Brazil

Control of TB in Brazil is well funded and is integrated into the general health-care system, with primary health care increasingly decentralized through the Unified Health System. The various health information systems of the Ministry of Health's programmes (including death registrations) are increasingly well integrated, with access to cross-linked individual patient data at central level. This allows for detailed analyses both of programme performance and of burden and impact. Plans to computerize the information system of the laboratories will increase further the range of possible applications of the data. Nonetheless, late reporting and the time taken to resolve duplicate entries mean that treatment outcomes were not available for 4% of the 2005 cohort. Brazil was the first high-burden country to offer ART to all HIV-positive TB patients, and treatment for MDR-TB patients is expanding (400 patients treated in 2006, with 1000 expected in 2007).

SURVEILLANCE AND EPIDEMIOLOGY, 2006

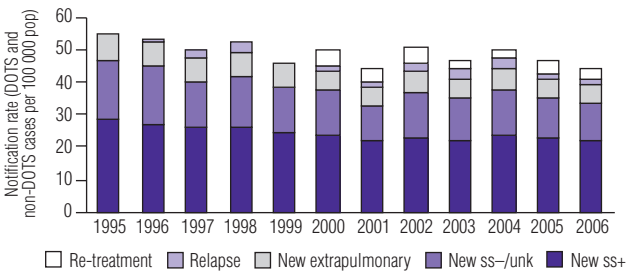
Population (thousands)[a]	189 323
TB burden, 2006 estimates[1]	
Incidence (all cases/100 000 pop/yr)	50
Trend in incidence rate (%/yr, 2005–2006)[2]	**-3.3**
Incidence (ss+/100 000 pop/yr)	31
Prevalence (all cases/100 000 pop)[2]	**55**
Mortality (deaths/100 000 pop/yr)[2]	**4.0**
Of new TB cases, % HIV+[b]	12
Of new TB cases, % MDR-TB (1996)[c]	0.9
Of previously treated TB cases, % MDR-TB (1996)[c]	5.4
Surveillance and DOTS implementation	
Notification rate (new and relapse/100 000 pop/yr)	41
Notification rate (new ss+/100 000 pop/yr)	22
DOTS case detection rate (new ss+, %)	**55**
DOTS treatment success (new ss+ cases, 2005 cohort, %)	**77**
Of new pulmonary cases notified under DOTS, % ss+	65
Of new cases notified under DOTS, % extrapulmonary	14
Of new ss+ cases notified under DOTS, % in women	33
Of sub-national reports expected, % received at next reporting level[d]	100
Laboratory services[3]	
Number of laboratories performing smear microscopy	4,044
Number of laboratories performing culture	193
Number of laboratories performing DST	38
Of laboratories performing smear microscopy, % covered by EQA	52
Management of MDR-TB	
Of new cases notified, % receiving DST at start of treatment	–
Of new cases receiving DST at start of treatment, % MDR-TB	–
Of re-treatment cases notified, % receiving DST	–
Of re-treatment cases receiving DST, % MDR-TB	–
Collaborative TB/HIV activities	
National policy of counselling and testing TB patients for HIV?	Yes (to all patients)
National surveillance system for HIV-infection in TB patients?	Yes
Of TB patients (new and re-treatment) notified, % tested for HIV	65
Of TB patients tested for HIV, % HIV+	15
Of HIV+ TB patients detected, % receiving CPT	86
Of HIV+ TB patients detected, % receiving ART	80

WHO Region of the Americas (AMR)

Rank based on estimated number of incident cases (all forms) in 2006

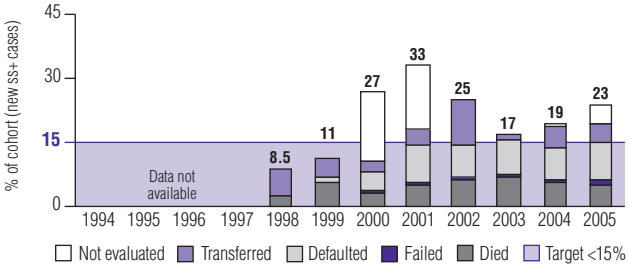
Case notifications

Notifications declining pre-2000, then approximately constant; assumed to reflect declining incidence coupled with improved case-finding over past several years



Unfavourable treatment outcomes, DOTS

Treatment success rate for 2005 cohort lower than for 2004 cohort and below target; outcomes reported for almost all registered patients; only about half of successfully treated cases confirmed cured in last 5 cohorts



DOTS expansion and enhancement	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
DOTS coverage (%)	–	0.0	0.0	3.0	7.0	7.0	32	25	34	52	68	86
DOTS notification rate (new and relapse/100 000 pop)	–	–	–	2.4	2.4	3.1	4.3	4.9	9.1	24	28	32
DOTS notification rate (new ss+/100 000 pop)	–	–	–	1.3	1.2	2.3	2.3	2.7	5.0	12	14	17
DOTS case detection rate (all new cases, %)	–	0.0	0.0	3.8	3.8	4.9	6.4	8.3	15	43	52	62
DOTS case detection rate (new ss+, %)	–	–	–	3.2	3.1	5.9	6.3	7.6	14	37	43	55
Case detection rate within DOTS areas (new ss+, %)[e]	–	–	–	106	44	84	20	30	43	70	64	64
DOTS treatment success (new ss+, %)	–	–	–	91	89	73	67	75	83	81	77	–
DOTS re-treatment success (ss+, %)	–	–	–	–	–	43	47	60	64	51	47	–

IMPLEMENTING THE STOP TB STRATEGY[1]

DOTS EXPANSION AND ENHANCEMENT

Political commitment, standardized treatment, and monitoring and evaluation system

Achievements

- Strengthened information systems to improve quality through periodic review of system and training of new staff, and updating recording and reporting forms
- Produced 4th annual report of NTP activities

Planned activities

- Implement the Global Fund round 5 proposal in 11 large metropolitan areas
- Accelerate the implementation of National Plan 2004–2007 with the goal of reaching full DOTS coverage in 315 priority municipalities
- Conduct quarterly macroregional cycles of monitoring and evaluation with states and priority cities included in the 2004–2007 plan
- Continue strengthening information system

Quality-assured bacteriology

Achievements

- Strengthened laboratory network through development and implementation of broad training plan and introduction of culture in all states
- Organized workshop on laboratory monitoring data
- Conducted courses for training of laboratory staff in sputum smear microscopy

Planned activities

- Implement culture in laboratories in border areas and in major cities
- Develop and implement a computerized system for the laboratory network
- Introduce EQA in all laboratories (for smear, culture and DST)

Drug supply and management system

Achievements

- Planned for procurement of drugs for 2007–2008 in collaboration with MoH

Planned activities

- Plan for procurement of drugs for 2008–2009 in collaboration with the MoH
- Introduce quality control of anti-TB drugs distributed within the Unified Health System (SUS, Sistema Unico de Saúde)

TB/HIV, MDR-TB AND OTHER CHALLENGES

Collaborative TB/HIV activities

Achievements

- Developed National Collaborative TB/HIV Action Plan
- Applied experiences from NAP in mobilization and patient participation in collaborative TB/HIV activities
- Provided ART to all HIV-infected TB patients

Planned activities

- Ensure timely detection and quality treatment for people living with TB and HIV/AIDS through workshops, training, counselling, rapid HIV tests for people with TB and chemoprophylaxis
- Produce manuals, folders and posters on TB/HIV
- Strengthen and mobilize civil society to participate in collaborative TB/HIV activities

Diagnosis and treatment of multidrug-resistant TB

Achievements

- Developed and launched information system for monitoring drug resistance at national level
- Trained doctors and specialists in preparation for decentralization of management of MDR-TB cases to state level

Planned activities

- Assess use of information system for monitoring of drug resistance at national level
- Decentralize MDR-TB case management to the states

High-risk groups and special situations

Achievements

- In collaboration with the National Foundation of Indigenous Health, implemented activities to improve access to TB control services for indigenous populations, primarily by establishing these services in health centres near settlements of indigenous people

Planned activities

- Further strengthen TB control services for indigenous populations

HEALTH SYSTEM STRENGTHENING, INCLUDING HUMAN RESOURCE DEVELOPMENT

Achievements

- Involved sector-wide and intersectoral collaboration in planning for TB control
- Improved access to TB care resulting from Decentralization of the Basic Health Care Programme (PACS) and Family Health Care Programme (PSF), which is incorporated into these programmes
- Incorporated TB control as a priority into the management agreement of the SUS
- Developed a plan for PAL adaptation and implementation

Planned activities

- Speed up the decentralization of TB diagnosis and treatment to primary care settings
- Continue strengthening of the National Epidemiological Information System and monitoring and evaluation
- Strengthen the laboratory network and expand coverage of quality control
- Develop PAL guidelines and initiate PAL activities in pilot sites

[1] Unless otherwise specified, achievements are for financial year 2006; planned activities are for financial year 2007.

ENGAGING ALL CARE PROVIDERS

Achievements

- All providers, public and private, report all TB cases to NTP, and drugs are supplied for all TB patients, free of charge
- Conducted pilot PPM activities in São Paulo to improve collaboration between NTP and other providers

Planned activities

- Strengthen TB case referral in the SUS and delivery of first-line and second-line drugs to all patients

EMPOWERING PEOPLE WITH TB, AND COMMUNITIES

Advocacy, communication and social mobilization

Achievements

- All metropolitan areas covered by the Global Fund Project (11 biggest metropolitan areas of the country) have ACSM activities, including production of IEC materials and organization of workshops with civil society partners
- Membership of STOP TB Brazil increased to 54 partners
- Mobilized government and civil society to fight TB at national, regional and local levels
- Created 3 TB NGO fora at state level
- Organized large-scale television and radio education campaigns

Planned activities

- Organize television and radio campaigns
- Fund state "Day of Awareness and Mobilization in the Struggle against TB" in Rio de Janeiro

Community participation in TB care

Achievements

- Celebrated World TB Day in most municipalities

Planned activities

- Involve community health agents in contact investigation and treatment supervision
- Form "GAEXPA" (group of people affected with TB in the municipality of Rio de Janeiro)

Patients' Charter

Achievements

- Discussed dissemination of Patients' Charter at NGO meetings in Rio de Janeiro and Sao Paulo, but the charter has not yet been translated and printed

Planned activities

- Translate and distribute the Patients' Charter

RESEARCH, INCLUDING SPECIAL SURVEYS AND IMPACT MEASUREMENT

Achievements

- Conducted national DRS and survey of prevalence of HIV infection in TB patients (2005–2007)
- Research network for TB, REDE-TB ("NETWORK-TB"), consisting more than 40 institutions, carried out clinical, operational and epidemiological research, in the area of new technologies for drugs, diagnostic methods and especially a large survey in vaccine
- Organized workshop with participants from NTP, MoH , University of Rio de Janeiro and WHO to revise the estimates of TB incidence using analysis of routinely collected TB data from SINAN (National Disease Information System) and death registrations in SIM

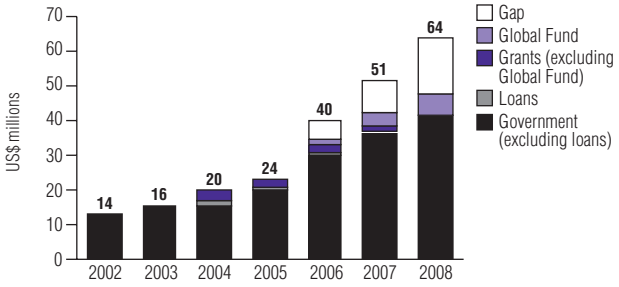
Planned activities

- Continue broad programme of research by REDE-TB
- Several states and some of the larger metropolitan regions are developing operational research programmes
- Continue to analyse available data to improve understanding of TB epidemiology and control in Brazil

FINANCING THE STOP TB STRATEGY

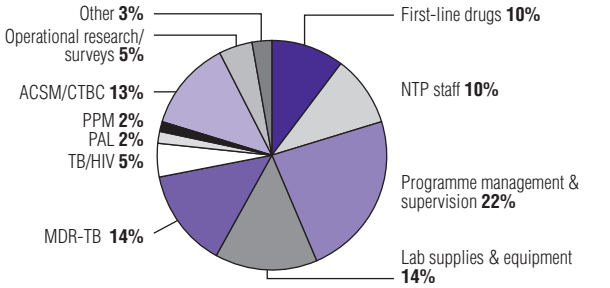
NTP budget by source of funding

Increased political commitment to control TB reflected in increased NTP budget and increased funding from the government



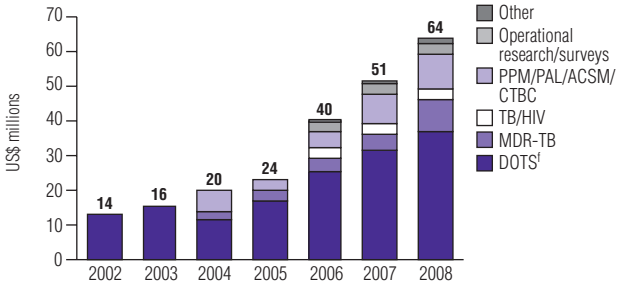
NTP budget by line item, 2008

Most of the budget is for components 1, 2 and 5 of the Stop TB Strategy: DOTS (58%), MDR-TB and TB/HIV (19%) and ACSM/CTBC (13%)



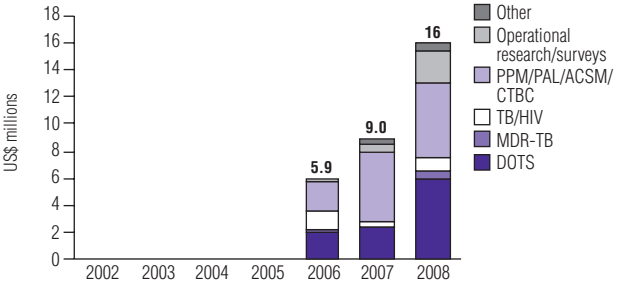
NTP budget by line item

Increased budget for DOTS includes recruitment of additional staff, more municipalities with evaluation meetings, training for TB coordinators and laboratory technicians, and increased number of laboratories with capacity for culture and DST



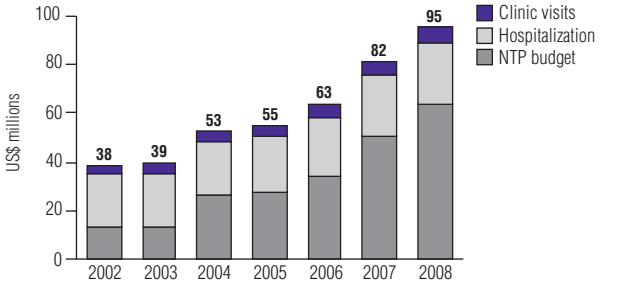
NTP funding gap by line item

Large funding gap for ACSM; funding gap within DOTS component mainly for laboratory supplies and equipment



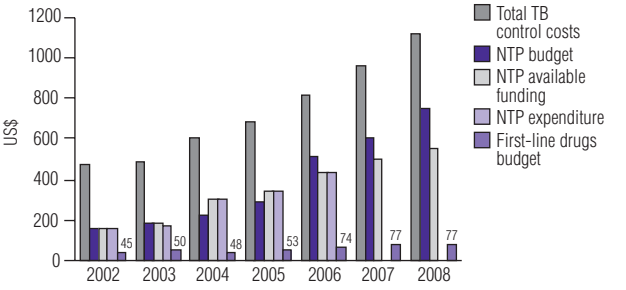
Total TB control costs by line item[4]

Hospitalization costs are for 2500 dedicated TB beds; costs for clinic visits based on 56 outpatient visits per new ss+ patient during treatment and 6 outpatient visits per new ss–/extrapulmonary patient



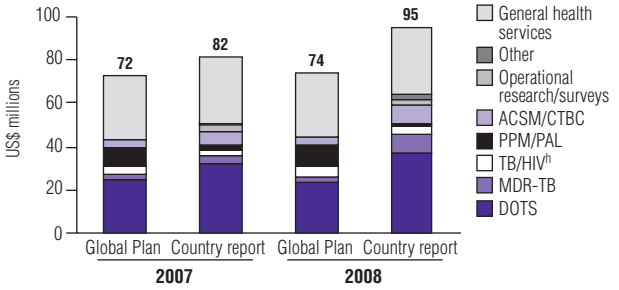
Per patient costs, budgets and expenditures[5]

Increasing costs, budget and expenditure per patient as TB control is broadened in line with the Stop TB Strategy



Comparison of country report and Global Plan:[g] total TB control costs, 2007–2008

Country report ahead of Global Plan in all components, except PPM/PAL; expected number of TB patients to be treated 2007–2008 higher in country report



NTP budget and funding gap by Stop TB Strategy component

	2007		2008	
(US$ millions)	BUDGET	GAP	BUDGET	GAP
DOTS expansion and enhancement	32	2.4	37	6.0
TB/HIV, MDR-TB and other challenges	7.1	0.4	12	1.5
Health system strengthening	1.0	1.0	1.0	1.0
Engage all care providers	1.0	0.7	1.0	1.0
People with TB, and communities	6.6	3.2	8.1	3.5
Research	2.9	0.7	2.9	2.4
Other	0.7	0.4	1.8	0.7

Financial indicators for TB

Government contribution to NTP budget (including loans)	73% / 65%
Government contribution to total cost TB control (including loans)	83% / 77%
NTP budget funded	82% / 75%
Per capita health financial indicators (US$)	
NTP budget per capita	0.3 / 0.3
Total costs for TB control per capita	0.4 / 0.5
Funding gap per capita	0.05 / 0.1
Government health expenditure per capita (2004)	157
Total health expenditure per capita (2004)	290

SOURCES, METHODS AND ABBREVIATIONS

[a–h] Please see footnotes page 169.

1 Incidence, prevalence and mortality estimates include TB cases in HIV-positive people. Estimates revised in 2007 based on TB mortality data from vital registration system cross-linked with communicable disease registry data.

2 MDG and STB Partnership indicators shown in bold. Targets are 70% case detection of smear-positive cases under DOTS, 85% treatment success, to ensure that the incidence rate is falling by 2015, and to reduce incidence rates and halve 1990 prevalence and mortality rates by 2015. Estimates for 1990 are prevalence 127/100 000 pop and mortality 7/100 000 pop/yr.

3 For routine diagnosis, there should be at least one laboratory providing smear microscopy per 100 000 population. To provide culture for diagnosis of paediatric, extrapulmonary and ss-/HIV+ TB, as well as DST for re-treatment and failure cases, there should be at least one culture facility and one DST facility in each of the 27 states.

4 Total TB control costs for 2002–2006 are based on expenditure, whereas those for 2007–2008 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.

5 NTP available funding for 2004–2006 is based on the amount of funding actually received, using retrospective data; available funding for 2002–2003 and 2007–2008 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.

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