

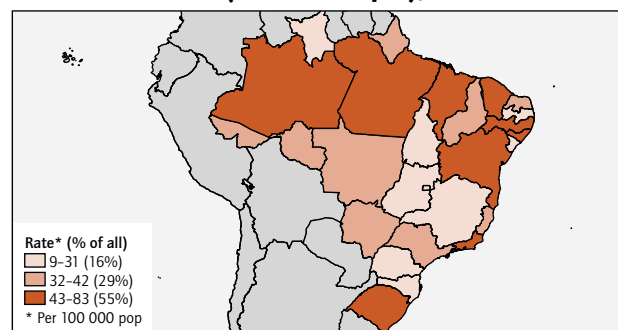
# Brazil

Government commitment to promoting social services has increased the visibility of TB as a public health problem, and funding for TB control has increased substantially in recent years. DOTS expansion has progressed and TB control activities have prioritized 315 of a total of 5565 municipalities accounting for 70% of the country's TB cases. TB services are integrated into the primary health-care system. The process of decentralizing TB control management to state and municipality levels is continuing. Collaborative TB/HIV activities have been implemented and scaled up. About 14% of the 72% of TB patients tested for HIV infection are found to be HIV-positive. Special initiatives to control TB in vulnerable groups such as indigenous populations and prisoners have been implemented in collaboration with relevant governmental organizations and NGOs. Despite the progress made in controlling TB, rates of case detection and treatment success are still below the global targets.

## SURVEILLANCE AND EPIDEMIOLOGY

<b>Population</b> (thousands) <sup>a</sup>	191 791	
<b>Estimates of epidemiological burden, 2007<sup>b</sup></b>	ALL	IN HIV+ PEOPLE
<b>Incidence</b>		
All forms of TB (thousands of new cases per year)	92	13
All forms of TB (new cases per 100 000 pop/year)	48	6.8
Rate of change in incidence rate (%), 2006-2007	<b>-3.2</b>	<b>-2.8</b>
New ss+ cases (thousands of new cases per year)	49	5.9
New ss+ cases (per 100 000 pop/year)	26	3.1
HIV+ incident TB cases (% of all TB cases)	14	—
<b>Prevalence</b>		
All forms of TB (thousands of cases)	114	6.5
All forms of TB (cases per 100 000 pop)	<b>60</b>	3.4
2015 target for prevalence (cases per 100 000 pop)	<b>62</b>	—
<b>Mortality</b>		
All forms of TB (thousands of deaths per year)	8.4	2.5
All forms of TB (deaths per 100 000 pop/year)	<b>4.4</b>	1.3
2015 target for mortality (deaths per 100 000 pop/year)	<b>3.6</b>	—
<b>Multidrug-resistant TB (MDR-TB)</b>		
MDR-TB among all new TB cases (%)	0.9	—
MDR-TB among previously treated TB cases (%)	5.4	—

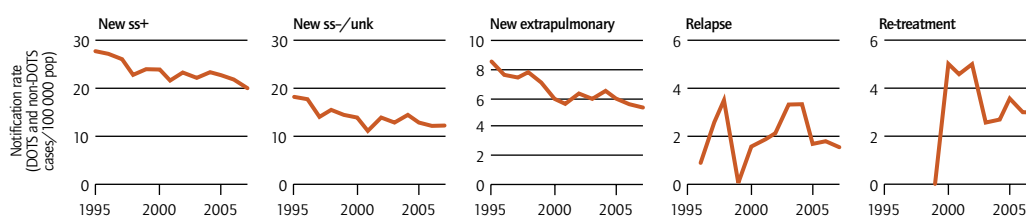
### TB notification rate (new and relapse), 2007



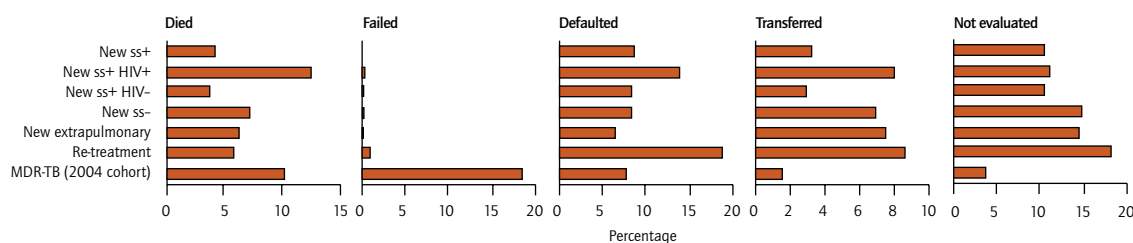
### Total notifications, 2007

Notified new and relapse cases (thousands)	75
Notified new and relapse cases (per 100 000 pop/year)	39
Notified new ss+ cases (thousands)	38
Notified new ss+ cases (per 100 000 pop/year)	20
as % of new pulmonary cases	63
sex ratio (male/female)	2.1
DOTS case detection rate (% of estimated new ss+)	<b>69</b>
Notified new extrapulmonary cases (thousands)	10
as % of notified new cases	14
Notified new ss+ cases in children (<15 years) (thousands)	0.7
as % of notified new ss+ cases	1.9

### Case notifications



### Unfavourable treatment outcomes, 2006 cohorts



	2000	2001	2002	2003	2004	2005	2006	2007
DOTS coverage (%)	7.0	32	25	34	52	68	86	75
Notification rate (new & relapse cases/100 000 pop)	45	42	45	44	47	43	41	39
% notified new & relapse cases reported under DOTS	6.8	11	11	21	51	63	79	89
Notification rate (new ss+ cases/100 000 pop)	24	22	23	22	23	23	22	20
% notified new ss+ cases reported under DOTS	9.6	11	12	23	53	62	79	89
Case detection rate (all new cases, %)	72	65	77	74	83	81	79	78
Case detection rate (new ss+ cases, %)	73	70	76	75	82	82	82	78
Treatment success (new ss+ patients, %)	71	55	80	77	76	76	73	—
Re-treatment success (ss+ patients, %)	40	23	60	64	49	48	47	—

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	Primary health-care units and hospitals
Number of units (DOTS/total), 2007	7411/9818
<b>Location of NTP services</b>	
Rural	Primary health-care unit
Urban	Primary health-care units and hospitals
NTP services part of general primary health-care network?	Yes
<b>Location where TB diagnosed</b>	
Rural	Primary health-care unit
Urban	Primary health-care units and hospitals
Diagnosis free of charge?	Yes (all suspects)
Treatment supervised?	Some patients in some units
Intensive phase	Health-care worker, community member, family member
Continuation phase	Health-care worker, community member, family member
Category I regimen	2(HR)ZE/4(HR)
Treatment free of charge	All patients in all units
External review missions	last: 2006 next: 2009

## Political commitment

National strategic plan?	Yes (2007-2015)
Mechanism for national interagency coordination?	Yes (established 2004)
National Stop TB Partnership?	Yes (established 2004)

## Financial indicators, 2009

(see final page for detailed presentation)	%
Government contribution to NTP budget (incl loans)	80
Government contribution to total cost TB control (incl loans)	86
Government health spending used for TB control	0.3
NTP budget funded	82

## Per capita health financial indicators, 2009

	US\$
NTP budget per capita	0.3
Total costs for TB control per capita	0.5
Funding gap per capita	0.1
Government health expenditure per capita (2005)	164
Total health expenditure per capita (2005)	371

## Quality-assured bacteriology

National reference laboratory?	Yes
--------------------------------	-----

## 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	4 044	2.1	1 819	75%	193	5.0	38	2.0	17	82%
2008	4 044	2.1	2 022	–	232	0.6	38	2.0	27	–

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?	–	Yes	No	–	All units	No
Stock-outs of first-line anti-TB drugs?	–	No	No	No	No	No

## Monitoring and evaluation system, and impact measurement

NTP publishes annual report?	No	Burden and impact assessment		last	next
% of BMUs reporting to next level in 2007		In-depth analysis of routine surveillance data	Yes	2008	2009
Case-finding	100%	Prevalence of disease survey	No	–	–
Treatment outcomes	100%	Prevalence of infection survey	No	–	–
		Drug resistance survey	Yes, sub-national	1996	Ongoing
		Mortality survey	Yes	2006	2007
		Analysis of vital registration data	Yes	2007	2008

## 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	1 098	1 077	1 056
Diagnosed and notified	373 (34%)	399 (37%)	832 (79%)
Registered for treatment	347 (32%)	309 (29%)	321 (30%)
GLC	0	0	0
non-GLC	347	309	321

## 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	57 593
as % of all notified TB patients	72
TB patients with positive HIV test	8 141
as % of all estimated HIV+ TB cases	63
HIV+ TB patients started or continued on CPT	0
as % of HIV+ TB patients notified	0
HIV+ TB patients started or continued on ART	8 141
as % of HIV+ TB patients notified	100

### Screening for TB in HIV-positive patients, 2007

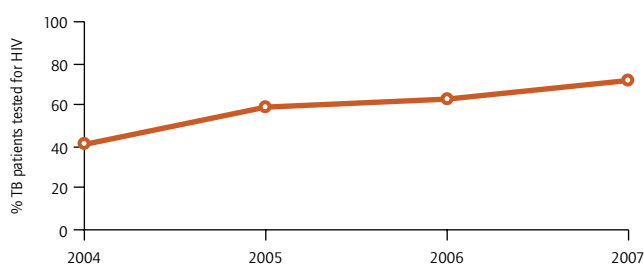
HIV+ patients in HIV care or ART register	—
Screened for TB	—
as % of HIV+ patients in HIV care or ART register	—
Started on TB treatment	—
as % of HIV+ patients in HIV care or ART register	—
Started on IPT	—
as % of HIV+ patients without TB in HIV care or ART register	—

### 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	—

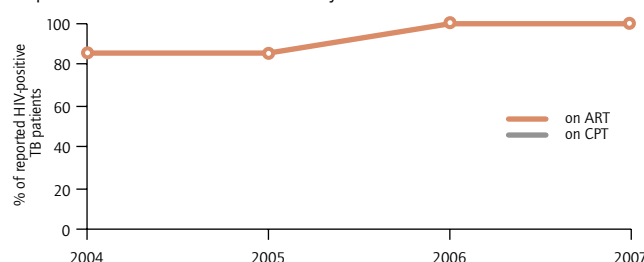
### HIV testing for TB patients

The proportion of TB patients screened for HIV continues to increase



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

In 2006 and 2007, 100% of HIV-positive TB patients received ART. Data on provision of CPT are not recorded by the NTP



## CONTRIBUTING TO HEALTH SYSTEM STRENGTHENING

The health-care system is relatively strong and there is an extensive and decentralized primary health-care infrastructure into which TB control is integrated. TB control is aligned with the general national health plan.

### Practical Approach to Lung Health (PAL), 2007

Number of health-care facilities providing PAL services	—	As % of total number of health-care facilities	—
---	---	--	---

## 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	— (—)	—	—
Private sector	— (—)	—	—

### International Standards for Tuberculosis Care (ISTC)

ISTC endorsed by professional organizations?	Yes
By which organizations:	—
ISTC included in medical curriculum?	Yes

## EMPOWERING PEOPLE WITH TB, AND COMMUNITIES

### Advocacy, communication and social mobilization (ACSM)

The NTP has a national ACSM strategy and is engaged in a wide range of ACSM activities. The Brazilian health system requires that municipalities and states have a health council comprising health professionals, managers and service users. There are six TB and 27 AIDS forums involved in increasing engagement with civil society. Activities with policy-makers and organizations working with drug users, the homeless and prison populations have been carried out to better engage these groups in TB control. In 2008, three national television and radio campaigns were broadcast to raise awareness about TB. A KAP survey was conducted in 2008.

### Community participation in TB care and Patients' Charter

The NTP is engaging civil society and empowering communities by training staff in health councils on awareness about TB. These health councils, which operate at federal, state and municipal levels of government, are comprised of health professionals, managers and service users. The NTP is also engaging communities by strengthening the national Stop TB Partnership, encouraging TB NGOs to create state forums and financing a range of NGO projects.

## ENABLING AND PROMOTING RESEARCH

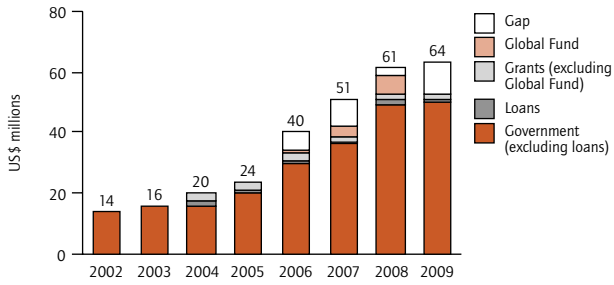
### Programme-based operational research, 2007

Operational research budget (% of NTP budget)	5.7%
---	------

FINANCING

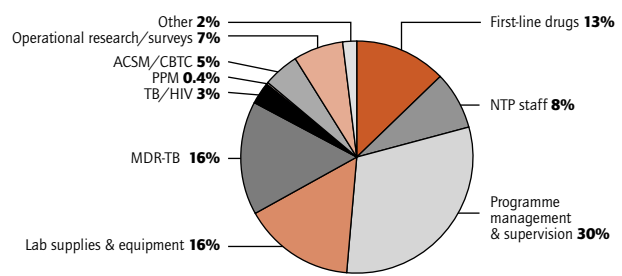
a. NTP budget by source of funding

NTP budget and government funding have more than tripled since 2002, demonstrating increased political commitment



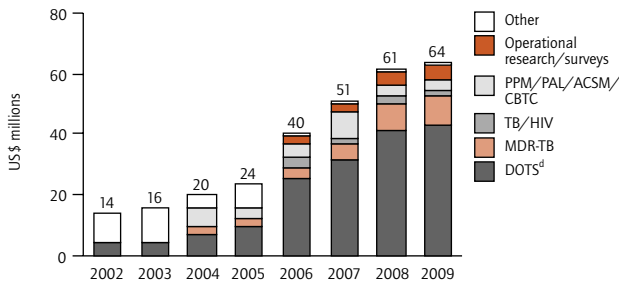
b. NTP budget line items in 2009

Most of the budget is for DOTS (67%) and MDR-TB (16%)



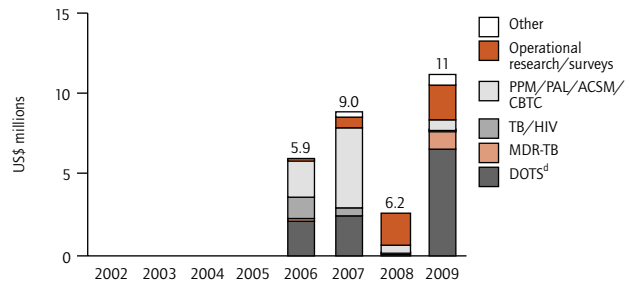
c. NTP budget by line item

Increased budget for routine programme management activities and MDR-TB



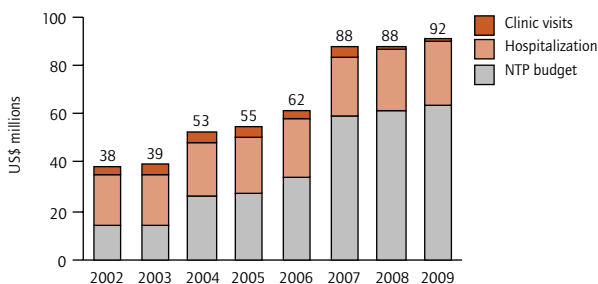
d. NTP funding gap by line item

Funding gap within DOTS mainly for routine programme management activities



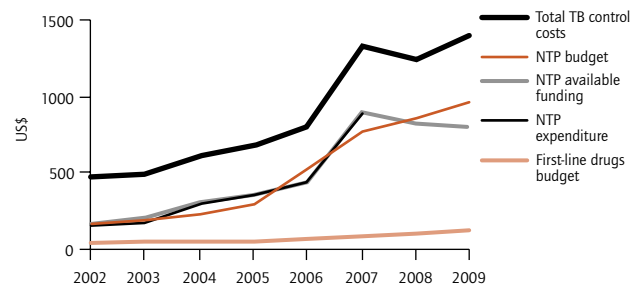
e. Total TB control costs by line item<sup>1</sup>

Hospitalization costs are for 2500 dedicated TB beds; costs for clinic visits based on 12 visits per patient in 2008 and 2009



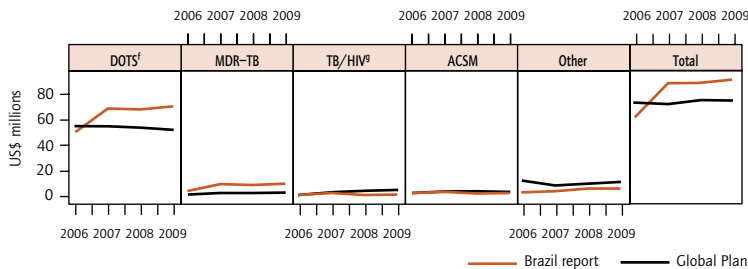
f. Per patient costs, budgets and expenditures<sup>2</sup>

Increasing cost per patient since 2002 as newer elements of TB control are introduced; increased expenditures in 2007



g. Global Plan compared with country reports<sup>a</sup>

Implemented (2006-2007) and planned (2008-2009) activities are consistent with or ahead of the Global Plan, except for PPM/PAL (in other)



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

Component	2009 BUDGET	GAP
DOTS expansion and enhancement	43	6.7
TB/HIV, MDR-TB and other challenges	12	1.1
Health system strengthening	0.3	0.3
Engage all care providers	0.3	0.3
People with TB, and communities	3.0	0.1
Research and surveys	4.6	2.0
Other	0.9	0.8

SOURCES, METHODS AND ABBREVIATIONS

<sup>a-g</sup> Please see footnotes page 169.

<sup>1</sup> 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.

<sup>2</sup> 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.