

India

All Ministry of Health facilities in India were providing DOTS services by 2006, and there are ongoing initiatives to collaborate with the public sector beyond the Ministry of Health, and with NGOs, medical colleges and private practitioners. This collaboration has helped to achieve a case detection rate of 68% (2007) and a treatment success rate of 86% (2006). Services to control MDR-TB are now available in designated sites within six states, with culture and DST facilities offered in five state-level laboratories. Weak laboratory capacity is a major barrier to scaling-up MDR-TB services. Collaborative TB/HIV activities have considerable scope for expansion. Launching of a coalition of associations of medical professionals by the Indian Medical Association has been a major step in engaging the private sector. Ensuring the rational use of anti-TB drugs outside the Revised National TB Control Programme is crucial.

SURVEILLANCE AND EPIDEMIOLOGY

Population (thousands)^a 1 169 016

Estimates of epidemiological burden, 2007^b ALL IN HIV+ PEOPLE

Incidence

All forms of TB (thousands of new cases per year)	1 962	103
All forms of TB (new cases per 100 000 pop/year)	168	8.8
Rate of change in incidence rate (%), 2006-2007	0	-4.1
New ss+ cases (thousands of new cases per year)	873	36
New ss+ cases (per 100 000 pop/year)	75	3.1
HIV+ incident TB cases (% of all TB cases)	5.3	—

Prevalence

All forms of TB (thousands of cases)	3 305	52
All forms of TB (cases per 100 000 pop)	283	4.4
2015 target for prevalence (cases per 100 000 pop)	293	—

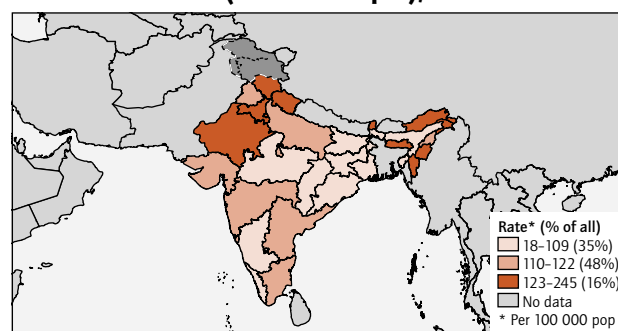
Mortality

All forms of TB (thousands of deaths per year)	331	30
All forms of TB (deaths per 100 000 pop/year)	28	2.5
2015 target for mortality (deaths per 100 000 pop/year)	21	—

Multidrug-resistant TB (MDR-TB)

MDR-TB among all new TB cases (%)	2.8	—
MDR-TB among previously treated TB cases (%)	17	—

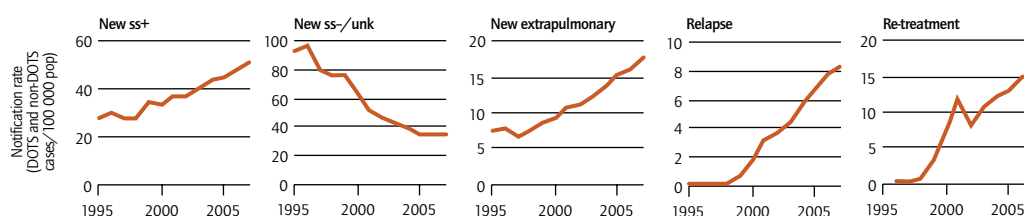
TB notification rate (new and relapse), 2007



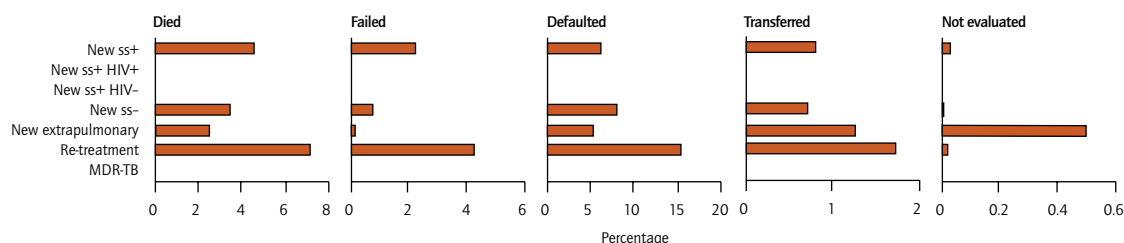
Total notifications, 2007

Notified new and relapse cases (thousands)	1 296
Notified new and relapse cases (per 100 000 pop/year)	111
Notified new ss+ cases (thousands)	593
Notified new ss+ cases (per 100 000 pop/year)	51
as % of new pulmonary cases	60
sex ratio (male/female)	2.3
DOTS case detection rate (% of estimated new ss+)	68
Notified new extrapulmonary cases (thousands)	207
as % of notified new cases	17
Notified new ss+ cases in children (<15 years) (thousands)	12
as % of notified new ss+ cases	2.0

Case notifications



Unfavourable treatment outcomes, 2006 cohorts



	2000	2001	2002	2003	2004	2005	2006	2007
DOTS coverage (%)	30	45	52	67	84	91	100	100
Notification rate (new & relapse cases/100 000 pop)	107	102	98	98	102	102	107	111
% notified new & relapse cases reported under DOTS	23	44	52	76	93	99	100	100
Notification rate (new ss+ cases/100 000 pop)	33	36	37	39	44	45	48	51
% notified new ss+ cases reported under DOTS	27	48	62	83	95	100	100	100
Case detection rate (all new cases, %)	63	59	56	56	57	57	59	61
Case detection rate (new ss+ cases, %)	45	49	49	53	59	60	64	68
Treatment success (new ss+ patients, %)	34	54	60	76	82	86	86	—
Re-treatment success (ss+ patients, %)	70	58	72	70	73	71	72	—

Note: notification, case detection and treatment success rates are for the whole country (i.e. DOTS and non-DOTS cases combined).

DOTS EXPANSION AND ENHANCEMENT

Overview of services for diagnosis of TB and treatment of patients

Description of basic management unit	Designated microscopy centres, most of which are part of general primary health-care facilities
Number of units (DOTS/total), 2007	634/634
Location of NTP services	
Rural	General health-care facilities in public, private and NGO sectors
Urban	General health-care facilities in public, private, NGO and corporate sectors
NTP services part of general primary health-care network?	Yes
Location where TB diagnosed	
Rural	Designated microscopy centres, most of which are part of general primary health-care facilities
Urban	Designated microscopy centres, most of which are part of general primary health-care facilities
Diagnosis free of charge?	Yes (all suspects)
Treatment supervised?	All patients in all units
Intensive phase	Health-care worker, community member
Continuation phase	Health-care worker, community member
Category I regimen	2HRZE3/4HR3
Treatment free of charge	All patients in all units
External review missions	last: 2006 next: 2009

Political commitment

National strategic plan?	Yes (2006–2011)
Mechanism for national interagency coordination?	Yes (established 2002)
National Stop TB Partnership?	No (planned –)

Financial indicators, 2009

(see final page for detailed presentation)	%
Government contribution to NTP budget (incl loans)	46
Government contribution to total cost TB control (incl loans)	61
Government health spending used for TB control	1.8
NTP budget funded	70

Per capita health financial indicators, 2009

	US\$
NTP budget per capita	0.1
Total costs for TB control per capita	0.1
Funding gap per capita	0.02
Government health expenditure per capita (2005)	6.8
Total health expenditure per capita (2005)	36

Quality-assured bacteriology

National reference laboratory?	Yes
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All TB laboratories performing EQA of smear microscopy or DST under the supervision of the National Reference Laboratory

	Smear				Culture		DST			
	Number	per 100 000	EQA	% adeq perf	Number	per 5 000 000	Number	per 10 000 000	EQA	% adeq perf
2007	12 184	1.0	11 386	81%	11	0.05	11	0.1	8.0	75%
2008	13 000	1.1	13 000	–	17	0.1	17	0.1	17	–

Note: for routine diagnosis, there should be at least one laboratory providing smear microscopy per 100 000 population. To provide culture for diagnosis of paediatric, extra-pulmonary and ss-/HIV+ TB, as well as DST of re-treatment and failure cases, most countries will need one culture facility per 5 million population and one DST facility per 10 million population. EQA column shows number of laboratories for which EQA was done. Adeq perf; adequate performance for microscopy based on results of EQA.

System for managing drug supplies and laboratory equipment

	Central level			Peripheral level		
	2005	2006	2007	2005	2006	2007
Stock-outs of laboratory supplies?	–	No	No	–	No	Some units
Stock-outs of first-line anti-TB drugs?	No	No	No	Yes	No	No

Monitoring and evaluation system, and impact measurement

NTP publishes annual report?	Yes (since 2001)	Burden and impact assessment		last	next
% of BMUs reporting to next level in 2007		In-depth analysis of routine surveillance data	Yes	2007	2008
Case-finding	100%	Prevalence of disease survey	Yes, sub-national	2000	Ongoing
Treatment outcomes	100%	Prevalence of infection survey	Yes, national	2000–2003	Ongoing
		Drug resistance survey	Yes, sub-national	1995–2006	Ongoing
		Mortality survey	No	–	–
		Analysis of vital registration data	No	–	–

MDR-TB, TB/HIV AND OTHER CHALLENGES

Multidrug-resistant TB (MDR-TB)	2005	2006	2007
	Number (% of estimated ss+ MDR-TB)		
Estimated incidence of ss+ MDR cases	96 663	98 155	99 639
Diagnosed and notified	34 (0.04%)	33 (0.03%)	146 (0.15%)
Registered for treatment	34 (0.04%)	33 (0.03%)	88 (0.09%)
GLC	0	0	0
non-GLC	34	33	88

MDR-TB, TB/HIV AND OTHER CHALLENGES (continued)**Detection and treatment of HIV in TB patients, 2007**

TB patients for whom the HIV test result was known	80 425
as % of all notified TB patients	5.5
TB patients with positive HIV test	9 324
as % of all estimated HIV+ TB cases	9.0
HIV+ TB patients started or continued on CPT	724
as % of HIV+ TB patients notified	7.8
HIV+ TB patients started or continued on ART	162
as % of HIV+ TB patients notified	1.7

Screening for TB in HIV-positive patients, 2007

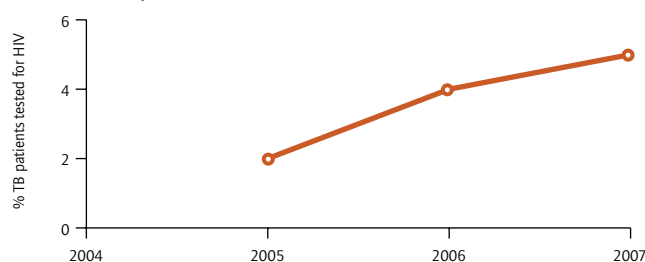
HIV+ patients in HIV care or ART register	277 760
Screened for TB	50 586
as % of HIV+ patients in HIV care or ART register	18
Started on TB treatment	7 130
as % of HIV+ patients in HIV care or ART register	2.6
Started on IPT	—
as % of HIV+ patients without TB in HIV care or ART register	—

High-risk groups, 2007

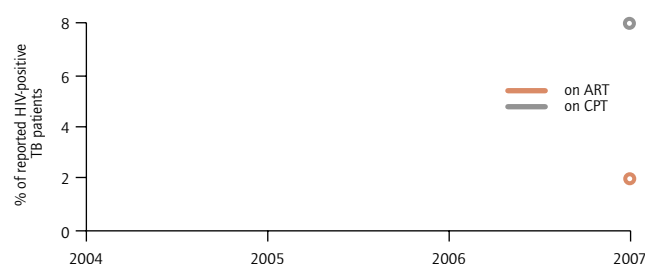
Number of close contacts of ss+ TB patients screened	—
Number of TB cases identified among contacts	—
% of contacts with TB	—
Contacts started on IPT	—
% of contacts without TB on IPT	—

HIV testing for TB patients

The proportion of TB patients screened for HIV is low but continues to increase steadily

**CPT and ART for HIV-positive TB patients**

Among HIV-positive TB cases, 2% received ART and 8% received CPT in 2007

**CONTRIBUTING TO HEALTH SYSTEM STRENGTHENING**

TB control is fully integrated into general primary health-care services. Major challenges include poor primary health-care infrastructure in rural areas in several states, and unregulated private health care leading to widespread irrational use of first-line and second-line anti-TB drugs. The NTP is coordinating with the National Rural Health Mission, which is a reform initiative whose goal is to improve primary health care in rural areas. The NTP has also established several initiatives to improve TB care in the private sector, including collaboration with the Indian Medical Association.

Practical Approach to Lung Health (PAL), 2007

Number of health-care facilities providing PAL services	—	As % of total number of health-care facilities	—
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ENGAGING ALL CARE PROVIDERS**Public-public and public-private approaches (PPM), 2007**

	Number collaborating (total number of providers)	% total notified TB	
		Diagnosed	Treated
Public sector	142 (143)	—	—
Private sector	20 983 (—)	—	—

International Standards for Tuberculosis Care (ISTC)

ISTC endorsed by professional organizations?	Yes
By which organizations:	Indian Medical Association, 2007; key members of other professional associations in their individual capacity, March 2008
ISTC included in medical curriculum?	No

EMPOWERING PEOPLE WITH TB, AND COMMUNITIES**Advocacy, communication and social mobilization (ACSM)**

A KAP survey was conducted in 2005 and a second survey is planned for 2010. Field visits have shown that state and district capacity to implement ACSM activities needs to be strengthened, and the RNTCP has taken steps to do this. For example, an agency has been hired to produce new IEC materials and to support states and districts to implement ACSM activities.

Community participation in TB care and Patients' Charter

As part of the national strategy to control TB, DOT is provided by health workers or trained community volunteers who are not family members in areas where health facilities are far from patients' homes. Intensified community-based activities are ongoing in areas with marginalized populations, particularly in urban slums and tribal populations. Community-based treatment of MDR-TB has been initiated in two states. No data on use of the Patients' Charter were reported in 2008.

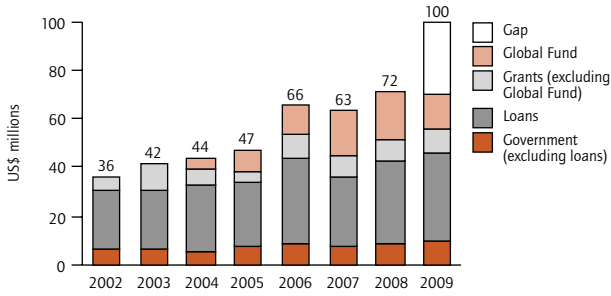
ENABLING AND PROMOTING RESEARCH**Programme-based operational research, 2007**

Operational research budget (% of NTP budget)	1.5%
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FINANCING

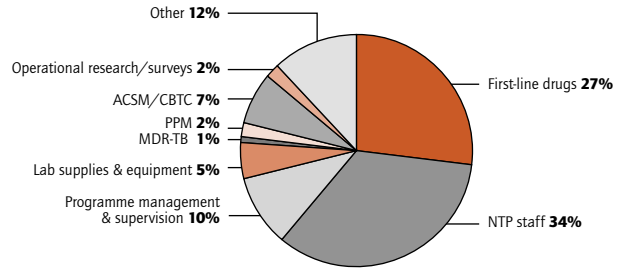
a. NTP budget by source of funding

Large increase in budget in 2009, with funding gap likely to be funded through Global Fund's Rolling Continuation Channel mechanism



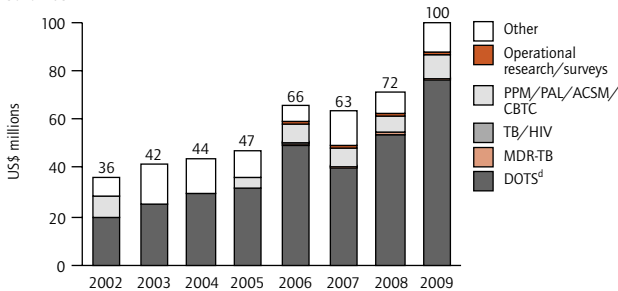
b. NTP budget line items in 2009

First-line drugs and NTP staff account for 61% of the budget; some first-line drugs are used in PPM schemes; budget for MDR-TB small in context of estimated number of cases



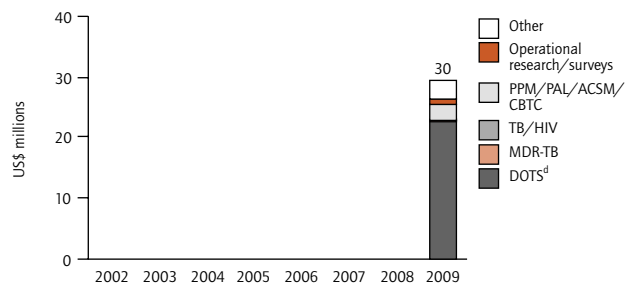
c. NTP budget by line item

Within DOTS, the budgets for first-line drugs and NTP staff have increased, primarily to maintain an adequate buffer stock and to increase salaries



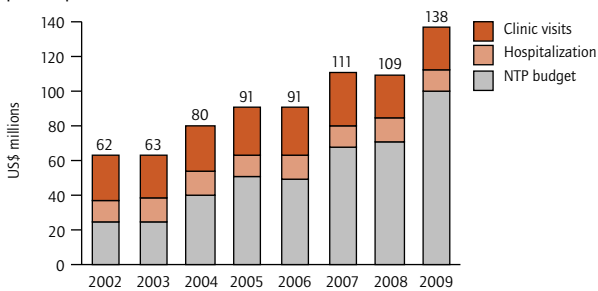
d. NTP funding gap by line item

Funding gap in 2009 likely to be closed via Global Fund; within DOTS gaps to be filled are mainly for first-line drugs and dedicated NTP staff



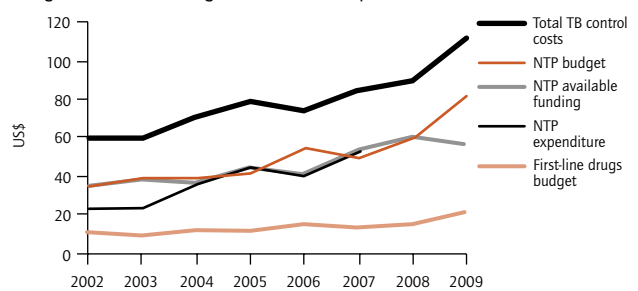
e. Total TB control costs by line item¹

Hospitalization costs are for 11 750 dedicated TB beds; costs for clinic visits are based on an average of 27 visits to a health facility for DOT per TB patient



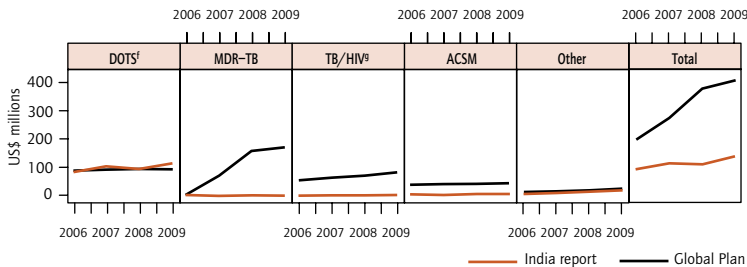
f. Per patient costs, budgets and expenditures²

Increasing cost, budget, available funding and expenditure per patient since 2002 as more elements of Stop TB Strategy implemented; higher budget for first-line drugs in 2009 due to purchase of buffer stock



g. Global Plan compared with country reports^a

Country implementation of DOTS in line with Global Plan, but plan for expanding of MDR-TB treatment falls short of targets in the Global MDR/XDR-TB Response Plan; NTP budget for TB/HIV small because most activities funded through HIV budgets



h. NTP budget and funding gap by Stop TB Strategy component (US\$ millions)

Component	2009 BUDGET	GAP
DOTS expansion and enhancement	76	23
TB/HIV, MDR-TB and other challenges	0.8	0.2
Health system strengthening	0	0
Engage all care providers	2.3	0.7
People with TB, and communities	6.9	2.1
Research and surveys	1.6	0.5
Other	12	3.5

SOURCES, METHODS AND ABBREVIATIONS

^{a-g} Please see footnotes page 169.

¹ Total TB control costs for 2002-2007 are based on expenditure, whereas those for 2008-2009 are based on budgets. Estimates of the costs of clinic visits and hospitalization are WHO estimates based on data provided by the NTP and from other sources. See Methods for further details.

² NTP available funding for 2004-2007 is based on the amount of funding actually received, using retrospective data; available funding for 2002-2003 and 2008-2009 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.

- indicates not available or not applicable; pop, population; ss+, sputum smear-positive; ss-, sputum smear-negative pulmonary; unk, pulmonary - sputum smear not done or result unknown.