at the state level and have to ensure greater involvement of other sectors in the programme. Let us pledge to continue our efforts to fight against tuberculosis.

I am glad that an annual report of the TB Programme is being published for the fourth consecutive year, and coincides with the 2nd Stop TB Partners Forum in Delhi on the occasion of World TB day. I hope that the publication of this report will facilitate sharing of the experiences and achievements of the Programme amongst national and international community who are here on World TB Day to participate in the meeting of the Partners Forum.



(Sushma Swaraj)



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# RNTCP 2003–An Overview

## Forging ahead in the fight against TB...

The Revised National Tuberculosis Control Programme (RNTCP), based on the DOTS strategy, has seen a rapid expansion in the last five years. From a coverage of ~130 million population in 1999, the present coverage is 778 million (around 75% of the population).

**Achievements under RNTCP, 2003**

| Indicator | |
|---|---|
| Population coverage, cumulative | 778 million |
| Total number of cases put on DOTS | 9,06,472 |
| New smear positive patients put on DOTS | 3,58,496 |
| Cure rate (expected 85%) | 86% |
| No. of NGOs involved | >700 |

## RNTCP achievements till 31st December 2003

Around 75% of the population covered under RNTCP

Thirteen states/union territories fully covered under RNTCP

Since inception of the programme in 1993, more than 25,00,000 patients placed on treatment thus saving about 4,50,000 additional lives

Treatment success rates tripled from 25% in the earlier programme to 86% in RNTCP

Diagnostic facilities in about 7800 laboratories throughout the country established

A total of more than 3,50,000 lakh health staff trained using a modular approach

Uninterrupted drug supply in patient-wise boxes (PWB) ensured in the programme

Involvement of >700 NGOs under various schemes

>3000 private practitioners involved in RNTCP



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## Expansion during 2003

- Increase in population coverage from 530 million in 2002 to 778 million by 31st December 2003
- The number of districts/ units implementing RNTCP increased from 302 in 2002 to 431 in 2003
- In 2003, more than 900,000 lakh cases put on DOTS in India–more than any other country in a single year
- More than 80, 000 patients now being put on DOTS every month

## Other achievements since January 2003

- Agreement with GFATM signed for funding of RNTCP activities in three states–Chhattisgarh, Jharkhand and Uttaranchal–for the round 1 support. GFATM supporting RNTCP implementation in remaining districts of Uttar Pradesh and Bihar (110 million population) in the second round support. USAID is now supporting RNTCP implementation in the entire state of Haryana.
- A Joint Monitoring Mission comprising national and international experts reviewed the programme in September 2003. The mission complemented the programme for the rapid expansion and cost-effectiveness while maintaining the quality of services.
- 2nd national level workshop for the involvement of medical colleges in RNTCP was held in Delhi in November 2003.
- Public Private Mix project for involvement of private sector has been initiated in 14 major cities of the country.
- Consensus with Indian Academic of Paediatrics (IAP) on management of paediatric TB cases under RNTCP.
- Document for guidelines on State TB Training and Demonstration Centre (STDC) revised.
- External Quality Assessment (EQA) guidelines developed for pilot testing.
- Independent agency hired for testing quality of TB drugs.
- National Annual Risk of TB Infection (ARTI) study completed.
- Five studies completed in operational research and three initiated.
- National and Zonal task forces formed for the involvement of medical colleges.



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Chapter 1

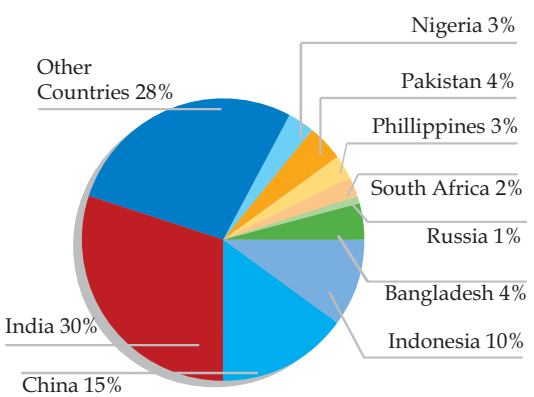
# TB: Burden of the Disease in India

TB kills more people in India than HIV, STD, malaria, leprosy and tropical diseases.

India accounts for one-third of the global TB burden of the world. It has more TB cases than any other country in the world and twice as many patients on treatment as China, which has the next highest number.

## Magnitude of TB in India

- 40% of the Indian population is infected with the TB bacillus.
- Every day, more than 20,000 people become infected with the TB bacillus and about 5000 develop the disease.
- Every year 18 lakh (or 1.8 million) people in India develop TB, of which nearly 8 lakh (0.8 million) are infectious (sputum-positive).
- Untreated pulmonary TB cases spread infection to others in the community—each infectious patient can infect 10-15 persons in a year unless effectively treated.



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## Economic burden

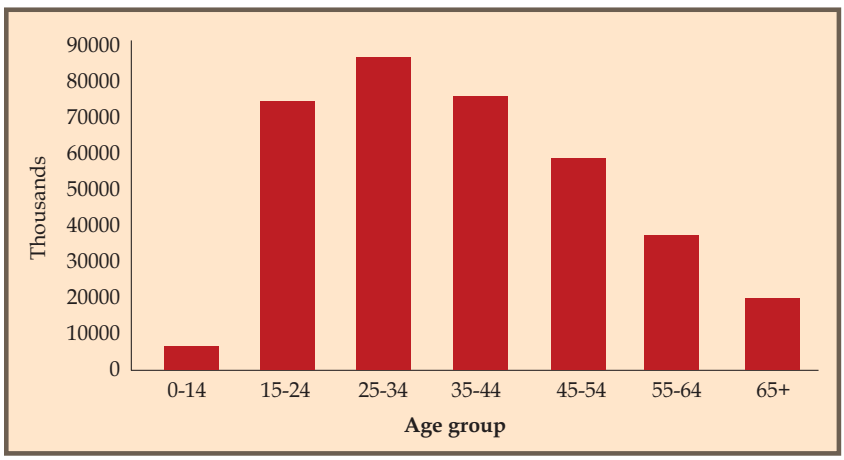
TB is a leading killer of adults—it kills more adults than any other infectious disease. Despite being completely curable, TB claims the lives of >400,000 people in India every year.

As TB affects the most productive age-group (15-54 years), it causes enormous social and economic disruption and hampers the development of the country.

On an average, 3-4 months of work time are lost if an adult has TB, resulting in the loss of 20-30% of annual household income. An average of 15 years of income is lost if an individual dies of the disease.

3,58,496 new smear positve patients registered during 2003 under RNTCP

### TB affects young adults most




Source: RNTCP, 2003

## Social burden

The burden of TB is compounded by the stigma attached to the disease. TB kills more women in India than any other infectious disease, and more than all causes of maternal mortality combined. Moreover, women with TB are stigmatised—more than 100,000 women are rejected by their families each year because of TB. The disease also has an adverse impact on children—it leads to a large number of children becoming orphans, and every year in India alone, 300,000 children leave school on account of their parents' TB.

## TB and HIV

TB is the most common opportunistic disease in people living with HIV. As the human immuno-deficiency virus (HIV) breaks down the immune system, HIV-infected people are at greatly increased risk of TB disease. Without HIV, the



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lifetime risk of developing TB disease in TB-infected people (PPD+) is 10%, compared to at least 50% in HIV-infected, TB-infected people. HIV is also the most powerful risk factor for progression from TB infection to TB disease. TB in turn accelerates the progression of HIV to AIDS and shortens the survival of patients with HIV infection. Thus, TB and HIV are closely interlinked.

In India, there are an estimated 4.58 million HIV-infected persons (NACO 2002 Report). It is estimated that 50-60% of HIV-infected persons in India will develop TB.

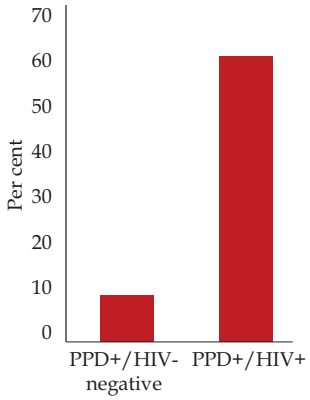
In some countries, the HIV epidemic has doubled or tripled TB cases. With an estimated 4.58 million HIV-positive individuals in India, it is likely that HIV will worsen the TB epidemic.

However, even among HIV-infected people, TB can be cured. 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 surviving HIV-infected TB patients can be cured of TB, and can live longer, healthier lives.

Given the strong linkage between TB and HIV/AIDS, the Government of India is strengthening collaboration between the TB and AIDS control programmes. An Action Plan has been formulated at the centre between the RNTCP and the National AIDS Control Organization (NACO). Key areas include:

- Sensitisation of key policy-makers to address the importance of TB-HIV collaboration.
- Service delivery coordination and cross-referral, through training, provision of additional services, and coordination at local level.
- Optimal and comprehensive use of the community outreach of both programmes through sensitisation and involvement of NGOs and private practitioners.
- Infection control to prevent the spread of TB in facilities caring for HIV-infected persons, and to prevent the spread of HIV through safe injection practices in the RNTCP.
- Joint efforts in IEC, especially with regard to removing stigma, generating awareness about TB being curable, effectiveness of DOTS in prolonging the life of HIV patients, and ensuring confidentiality of HIV and TB-related information.
- Monitoring and evaluation at district, state and national level to assess the coordination between the two programmes.

## Lifetime risk of AIDS




With an estimated 4.58 million HIV-positive individuals in India (NACO 2002 Report), it is likely that HIV may worsen the TB epidemic.



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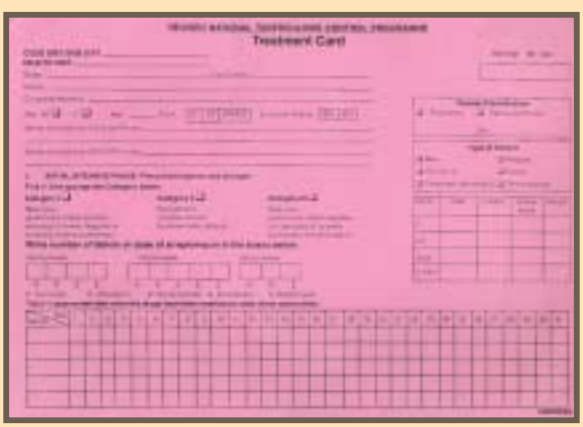
Treatment Card

Chapter 2

# DOTS and its Advantages

DOTS strategy has proven effective in controlling TB

The DOTS, strategy, adopted in the Revised National Tuberculosis Control Programme (RNTCP) in India, is a comprehensive strategy for TB control. This strategy has proven effective in controlling TB on a mass basis. To date, over 150 countries are implementing the DOTS strategy. India has adapted and tested DOTS in various parts of the country since 1993, when the RNTCP was formally launched as a pilot project. A full-fledged programme started in 1997 and is being expanded in a phased manner with excellent results. The RNTCP now covers more than 778 million people in 431 districts in 27 states and union territories.

## Salient features of DOTS

DOTS is a systematic strategy which has five components:

### Political and administrative commitment

Since TB can be cured and the epidemic reversed, it warrants the topmost priority, which it has been accorded by the Government of India. This priority should be continued and expanded at the state, district and local levels. The government 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.

J.V.R. Prasada Rao, Secretary Health GOI, inaugurating OPD complex of LRS Institute of TB, New Delhi



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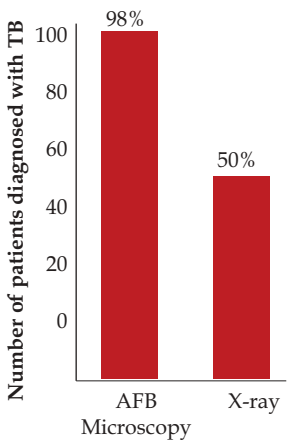


## Good quality diagnosis through sputum miscroscopy

Top quality microscopy allows health workers to see the TB bacilli and is essential to identify 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.

## Good quality drugs

An uninterrupted supply of good quality anti-TB drugs must be available. In the RNTCP, an individual's 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 facilitate 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 the right interval 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. The RNTCP shifts the responsibility for cure from the patient to the health system.



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## Treatment

The WHO-recommended treatment regimen for DOTS is SCC. It is divided into two phases—the intensive and continuation phases. In India:

1 | In the intensive phase (2-3 months), each dose given thrice a week is administered under direct observation.

2 | In the continuation phase (4-5 months), at least one of the thrice a week doses, is administered under direct observation.

The actual treatment regimen and duration depend on the category of treatment of the patient.

### Five components of RNTCP


| Category of treatment | Type of patient | Regimen |
|---|---|---|
| Category I | New sputum smear-positive<br>Seriously ill sputum smear-negative<br>Seriously ill extra-pulmonary | $2H_3R_3Z_3E_3/4H_3R_3$ |
| Category II | Previously treated<br>Sputum smear-positive relapse<br>Sputum smear-positive failure<br>Sputum smear-positive treatment after default | $2S_3H_3R_3Z_3E_3$<br>$/1H_3R_3Z_3E_3$<br>$/5H_3R_3E_3$ |
| Category III | New sputum smear-negative, not seriously ill<br>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 before the letters refers to the number of months of treatment. The subscript after the letter refers to the number of doses per week

> Failure to use DOTS in the face of the HIV can lead to explosive spread of TB and increase in drug resistance.



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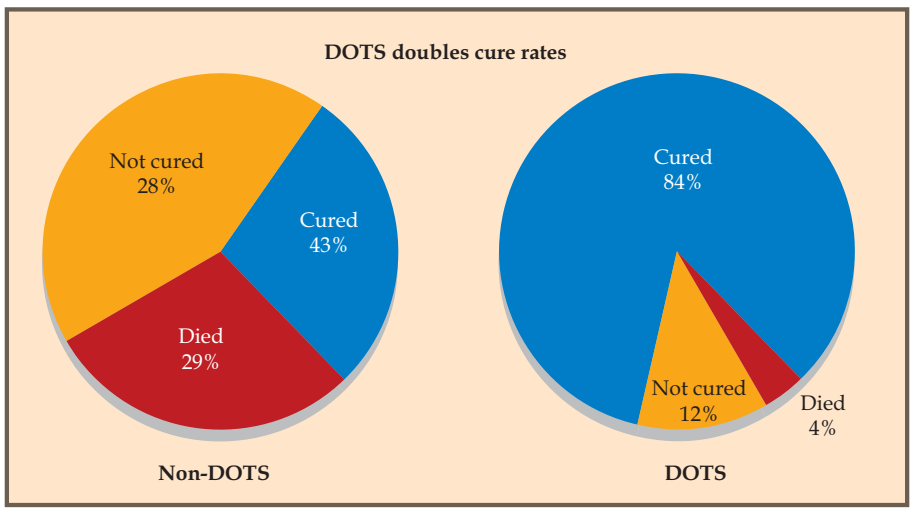
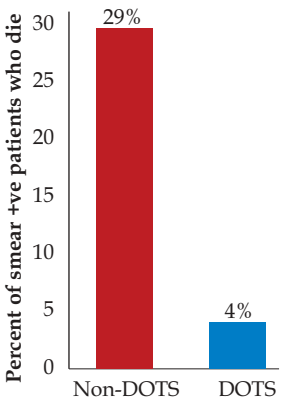



Source: Joint TB Programme Review India, February 2000. Delhi: WHO, 2000




## Benefits of DOTS

1 | DOTS more than doubles the accuracy of TB diagnosis.

2 | Its success rate is up to 95%.

3 | It prevents the spread of tuberculous bacilli, thus reducing the incidence and prevalence of TB.

4 | It helps in alleviating poverty by saving lives, reducing the duration of illness and preventing new infectious cases.

5 | It improves the quality of care and removes stigma.

6 | It prevents treatment failure and the emergence of MDR-TB by ensuring patient adherence and uninterrupted supply of anti–TB drugs.

7 | It lends credence to TB control efforts.

8 | It provides a model for strengthening health services.



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Chapter 3

# RNTCP: Implementation Status and Expansion

> RNTCP is the fastest expanding DOTS programme ever. ……
>
> **Leopold Blanc, World Health Organization**
>
> **(September 2003)**

The Revised National Tuberculosis Control Programme (RNTCP), based on the internationally recommended DOTS strategy, began on a pilot scale in 1993 and gradually expanded to cover a population of 20 million by mid-1998. Rapid RNTCP expansion began in late 1998. By the end of 2000, 30% of the country's population was covered, and by the end of 2002, 50% of the country's population was covered under the RNTCP. The present coverage is 778 million (around 75% of the population).

Thirteen states/union territories are now fully covered under RNTCP (Arunachal Pradesh, Chandigarh, Delhi, Himachal Pradesh, Kerala, Maharashtra, Manipur, Meghalaya, Mizoram, Rajasthan, Sikkim, Tamil Nadu and West Bengal). All districts have been urged to prepare for implementation and it is planned that the RNTCP coverage will be extended to the entire country by 2005.

As a result of rapid expansion in diagnostic facilities, with 7800 laboratories having been established throughout the country, the proportion of sputum-positive cases confirmed in the laboratory is double compared to the previous programme and is on par with international standards. Despite the rapid expansion, overall performance remains good and in many areas is excellent. Treatment success rates have tripled from 25% in the earlier programme to 86% in RNTCP.



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## Expansion during 2003

The RNTCP's recent progress has been very encouraging. The implementation of DOTS in India is playing a major role in global DOTS expansion.

### Expansion of DOTS coverage in 2003

| | Increase in coverage | Increase in no. of districts | Success rate |
|---|---|---|---|
| 1st quarter | 135 million | 76 | 86% |
| 2nd quarter | 47 million | 22 | 86% |
| 3rd quarter | 32 million | 18 | 87% |
| 4th quarter | 34 million | 28 | 87% |

## RNTCP accomplishments

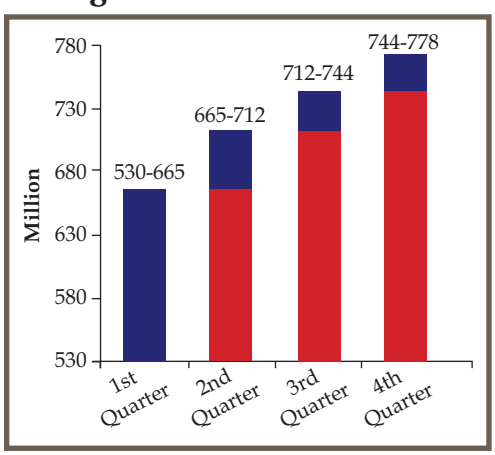
1 | More than 30-fold expansion of DOTS in the past four years

2 | Second largest programme in the world in terms of population coverage and largest in terms of patients initiated on treatment

3 | One of the fastest expansion of DOTS in the world

4 | Till 31st December 2003, RNTCP has placed 25,00,000 patients on treatment and averted 4,50,000 additional deaths.

### Increase in population coverage during 2003




## Progress in 2003

1 | Increase in population coverage from 530 million in 2002 to 778 million

2 | Since 1st January 2003, 250 million people additionally covered under RNTCP

3 | Each month more than 80,000 patients being initiated on treatment

4 | New smear-positive detection in DOTS area increased from 59% in 2002 to 69% in 2003.

5 | Success rate of 87%

6 | 7400 health workers trained

## Capacity building & monitoring

1 | State TB cells are being trained and encouraged to analyse performance data each quarter—15 states have started to analyse district quarterly reports and send regular feedback to highlight strengths and weaknesses for corrective action.



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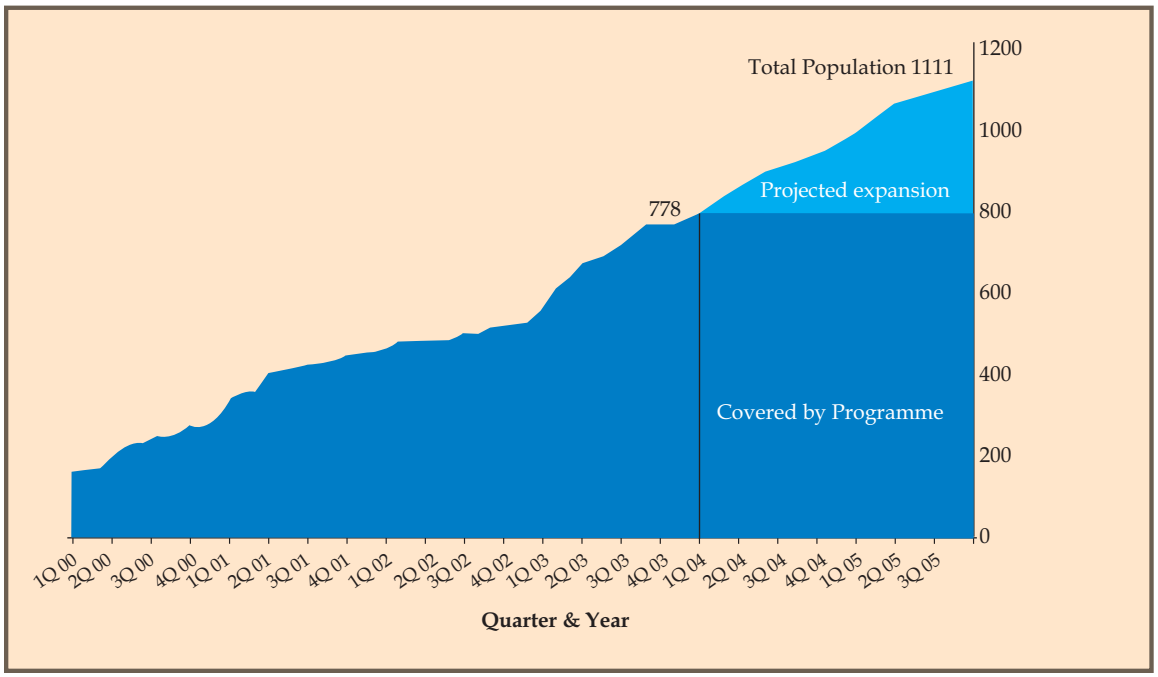
## Multiyear DOTS expansion plan for India*

**31 December 2003**




*All figures and data in this report use standard GOI Census Bureau methodology to project the population. Population is projected from 2001 census.

2 | Quarterly review meetings for programme evaluation have been conducted in the states. Additionally, central level review meetings with STOs and DTOs were held in Delhi. Field visits by CTD staff were made to states and districts.

3 | Each state has been asked to perform internal evaluations at the district level. The quality of services is assessed through randomly selected districts and a rigorous methodology, involving direct patient interviews.

4 | Efforts are being made to have regular training sessions for staff at the different levels to review their progress and refresh knowledge on different aspects of RNTCP implementation. Training of State TB Training and Demonstration Centre (STDC) personnel was held in April 2003 at National TB Institute (NTI), Bangalore with the long-term objective of proper expansion, implementation and sustenance of RNTCP.

Review meeting chaired by Ms. Rita Teaotia, Joint Secretary, at Vadodara



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Dr. S.P. Agarwal DGHS speaking in the Tuberculosis Association of India (TAI) meeting in Mumbai, 2003

## Involvement of other sectors

- Medical colleges are becoming active participants in the struggle to fight TB through DOTS. National, zonal and state level workshops for formation of task forces for the involvement of medical colleges in RNTCP were held. Progress made in the past year was reviewed and an action plan for the coming year drawn up during the National Task Force meeting in November 2003. Presently, 131 medical college are involved in the programme.
- There has also been increased focus on involving the private sector in TB control. More than 3000 Private Practitioners (PPs) and 750 NGOs have been involved in RNTCP.
- Regular interaction with NGOs has been ensured through meetings.
- Directives have been issued from the Ministry of Railways, Shipping, Coal, Mines and Employees State Insurance Scheme (ESIS) to involve all the health establishments in RNTCP in collaboration with the Ministry of Health.

## TB-HIV coordination

- Review meetings on TB-HIV were held at NACO to discuss ongoing collaborations and future plans for scaling up of RNTCP-NACO collaboration in a phased manner.
- TB-HIV coordination is being initiated in eight more states—Delhi, Gujarat, Himachal Pradesh, Kerala, Orissa, Punjab, Rajasthan and West Bengal, as per the Phase II of the TB-HIV Action Plan. As of now, 14 states have TB-HIV coordination activities going on.

## External Quality Assessment (EQA)

The need to modify the existing document on EQA was felt in view of the recently revised international guidelines. A preliminary meeting of technical experts was held at NTI, Bangalore, in June 2003, to review the existing EQA and Drug Resistance Surveillance (DRS) guidelines in RNTCP and to suggest necessary changes. New EQA guidelines have been drafted, and pilot testing is expected to start soon.

The modified guidelines on EQA will allow participant laboratories to assess their capabilities by comparing results with those in other laboratories through panel testing and blinded rechecking. EQA would also include on-site evaluation of the laboratory to review quality of performance and include on-site re-reading of smears.



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## RNTCP-WHO Joint Monitoring Mission

A review of RNTCP was conducted in September 2003 by a team of over 40 national and international TB experts, who made field visits to five states—Maharashtra, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh. The team visited 20 districts and reviewed the record of more than 10,000 patients. The Mission commended India for achieving the fastest expansion of a quality TB control programme in the world, which has prevented more than 350,000 deaths till the time of the review. The team expressed their confidence that if India continues its efforts, the RNTCP will be able to achieve a major reduction in the TB burden. The review mission also made detailed recommendations for sustaining the achievements and improving the programme further.

JMM team during the field visit in Uttar Pradesh

## Global Fund against AIDS, TB and Malaria (GFATM)

Under GFATM round 1, with support of US$ 8.73 million, the programme is being expanded in the three new states of Chhattisgarh, Jharkhand and Uttaranchal. The achievements under round 1 are:

- More than 22 million population covered in 13 districts in the three states
- More than 20,000 patients put on treatment during 2003, saving around 3,600 additional lives.
- 94% of new smear-positive cases detected being put on DOTS

Under round 2, the total cost for RNTCP implementation and expansion in Uttar Pradesh and Bihar is Rs. 135.78 crore (US$ 30 million) and the grant-in-aid to NGOs would be 3.9 crore (US$ 0.86 million). In Bihar, 29 (out of 37) districts with a population of 58.3 million will be covered, while in Uttar Pradesh, 27 (out of 70) districts with a population of 51.8 million will be covered.

## Important forthcoming events

*Second Stop TB Partners Forum:* Stop TB partnership, in collaboration with the Ministry of Health & Family Welfare, GOI, has planned to hold the Second Stop TB Partners Forum in New Delhi on 24-26 March 2004. Delegations of health/finance ministers from 22 high TB burden countries, high level representatives of Stop TB partners and many special invitees from various regions, are likely to participate.



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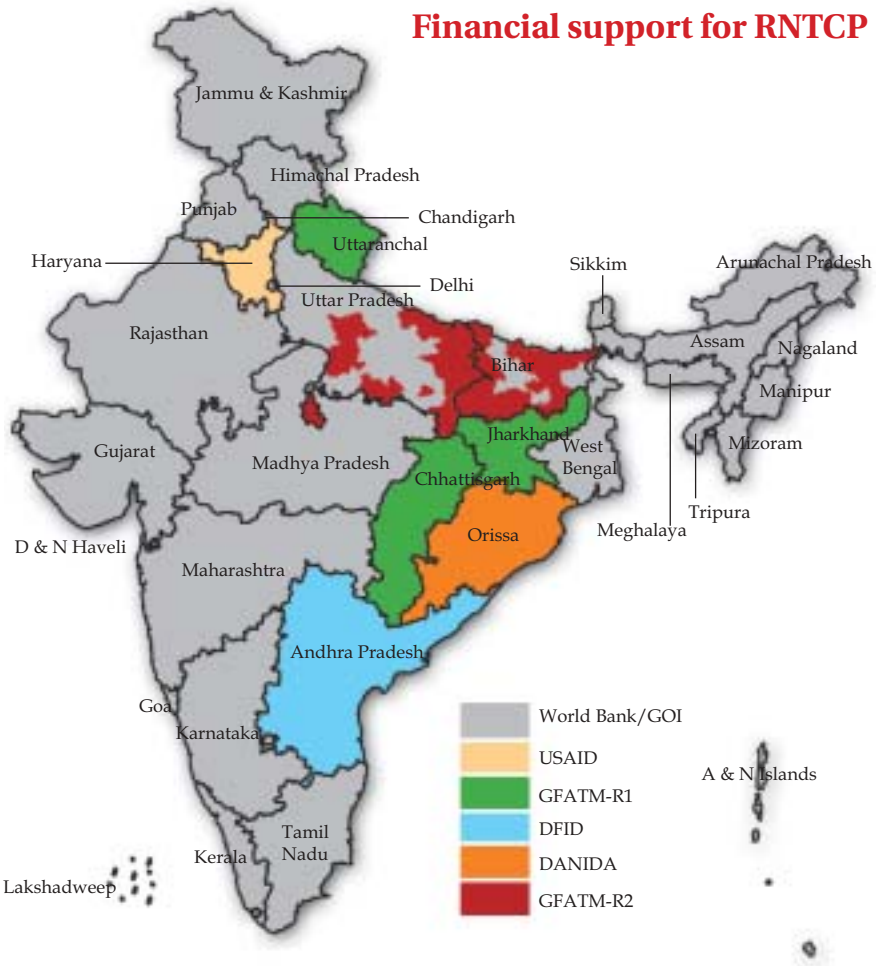
## Financial support for RNTCP




*GDF supports drugs for Orissa and 200 million population

## RNTCP Implementation Timeline

**1992**: National review of the National TB Programme (NTP). DOTS strategy adopted and RNTCP developed.
**1993**: RNTCP pilot tested in a population of 18 million
**1997**: Soft loan of Rs. 604 crores (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 15-fold (from 1997) to become the second largest programme in the world.
**2001**: 450 million population covered under RNTCP.
**2002**: More than half of the country (530 million) covered.
**2003:** Around 75% (778 million) of the country covered.
**2004**: Population of 850 million planned to be covered.
**2005**: Entire country planned to be covered under RNTCP.



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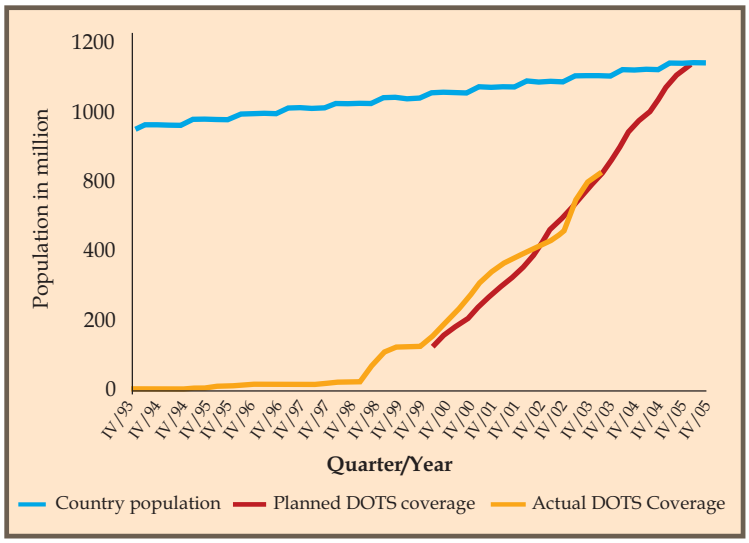
## Future direction

- Expansion to cover the entire country, whilst maintaining quality.
- To further improve reach and quality of the programme:
  - Implement and evaluate the Public-Private Mix projects in 14 urban sites.
  - Implement revised guidelines for EQA of sputum smear microscopy.
  - Continue with quality assurance of drugs through an independent agency, and analyse and publicise the results of drug quality control testing.
  - Strengthen ongoing and refresher training.
- Revitalise State TB Training and Demonstration Centres.
- Build and strengthen partnerships/collaborations with all large providers of health care:
  - Private sector, medical colleges, ESIS, Railways, CGHS, TB hospitals, etc.
  - In collaboration with NACO, scale up TB/HIV coordination activities to eight more states in addition to the six high-HIV prevalence states.
- Intensify IEC activities.
- Strengthen capacity of states for decentralised management.
- Build effective political commitment.
- Maintain treatment success rates.
- Meet global case finding targets.
- Address issues related to management of paediatric and extra-pulmonary TB under RNTCP.
- Conduct operational research on an ongoing basis to continuously improve the programme.

**DOTS Expansion in India (1993-2005)**




## States that have achieved full coverage

Four more states—Maharashtra, Meghalaya, Mizoram and West Bengal—attained the status of fully implemented states during 2003, increasing the number of such states to 13 in the country.



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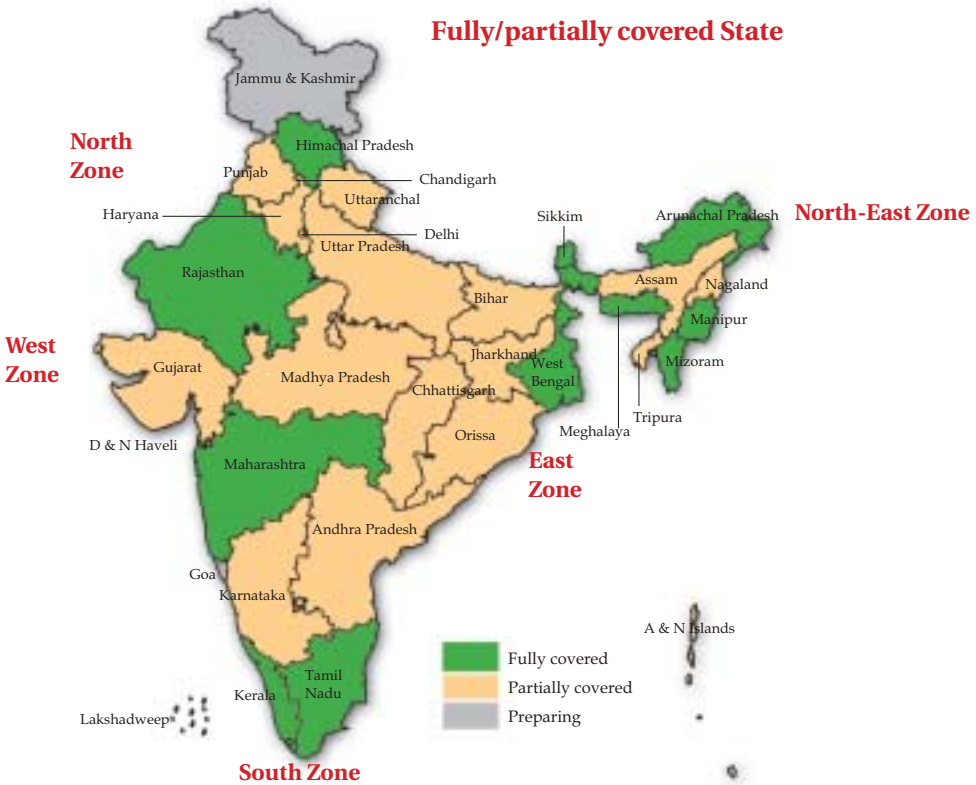


Eight of these states/UTs (Chandigarh, Kerala, Maharashtra, Manipur, Rajasthan, Sikkim, Tamil Nadu and West Bengal) have had continuous improvement in their performance and three states (Manipur Rajasthan and Sikkim) have met the global target during the year.

In five other states/UTs—Chandigarh, Himachal Pradesh, Kerala, Manipur and Rajasthan—all medical colleges are involved in RNTCP.

## Arunachal Pradesh

Total population 1.1 million; 13 districts

- September 2002 – began implementing in all districts and achieved full coverage.
- During 2003, new smear-positive case detection at 68/100,000 remained good.

### Special feature

- Six District TB Centres (DTCs) covering all 13 districts.
- Difficult terrain with poor communications and population density make supervisory activities difficult.



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- Cure rate of 81%.

## Union Territory of Chandigarh

Total population 1 million, 1 district

- January 2002 – began implementation and achieved full coverage.
- New smear-positive case detection rate at 73/100,000 is good and cure rate is also improving.

### Special features

24 of 67 DOT centres are in private sector. Since July 2002 both medical colleges have been participating as microscopy and DOT centres. Chandigarh is one of the states/UTs involved in the pilot study for Public Private Mix.

## Delhi

Total population 14.9 million; 20 districts.

- October 1993 – pilot project began in Gulabi Bagh followed by LRS, Nehru Nagar and Moti Nagar in 1995/1996.
- January 1999 – achieved full coverage.
- During 2003, new smear-positive case detection rate at 76/100,000 was good.

### Special features

The programme is implemented through chest clinics presently 20 in number. Delhi is one state where two medical colleges and two NGOs are participating at TB Unit (TU) level. Eighty NGOs and 27 private practitioners have signed Memorandum of Understanding (MOU) with the State to work in RNTCP. Large migratory population and development of new colonies leading to difficulty in case holding and achievement of success rate target.

## Himachal Pradesh

Total population 6.3 million; 12 districts.

- 4th quarter 1995 – pilot project started in Hamirpur.
- July 2000 – began implementation in three districts (Shimla, Sirmaur and Solan).
- December 2001 – achieved full coverage
- During 2002, maintained good cure rate at 88%.

### Special features

State has good health infrastructure.



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## Kerala

Total population 32.4 million; 14 districts

- February 1994 – pilot project started in Pathnamthitta.
- February/October 1998 – began implementation in 5 districts.
- December 2000 – achieved full coverage
- During 2002, maintained good cure rate of 89% in new smear-positive cases. Case finding is also showing an upward trend.

### Special features

Communication for Behavioural Impact (COMBI) Plan is being pilot tested with technical assistance from Central TB Division (CTD) and stop TB partnership, Geneva. All the 18 ESI hospitals have been identified as microscopy centres and 125 dispensaries as DOT centres. ESIS department has stopped the purchase of anti-TB drugs.

## Maharashtra

Total population 100.8 million; 48 districts.

- October 1993 – pilot project started.
- November 1998 – began implementation in 5 districts (Mumbai, Pimpri Chinchwad MC, Pune MC, Pune Rural and Raigarh)
- October 2003 – achieved full coverage.
- Case detection rate is improving and the cure rate at 85% is satisfactory.

### Special features

- 36 medical colleges are involved and core committees are established in all medical colleges.
- 138 NGOs and 942 private practitioners are participating under various schemes.
- The state has started refresher training of RNTCP staff.
- However, large migratory population is leading to difficulty in placing the patients on DOTS.

## Manipur

Total population 2.5 million; 9 districts

- October 1998 – began implementation in one district (now split into two)
- January 2002 – achieved full coverage
- During 2003, new smear-positive case detection was 58/100,000 and cure rate remained at 85%.



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### Special features

State has small districts which are easily manageable. State has also good infrastructure and trained manpower.

## Meghalaya

Total population 2.4 million; 7 districts.

- October 2003 – began implementation in all the districts and achieved full coverage.
- In the 1st quarter of implementation, total case detection rate at 130/100,000 and new smear-positive case detection rate at 43/100,000 are encouraging.
- 5 DTCs covering all 7 districts.

## Mizoram

Total population 0.9 million; 8 districts.

- March 2003 – began implementation in all the districts and achieved full coverage.
- In 1st year of implementation, state has demonstrated good total case detection and new smear-positive case detection rate at 222/100,000 and 74/100,000 respectively.

### Special features

State completed preparatory activities very fast.

## Rajasthan

Total population 59.4 million; 32 districts

- April 1995 – pilot project began in Jaipur.
- November 1998 – began implementation in two full districts.
- January 2001 – achieved full coverage

During 2003, new smear-positive case detection rate at 63/100,000 and cure rate at 87% in new smear-positive cases during 2002 remained good.

### Special features

Rajasthan had the fastest expansion of the programme and has good infrastructure. Operational research is being carried out, which will help in improving and providing quality service.



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## Sikkim

Total population 0.6 million; 4 districts

- March 2002 – began implementation.
- March 2002 – achieved full coverage
- During 2003, new smear-positive case detection rate at 77/100,000 and cure rate at 86% in new smear-positive cases during 2002 remained good.

### Special features

The state has shown continuous improvement in performance. Strength of the state is good health infrastructure and dedicated staff.

## Tamil Nadu

Total population 63.4 million; 29 districts (now 30)

- January/February 1999 – implementation began in two districts (Chennai and Cuddalore).
- January 2002 – achieved full coverage.
- Cure rate at 86% in new smear-positive cases remained good during 2002 and case finding is also gradually improving during 2003.

### Special features

Resource Group for Education and Advocacy for Community Health (REACH) in Chennai has taken up a project in the first round of GFATM. Four out of 10 zones have been selected, in which the aim is to bring 50-60% private practitioners and private hospitals into the RNTCP in a phased manner.

## West Bengal

Total population 82.9 million; 19 districts.

- March 1994 – pilot project began in Kolkata and Murshidabad.
- 1998 & 1999 – Implementation began in 6 districts (Kolkata, Howrah, Hoogli, Malda, Murshidabad and Nadia)
- December 2003 – achieved full coverage.
- Performance is gradually improving and overall cure rate at 85% is satisfactory.

### Special features

Involvement of ESIS is a big challenge.



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Chapter 4

# Success Stories

More than 900,000 TB patients have been placed on DOTS treatment in 2003 alone.

## Administrative commitment at District level

Mr. Ka. Balachandran, District Collector of Erode District, Tamil Nadu, seen administering DOT



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## DOTS is convenient

*ESI (MB) Scheme & DTCS, Howrah, West Bengal:* Kartik Nayek is a poor jute mill worker in Belur, who suffered from cough, fever and chest pains for more than a month. As he wanted to continue working at the mill and avoid the long queues at the ESI dispensary, he went to a private doctor. After X-ray and blood test, the doctor started treatment for TB. Though Nayek felt better after six weeks, the treatment was quite costly, and he discontinued the medicines. Very soon, the cough and fever returned, so he went to the free clinic run by the Sri Ram Krishna Mission Math. There he was advised to go to the ESI hospital for admission and treatment of TB. By this time, Nayek was too weak even to sit up.

At the ESI hospital, his sputum was tested and he was started on DOTS medicine. The hospital arranged for a local NGO, Matri Shishu Mangal Kendra, to provide him with DOTS medicines. As the centre was open both in the morning and evening, Nayek was able to continue his shifts at the jute mill while taking his medicines regularly. After six months, Nayek was completely cured and glad that he was able to work and provide support for his family even during his illness.

## DOT Providers (DPs) add to the Success Story

### A woman with a mission

*Ahmedabad, Gujarat:* Nurjehaben Shaikh, a resident of the poor slum area of Millatnagar, has been working as a community DOT provider for the last one year. She has successfully given DOTS to 25 patients, and now 10 patients are on DOTS with her. She has motivated alcoholic and chronic TB patients and brought them to treatment. She is dedicated to the RNTCP programme, and has made her home a DOTS centre.



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## "Best DOT provider"

*Anantapur, Andhra Pradesh:* Vijayamma, an Anganwadi Worker (AWW) working in Rapthadu village, has successfully provided DOTS to 12 patients, of whom nine have completed the treatment. She has updated all the treatment cards, and refers the patients for follow-up sputum examination at stipulated intervals. The District TB Society gave her the "Best DOT Provider" award in 2003.

## Relative of cured patient as DOT provider

*Karnal, Haryana:* Bansi Lal, a shoemaker, has been a DOT provider since a family member was cured by DOTS last year. Local patients are happy that they no longer have to travel long distances to receive medicines. He has supervised 80 patients, of whom 26 have completed the treatment. He gives medicines in his own factory, which is located in a very thickly populated area.

## A DOT provider despite his disability

*Kamrup, Assam:* Marten Barman, 27, lost both his legs in an accident in 1992, and lives in a home run by the Missionaries of Charity. His disability has not stopped him from helping others—he works as a DOT provider to patients in the home as well as in the surrounding areas. Five of the 29 patients have so far completed the treatment successfully.

## A figure of hope and trust

*Orissa:* Bhuban Patra suffered from lingering cough and tried some traditional medicines, but in vain. The villagers took him to the Peripheral Health Institution (PHI), where he was treated successfully with DOTS. Today, Bhuban is a trustworthy DOT provider, who has given medicines to 18 patients.

Elsewhere in Orissa, 262 cured patients have been trained to serve as DOT providers in the 14 RNTCP districts of the state. Of these, 41 are active DPs while the others are advocates of DOTS strategy.



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## Political will paves the way

*DTCS, Eluru, West Godavari, Andhra Pradesh*: The DOTS centre received a large number of patients, but did not have enough space for them to sit and have their medicine through direct observation. The treatment organiser used to give medicines through a window and was unable to see whether the patients were taking the medicines or not. The local MP, Mr Bolla Buli Ramaiah, was approached and the problem was discussed. He was convinced about the programme, and consented to give support from the MP's fund.

The state Governor Shri Surjit Singh Barnala laid the foundation stone for a new building on 10 October 2003, and construction began on war footing. The building of the DOTS centre was completed and inaugurated within 1½ months time at the hands of Honourable MP Sri Bolla Buliramaiah.

## Haryana- the fastest expansion in recent months

RNTCP was first launched in three districts of Haryana in April 2000. Another two districts were launched in March 2003.

The strong commitment of the State Govt. especially the Secretary Health and DGHS Haryana towards the TB programme lead to the launching of remaining 12 districts by the 1st week of February, 2004 covering the entire population of 21 million within six months making it one of the fastest DOTS expansion in the country.

To launch the programme in such a short time was possible due to the strong commitment of the Health Secretary and the DGHS, the extensive touring by the STO and the efforts of all the Civil Surgeons and District TB Officers



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Chapter 5

# RNTCP Activities in 2003

> In the year 2003 about 80,000 TB patients were placed on DOTS treatment every month.

## Involvement of the private sector

India has one of the largest private health care sectors in the world, with an estimated 8 million private practitioners. These are often the first point of contact for a significant percentage of TB suspects and patients. RNTCP has made a concerted effort to develop partnerships with the private health sector and NGOs, in order to widen access to quality TB care.

1 | More than 3000 private practitioners and more than 750 NGOs are officially providing RNTCP services.

2 | Many public-private mix (PPM) DOTS projects are being implemented throughout the country. Documentation from a number of the projects has shown promising results, e.g. Delhi, Hyderabad, Kannur, Pune, and Thane.

3 | Over 80 corporate sector units are involved in RNTCP, such as a sugar mill in Uttar Pradesh, and tea gardens in the North-East and West Bengal.

4 | GOI has initiated PPM projects in 14 large urban areas with technical assistance from WHO. This is a ground-breaking initiative, and it is hoped that

> RNTCP is yet the friendliest face of the Government to the private healthcare delivery system. The success of RNTCP in Public-Private partnership is due to the human bonds built by its dedicated team. They have overcome many a challenge to build these bridges. Now, the doctors in the private sector have to stand shoulder to shoulder in this Kurukshetra. ... ...
>
> **Dr R V Asokan, Indian Medical Association (IMA) Project Coordinator for RNTCP**



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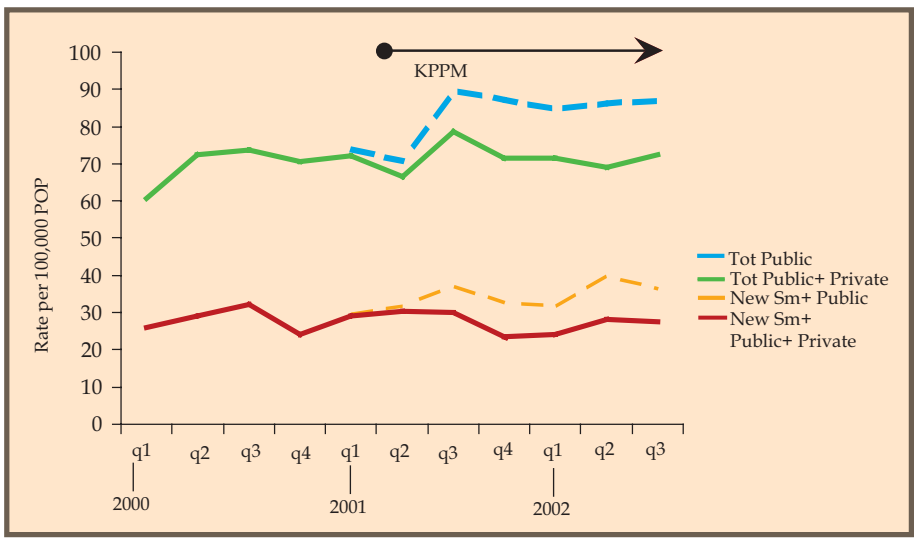
## Kannur: Increase in case detection by involvement of private sector




it will significantly strengthen the partnership between the public and private health sectors in TB control activities in India.

5 | An "Urban TB control project", which will have a significant PPM component, is soon to be implemented in four metropolitan cities, utilising GFATM funding.


Dr. L.S. Chauhan (DDGTB) speaking at Resource Group for Education and Advocacy for Community Health

## Involvement of NGOs

The RNTCP proactively solicits the involvement of NGOs in TB control activities. NGOs are actively involved in the community because of their accessibility and flexibility of services.

In a pioneering effort, the Government of India has prepared policies, guidelines and schemes to involve the private sector and presently more than 750 NGOs are providing services as per RNTCP guidelines.



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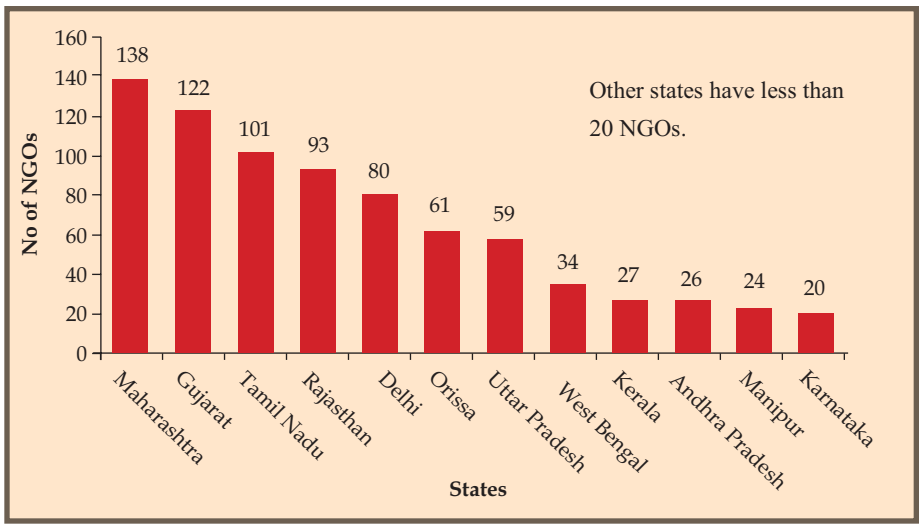
## NGOs – Statewise




## Southern Health Improvement Samity (SHIS)

SHIS, an NGO based in Bhangar, South 24 Parganas, West Bengal, runs seven TB units (TUs) in the Sunderbans, about 40 km from Kolkata. Four TUs are in North 24 Parganas and three in South 24 Parganas District. SHIS has generated awareness among private practitioners regarding identifying and observing treatment of TB patients as per RNTCP guidelines. They have involved practitioners from allopathic as well as other systems of medicine, who provide treatment observation either at one of their own facilities or at any other mutually convenient place.

The sputum microscopy and DOTS provision are done with the help of boats in the inaccessible and remote areas of Sunderbans.



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## REACH (Resource Group for Education and Advocacy for Community Health)

REACH (Resource Group for Education and Advocacy for Community Health) is an NGO working in the city of Chennai, with a population of 4.2 million, REACH has taken up a project in the 1st round of GFATM. Out of 10 corporation zones, four zones have been selected in the northern and western parts of Chennai, with the objective of bringing 50-60% of all the private practitioners and private hospitals into the RNTCP in a phased manner.

The main activities include forming a registry of private practitioners, hospitals, laboratory, DOT providers and NGOs for TB care in the private sector; training and sensitisation; preparation of IEC and training material; treatment of patients as per RNTCP norms by private practitioners; quality control network; and strengthening of laboratories. REACH intends to establish a project baseline data; strengthen private sector treatment and lab services; reduce stigma and improve patients' adherence to treatment through DOTS; and strengthen collaboration between the private and public sector partners in TB treatment.


Shri Deepak Gupta, Former Joint Secretary, giving grant-in-aid to REACH


Hon'ble Minister for Labour Shri Babu Divakaran, inaugurating RNTCP Service Delivery in Insurance Medical Services, Kerala

## RNTCP in Railways, ESIS and Industry (steel, coal, mines)

The Ministry of Health & Family Welfare, Government of India, has successfully involved the Ministry of Labour, Railways, Mines and Steel. The ministries have issued directives to their respective health establishments for adopting the DOTS strategy as the standardised treatment for TB patients. This is necessary for creating an epidemiological impact, as all the cases will have uniform treatment with uninterrupted good quality drugs from RNTCP.



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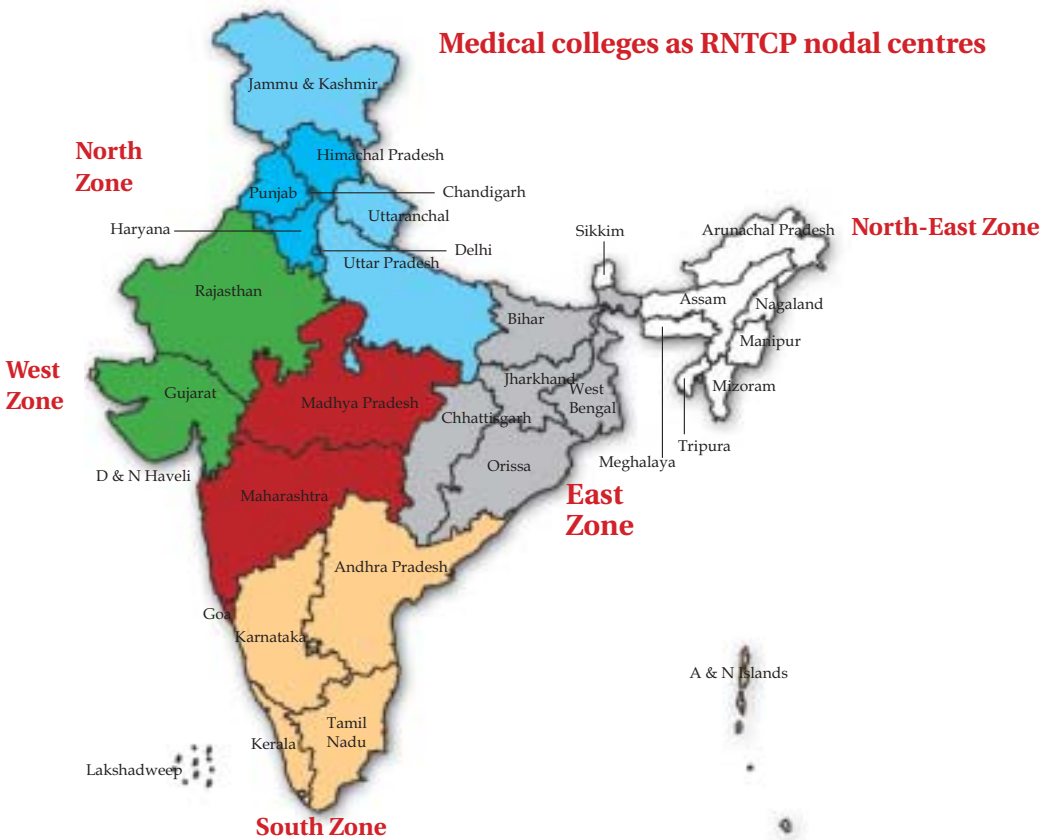
In Kerala, all the 18 ESI hospitals have been identified as microscopy centres and 125 dispensaries as DOT Centres. The ESI department has stopped their own purchase of anti-TB drugs and is implementing RNTCP exclusively. Similarly, in West Bengal, 9 out of 14 ESI hospitals have been involved in RNTCP.

South Eastern Railways has started RNTCP from April 2003. Eastern Railways in Howrah in West Bengal, runs a microscopy centre for 10,000 staff at Liluah.

## Involvement of medical colleges

India has over 180 medical colleges, which produce more than 18,000 new medical graduates annually. In recent years, the initiatives by RNTCP towards greater involvement of medical colleges in the programme have gained momentum and there is now growing professional consensus in India regarding the efficacy of the DOTS strategy.



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Dr. L.S. Chauhan (DDGTB) and Dr. Arora, Director LRS at Workshop for involvement of Medical College in RNTCP–2003

RNTCP has organised a series of sensitisation seminars, training of medical college faculty staff at Central TB Institutes, and national level workshops. In 2002, seven premier medical colleges in different zones of the country were identified as nodal centres to take this initiative forward. After a national level workshop in 2002 to develop the structure and processes required for effective nationwide participation of medical colleges in the programme, one national and five zonal task forces (ZTF) were formed and the structure of the different levels of task forces formulated.

The main task of the National Task Force (NTF) as envisaged would be to provide leadership and advocacy, coordination, monitoring, and policy development on issues related to effective involvement of medical colleges in the RNTCP. The Zonal Task Forces will facilitate in execution of the recommendations made at the national level, in all the states in their zone through the states. Thus, each state was expected to form a State Task Force and each medical college in turn would form a core committee with representatives from the medical college faculty and RNTCP programme staff to implement activities as agreed upon. Progress in this regard is as follows:

1 | After February 2003, all 5 ZTFs have held their first zonal workshops with participation of representatives from the medical colleges in that zone. Nineteen out of 23 states which are implementing the RNTCP and which have medical colleges have now formed state task forces.

2 | The national, five zonal and state task forces have well defined roles and have representation from different levels of the programme personnel, as well as medical college faculty members.

3 | The programme provides the necessary human resource and logistics support to implement and coordinate the activities of RNTCP in medical college hospitals.

4 | At present, 131 medical colleges situated in RNTCP-implementing districts are participating in the programme. Many medical colleges have established a core committee to oversee the functioning of the microscopy/DOT centre in their respective institutions.

## Participation of corporate sector in RNTCP

Industries like Coal India in West Bengal, are also contributing to the success of the programme. The participation of tea estates in the RNTCP in Dibrugarh in Assam and Jalpaiguri in West Bengal, has given especially encouraging results.



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The Indian Business Alliance is a coalition by the Global Health Initiative of the World Economic Forum of Stop TB Partnership, WHO, CII, Reliance, L&T, Aditya Birla, TATA, HLL, Lupin, Novartis and other corporate houses. The objective of this alliance is to bring together companies to work with GOI for TB control.

More than 100 occupational physicians have been sensitised, and advocacy among management of large corporate houses for promotion of DOTS and RNTCP is being undertaken.

## Paediatric TB

Efforts are on to resolve practical problems associated with diagnosis and treatment of paediatric cases under RNTCP which are related to difficulty in obtaining sputum in children, organising drugs in the form of combipacks in patient wise-boxes, linked to the child's weight, monitoring issues, etc. Additionally, the present guidelines of the Indian Academy of Paediatrics (IAP) are not consistent with the RNTCP guidelines. With the consensus that DOTS is the recommended strategy for Paediatric TB and intermittent SCC given under DOT should be used in children, there is an ongoing consultation to formulate guidelines for diagnosis and treatment of paediatric TB under RNTCP. A workshop was organised on 6-7th August 2003, New Delhi, to arrive at a consensus on the diagnosis, treatment and monitoring of paediatric cases under RNTCP.

Consensus meeting for Paediatric TB, New Delhi

The participants in this evidence-based consensus meeting included national and international paediatricians and TB experts, including those from the Indian Academy of Paediatrics, and TB control programme managers. The consensus statement issued by the participants of this meeting is reproduced on the next page.

## RNTCP-WHO Joint Monitoring Mission

A review of the RNTCP was conducted from 15-26 September 2003 by a team of over 40 national and international TB experts, who made field visits to five states—Maharashtra, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh. The team reviewed the programme at central level, visited more than health 70 health facilities in 20 districts, interviewed administrators,



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## Consensus Statement on Paediatric TB

- Diagnosis of TB in children is to be based on a combination of clinical presentation, sputum examination, chest X-ray, Mantoux test and history of contact as described in the diagnostic algorithm.
- DOTS is the recommended strategy for treatment.
- All paediatric TB patients should be registered under RNTCP.
- Paediatric formulations and administration of drugs should be linked to child's weight.
- Paediatric-focused monitoring may preferably be an integral part of the programme.
- Identified operational research areas should be prioritised and conducted.
- Training modules should be developed for paediatric tuberculosis under RNTCP for training of paediatricians and medical officers.
- Representative(s) of Indian Academy of Paediatrics (IAP) to be included in the committee for monitoring the implementation of these recommendations.

health staff, TB patients, community members and reviewed the records of more than 10,000 patients.

Key findings of the review included:

1 | Rapid expansion of DOTS and five-fold increase, from 135 million in 2000 to over 740 million at the time of the review–faster expansion than any other effective TB control programme in the history of DOTS.

2 | The RNTCP has placed large numbers of patients on treatment, and has maintained high levels of treatment success.

3 | RNTCP is a highly economical programme, costing less than Rs 2 per capita.

4 | Good infrastructure and management system for TB control have been established resulting in increased case detection and cure rates.

5 | Overall excellent reporting and recording system-published data at the central level reflect the programme activities in the field.



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The JMM review expressed concern that though the programme has been remarkably successful to date, the extraordinarily rapid expansion has outstripped management and financial capacity at central and state levels, creating a high likelihood of declining quality unless urgent action is taken. Several areas require strengthening, particularly in view of the national decision to complete implementation in the entire country by the end of 2005. Key recommendations made were:

1 | In order to maintain quality, given the huge current coverage and continuing expansion, increase managerial capacity and staffing at central and state levels.

2 | Filling up of vacancies of contractual staff at all levels.

3 | Strengthening of managerial capacity for planning, implementation, supervision, monitoring and financial management at state level.

4 | Setting up of efficient flow of funds from state to districts.

5 | Continue to ensure quality and regular availability of drugs, including sufficient buffer stock.

6 | Greater involvement of the private sector.

7 | Ensure wider dissemination of information about and support for RNTCP at all levels.

8 | Promote long-term programme sustainability.

This review is the third comprehensive joint programme review for the TB control programme of India since 1990. Based on the recommendations of the first review held in 1992, RNTCP was started on a pilot basis in 1993. This was followed by large-scale implementation of the RNTCP in 1998. The second joint programme review, conducted in February 2000, found the programme to be successful and recommended rapid expansion of quality RNTCP services to cover the entire country by 2005.

## Collaboration between NACO and RNTCP

The Government of India has taken important steps to strengthen coordination between TB and HIV control programmes. The basic purpose of this coordination is to ensure optimal synergy between the two programmes.

In Phase I of the programme, coordination started initially in the six states with high prevalence of HIV-AIDS—Andhra Pradesh, Karnataka, Maharashtra, Manipur, Nagaland and Tamil Nadu. In Phase II of the programme, TB-HIV coordination is being initiated in eight more states—Delhi, Gujarat, Himachal Pradesh, Kerala, Orissa, Punjab, Rajasthan and West Bengal. As of now, 14 states have TB-HIV coordination activities going on.



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Poster on DOTS displayed in counselling room, PRABHANI VCTC, Maharashtra

1 | Sensitisation workshops have been held in all six high-burden states.

2 | Five WHO-RNTCP TB-HIV consultants have been appointed by WHO to oversee collaborative TB-HIV activities—(one each at NACO and CTD, and one each in Andhra Pradesh, Maharashtra and North-East).

3 | More than 1900 National AIDS Control Programme (NACP) staff and 856 RNTCP staff have been trained in TB-HIV related issues.

4 | District level linkages between AIDS and TB control programmes have been established in the form of referral linkages between voluntary counselling and training centers (VCTCs) and RNTCP sputum microscopy centres.

5 | A total of 384 NGOs participating in the programme have been sensitised on TB-HIV related issues.

6 | Treatment guidelines for TB in HIV-infected patients were jointly developed by NACO and CTD.

## Drug procurement and logistics management

Strong procurement and logistics management of drugs is a high priority in RNTCP. As a result of work done over the past few years, significant improvements in inspection, supply, storage and quality control practices and procedures, have been achieved.

Procurement of anti-TB drugs by the Central TB Division (CTD) is done through an independent procurement agency. CTD calculates the drug requirements, delivery schedule, technical specifications and consignee details, which are approved by a Technical Committee. All drugs procured for RNTCP, irrespective of the procuring agency, are packaged and delivered in similar patient-wise boxes (PWBs).

### Distribution and monitoring

The distribution of drug supplies is primarily effected from the manufacturer to the:

1 | District Tuberculosis Centres

2 | State Drug Stores, operational at present in Arunachal Pradesh, Bihar, Delhi, Himachal Pradesh, Kerala, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Rajasthan, Sikkim and Tamil Nadu



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3 | Government Medical Store Depots (GMSDs) at Calcutta, Chennai, Guwahati, Hyderabad, Karnal and Mumbai.

Drug consumption and requirement are done through a system which continuously monitors the drug stock position in each district, and includes verification using the quarterly reports, which provide details of the number of patients put on treatment during the quarter; quantity of drugs consumed; stock received during the quarter; closing stock; and calculated drug requirement of the district. A buffer stock level of three months at each district is maintained nationwide, and is achieved by a monitoring system which provides projections of future drug utilisation and supply requirements of the districts.

## Quality assurance

The quality assurance of all anti-TB drugs used under RNTCP is ensured in the following ways:

1 | Samples from all batches of the anti-TB drugs are tested before they are cleared for dispatch.

2 | The GMSDs take random samples from the drugs stored at the respective GMSD for quality checking.

3 | The Central and State Drugs Inspectors from time to time take drug samples from the districts for testing, in addition to when they receive specific complaints.

4 | An independent laboratory has been selected for quality assurance testing of anti-TB drugs. The samples of the drugs to be tested will be collected by the programme officials every quarter and sent to this laboratory for quality assurance via another independent channel.

## External Quality Assessment (EQA) of the sputum smear microscopy network

Under the RNTCP, a designated microscopy centre (DMC) should be established for approximately 100,000 population (50,000 for tribal and mountainous areas). At each DMC, there is an RNTCP-trained laboratory technician, and the programme provides for upgradation of the laboratory facilities, supply of a binocular microscope and requirements of laboratory consumables. As of end December 2003, there were 7,800 microscopy centres working under RNTCP.

As RNTCP rapidly expands and moves to achieve its objectives, the programme has identified ensuring the quality of the sputum smear microscopy services as a high priority area.



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In light of the release of new international guidelines for the external quality assessment (EQA) of sputum smear microscopy services in 2002, CTD initiated a review of the existing RNTCP QA protocol in 2003, with technical input of NTI, Tuberculosis Research Centre (TRC), Lala Ram Sarup Institute of TB & Respiratory Diseases (LRS) and WHO. This review culminated in a national level meeting in August 2003, with the specific objectives of developing an updated RNTCP protocol for EQA of sputum smear microscopy services. The meeting also addressed the issue of drug resistance surveillance by RNTCP. The various activities in the proposed new EQA protocol will be piloted to different degrees in five states, namely, Kerala, Madhya Pradesh, Maharashtra, Rajasthan and West Bengal. After evaluation of the pilot, it is hoped to roll out the proposed protocol to other states.

## Global Drug Facility (GDF)

GDF is a mechanism to expand access to, and availability of high-quality drugs to facilitate global DOTS expansion. It enables governments and NGOs to implement effective TB control programmes based on the DOTS strategy. GDF support to India has been provided, in principle for three years, subject to availability of resources and satisfactory compliance with GDF conditions of support, including annual independent monitoring.

GDF shall provide to India a grant of anti-TB drugs to meet the patient needs in a catchment population of 200 million. The 1st year supply to India was received in July 2003, which has been stored at the Government Medical Store Depots, Chennai and Mumbai. These drugs are being distributed to states of Karnataka, Kerala, Maharashtra and Tamil Nadu. The state of Orissa is also being provided with GDF drugs, which are stored at the DDMS, Orissa, and are presently catering to the patient needs in a catchment population of 31 million.

## Human Resource Development-related activities

HRD and training form an essential component of the DOTS strategy for TB control. RNTCP is undertaking a range of activities with regard to HRD.

### Improvement of existing training programmes

RNTCP has a series of modular training courses with printed material for all levels of staff, ranging from the State TB Officers (STOs) to the community DOT providers. A number of additional modules and training courses have been added to the existing training packages. CTD has initiated a process of review and updating of the existing modular training, with NTI, Bangalore, taking the lead in this process. It is hoped that this process will be completed within the next year. RNTCP modules on EQA of sputum smear microscopy services and drug resistance surveillance (DRS) are also being developed by CTD, with the



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assistance of TRC, Chennai. Additionally, as part of the PPM project modular training materials on PPM will be developed for private providers and DTOs.

### Coordination of TB-related and HIV/AIDS training with NACO

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

### RNTCP training for medical colleges

Existing undergraduate and postgraduate curricula and training material are being reviewed and RNTCP will be included in all future curricula and training material used by medical colleges. CTD is also working with the IUATLD and WHO to produce a 2-3 day specialised training in TB and TB-control activities for medical professors and heads of departments as an approach to the "training the trainers" at this level.

## Information, education and communication (IEC)

The IEC strategy for RNTCP aims at awareness generation about symptoms, curability, and free availability of high quality diagnostic and treatment services for TB in a patient-friendly environment. The major target groups for IEC are patients, including families and the community, health providers, and opinion makers. These are reached by standardised messages through the appropriate media options. RNTCP is essentially a patient-focused programme which believes that cured patients act as one of the best motivators, promoting case detection and patient adherence to treatment. In 2003, a number of IEC activities were undertaken.


IEC Sticker



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IEC Activities

## National Level

- Through the contracted mass media agency (R K Swamy BBDO Advertising Pvt. Ltd), media activities on TV and press were initiated in March 2003. The awareness campaign is going on through TV, radio and press.
- Baseline KAP study undertaken by the mass media agency.
- Capacity building of state level managers in planning and implementation of IEC activities through three regional workshops on State IEC Action Plans.
- Workshop for development of prototype IEC material for RNTCP.
- Guidelines for supervision and monitoring of IEC activities at state and district level.
- Supply of prototype material to the states and districts – CDS and VHS on TV spots, CD on flip charts, print material for use at the district level, material for health melas.
- Supervision and monitoring through visits to the states.



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### State Level

Each state develops an IEC action plan for the planning and implementation of IEC activities that take into account activities to be undertaken at the district level. In this year, about 27 states have submitted State IEC Action Plans.

### District Level

District level activities vary across states. The district level IEC activities include outdoor publicity, such as wall paintings, hoarding, publicity through loudspeaker, community/Mahila Mandal meetings, health melas, rallies, workshops and observance of World TB Day. There is scope for improvement in the district level activities, and improved coordination between state and district level IEC activities, along with regular supervision and monitoring by the state, would result in more effective IEC activities.

### COMBI campaign in Kerala

In Kerala, a statewide campaign called Communications for Behavioural Impact (COMBI), developed by the Stop TB Partnership Secretariat and Social Mobilisation and Training (SMT) team of WHO, was launched. The campaign will mobilise millions of schoolchildren and thousands of health workers, supported by media spots around the slogan "Coughing, coughing, coughing... take the free TB sputum test", with the aim of increasing the detection rate for infectious TB cases. Kerala signed on to the campaign because while it has achieved 100% DOTS coverage, case detection has been lagging behind the national average.

## Strengthening of STDCs

Given the rapid expansion of RNTCP, there is a strong need to decentralise the implementation and monitoring of the programme. Once the entire country is covered under RNTCP, it will be difficult to monitor all activities from the Centre. The STO with limited staff, may not be able to monitor and supervise the programme in the entire state. Hence, the State TB Training and Demonstration Centre (STDC) has an important role to play in the future success of RNTCP. The role envisaged for STDCs in RNTCP include training, supervision, monitoring and evaluation, quality assurance (QA) of sputum microscopy, advocacy and IEC, operational research, and culture and sensitivity facilities for *Mycobacterium tuberculosis* after the state is fully covered and other components of QA are fully established.

As of date there are STDCs in Andhra Pradesh, Bhopal, Gujarat, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal and two in Bihar. In



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addition, the three Central institutes, *viz.* TRC, Chennai; NTI, Bangalore; and LRS, Delhi are assisting the respective states in various activities in addition to the regular functions.

Some of the steps taken and future plans for strengthening of STDCs are as follows

1 | Revised document on the functioning of STDCs developed in coordination with NTI, Bangalore.

2 | A quarterly reporting format for STDCs developed and states requested to send regular reports on STDC performance

3 | Phased training of STDC staff on training, monitoring and supervision to take place.

4 | Onsite evaluation of three state level laboratory facilities by team comprising Central TB Division, Central institutes and WHO representatives planned for February 2004.

5 | Phased training of STDC staff on EQA. By June 2004, two STDC would be strengthened for undertaking lab EQA. The remaining would be strengthened after receiving results from the pilot districts.

6 | Strengthening of facilities for culture and sensitivity (C/S) for state level reference labs – procurement process for two states has already begun. For other States, this is proposed to be taken up in the future.

7 | Phased training of STDC staff on DRS, depending on the implementation of EQA protocol, complete coverage and establishment of (C/S) facilities.



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Chapter 6

# Research Activities

"DOT seems imperative … where the disease has become epidemic."……

**Chaulk, JAMA, 1996**

RNTCP has identified priority areas for operational research and is seeking proposals from the medical fraternity for funding. Funds have also been made available to states for inviting proposals and funding research activities in their respective states. In operational research, priority has been given to achieving the cure rate of at least 85% of the registered new smear-positive pulmonary TB (NSP+) cases and detecting at least 70% of the estimated NSP+ cases existing in the community.

Details on the research agenda and format for submitting of proposals are available on the RNTCP website *www.tbcindia.org*

Important studies funded through central funds have been completed or are in progress. These include the National ARTI survey, drugs resistance surveillance in six districts, and utilisation of RNTCP services by marginalised groups, such as scheduled caste/scheduled tribes, women, and people living with HIV/AIDS.

## National Annual Risk of TB infection (ARTI) survey

A nationwide cross-sectional study was conducted in different parts of India to assess the prevailing epidemiological situation of TB in the country by estimating the Annual Risk of TB Infection (ARTI). In collaboration with Central TB Division, the study was conducted by National Tuberculosis



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Institute (NTI), Bangalore, along with Tuberculosis Research Centre (TRC), Chennai, and other institutions between January 2000 and 2002.

For the purpose of the survey, the country was stratified into four zones, viz north, south, east and west. The survey was designed to estimate the average ARTI in each of the four zones. The estimated prevalence of infection and computed ARTI in each zone by the cut-off method (Method I) and the mirror image technique (Method II), are given in the table.

The zonal ARTI indicates inter-regional differences in the rate of transmission of infection. Higher figures were also found in urban areas compared to those in rural areas. A national ARTI of 1.5% has been derived from the zonal estimates. This study has provided robust data on the epidemiology of TB in India and will serve as the baseline data for calculating case detection rates in the future and the assessment of the long-term epidemiological impact of RNTCP. The report of this study has been finalised and revised, and estimates will be used from the first quarter in 2004 onwards.

| | Method I | | Method II | |
|---|---|---|---|---|
| **Zone** | **Prevalence of infection (%)** | **ARTI (%)** | **Prevalence of infection (%)** | **ARTI (%)** |
| North | 10.3 (8.4-12.2) | 1.9 (1.5-2.2) | 10.5 (7.4-13.5) | 1.9 (1.3-2.5) |
| West | 9.3 (6.8-11.8) | 1.8 (1.3-2.3) | 8.5 (5.4-11.6) | 1.6 (1.0-2.2) |
| South | 6.1 (4.9-7.2) | 1.1 (0.9-1.3) | 5.9 (4.0-7.7) | 1.0 (0.7-1.4) |
| East | 6.9 (5.6-8.3) | 1.3 (1.0-1.6) | 6.9 (5.5-8.2) | 1.3 (1.0-1.6) |
| ( ) : 95% C.I. | | | | |

## Drug Resistance Surveillance

Surveys of drug resistance have been completed in six districts from various parts of the country. The results show that the prevalence of multi-drug-resistant TB (MDR-TB) is less than 3% amongst the previously untreated patients. Documenting the level of drug resistance in the community is important in order to monitor the impact of the programme over time and to ensure that treatment regimens used by the programme are appropriate. The present relatively low level of MDR-TB makes the expansion of the RNTCP



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throughout the country the priority to ensure that drug resistance levels remain low in India.

In 2004, state-wide drug resistance surveillance studies are planned in two states, using a generic protocol developed by TRC, Chennai, and NTI, Bangalore. These studies would be conducted under state-initiated research. These DRS studies would be indicators to the impact of the RNTCP in containing the TB epidemic in the country. They would also indicate appropriateness of regimens being used and in the future, trends/patterns of drug resistance could be analysed.

## Knowledge, Attitude and Practices study

To assess the impact of IEC interventions, baseline information is needed. With this in mind, a baseline KAP study was undertaken with the help of a professional research organisation, which developed indicators to be tracked throughout the period of intervention and at the end of the campaign through mass media. The KAP study and its finding are being used for planning and executing a media campaign so that DOTS services are accessible to each segment of society and that the health providers—both private and public—are sensitised to shift in paradigm for diagnosis and treatment of TB under RNTCP. The study is helping to identify important issues that need to be addressed through the media campaign to bring about a change in knowledge, attitude and practices regarding TB.

## Studies on accessibility and utilisation of RNTCP by marginalised sections

*Study on accessibility and utilisation of RNTCP by Schedule Caste/ Schedule Tribe (SC/ST):* The study conducted by IIHMR, Jaipur, collected and analysed baseline data on accessibility and utilisation of different components of RNTCP by SCs/STs in different parts of the country. Its recommendations include strengthening of RNTCP in rural areas, especially SC/ST pockets; adoption of area-specific strategies; promoting early diagnosis and complete treatment; strengthening of behaviour change communication through effective IEC strategy and treatment, and in general, increase in awareness about correct regimen of treatment under RNTCP.

*Study on accessibility and utilisation of RNTCP by women:* The study was conducted by Administrative Staff College of India, Hyderabad, on behalf of CTD, with the objectives to assess the baseline data on gender differentials for the utilization of RNTCP, to analyse these differentials for the barriers in utilization and to make recommendations based on the finding. The



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recommendations include optimisation of the use of services through various measures to improve the diagnostic and treatment facilities. The findings highlight that barriers are mainly because of the attitude of the health care providers at different levels and there is need for greater interpersonal communication between patients and providers. The findings are shared with the states and districts to make the services accessible to women.

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# Chapter 7

# Performance of the RNTCP

## RNTCP Annual Summary – 2003

Performance of States Case Finding (2003), Smear Conversion (4th quarter 2002 and quarters 1-3, 2003) and Treatment Outcomes (2002)

| State | Population covered in 100,000 by 31.12.03 | Total cases initiated on treatment | Annual total detection rate | New S+ve cases initiated on treatment | Annual New S+ve detection rate per 100,000 No. (%) | Ratio of new S-ve to new S+ve patients | 3 months conversion rate of new S+ve patients | Cure rate of new S+ve patients | Success rate of new S+ve patients |
|---|---|---|---|---|---|---|---|---|---|
| Andhra Pradesh | 742 | 89511 | 142 | 38702 | 61(81) | 1.0 | 89% | 85% | 87% |
| Arunachal Pradesh | 11 | 1978 | 173 | 779 | 68(91) | 0.8 | 90% | 81% | 82% |
| Assam | 109 | 9019 | 109 | 3863 | 47(62) | 0.8 | 84% | 86% | 88% |
| Bihar | 117 | 10820 | 92 | 4201 | 36(48) | 1.1 | 93% | 89% | 92% |
| Chandigarh | 10 | 1918 | 199 | 702 | 73(77) | 0.6 | 89% | 79% | 80% |
| Chhatisgarh | 94 | 9490 | 101 | 3543 | 38(47) | 1.1 | 87% | 81% | 82% |
| Delhi | 149 | 38814 | 261 | 11325 | 76(80) | 0.8 | 88% | 81% | 82% |
| Gujarat | 502 | 69877 | 139 | 26471 | 52(66) | 0.6 | 91% | 84% | 84% |
| Haryana | 131 | 11670 | 150 | 4330 | 55(57) | 0.8 | 86% | 80% | 82% |
| Himachal Pradesh | 63 | 13311 | 212 | 4902 | 78(82) | 0.6 | 92% | 88% | 89% |
| Jharkhand | 112 | 8714 | 102 | 3532 | 41(55) | 1.0 | 96% | 93% | 93% |
| Karnataka | 489 | 50797 | 117 | 21625 | 49(66) | 0.7 | 88% | 84% | 85% |
| Kerala | 324 | 24878 | 77 | 10861 | 34(45) | 0.6 | 90% | 89% | 89% |
| Madhya Pradesh | 449 | 32269 | 113 | 12687 | 44(55) | 0.9 | 87% | 83% | 85% |
| Maharashtra | 1008 | 127725 | 130 | 46257 | 47(59) | 0.9 | 90% | 85% | 86% |
| Manipur | 25 | 5095 | 202 | 1451 | 58(77) | 1.3 | 89% | 85% | 88% |
| Meghalaya | 24 | 778 | | 257 | | 0.7 | | | |
| Mizoram | 9 | 1564 | 222 | 517 | 74(98) | 0.9 | 87% | | |
| Nagaland | 19 | 1512 | 81 | 657 | 35(47) | 0.5 | 84% | 87% | 87% |
| Orissa | 268 | 24187 | 140 | 11703 | 69(91) | 0.6 | 88% | 85% | 87% |
| Punjab | 154 | 15624 | 106 | 5831 | 39(41) | 0.7 | 88% | 87% | 87% |
| Rajasthan | 594 | 98147 | 165 | 37459 | 63(79) | 0.8 | 91% | 87% | 88% |
| Sikkim | 6 | 1403 | 245 | 443 | 77(82) | 0.7 | 90% | 86% | 87% |
| Tamil Nadu | 634 | 89617 | 141 | 34768 | 55(73) | 0.9 | 92% | 86% | 87% |
| Uttar Pradesh | 864 | 75860 | 124 | 31937 | 52(55) | 0.8 | 87% | 89% | 90% |
| Uttaranchal | 20 | 2068 | 105 | 827 | 42(44) | 0.7 | 96% | 95% | 95% |
| West Bengal | 829 | 89826 | 111 | 38866 | 48(64) | 0.7 | 89% | 85% | 86% |
| **Grand Total** | **7754** | **906472** | **132** | **358496** | **52(69)** | **0.8** | **90%** | **86%** | **87%** |

CDR is calculated using person-year method and to account for districts which started implementation during 2003, data is included only for full quarter implementation.

Projected population of 2003, based on Census 2001, is used for CDR calculation

**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, Orissa, Sikkim, Tripura, West Bengal) is 75; **South Zone** (Andhra Pradesh, Karnataka, Kerala, Lakshdweep, Pondicherry, Tamil Nadu ) is 75 and **West Zone** (Chhatisgarh, Dadra & Nagar Haveli, Daman & Diu, Goa, Gujarat, Madhya Pradesh, Maharashtra, Rajasthan) is 80

Values in blank spaces are not expected; values in red are below or above RNTCP targets



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# RNTCP Annual Summary – 2003

Performance of Districts Case Finding (2003), Smear Conversion (4th quarter 2002 and quarters 1-3, 2003) and Treatment Outcomes (2002)

| State | Population covered in 100,000 by 31.12.03 | Total cases initiated on treatment | Annual total detection rate | New S+ve cases initiated on treatment | Annual New S+ve detection rate per 100,000 No. (%) | Ratio of new S-ve to new S+ve patients | 3 months conversion rate of new S+ve patients | Cure rate of new S+ve patients | Success rate of new S+ve patients |
|---|---|---|---|---|---|---|---|---|---|
| **Andhra Pradesh** | | | | | | | | | |
| Adilabad | 25 | 1448 | 74 | 829 | 42(56) | 0.5 | 87% | | |
| Anantapur | 37 | 5910 | 158 | 2811 | 75(100) | 0.7 | 91% | 84% | 84% |
| Bhadrachalam | 8 | 168 | | 114 | | 0.2 | | | |
| Chittoor | 38 | 4487 | 117 | 2054 | 54(71) | 0.8 | 89% | 77% | 79% |
| Cuddapah | 26 | 5259 | 199 | 2131 | 81(108) | 1.2 | 89% | 80% | 83% |
| East Godavari | 50 | 4284 | 114 | 1816 | 48(65) | 0.9 | 89% | | |
| Guntur | 45 | 7119 | 157 | 3027 | 67(89) | 1.1 | 90% | 87% | 88% |
| Hyderabad | 38 | 5463 | 144 | 2224 | 59(78) | 0.7 | 91% | 90% | 90% |
| Khammam | 18 | 2665 | 192 | 1664 | 120(160) | 0.4 | 94% | | |
| Krishna | 43 | 3937 | 121 | 1796 | 54(72) | 0.9 | 92% | | |
| Kurnool | 36 | 4345 | 161 | 1945 | 72(96) | 1.1 | 64% | | |
| Mahbubnagar | 36 | 4556 | 127 | 1796 | 50(67) | 1.2 | 88% | 82% | 83% |
| Medak | 27 | 2988 | 109 | 1221 | 45(60) | 0.9 | 93% | 84% | 89% |
| Nalgonda | 33 | 714 | | 463 | | 0.5 | | | |
| Nellore | 27 | 3030 | 111 | 995 | 36(49) | 1.3 | 83% | | |
| Nizamabad | 24 | 2232 | 121 | 969 | 52(70) | 1.1 | 87% | | |
| Prakasam | 31 | 4982 | 159 | 2086 | 67(89) | 1.2 | 89% | 86% | 89% |
| Rangareddi | 36 | 4229 | 118 | 1616 | 45(60) | 1.0 | 93% | 90% | 90% |
| Srikakulam | 26 | 4727 | 182 | 2030 | 78(104) | 1.1 | 94% | 88% | 92% |
| Visakhapatnam | 39 | 3799 | 143 | 1681 | 66(88) | 1.0 | 90% | | |
| Vizianagaram | 23 | 4076 | 177 | 1739 | 75(101) | 0.9 | 92% | 89% | 89% |
| Warangal | 33 | 4738 | 183 | 1768 | 68(91) | 1.3 | 84% | | |
| West Godavari | 39 | 4355 | 143 | 1927 | 62(83) | 0.9 | 89% | | |
| **Arunachal Pradesh** | | | | | | | | | |
| Along DTC | 1.1 | 132 | 122 | 41 | 38(50) | 1.5 | 83% | 89% | 89% |
| Bomdila DTC | 1.7 | 313 | 180 | 163 | 94(125) | 0.4 | 94% | 91% | 91% |
| Deomali DTC | 2 | 267 | 113 | 86 | 36(49) | 1.0 | 90% | 80% | 90% |
| Pasighat DTC | 1.3 | 391 | 310 | 167 | 132(176) | 0.9 | 90% | 88% | 88% |
| Tezu DTC | 2 | 408 | 194 | 185 | 88(117) | 0.5 | 89% | 75% | 75% |
| Ziro DTC | 3 | 467 | 162 | 137 | 48(64) | 1.2 | 92% | 72% | 72% |
| **Assam** | | | | | | | | | |
| Barpeta | 17 | 1131 | 103 | 371 | 31(42) | 1.6 | 89% | | |
| Cachar | 15 | 777 | 69 | 346 | 31(41) | 0.7 | 77% | | |
| Dibrugarh | 12 | 1859 | 153 | 873 | 72(96) | 0.5 | 88% | 86% | 88% |
| Jorhat | 10 | 766 | 98 | 410 | 52(70) | 0.5 | 78% | | |
| Kamrup | 26 | 1423 | 73 | 656 | 34(45) | 0.7 | 82% | | |
| Lakhimpur | 9 | 1050 | 152 | 446 | 65(86) | 0.6 | 85% | | |
| North Cachar Hills | 1.9 | 127 | 88 | 63 | 44(58) | 0.7 | 93% | | |
| Sonitpur | 17 | 1886 | 145 | 698 | 54(71) | 1.2 | 81% | | |
| **Bihar** | | | | | | | | | |
| Muzaffarpur | 39 | 4046 | 103 | 1255 | 32(43) | 1.7 | 93% | 88% | 92% |



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Performance of Districts Case Finding (2003), Smear Conversion (4th quarter 2002 and quarters 1-3, 2003) and Treatment Outcomes (2002)

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|---|---|---|---|---|---|---|---|---|---|
| Patna | 50 | 4175 | 84 | 1830 | 37(49) | 0.8 | 92% | 88% | 89% |
| Vaishali | 29 | 2599 | 91 | 1116 | 39(52) | 0.9 | 95% | 91% | 94% |
| **Chandigarh** | | | | | | | | | |
| Chandigarh | 10 | 1918 | 199 | 702 | 73(77) | 0.6 | 89% | 79% | 80% |
| **Chhatisgarh** | | | | | | | | | |
| Bilaspur-CG | 21 | 2177 | 106 | 867 | 42(53) | 0.9 | 91% | 83% | 84% |
| Durg | 29 | 2933 | 101 | 941 | 32(41) | 1.5 | 88% | 80% | 82% |
| Raipur | 31 | 2846 | 91 | 1164 | 37(47) | 1.0 | 85% | 79% | 79% |
| Rajnandgaon | 13 | 1534 | 116 | 571 | 43(54) | 1.1 | 84% | 84% | 84% |
| **Delhi** | | | | | | | | | |
| BJRM Chest Clinic | 3 | 1084 | 335 | 356 | 110(116) | 0.7 | 89% | 84% | 84% |
| DDU Chest Clinic | 8 | 3645 | 483 | 954 | 126(133) | 1.2 | 88% | 71% | 74% |
| GTB Chest Clinic | 9 | 2139 | 248 | 524 | 61(64) | 0.6 | 85% | 81% | 81% |
| Gulabi Bagh | 10 | 1512 | 156 | 491 | 51(53) | 0.5 | 92% | 89% | 89% |
| Jhandewalan | 5 | 1188 | 220 | 360 | 67(70) | 0.7 | 89% | 83% | 83% |
| Karawal Nagar | 10 | 3940 | 406 | 1057 | 109(115) | 0.8 | 77% | 62% | 71% |
| Kingsway | 4 | 1205 | 280 | 385 | 89(94) | 0.8 | 91% | 89% | 89% |
| LN Chest Clinic | 3 | 399 | 123 | 143 | 44(47) | 0.4 | 92% | 86% | 86% |
| LRS | 17 | 3547 | 206 | 1143 | 66(70) | 0.6 | 91% | 88% | 88% |
| Moti Nagar | 5 | 1431 | 266 | 321 | 60(63) | 1.2 | 90% | 76% | 78% |
| Narela | 5 | 999 | 185 | 295 | 55(58) | 1.1 | 87% | 80% | 80% |
| NDMC | 4 | 653 | 151 | 211 | 49(52) | 0.6 | 87% | 88% | 89% |
| NDTC | 2 | 852 | 395 | 186 | 86(91) | 0.9 | 89% | 83% | 83% |
| Nehru Nagar | 19 | 2882 | 149 | 1052 | 54(57) | 0.6 | 86% | 79% | 79% |
| Patparganj | 8 | 2315 | 307 | 720 | 95(100) | 0.5 | 87% | 78% | 80% |
| RK Mission | 9 | 1628 | 189 | 569 | 66(69) | 0.6 | 90% | 87% | 87% |
| RTRM Chest Clinic | 4 | 808 | 187 | 259 | 60(63) | 0.7 | 92% | 88% | 88% |
| SGM Chest Clinic | 9 | 4620 | 536 | 1221 | 142(149) | 1.0 | 92% | 88% | 88% |
| Shahadra | 9 | 2640 | 306 | 658 | 76(80) | 0.9 | 90% | 82% | 84% |
| SPM Marg | 5 | 1327 | 246 | 420 | 78(82) | 0.7 | 85% | 82% | 82% |
| **Gujarat** | | | | | | | | | |
| Ahmadabad | 24 | 3032 | 127 | 1056 | 44(55) | 0.9 | 92% | 86% | 86% |
| AMC | 37 | 7457 | 204 | 2147 | 59(73) | 0.6 | 88% | 86% | 86% |
| Amreli | 15 | 1587 | 109 | 659 | 45(57) | 0.5 | 92% | 89% | 90% |
| Anand | 19 | 2865 | 148 | 1291 | 67(83) | 0.5 | 91% | 81% | 81% |
| Banas Kantha | 26 | 4138 | 159 | 1205 | 46(58) | 1.1 | 90% | 85% | 85% |
| Bharuch | 20 | 2416 | 123 | 1173 | 60(75) | 0.5 | 85% | 69% | 70% |
| Bhavnagar | 26 | 3393 | 132 | 1153 | 45(56) | 0.7 | 92% | 84% | 85% |
| Dahod | 17 | 3449 | 203 | 1512 | 89(111) | 0.4 | 93% | 86% | 87% |
| Gandhinagar | 14 | 1975 | 142 | 835 | 60(75) | 0.6 | 93% | 88% | 88% |



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|---|---|---|---|---|---|---|---|---|---|
| Jamnagar | 20 | 2164 | 109 | 859 | 43(54) | 0.6 | 95% | 88% | 90% |
| Junagadh | 31 | 3319 | 107 | 1266 | 41(51) | 0.6 | 92% | 84% | 84% |
| Kheda | 21 | 3509 | 158 | 1407 | 60(75) | 0.5 | 91% | 85% | 86% |
| Mahesana | 19 | 2745 | 143 | 1216 | 64(79) | 0.7 | 94% | 87% | 87% |
| Panch Mahals | 21 | 4343 | 206 | 1806 | 86(107) | 0.6 | 90% | 82% | 83% |
| Patan | 12 | 1784 | 145 | 694 | 56(70) | 0.8 | 90% | 84% | 84% |
| Rajkot | 33 | 3384 | 103 | 1201 | 37(46) | 0.7 | 93% | 86% | 87% |
| Sabar Kantha | 22 | 2998 | 138 | 1274 | 59(73) | 0.5 | 92% | 87% | 87% |
| Surat | 16 | 1702 | 108 | 724 | 46(57) | 0.7 | 90% | 83% | 83% |
| Surat Municipal Corp | 25 | 3288 | 130 | 913 | 36(45) | 0.9 | 89% | 83% | 83% |
| Surendranagar | 16 | 1899 | 114 | 683 | 41(51) | 0.7 | 92% | 88% | 89% |
| The Dangs | 1.9 | 242 | 152 | 97 | 58(73) | 1.0 | 99% | | |
| Vadodara | 15 | 1724 | 116 | 764 | 52(64) | 0.6 | 88% | 81% | 83% |
| Vadodara Corp | 14 | 1749 | 129 | 596 | 44(55) | 0.9 | 91% | 86% | 86% |
| Valsad | 27 | 2891 | 105 | 1247 | 45(57) | 0.5 | 89% | 82% | 82% |
| Vyara(Surat) | 11 | 1824 | 167 | 693 | 63(79) | 0.9 | 91% | 85% | 85% |
| **Haryana** | | | | | | | | | |
| Ambala | 11 | 46 | | 21 | | 0.5 | | | |
| Faridabad | 23 | 3715 | 161 | 1239 | 54(57) | 1.0 | 86% | 80% | 83% |
| Fatehabad | 8 | 0 | | 0 | | | | | |
| Gurgaon | 17 | 2447 | 140 | 909 | 52(55) | 0.6 | 86% | 80% | 80% |
| Jind | 13 | 1308 | 128 | 665 | 65(68) | 0.3 | 85% | | |
| Karnal | 13 | 1451 | 143 | 600 | 59(62) | 0.8 | 89% | | |
| Mahendragarh | 9 | 56 | | 20 | | 0.8 | | | |
| Panchkula | 5 | 154 | | 72 | | 0.1 | | | |
| Rewari | 8 | 13 | | 3 | | 1.0 | | | |
| Sonipat | 13 | 2213 | 165 | 657 | 49(51) | 1.3 | 87% | 78% | 82% |
| Yamunanagar | 10 | 267 | | 144 | | 0.5 | | | |
| **Himachal Pradesh** | | | | | | | | | |
| Bilaspur-HP | 4 | 653 | 186 | 293 | 83(88) | 0.5 | 92% | 89% | 91% |
| Chamba | 5 | 795 | 167 | 317 | 67(70) | 0.6 | 95% | 90% | 90% |
| Hamirpur-HP | 4 | 970 | 228 | 409 | 96(101) | 0.7 | 95% | 90% | 90% |
| Kangra | 14 | 2642 | 191 | 1034 | 75(79) | 0.6 | 93% | 89% | 89% |
| Kinnaur | 0.9 | 164 | 189 | 63 | 73(76) | 0.7 | 92% | 71% | 84% |
| Kullu | 4 | 1520 | 387 | 378 | 96(101) | 1.2 | 90% | 92% | 92% |
| Lahul & Spiti | 0.3 | 69 | 201 | 17 | 50(52) | 1.3 | 100% | 70% | 70% |
| Mandi | 9 | 2379 | 256 | 862 | 93(98) | 0.5 | 87% | 86% | 86% |
| Shimla | 7 | 1582 | 212 | 545 | 73(77) | 0.5 | 96% | 87% | 87% |
| Sirmaur | 5 | 970 | 205 | 336 | 71(75) | 0.7 | 93% | 87% | 87% |
| Solan | 5 | 913 | 177 | 400 | 78(82) | 0.4 | 94% | 94% | 94% |
| Una | 5 | 654 | 141 | 248 | 54(56) | 0.6 | 89% | 86% | 86% |



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|---|---|---|---|---|---|---|---|---|---|
| **Jharkhand** | | | | | | | | | |
| Deoghar | 12 | 352 | 67 | 167 | 34(46) | 1.0 | 100% | | |
| Dhanbad | 25 | 515 | | 149 | | 1.8 | | | |
| Hazaribagh | 24 | 2280 | 96 | 826 | 35(46) | 1.4 | 94% | 80% | 80% |
| Palamu | 22 | 2760 | 127 | 1219 | 56(75) | 0.9 | 97% | 93% | 94% |
| Ranchi | 29 | 2807 | 97 | 1171 | 40(54) | 0.9 | 95% | 93% | 93% |
| **Karnataka** | | | | | | | | | |
| Bagalkot | 17 | 1819 | 107 | 800 | 47(63) | 0.9 | 90% | 86% | 86% |
| Bangalore City | 43 | 4902 | 114 | 1768 | 41(55) | 0.7 | 90% | 85% | 85% |
| Bangalore Rural | 19 | 2458 | 127 | 1073 | 55(74) | 0.7 | 83% | 70% | 76% |
| Bangalore U | 24 | 2165 | 89 | 896 | 37(49) | 0.7 | 90% | 84% | 84% |
| Belgaum | 43 | 1683 | 91 | 651 | 34(45) | 1.0 | 76% | | |
| Bellary | 21 | 3037 | 145 | 1435 | 69(92) | 0.7 | 88% | 80% | 80% |
| Bidar | 15 | 1177 | 80 | 579 | 36(49) | 0.5 | 76% | | |
| Bijapur | 19 | 1923 | 103 | 739 | 40(53) | 1.1 | 89% | 84% | 84% |
| Chikmagalur | 12 | 1288 | 133 | 545 | 55(74) | 0.5 | 89% | | |
| Chitradurga | 16 | 2601 | 167 | 1185 | 76(101) | 0.8 | 92% | 87% | 88% |
| Dakshina Kannada | 20 | 1407 | 80 | 702 | 40(53) | 0.7 | 88% | | |
| Davanagere | 18 | 2541 | 138 | 934 | 51(67) | 1.0 | 91% | 87% | 87% |
| Dharwad | 17 | 1728 | 113 | 569 | 37(49) | 0.8 | 85% | | |
| Gadag | 10 | 911 | 97 | 392 | 39(52) | 0.5 | 81% | | |
| Gulbarga | 32 | 2722 | 95 | 1289 | 42(56) | 0.7 | 82% | | |
| Hassan | 18 | 1970 | 115 | 867 | 50(66) | 0.5 | 89% | | |
| Kolar | 26 | 2247 | 114 | 1064 | 54(72) | 0.6 | 90% | | |
| Koppal | 12 | 1792 | 145 | 707 | 57(77) | 0.9 | 94% | 87% | 87% |
| Mandya | 18 | 2240 | 123 | 959 | 53(70) | 0.7 | 87% | 78% | 78% |
| Mysore | 27 | 2802 | 118 | 1149 | 48(65) | 0.7 | 84% | | |
| Raichur | 17 | 2985 | 175 | 1273 | 75(100) | 0.8 | 95% | 94% | 94% |
| Shimoga | 17 | 1599 | 98 | 591 | 35(47) | 1.1 | 77% | | |
| Tumkur | 27 | 2800 | 111 | 1458 | 58(77) | 0.4 | 81% | | |
| **Kerala** | | | | | | | | | |
| Alappuzha | 21 | 1979 | 92 | 736 | 34(46) | 1.0 | 92% | 89% | 91% |
| Ernakulam | 32 | 2473 | 78 | 1133 | 36(48) | 0.5 | 87% | 89% | 90% |
| Idukki | 11 | 523 | 46 | 260 | 23(30) | 0.3 | 90% | 90% | 91% |
| Kannur | 25 | 2025 | 82 | 835 | 34(45) | 0.5 | 91% | 90% | 91% |
| Kasaragod | 12 | 909 | 74 | 450 | 37(49) | 0.5 | 89% | 86% | 86% |
| Kollam | 26 | 2605 | 99 | 1116 | 42(57) | 0.9 | 93% | 92% | 92% |
| Kottayam | 20 | 1799 | 90 | 859 | 43(58) | 0.5 | 89% | 89% | 89% |
| Kozhikode | 29 | 2104 | 72 | 824 | 28(37) | 0.6 | 91% | 87% | 89% |
| Malappuram | 37 | 2322 | 63 | 988 | 27(36) | 0.6 | 90% | 89% | 91% |
| Palakkad | 27 | 2175 | 82 | 1026 | 39(51) | 0.4 | 87% | 84% | 86% |
| Pathanamthitta | 13 | 789 | 63 | 385 | 31(41) | 0.4 | 92% | 91% | 91% |
| Thiruvananthapuram | 33 | 2266 | 69 | 915 | 28(37) | 0.7 | 92% | 88% | 88% |



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|---|---|---|---|---|---|---|---|---|---|
| Thrissur | 30 | 2227 | 74 | 1081 | 36(48) | 0.4 | 91% | 88% | 89% |
| Wayanad | 8 | 682 | 85 | 253 | 32(42) | 1.0 | 91% | 93% | 93% |
| **Madhya Pradesh** | | | | | | | | | |
| Balaghat | 15 | 1143 | 117 | 427 | 41(51) | 1.1 | 85% | | |
| Barwani | 11 | 522 | 91 | 255 | 44(55) | 0.5 | 82% | | |
| Bhopal | 19 | 2825 | 147 | 1062 | 55(69) | 1.0 | 92% | 84% | 84% |
| Chhatarpur | 15 | 577 | 64 | 335 | 36(45) | 0.4 | 83% | | |
| Chhindwara | 19 | 1090 | 84 | 430 | 34(42) | 1.1 | 78% | | |
| Damoh | 11 | 1712 | 172 | 882 | 89(111) | 0.6 | 88% | | |
| Dewas | 14 | 931 | 82 | 346 | 30(38) | 1.0 | 90% | | |
| Dhar | 18 | 815 | 105 | 312 | 40(50) | 0.9 | 87% | | |
| Dindori | 6 | 94 | 48 | 60 | 30(38) | 0.3 | 91% | | |
| Guna | 17 | 684 | 119 | 278 | 48(60) | 0.9 | 94% | | |
| Harda | 5 | 428 | 90 | 157 | 31(39) | 0.8 | 72% | | |
| Hoshangabad | 11 | 1797 | 159 | 702 | 62(77) | 0.8 | 94% | 92% | 92% |
| Indore | 27 | 985 | 73 | 389 | 29(36) | 0.5 | 85% | | |
| Jabalpur | 23 | 241 | | 81 | | 1.4 | | | |
| Jhabua | 15 | 650 | 59 | 282 | 22(28) | 0.9 | 93% | | |
| Katni | 11 | 1322 | 146 | 521 | 56(70) | 1.1 | 78% | | |
| Khandwa | 18 | 843 | 78 | 368 | 34(42) | 0.9 | 79% | | |
| Khargone | 16 | 1045 | 108 | 506 | 53(66) | 0.6 | 86% | | |
| Mandla | 9 | 351 | 85 | 162 | 40(50) | 0.7 | 75% | | |
| Mandsaur | 12 | 921 | 98 | 400 | 43(53) | 0.8 | 86% | | |
| Narsimhapur | 10 | 428 | 83 | 189 | 36(45) | 0.4 | 68% | | |
| Neemuch | 8 | 874 | 134 | 366 | 57(71) | 0.7 | 89% | | |
| Raisen | 12 | 1509 | 129 | 333 | 28(36) | 2.6 | 91% | 87% | 88% |
| Rajgarh | 13 | 1909 | 146 | 608 | 46(58) | 1.4 | 88% | 85% | 86% |
| Ratlam | 13 | 1266 | 120 | 468 | 44(55) | 0.6 | 87% | | |
| Sagar | 21 | 1417 | 107 | 568 | 44(55) | 1.2 | 93% | | |
| Satna | 20 | 1085 | 109 | 364 | 36(45) | 1.5 | 83% | | |
| Sehore | 11 | 1065 | 95 | 325 | 29(36) | 1.4 | 88% | 85% | 87% |
| Tikamgarh | 13 | 313 | 78 | 147 | 35(44) | 0.9 | 62% | | |
| Ujjain | 18 | 1172 | 89 | 561 | 42(53) | 0.7 | 85% | | |
| Umaria | 5 | 69 | 48 | 38 | 27(33) | 0.5 | | | |
| Vidisha | 13 | 2186 | 172 | 765 | 60(75) | 1.1 | 87% | 77% | 81% |
| **Maharashtra** | | | | | | | | | |
| Ahmednagar | 43 | 2849 | 67 | 831 | 20(24) | 1.4 | 86% | 80% | 80% |
| Akola | 17 | 1609 | 114 | 644 | 44(55) | 0.8 | 88% | | |
| Amravati Mun Corp | 6 | 855 | 150 | 266 | 47(59) | 0.8 | 84% | | |
| Amravati Rural | 21 | 1904 | 116 | 732 | 44(55) | 0.7 | 84% | | |
| Aurangabad Muni Corp | 9 | 783 | 86 | 319 | 35(44) | 0.5 | 93% | 83% | 85% |
| Aurangabad-MH | 21 | 2237 | 105 | 901 | 42(53) | 1.0 | 95% | 91% | 91% |
| Bhandara | 12 | 1399 | 118 | 576 | 49(61) | 0.8 | 92% | 89% | 89% |



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|---|---|---|---|---|---|---|---|---|---|
| Bid | 22 | 1841 | 82 | 660 | 29(37) | 1.0 | 92% | 82% | 82% |
| Buldana | 23 | 2433 | 144 | 883 | 50(63) | 1.0 | 89% | | |
| Chandrapur | 22 | 2840 | 131 | 1047 | 48(60) | 1.0 | 90% | 84% | 84% |
| Dhule | 18 | 2267 | 127 | 854 | 48(60) | 1.0 | 91% | 83% | 83% |
| Gadchiroli | 10 | 1415 | 140 | 602 | 60(74) | 0.9 | 90% | 85% | 85% |
| Gondiya | 13 | 2048 | 164 | 702 | 56(70) | 1.2 | 90% | 87% | 87% |
| Hingoli | 10 | 1177 | 115 | 564 | 55(69) | 0.6 | 94% | | |
| Jalgaon | 38 | 4647 | 121 | 2021 | 53(66) | 0.9 | 92% | 86% | 86% |
| Jalna | 17 | 2237 | 133 | 809 | 48(60) | 1.2 | 90% | 83% | 86% |
| Kalyan Dombivli MC | 12 | 1501 | 121 | 533 | 43(54) | 0.9 | 86% | 74% | 77% |
| Kolhapur | 32 | 3476 | 110 | 1463 | 46(58) | 0.9 | 93% | 90% | 90% |
| Kolhapur Mun Corp | 5 | 705 | 140 | 280 | 55(69) | 0.7 | 93% | 90% | 90% |
| Latur | 22 | 1585 | 73 | 626 | 29(36) | 0.7 | 92% | 86% | 86% |
| Mumbai | 124 | 24620 | 198 | 7542 | 61(76) | 0.9 | 89% | 85% | 85% |
| Nagpur Muni Corp | 21 | 2847 | 133 | 896 | 42(52) | 0.7 | 89% | 76% | 76% |
| Nagpur Rural | 21 | 1990 | 96 | 993 | 48(60) | 0.6 | 96% | 89% | 89% |
| Nanded | 25 | 3258 | 128 | 1005 | 40(49) | 1.3 | 87% | 81% | 81% |
| Nanded Mun Corp | 4 | 486 | 144 | 166 | 49(62) | 0.7 | 66% | | |
| Nandurbar | 14 | 1876 | 138 | 667 | 49(61) | 1.2 | 91% | 80% | 88% |
| Nasik | 41 | 6125 | 150 | 2407 | 59(74) | 1.0 | 93% | 89% | 89% |
| Nasik Corp | 11 | 1107 | 99 | 298 | 27(33) | 1.3 | 82% | 75% | 76% |
| Navi Mumbai | 7 | 1300 | 177 | 474 | 65(81) | 0.8 | 88% | 75% | 75% |
| Osmanabad | 15 | 1191 | 78 | 437 | 28(36) | 1.2 | 92% | 89% | 89% |
| Parbhani | 16 | 1586 | 102 | 583 | 38(47) | 1.1 | 90% | 87% | 89% |
| Pimpri Chinchwad | 10 | 1500 | 143 | 541 | 52(65) | 0.5 | 89% | 88% | 88% |
| Pune | 26 | 3614 | 137 | 1268 | 48(60) | 0.8 | 92% | 89% | 89% |
| Pune Rural | 38 | 4024 | 105 | 1702 | 44(56) | 0.7 | 92% | 86% | 86% |
| Raigarh-MH | 23 | 3344 | 146 | 1283 | 56(70) | 1.0 | 92% | 85% | 85% |
| Ratnagiri | 18 | 2648 | 150 | 957 | 54(68) | 1.0 | 91% | 87% | 88% |
| Sangli | 22 | 2565 | 115 | 1029 | 46(58) | 0.8 | 91% | 86% | 86% |
| Sangli Muni Corp | 5 | 495 | 109 | 185 | 41(51) | 0.6 | 95% | 85% | 85% |
| Satara | 29 | 3993 | 137 | 1399 | 48(60) | 1.2 | 91% | 85% | 86% |
| Sindhudurg | 9 | 1135 | 126 | 383 | 43(53) | 1.1 | 90% | 81% | 81% |
| Solapur | 31 | 2890 | 93 | 1323 | 43(53) | 0.8 | 88% | 82% | 82% |
| Solapur Muni Corp | 9 | 1173 | 129 | 360 | 40(49) | 1.2 | 83% | 60% | 61% |
| Thane | 47 | 6052 | 129 | 2325 | 50(62) | 1.0 | 93% | 86% | 87% |
| Thane Muni Corp | 13 | 2590 | 197 | 779 | 59(74) | 0.7 | 89% | 81% | 81% |
| Ulhasnagar Mun Corp | 5 | 211 | | 80 | | 0.6 | | | |
| Wardha | 13 | 1587 | 124 | 639 | 50(62) | 0.9 | 91% | 86% | 86% |
| Washim | 11 | 248 | | 80 | | 1.1 | | | |
| Yavatmal | 26 | 3462 | 135 | 1143 | 45(56) | 1.1 | 86% | 82% | 86% |
| **Manipur** | | | | | | | | | |
| Bishnupur | 2 | 428 | 197 | 151 | 70(93) | 0.8 | 91% | 92% | 95% |
| Chandel | 1.3 | 231 | 179 | 67 | 52(69) | 1.0 | 86% | 75% | 87% |



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# RNTCP Annual Summary – 2003

Performance of Districts Case Finding (2003), Smear Conversion (4th quarter 2002 and quarters 1-3, 2003) and Treatment Outcomes (2002)

| State | Population covered in 100,000 by 31.12.03 | Total cases initiated on treatment | Annual total detection rate | New S+ve cases initiated on treatment | Annual New S+ve detection rate per 100,000 No. (%) | Ratio of new S-ve to new S+ve patients | 3 months conversion rate of new S+ve patients | Cure rate of new S+ve patients | Success rate of new S+ve patients |
|---|---|---|---|---|---|---|---|---|---|
| Churachandpur | 2 | 744 | 309 | 186 | 77(103) | 1.5 | 86% | 90% | 91% |
| Imphal East | 4 | 1036 | 250 | 271 | 65(87) | 1.6 | 86% | 79% | 82% |
| Imphal West | 5 | 1249 | 270 | 361 | 78(104) | 1.5 | 92% | 87% | 88% |
| Senapati | 4 | 464 | 116 | 132 | 33(44) | 1.1 | 92% | 84% | 84% |
| Tamenglong | 1.2 | 81 | 69 | 32 | 27(36) | 0.6 | 91% | 87% | 87% |
| Thoubal | 4 | 656 | 170 | 192 | 50(66) | 1.4 | 94% | 82% | 90% |
| Ukhrul | 1.5 | 206 | 139 | 59 | 40(53) | 0.9 | 79% | 82% | 82% |
| **Meghalaya** | | | | | | | | | |
| E Khasi Hills&Ri Bhoi | 9 | 349 | | 104 | | 0.5 | | | |
| East Garo Hills | 3 | 44 | | 16 | | 0.9 | | | |
| Jaintia Hills | 3 | 69 | | 22 | | 1.3 | | | |
| W & S Garo Hills | 6 | 235 | | 93 | | 0.7 | | | |
| West Khasi Hills | 3 | 81 | | 22 | | 0.9 | | | |
| **Mizoram** | | | | | | | | | |
| Aizawl | 4 | 692 | 258 | 173 | 64(86) | 1.2 | 77% | | |
| Champhai | 1.1 | 134 | 167 | 28 | 35(47) | 1.0 | 96% | | |
| Kolasib | 0.6 | 139 | 289 | 69 | 143(191) | 0.4 | 98% | | |
| Lawngtlai | 0.8 | 65 | 113 | 31 | 54(72) | 0.4 | 82% | | |
| Lunglei | 1.4 | 246 | 227 | 131 | 121(161) | 0.4 | 91% | | |
| Mamit | 0.7 | 48 | 98 | 27 | 55(73) | 0.4 | 91% | | |
| Saiha | 0.6 | 186 | 387 | 45 | 94(125) | 1.6 | 84% | | |
| Serchhip | 0.6 | 54 | 123 | 13 | 30(40) | 2.0 | 100% | | |
| **Nagaland** | | | | | | | | | |
| Kohima | 3 | 340 | 98 | 133 | 38(51) | 0.5 | 82% | | |
| Mokokchung | 3 | 170 | 68 | 66 | 26(35) | 0.4 | 89% | 100% | 100% |
| Mon | 3 | 217 | 76 | 106 | 37(49) | 0.3 | 78% | 73% | 73% |
| Phek | 1.6 | 86 | 53 | 44 | 27(36) | 0.1 | 71% | 100% | 100% |
| Tuensang | 5 | 507 | 111 | 223 | 49(65) | 0.7 | 88% | 100% | 100% |
| Wokha | 1.8 | 114 | 64 | 54 | 30(40) | 0.7 | 84% | 71% | 71% |
| Zunheboto | 1.7 | 78 | 46 | 31 | 18(24) | 0.7 | 84% | 100% | 100% |
| **Orissa** | | | | | | | | | |
| Angul | 12 | 398 | 85 | 212 | 46(61) | 0.2 | 77% | | |
| Baleshwar | 21 | 500 | 90 | 236 | 41(55) | 0.5 | 65% | | |
| Baudh | 4 | 244 | | 125 | | 0.3 | 91% | | |
| Bhadrak | 14 | 502 | 79 | 134 | 24(32) | 1.0 | 69% | | |
| Cuttack | 24 | 403 | | 161 | | 0.8 | | | |
| Debagarh | 3 | 229 | 81 | 100 | 35(47) | 0.8 | 89% | 87% | 89% |
| Dhenkanal | 11 | 169 | | 63 | | 1.0 | | | |
| Gajapati | 5 | 1046 | 196 | 473 | 89(118) | 0.7 | 86% | 79% | 82% |
| Jagatsinghpur | 11 | 78 | | 19 | | 1.3 | | | |
| Jharsuguda | 5 | 782 | 149 | 329 | 63(84) | 0.8 | 92% | 89% | 89% |



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# RNTCP Annual Summary – 2003

Performance of Districts Case Finding (2003), Smear Conversion (4th quarter 2002 and quarters 1-3, 2003) and Treatment Outcomes (2002)

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|---|---|---|---|---|---|---|---|---|---|
| Kalahandi | 14 | 2279 | 166 | 1347 | 98(131) | 0.3 | 87% | 87% | 87% |
| Kandhamal | 7 | 820 | 123 | 471 | 71(94) | 0.2 | 80% | 78% | 82% |
| Kendrapara | 13 | 314 | 67 | 81 | 19(25) | 1.3 | 88% | | |
| Kendujhar | 16 | 2198 | 137 | 976 | 61(81) | 0.8 | 90% | 86% | 88% |
| Koraput | 12 | 1380 | 114 | 820 | 68(90) | 0.2 | 93% | 91% | 92% |
| Malkangiri | 5 | 798 | 161 | 441 | 89(119) | 0.5 | 90% | 81% | 82% |
| Mayurbhanj | 23 | 3950 | 173 | 2049 | 90(119) | 0.6 | 90% | 88% | 89% |
| Nabarangapur | 10 | 887 | 85 | 512 | 49(65) | 0.4 | 92% | 87% | 87% |
| Nuapada | 5 | 938 | 172 | 387 | 71(94) | 0.9 | 53% | 50% | 69% |
| Puri | 15 | 485 | 78 | 205 | 31(42) | 0.6 | 87% | | |
| Rayagada | 8 | 1283 | 151 | 789 | 93(124) | 0.3 | 93% | 83% | 83% |
| Sambalpur | 10 | 1329 | 139 | 483 | 50(67) | 1.0 | 86% | 83% | 90% |
| Sundargarh | 19 | 3175 | 168 | 1290 | 68(91) | 0.8 | 92% | 87% | 88% |
| **Punjab** | | | | | | | | | |
| Amritsar | 32 | 3134 | 104 | 1231 | 40(42) | 0.5 | 85% | | |
| Bathinda | 12 | 1287 | 105 | 402 | 33(35) | 1.1 | 85% | 86% | 86% |
| Fatehgarh Sahib | 6 | 505 | 99 | 210 | 40(42) | 0.5 | 92% | | |
| Hoshiarpur | 15 | 1497 | 109 | 563 | 41(43) | 0.7 | 85% | | |
| Ludhiana | 31 | 3408 | 108 | 1147 | 37(38) | 1.0 | 92% | 76% | 76% |
| Nawanshahr | 6 | 481 | 93 | 180 | 34(36) | 0.7 | 78% | | |
| Patiala | 19 | 2381 | 125 | 916 | 48(51) | 0.6 | 92% | 88% | 88% |
| Rupnagar | 12 | 1145 | 99 | 469 | 41(43) | 0.6 | 89% | 88% | 88% |
| Sangrur | 21 | 1786 | 93 | 713 | 36(38) | 0.9 | 89% | | |
| **Rajasthan** | | | | | | | | | |
| Ajmer | 23 | 4952 | 216 | 1872 | 82(102) | 0.8 | 92% | 88% | 89% |
| Alwar | 31 | 4527 | 144 | 1693 | 54(67) | 0.9 | 90% | 85% | 87% |
| Banswara | 16 | 2685 | 170 | 1196 | 76(95) | 0.6 | 92% | 88% | 92% |
| Baran | 11 | 2215 | 206 | 907 | 84(105) | 0.6 | 90% | 87% | 87% |
| Barmer | 21 | 2285 | 111 | 886 | 43(54) | 1.0 | 90% | 86% | 86% |
| Bharatpur | 22 | 2521 | 114 | 1042 | 47(59) | 0.7 | 89% | 84% | 88% |
| Bhilwara | 21 | 4822 | 228 | 1899 | 90(112) | 0.6 | 91% | 90% | 91% |
| Bikaner | 20 | 3146 | 158 | 1250 | 63(78) | 0.7 | 90% | 88% | 90% |
| Bundi | 10 | 1773 | 175 | 675 | 67(84) | 0.9 | 92% | 90% | 91% |
| Chittaurgarh | 19 | 2907 | 153 | 1251 | 66(83) | 0.4 | 92% | 90% | 91% |
| Churu | 18 | 3628 | 203 | 1328 | 74(93) | 0.7 | 89% | 87% | 88% |
| Dausa | 14 | 2473 | 179 | 880 | 64(79) | 0.9 | 91% | 89% | 90% |
| Dhaulpur | 10 | 1514 | 147 | 476 | 46(58) | 0.9 | 91% | 85% | 86% |
| Dungarpur | 12 | 2353 | 202 | 1069 | 92(115) | 0.7 | 90% | 85% | 88% |
| Ganganagar | 19 | 3198 | 170 | 1143 | 61(76) | 0.8 | 91% | 87% | 88% |
| Hanumangarh | 16 | 2919 | 183 | 1113 | 70(87) | 0.6 | 92% | 85% | 87% |
| Jaipur | 55 | 10720 | 194 | 3461 | 63(78) | 0.9 | 91% | 87% | 88% |
| Jaisalmer | 5 | 626 | 117 | 274 | 51(64) | 0.7 | 93% | 88% | 89% |
| Jalore | 15 | 1794 | 118 | 624 | 41(51) | 1.1 | 91% | 85% | 86% |



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# RNTCP Annual Summary – 2003

Performance of Districts Case Finding (2003), Smear Conversion (4th quarter 2002 and quarters 1-3, 2003) and Treatment Outcomes (2002)

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|---|---|---|---|---|---|---|---|---|---|
| Jhalawar | 12 | 1706 | 137 | 655 | 53(66) | 0.8 | 90% | 87% | 88% |
| Jhunjhunun | 20 | 2517 | 125 | 942 | 47(59) | 0.8 | 87% | 82% | 85% |
| Jodhpur | 30 | 3431 | 113 | 1111 | 37(46) | 1.4 | 90% | 83% | 87% |
| Karauli | 13 | 2340 | 185 | 1026 | 81(101) | 0.6 | 93% | 89% | 90% |
| Kota | 16 | 2539 | 154 | 974 | 59(74) | 0.8 | 95% | 91% | 92% |
| Nagaur | 29 | 3823 | 131 | 1360 | 47(58) | 1.1 | 91% | 83% | 86% |
| Pali | 19 | 3038 | 159 | 1180 | 62(77) | 1.0 | 92% | 89% | 90% |
| Rajsamand | 10 | 1769 | 171 | 641 | 62(77) | 0.9 | 88% | 84% | 84% |
| Sawai Madhopur | 12 | 2310 | 197 | 858 | 73(91) | 0.7 | 92% | 91% | 91% |
| Sikar | 24 | 3570 | 148 | 1321 | 55(69) | 0.8 | 94% | 88% | 88% |
| Sirohi | 9 | 1328 | 148 | 589 | 66(82) | 0.6 | 89% | 81% | 81% |
| Tonk | 13 | 3260 | 256 | 1386 | 109(136) | 0.7 | 92% | 88% | 92% |
| Udaipur | 28 | 5458 | 197 | 2377 | 86(107) | 0.5 | 90% | 85% | 87% |
| **Sikkim** | | | | | | | | | |
| East | 3 | 648 | 250 | 209 | 81(108) | 0.7 | 89% | 85% | 86% |
| North | 0.4 | 114 | 263 | 38 | 88(117) | 0.9 | 97% | 91% | 91% |
| South | 1.4 | 384 | 276 | 102 | 73(98) | 1.1 | 88% | 82% | 82% |
| West | 1.3 | 257 | 197 | 94 | 72(96) | 0.5 | 93% | 91% | 93% |
| **Tamil Nadu** | | | | | | | | | |
| Chennai | 43 | 6955 | 161 | 2318 | 54(72) | 1.0 | 92% | 86% | 86% |
| Coimbatore | 43 | 4831 | 112 | 2164 | 50(67) | 0.6 | 93% | 88% | 88% |
| Cuddalore | 23 | 3375 | 145 | 1263 | 54(72) | 1.0 | 93% | 88% | 88% |
| Dharmapuri | 29 | 2977 | 103 | 1222 | 42(56) | 0.7 | 93% | 87% | 87% |
| Dindigul | 20 | 3080 | 157 | 1264 | 64(86) | 0.9 | 91% | 87% | 88% |
| Erode | 26 | 2977 | 113 | 1427 | 54(72) | 0.7 | 92% | 87% | 87% |
| Kancheepuram | 29 | 4710 | 161 | 1614 | 5(73) | 1.0 | 94% | 88% | 88% |
| Kanniyakumari | 17 | 1660 | 97 | 744 | 44(58) | 0.8 | 92% | 86% | 89% |
| Karur | 10 | 1358 | 142 | 518 | 54(72) | 1.1 | 95% | 89% | 89% |
| Madurai | 26 | 4498 | 172 | 1568 | 60(80) | 1.2 | 89% | 85% | 86% |
| Nagapattinam | 15 | 1539 | 101 | 634 | 42(56) | 0.9 | 90% | 86% | 86% |
| Namakkal | 15 | 1971 | 129 | 695 | 45(61) | 1.1 | 92% | 87% | 87% |
| Perambalur | 12 | 1444 | 120 | 631 | 52(70) | 0.7 | 92% | 86% | 86% |
| Pudukkottai | 15 | 2201 | 148 | 947 | 64(85) | 0.8 | 91% | 88% | 91% |
| Ramanathapuram | 12 | 1954 | 162 | 710 | 59(78) | 1.2 | 87% | 89% | 89% |
| Salem | 31 | 4523 | 148 | 1529 | 50(67) | 1.1 | 94% | 89% | 89% |
| Sivaganga | 12 | 1637 | 139 | 602 | 51(68) | 1.2 | 91% | 88% | 90% |
| Thanjavur | 23 | 3099 | 137 | 1229 | 55(73) | 0.7 | 95% | 90% | 90% |
| The Nilgiris | 8 | 540 | 69 | 234 | 30(40) | 0.5 | 93% | 88% | 88% |
| Theni | 11 | 2210 | 198 | 741 | 66(88) | 1.3 | 91% | 88% | 88% |
| Thiruvallur | 28 | 4363 | 156 | 1596 | 57(76) | 1.0 | 86% | 79% | 79% |
| Thiruvarur | 12 | 1528 | 128 | 606 | 51(68) | 0.9 | 91% | 85% | 85% |
| Tiruchirappalli | 24 | 3156 | 129 | 1254 | 51(69) | 0.9 | 94% | 92% | 92% |
| Tirunelveli | 29 | 5426 | 190 | 1854 | 65(86) | 1.0 | 85% | 74% | 86% |



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# RNTCP Annual Summary – 2003

Performance of Districts Case Finding (2003), Smear Conversion (4th quarter 2002 and quarters 1-3, 2003) and Treatment Outcomes (2002)

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|---|---|---|---|---|---|---|---|---|---|
| Tiruvanamalai | 22 | 2607 | 117 | 1336 | 60(80) | 0.7 | 95% | 92% | 92% |
| Toothukudi | 16 | 2488 | 156 | 1210 | 76(101) | 0.7 | 90% | 87% | 87% |
| Vellore | 36 | 4984 | 140 | 2142 | 60(80) | 0.8 | 94% | 90% | 90% |
| Viluppuram | 30 | 4438 | 148 | 1598 | 53(71) | 1.1 | 90% | 86% | 86% |
| Virudhunagar | 18 | 3088 | 173 | 1118 | 62(83) | 1.2 | 91% | 86% | 86% |
| **Uttar Pradesh** | | | | | | | | | |
| Agra | 38 | 2794 | 128 | 1225 | 57(60) | 0.5 | 69% | | |
| Aligarh | 31 | 1689 | 72 | 671 | 27(28) | 1.2 | 74% | | |
| Baghpat | 12 | 1915 | 157 | 715 | 59(62) | 0.9 | 92% | 86% | 86% |
| Bahraich | 25 | 3294 | 170 | 1573 | 80(85) | 0.7 | 92% | | |
| Barabanki | 28 | 3352 | 120 | 1626 | 58(61) | 0.6 | 89% | 85% | 87% |
| Bareilly | 38 | 3291 | 132 | 1244 | 48(51) | 1.2 | 79% | | |
| Basti | 22 | 1211 | 90 | 462 | 34(36) | 1.1 | 77% | | |
| Bijnor | 33 | 2678 | 98 | 903 | 33(34) | 1.2 | 80% | | |
| Budaun | 32 | 1854 | 113 | 1133 | 71(75) | 0.5 | 85% | | |
| Bulandshahar | 31 | 3473 | 125 | 1382 | 50(52) | 0.9 | 85% | | |
| Etah | 29 | 1802 | 115 | 699 | 45(48) | 0.8 | 74% | | |
| Etawah | 14 | 3 | | 1 | | 2.0 | | | |
| Fatehpur | 24 | 1017 | 74 | 370 | 27(28) | 1.1 | 80% | | |
| Gautam Budh Nagar | 12 | 2130 | 171 | 814 | 65(69) | 0.7 | 89% | 87% | 88% |
| Ghaziabad | 34 | 6046 | 176 | 2358 | 68(72) | 0.8 | 93% | 87% | 87% |
| Hamirpur-UP | 11 | 935 | 96 | 427 | 43(46) | 0.8 | 83% | | |
| Jaunpur | 41 | 350 | | 149 | | 0.9 | 80% | | |
| Jhansi | 18 | 723 | 112 | 271 | 37(39) | 0.9 | 77% | | |
| Lucknow | 39 | 5424 | 141 | 2265 | 59(62) | 0.6 | 92% | 89% | 89% |
| Mainpuri | 17 | 1056 | 79 | 565 | 42(44) | 0.8 | 85% | | |
| Mathura | 22 | 756 | 102 | 214 | 28(30) | 2.0 | 72% | | |
| Meerut | 31 | 5838 | 186 | 2533 | 81(85) | 0.8 | 94% | 93% | 93% |
| Moradabad | 39 | 3449 | 99 | 1790 | 51(54) | 0.6 | 85% | | |
| Muzaffarnagar | 37 | 4649 | 125 | 2203 | 59(63) | 0.7 | 79% | | |
| Rae Bareli | 30 | 3074 | 102 | 1308 | 43(46) | 1.1 | 93% | 92% | 92% |
| Rampur | 20 | 1982 | 112 | 842 | 46(48) | 0.5 | 79% | | |
| Saharanpur | 30 | 3493 | 128 | 1517 | 56(59) | 0.8 | 93% | | |
| Shahjahanpur | 27 | 311 | | 117 | | 0.9 | | | |
| Sitapur | 38 | 1514 | 108 | 494 | 36(38) | 1.3 | 85% | | |
| Unnao | 28 | 3555 | 126 | 1179 | 42(44) | 1.5 | 92% | 87% | 87% |
| Varanasi | 33 | 2202 | 84 | 887 | 33(35) | 0.6 | 88% | | |
| **Uttaranchal** | | | | | | | | | |
| Almora | 7 | 474 | 73 | 214 | 33(34) | 0.6 | 96% | 100% | 100% |
| Dehradun | 13 | 1594 | 120 | 613 | 46(49) | 0.8 | 95% | 94% | 94% |
| **West Bengal** | | | | | | | | | |
| Bankura | 33 | 4218 | 128 | 1938 | 59(78) | 0.6 | 92% | 89% | 91% |



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# RNTCP Annual Summary – 2003

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|---|---|---|---|---|---|---|---|---|---|
| Barddhaman | 72 | 9881 | 138 | 3951 | 55(74) | 0.8 | 91% | 84% | 85% |
| Birbhum | 31 | 4222 | 136 | 2147 | 69(92) | 0.6 | 89% | 84% | 86% |
| Dakshin Dinajpur | 16 | 1832 | 140 | 1094 | 82(110) | 0.3 | 80% | | |
| Darjeeling | 17 | 14 | | 4 | | 0.8 | | | |
| Haora | 44 | 5638 | 128 | 1986 | 45(60) | 0.9 | 88% | 83% | 84% |
| Hugli | 52 | 6649 | 128 | 2656 | 51(68) | 0.8 | 91% | 85% | 86% |
| Jalpaiguri | 35 | 5264 | 150 | 2646 | 75(100) | 0.4 | 91% | 87% | 87% |
| Koch Bihar | 26 | 2863 | 112 | 1360 | 53(71) | 0.6 | 92% | 89% | 89% |
| Kolkata | 47 | 5692 | 120 | 2506 | 53(71) | 0.4 | 88% | 89% | 89% |
| Maldah | 34 | 4762 | 140 | 2342 | 69(92) | 0.6 | 87% | 80% | 81% |
| Medinipur East | 46 | 1926 | 42 | 715 | 16(21) | 0.9 | 86% | 76% | 78% |
| Medinipur West | 54 | 5906 | 110 | 2384 | 44(59) | 0.9 | 87% | 79% | 85% |
| Murshidabad | 61 | 7201 | 119 | 3124 | 52(69) | 0.8 | 91% | 85% | 86% |
| Nadia | 48 | 4526 | 95 | 1962 | 41(55) | 0.7 | 91% | 87% | 87% |
| North 24 Parganas | 92 | 7689 | 83 | 2964 | 32(43) | 0.6 | 90% | 87% | 87% |
| Puruliya | 26 | 3818 | 146 | 1789 | 68(91) | 0.7 | 90% | 89% | 91% |
| South 24 Parganas | 71 | 5466 | 77 | 2230 | 31(42) | 0.8 | 90% | 87% | 87% |
| Uttar Dinajpur | 25 | 2259 | 106 | 1068 | 49(65) | 0.6 | 81% | | |
| **Total** | **7754** | **906472** | **132** | **358496** | **52(69)** | **0.8** | **90%** | **86%** | **87%** |



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# Annexure 1

## RNTCP Population Coverage (31 December 2003)

| S. No. | State | Districts reporting unit | | Population | | |
|---|---|---|---|---|---|---|
| | | Total | Implementing RNTCP | Total | Covered under RNTCP | % Covered under RNTCP |
| 1 | A&N Islands | 2 | 0 | 373,583 | 0 | 0% |
| 2 | Andhra Pradesh | 24 | 23 | 77,719,473 | 74,150,935 | 95% |
| 3 | Arunachal Pradesh | 13 | 13 | 1,142,989 | 1,142,989 | 100% |
| 4 | Assam | 23 | 8 | 27,574,397 | 10,904,370 | 40% |
| 5 | Bihar | 37 | 3 | 87,132,409 | 11,739,156 | 13% |
| 6 | Chandigarh | 1 | 1 | 964,080 | 964,080 | 100% |
| 7 | Chhatisgarh | 16 | 4 | 21,498,059 | 9,392,398 | 44% |
| 8 | D&N Haveli | 1 | 0 | 241,753 | 0 | 0% |
| 9 | Daman & Diu | 2 | 0 | 172,45 2 | 0 | 0% |
| 10 | Delhi | 20 | 20 | 14,872,779 | 14,872,779 | 100% |
| 11 | Goa | 2 | 0 | 1,382,026 | 0 | 0% |
| 12 | Gujarat | 31 | 29 | 52,691,262 | 50,153,857 | 95% |
| 13 | Haryana | 19 | 11 | 22,151,929 | 13,073,342 | 59% |
| 14 | Himachal Pradesh | 12 | 12 | 6,276,731 | 6,276,731 | 100% |
| 15 | Jammu & Kashmir | 14 | 0 | 10,596,626 | 0 | 0% |
| 16 | Jharkhand | 22 | 7 | 28,055,024 | 11,988,718 | 43% |
| 17 | Karnataka | 28 | 23 | 54,439,026 | 48,853,844 | 90% |
| 18 | Kerala | 14 | 14 | 32,416,747 | 32,416,747 | 100% |
| 19 | Lakshadweep | 1 | 0 | 62,477 | 0 | 0% |
| 20 | Madhya Pradesh | 45 | 32 | 63,073,716 | 44,948,391 | 71% |
| 21 | Maharashtra | 49 | 49 | 100,771,366 | 100,771,366 | 100% |
| 22 | Manipur | 9 | 9 | 2,517,433 | 2,517,433 | 100% |
| 23 | Meghalaya | 7 | 7 | 2,430,004 | 2,430,004 | 100% |
| 24 | Mizoram | 8 | 8 | 937,815 | 937,815 | 100% |
| 25 | Nagaland | 8 | 7 | 2,196,389 | 1,855,790 | 84% |
| 26 | Orissa | 30 | 23 | 37,809,014 | 26,766,986 | 71% |
| 27 | Pondicherry | 4 | 0 | 1,010,874 | 0 | 0% |
| 28 | Punjab | 17 | 9 | 25,181,161 | 15,382,567 | 61% |
| 29 | Rajasthan | 32 | 32 | 59,361,900 | 59,361,900 | 100% |
| 30 | Sikkim | 4 | 4 | 572,044 | 572,044 | 100% |
| 31 | Tamil Nadu | 30 | 30 | 63,442,785 | 63,442,785 | 100% |
| 32 | Tripura | 4 | 0 | 3,285,884 | 0 | 0% |
| 33 | Uttar Pradesh | 70 | 32 | 173,852,902 | 88,400,434 | 51% |
| 34 | Uttaranchal | 13 | 2 | 8,782,193 | 1,977,679 | 23% |
| 35 | West Bengal | 19 | 19 | 82,898,265 | 82,898,265 | 100% |
| | **Grand** | **631** | **431** | **1,067,887,567** | **778,193,405** | **73%** |



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# Annexure 2

## Schemes for involvement of Private Practitioners (PPs) in RNTCP

**Scheme 1:** *Referral.* Persons suspected of having TB are referred by the PP to a RNTCP designated microscopy centre (DMC) for smear microscopy examination. If smear negative and further care is required, the patient is to be referred back to the PP for non-TB care.

**Scheme 2:** *Provision of treatment observation.* PP or staff provided by the PP are to provide DOT for patients, ensure follow-up sputum collection and late patient retrieval. RNTCP records are to be maintained by the PP and permit on-site monitoring by RNTCP supervisory staff as per RNTCP guidelines.

**Scheme 3A:** *Designated paid microscopy centre – microscopy only.* A private health facility with its own laboratory can function as an RNTCP DMC and charge service fees. The District TB Centre (DTC) will provide training and supervision of the laboratory technician and other staff. An annual review of approval will be made.

**Scheme 3B:** *Designated paid microscopy centre – microscopy and treatment.* As in Scheme 3A, but in addition the private health facility can serve as a treatment centre. Service fees may be charged, but not for the anti-TB drugs administered. Diagnosis, categorization, treatment, record keeping and supervision must follow RNTCP guidelines. In addition, PPs must complete an RNTCP modular training. Address verification must be ensured by the PPs before the start of treatment. The DTC will provide training and supervision of the quality of care provided by the private health facility, and will assist in the retrieval of late patients. An annual review of approval will be made.

**Scheme 4A:** *Designated microscopy centre – microscopy only.* A private health facility with its own laboratory can function as an RNTCP DMC that provides free services. The required laboratory materials for microscopy services are provided to the DMC by RNTCP. The PPs must ensure that RNTCP policy is followed, that a TB Laboratory Register is maintained, and patients informed about the availability of free drugs under RNTCP and/or are referred for treatment at a RNCTP DOT centre. The DTC will provide training and supervision of the laboratory technician and other staff. An annual review of approval will be made.

**Scheme 4B:** *Designated microscopy centre – microscopy and treatment.* A private health facility can serve as both an approved RNTCP DMC and treatment centre. Diagnostic and treatment services are provided free of charge, and the required laboratory materials are provided to the DMC by RNTCP. PPs must complete an RNTCP modular training. Address verification must be ensured by the PPs before the start of treatment. The DTC will provide training and supervision of the quality of care provided by the private health facility, and will assist in the retrieval of late patients. An annual review of approval will be made.



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# Annexure 3

## Schemes for NGO and RNTCP collaboration

**Scheme 1:** *Health Education and Community Outreach.* Under this scheme NGOs generate community awareness sensitize and train volunteers, disseminate information, provide counseling to patients and families, do advocacy with key groups, and develop IEC material according to the local context.

**Scheme 2:** *Provision of Directly Observed Treatment (DOT).* This scheme engages NGOs as DOT providers. NGOs take the responsibility to identify, train and supervise volunteers who provide DOT to patients and maintain records as per RNTCP guidelines. The DOT provider is also responsible for ensuring collection of sputum during treatment and for retrieving patients who are late for their treatment.

**Scheme 3:** *In-hospital Care for TB Disease*. Under this scheme established and experienced NGOs already providing in-hospital care for TB patients perform sputum smear examination and treatment and follow-up of patients as per RNTCP guidelines.

**Scheme 4:** *Microscopy and Treatment centre*. The collaborating NGO serves as a designated microscopy and treatment centre for a defined population and the diagnostic and treatment services are provided free by the NGO. RNTCP provides laboratory consumables, drugs and microscopes,

**Scheme 5:** *TB Unit (TU) Model*. Under this scheme the NGO takes full responsibility for providing services as a TB unit including sputum microscopy, treatment, direct observation, late patient retrieval, recording and registration per RNTCP guidelines. The NGO provides services for approximately 500,000 population and is responsible for supervision of up to five microscopy centres. RNTCP provides drugs, microscopes and laboratory consumables. To become eligible for this scheme NGOs must have minimum of three years experience in the related field along with required infrastructure and staff and must also qualify for Schemes 2 and 4.

For all schemes that include diagnostic and treatment services, RNTCP supervisory staff regularly visit the NGOs to help maintain and improve the quality of the microscopy and treatment services provided.



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# Annexure 4

## RNTCP research agenda

| Objective | Research priority areas |
|---|---|
| *Cure at least 85% of the registered New Sputum Positve cases* | High default rates in some areas<br>Varying levels of application of DOT<br>Varying quality of DOT by DOT providers<br>In-patient care: indications for in-patient care, treatment outcomes, cost-effectiveness of in-patient care<br>Impact of HIV/TB on RNTCP outcomes<br>Impact of MDR on RNTCP outcomes<br>Others: impact of MO-TCs' involvement, role of incentives, treatment of paediatric TB cases, frequency of adverse drug reactions, management and outcome of patients treated in the private sector |
| *b. Detect at least 70% of the estimated New Sputum Positve cases existing in the community* | Health-seeking behaviour of patients<br>Application of RNTCP diagnostic algorithm<br>Sensitivity of smear microscopy<br>Quality of smear microscopy services<br>Level of awareness of TB and RNTCP amongst the community<br>KAP of RNTCP amongst the medical colleges and<br>TB hospitals<br>KAP of RNTCP amongst the private sector<br>ARTI surveys<br>Others: Impact of HIV/AIDS stigma on presentation of people with TB suspects, impact of involving VCTC in RNTCP activities, HIV sero-prevalence amongst TB patients at sentinel sites, infection control practices at the field level, economic impact and cost-effectiveness of RNTCP implementation, evaluation of alternative electricity power sources at microscopy centres |



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