India

Overview of TB control system

Although state governments are legally responsible for health care, TB is one of several health programmes supported by central government funds. The Revised National TB Control Programme (locally RNTCP, hereafter NTP) designed by the Government of India was formally launched in 1997. All 35 states have a State TB Cell (STC) responsible for the planning, training, monitoring, and supervision of TB control activities. Each district has a District TB Centre (DTC) which is the nodal centre for TB control activities. Diagnosis and treatment services are provided at general health facilities, and each diagnostic centre (designated by the NTP) serves a population of approximately 100 000.

Surveillance, planning, operations

The detection rate of smear-positive cases within DOTS areas increased from 52% in 2001 to an estimated 60% in 2002, and the national smear-positive detection rate by the DOTS programme increased from 23% to 31%. Detection within DOTS areas is calculated here (as for other countries) with reference to the population covered at the end of 2002. By making use of NTP data describing the rate at which DOTS coverage expanded during the course of 2002, it is possible to calculate the case detection rate, more accurately, with reference to the average population covered during that year. For India's rapidly expanding DOTS programme this gives an estimate of 68% case detection within DOTS areas (higher than the 60% in the accompanying table). The NTP has maintained high treatment success rates under DOTS, and appears to have reached the target of 85% for the 2001 cohort.

A nationwide tuberculin survey to assess the prevalence of infection was completed during 2003. These data have already yielded a new national estimate of the annual incidence of smear-positive disease (75/100 000, close to the previous estimate), and will soon be used to provide separate estimates of TB incidence, and hence case detection, for each of 4 zones of India. The notification rate of all TB cases in India has been falling at an average of 2% per year for the past decade, which may reflect a real decline in TB incidence. However, the expected link between DOTS expansion and falling TB incidence has not yet been established.

Following recent rapid expansion at a rate of about 10 million people per month, 740 million people (almost 70% of the total population) in 397 districts from 25 states/union territories had access to DOTS services by August 2003. Expansion has been delayed in 3 states by slow progress in civil works and staff recruitment. In Bihar, progress has been hindered by a lack of training. Because of political unrest, implementation has not yet begun in Jammu and Kashmir. Nonetheless, with continued expansion and funding, India should be close to covering 100% of the population by 2005.

A national task force, and 7 zonal task force groups, were established in 2002 to involve medical colleges in NTP activities. Seven medical colleges have been designated zonal NTP centres. By the end of 2003, at least 128 of the 180 medical colleges in India were working with the NTP. The

PROGRESS IN TB CONTROL IN INDIA

Indicators

• Treatment success 2001 cohort	85%
• DOTS detection rate, 2002	31%
• NTP budget available, 2003	100%
• Government contribution to NTP budget, including loans, 2003	73%
• Government contribution to total TB control costs, including loans, 2003	88%
• Government health spending used for TB, 2003	2%

Constraints to achieving targets

- Challenge to maintain quality of TB services during rapid expansion to remaining 300 million population
- Insufficient staff at central and state levels to effectively manage a rapidly expanding programme
- Lack of TB awareness in some parts of the community
- Decentralization without adequate local management, supervision, and monitoring at state and district levels
- Lack of awareness and support for NTP from wider health care community

Remedial actions needed

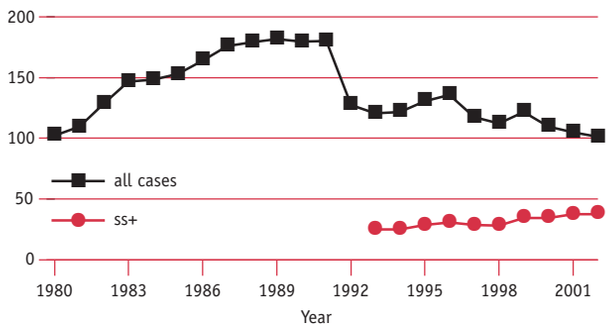
- Central and state governments to create additional staff posts and provide management training for key NTP officers
- Strengthen (re-) training, monitoring, and supervision activities at all levels
- Strengthen public-private partnerships to standardize and facilitate the delivery of TB services
- Continue to improve community awareness through a sustained mass media campaign and targeted IEC
- Standardize and facilitate delivery of TB services by strengthening partnerships with other public sector groups

INDIA

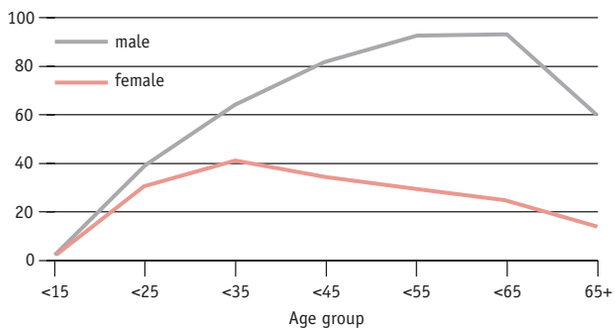
LATEST ESTIMATES[a]		TRENDS	1999	2000	2001	2002
Population	1 049 549 473	DOTS population coverage (%)	14	30	45	52
Global rank (by est. number of cases)	1	Notification rate (all cases/100 000 pop)	122	110	105	101
Incidence (all cases/100 000 pop)	168	Notification rate (new ss+/100 000 pop)	35	34	37	38
Incidence (new ss+/100 000 pop)	75	Detection of all cases (%)	68	63	61	60
Prevalence (ss+/100 000 pop)	156	Detection of new ss+ cases (%)	43	44	49	50
TB mortality per 100 000 pop	37	DOTS detection of new ss+ (%)	6.6	12	23	31
% of adult (15-49y) TB cases HIV+	4.6	DOTS detection of new ss+/coverage(%)	49	40	52	60
% of new cases multi-drug resistant	3.4	DOTS treatment success (new ss+, %)	82	84	85	—

Notification rate (per 100 000 pop)

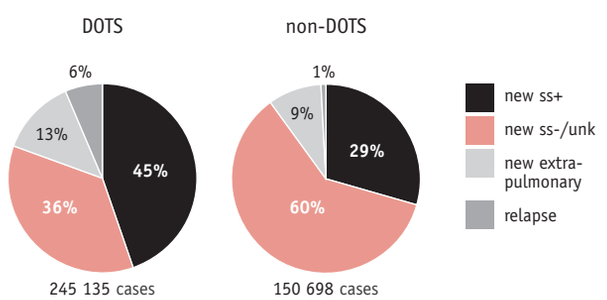
Notification (all cases) = 1 060 951 in 2002



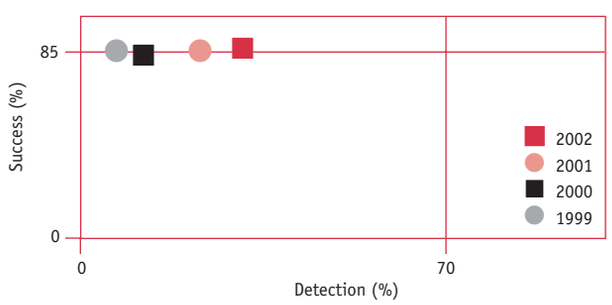
Notification rate by age and sex (new ss+)[b]



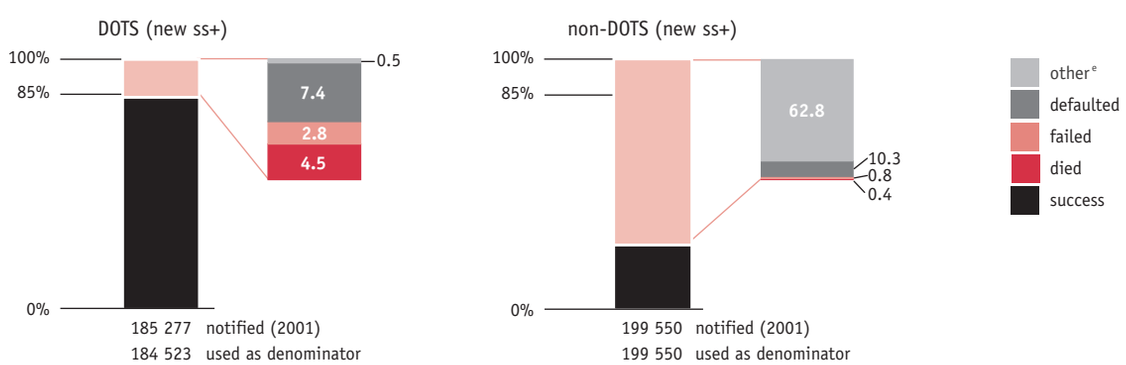
Case types notified[c]



DOTS progress towards targets[d]



Treatment outcomes[c]



Notes

ss+ Indicates smear-positive; ss-, smear-negative; pop, population; unk, unknown.

[a] See Methods for data sources.

[b] The sum of cases notified by age and sex is less than the number of new smear-positive cases notified for some countries.

[c] Non-DOTS is blank for countries which are 100% DOTS, or where no non-DOTS data were reported.

[d] DOTS progress towards targets: DOTS detection rate for given year, DOTS success rate for cohort registered in previous year.

[e] "Other" includes transfer out and not evaluated, still on treatment, and other unknown.

NTP published guidelines on involvement of NGOs and private practitioners in DOTS programmes. Over 550 NGOs and more than 2000 private practitioners are officially providing NTP services. With assistance from WHO, the GoI implemented 14 PPM DOTS projects in large urban areas throughout the country; results are promising and expected to increase case detection by about 20% over 3 years.

More than 50 corporate sector units, such as the tea gardens in the north-east and in West Bengal, are now working with the NTP. A collaboration between the NTP and the Indian Academy of Paediatricians will lead to revised guidelines on the management of TB in children. An NTP strategy for IEC was developed in 2002 and implemented in 2003 to spread the DOTS message even further. A mass media agency was hired to oversee the nationwide media campaign and to develop prototype IEC materials. IEC plans were developed for states. With support from the Stop TB Partnership, the NTP is also piloting the COMBI strategy.

The NTP conducts quarterly reviews of all districts at the state level and half-yearly reviews of all states at the central level. The central unit is working to strengthen technical skills of staff in STCs, so that responsibility for programme analysis and evaluation can be decentralized to the states. A joint GoI/WHO monitoring mission to review activities took place in 2003. Information on programme performance is widely disseminated through a quarterly NTP report and through an annual NTP status report, available both in hard copy and on the NTP website (www.tbcindia.org). The NTP is rapidly progressing toward complete electronic connectivity between district, state, and central levels: by the end of 2002, 55% of districts were submitting their quarterly reports electronically, and by mid-2003, 94% were doing so. The newly implemented web-based TB Programme Information System (TPIS) enabled production of reports on case finding, treatment outcomes, and finances, all of which will improve forecasting for DOTS expansion activities.

The process of appointing staff in districts and states has been streamlined to help maintain momentum during DOTS expansion. For example, contractors may now be employed without prior central unit approval from New Delhi. Some states remain understaffed for assorted reasons including an unwillingness to fund existing posts and an inability to create new ones. More WHO consultants have been appointed to support DOTS expansion. However, the use of these consultants is a temporary solution; in the long run the NTP needs permanent staff. By the end of 2003, more than 300 000 health workers had been retrained by the NTP, though retraining needs to be strengthened at the central and intermediate levels.

A joint NTP/NACO (National AIDS Control Organization) action plan to develop TB/HIV collaborative activities has been implemented in 6 states (and 150 of 600 districts) that have high HIV prevalence. TB/HIV collaborating bodies have been established at both national and state levels. Pilot testing of a referral system is under way wherein HIV-positive patients who are TB suspects, and TB patients who are HIV suspects, will be cross-referred between HIV voluntary counselling and testing centres (VCTC) and designated TB microscopy centres (DMC). Plans are under way to develop an HIV surveillance system among TB patients, There is no plan to involve the NTP in delivery of ART.

India participates in the WHO/IUATLD project on anti-TB drug resistance surveillance. DRS surveys are under way in Rajasthan and Maharashtra but the results are not yet available. The country is currently holding a series of meetings to develop a national plan for drug resistance surveillance and MDR-TB management. As part of the process of developing the state TB Training and Demonstration Centres, facilities for culturing mycobacteria and for testing drug sensitivity are being strengthened during 2003–4. The Lala Ram Sarup Institute of Tuberculosis and Allied Diseases in New Delhi has applied to the GLC for drugs to treat a cohort of MDR-TB patients.

A consulting agency was hired in 2003 to monitor drug quality. Efforts continue to create a buffer stock at all levels to ensure uninterrupted drug supply. Drug stores were established in large states and technical support will ensure effective management.

More microscopy centres were opened to strengthen diagnostic and laboratory capacity. More than 7000 laboratories were upgraded under the NTP. Alternative energy sources for microscopy illumination are being tested in areas outside the electrical grid.

To achieve case detection targets the programme will need to continue to involve all public and private health care facilities and practitioners, including NGOs and the corporate sector, and to patients who may have poor access to care such as homeless and migrants.

Partnerships

A donor coordinating committee was formed in 1998, and an NICC will be established in 2004. Political commitment within India was demonstrated by sustained government funding, and by successful negotiations to amend the World Bank credit agreement to GoI. DFID continues to support NTP expansion in Andhra Pradesh. DANIDA will fund DOTS activities throughout Orissa, where the GDF is providing anti-TB drugs. USAID supports DOTS activities in Haryana state. Proposals were submitted to the GFATM in the 1st and 2nd rounds, winning approval to expand NTP coverage to 56 million people in Chattisgarh, Jharkhand, and Uttaran-

Budget estimates, existing funding, and budget gaps for fiscal year 2003, US$ millions

	REQUIRED FUNDING	EXPECTED FUNDING				FUNDING GAP
		GOVERNMENT	LOANS	GRANTS	OTHER	
NTP budget						
Drugs	9.7	1.4	5.7	2.6	—	—
Dedicated staff working exclusively for TB control	13.2	2.0	7.6	3.6	—	—
New activities to raise case detection and cure rates	—	—	—	—	—	—
Buildings, equipment, vehicles	2.2	0.3	1.3	0.6	—	—
All other line items	16.7	2.4	9.8	4.5	—	—
TOTAL NTP BUDGET	**41.8**	**6.1**	**24.4**	**11.3**	**—**	**—**
Costs not covered by NTP budget [a]						
Treatment in non-DOTS areas	29.4	29.4	—	—	—	—
Clinic visits for DOT and monitoring, DOTS areas[b]	24.4	24.4	—	—	—	—
TOTAL COSTS NOT COVERED BY NTP BUDGET	**53.8**	**53.8**	**—**	**—**	**—**	**—**
TOTAL TB CONTROL COSTS	**95.6**	**59.9**	**24.4**	**11.3**	**—**	**—**

— Indicates zero; NA, not available

[a] WHO estimates, data not provided by the NTP

[b] This is likely to be an overestimate as it assumes all DOT is undertaken at health facilities. In practice some patients have treatment observed at no cost to the health system by community workers or volunteers.

chal, and to 110 million people in Bihar and Uttar Pradesh. Technical support to India is provided by WHO and, with funding from CIDA and USAID, includes a network of 88 locally recruited WHO/NTP TB consultants who work at the state and district levels.

Budgets and expenditures

Expenditures by the NTP central unit in fiscal year 2002 (from 1 April) were US$ 24.5 million, the same as received funding. Most funding came from grants and a World Bank loan. The expenditure was primarily for areas implementing DOTS, and with 549 700 new cases notified in 2002 was equivalent to about US$ 45 per patient. Expenditures for items not covered by the central level NTP budget in DOTS areas (i.e. clinic visits) are estimated at US$ 14.9 million (US$ 27 per patient). The cost per patient in non-DOTS areas is not known; if it is similar to DOTS areas, total TB control costs for 2002 in both DOTS and non-DOTS areas can be estimated at US$ 75 million.

In line with rapid programme expansion, the NTP budget at the central level for the fiscal year 2003 was much higher than expenditure in fiscal year 2002, at US$ 41.8 million. Large increases in spending on dedicated staff were projected (US$ 13.1 million in fiscal year 2003 vs. US$ 4.8 million in fiscal year 2002). At sub-district level the budget allows one full-time staff member for overall supervision and one full-time staff member for laboratory supervision. This large budget for dedicated staff – about one third of the programme budget – is unusual among the high-burden countries. As in 2002, the central-level budget is primarily for DOTS areas; if the NTP detects the approximately 900 000 cases anticipated in DOTS areas, the budget is around US$ 46 per patient. Most of the budget – US$ 24.5 million – is funded through the World Bank loan. The NTP has not identified any funding gap. Costs associated with TB control that are not funded from the NTP budget amount to an estimated US$ 24.4 million in DOTS areas (US$ 27 per patient). If the cost per patient is similar in non-DOTS areas and the nationwide total of 1.3 million cases needed to be on course to achieve targets in 2005 is treated (the central unit estimates they will treat at least 1.1 million), total TB control costs can be estimated at US$ 95.6 million. Eighty-eight percent of the total cost is covered by the government (through either loans or domestic sources of revenue).