

COUNTRY PROFILE

Pakistan

Case notifications have continued to increase in Pakistan, where full DOTS coverage was reached in 2005. It is likely that initiatives to involve private practitioners, along with the use of community volunteers to identify and refer TB suspects, and increased efforts to inform the general public about TB, have all contributed to this improvement in case-finding. The proportion of patients defaulting has decreased steadily over the past 8 years, bringing the treatment success rate close to the target of 85%. The number of districts where laboratories are subject to external quality did not increase from 2005 to 2006, but plans are under way to increase coverage in 2007. In Pakistan, as in several other high-burden countries, lack of technical expertise in MDR-TB and TB/HIV is identified as one of the challenges in broadening the activities of the NTP beyond basic DOTS.

SURVEILLANCE AND EPIDEMIOLOGY, 2006

Population (thousands)^a 160 943

Estimates of epidemiological burden¹

Incidence (all cases/100 000 pop/yr)	181
Trend in incidence rate (%/yr, 2005–2006) ²	0.0
Incidence (ss+/100 000 pop/yr)	82
Prevalence (all cases/100 000 pop) ²	263
Mortality (deaths/100 000 pop/yr) ²	34
Of new TB cases, % HIV+ ^b	0.3
Of new TB cases, % MDR-TB ^c	3.4
Of previously treated TB cases, % MDR-TB ^c	36

Surveillance and DOTS implementation

Notification rate (new and relapse/100 000 pop/yr)	110
Notification rate (new ss+/100 000 pop/yr)	41
DOTS case detection rate (new ss+, %)	50
DOTS treatment success (new ss+, 2005 cohort, %)	83
Of new pulmonary cases notified under DOTS, % ss+	44
Of new cases notified under DOTS, % extrapulmonary	15
Of new ss+ cases notified under DOTS, % in women	48
Of sub-national reports expected, % received at next reporting level ^d	100

Laboratory services³

Number of laboratories performing smear microscopy	982
Number of laboratories performing culture	3
Number of laboratories performing DST	1
Of laboratories performing smear microscopy, % covered by EQA	32

Management of MDR-TB

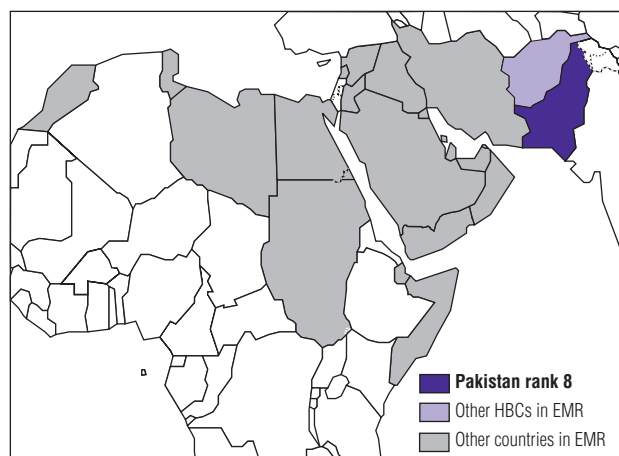
Of new cases notified, % receiving DST at start of treatment	–
Of new cases receiving DST at start of treatment, % MDR-TB	–
Of re-treatment cases notified, % receiving DST	–
Of re-treatment cases receiving DST, % MDR-TB	–

Collaborative TB/HIV activities

National policy of counselling and testing TB patients for HIV?	No policy
National surveillance system for HIV-infection in TB patients?	No
Of TB patients (new and re-treatment) notified, % tested for HIV	–
Of TB patients tested for HIV, % HIV+	–
Of HIV+ TB patients detected, % receiving CPT	–
Of HIV+ TB patients detected, % receiving ART	–

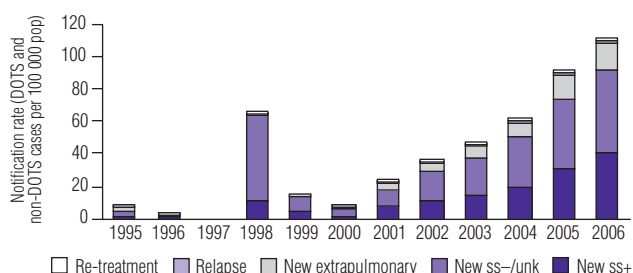
WHO Eastern Mediterranean Region (EMR)

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



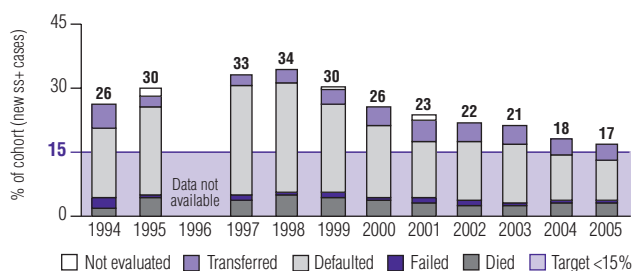
Case notifications

Notifications continue to increase even after reaching 100% DOTS coverage in 2005



Unfavourable treatment outcomes, DOTS

Treatment success remains below global target largely because of default rate that is still nearly 10%, though declining



DOTS expansion and enhancement	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
DOTS coverage (%)	2.0	8.0	–	8.0	8.0	9.0	24	44	66	79	100	100
DOTS notification rate (new and relapse/100 000 pop)	2.8	3.3	–	6.9	3.3	7.7	12	32	46	61	90	110
DOTS notification rate (new ss+/100 000 pop)	0.8	1.4	–	3.0	1.6	2.3	4.3	10	14	20	31	41
DOTS case detection rate (all new cases, %)	1.5	1.8	–	3.6	1.7	4.1	6.3	17	25	33	49	59
DOTS case detection rate (new ss+, %)	1.0	1.7	–	3.7	2.0	2.8	5.2	13	17	25	38	50
Case detection rate within DOTS areas (new ss+, %) ^a	51	22	–	46	25	31	22	29	26	32	38	50
DOTS treatment success (new ss+, %)	70	–	67	66	70	75	77	78	79	82	83	–
DOTS re-treatment success (ss+, %)	70	–	57	92	75	54	–	76	65	78	76	–

IMPLEMENTING THE STOP TB STRATEGY¹**DOTS EXPANSION AND ENHANCEMENT****Political commitment, standardized treatment, and monitoring and evaluation system****Achievements**

- Strengthened monitoring and supervision system through quarterly surveillance meetings and appointment of national programme officers
- Trained staff in data management and analysis
- Initiated web-based reporting for laboratories, including EQA data (district-level data for 40 districts entered on-line at provincial reference laboratories)
- Published annual report of NTP activities
- Analysed subnational data

Planned activities

- Revise national guidelines to bring them in line with the Stop TB Strategy
- Continue strengthening managerial capacities of staff at provincial and district levels
- Strengthen collaboration and coordination capacities with partners involved in TB control
- Closely monitor implementation of action plans of federal and provincial governments, WHO/JRM workplan and Global Fund round 6 activities workplan
- Develop technical capacities at provincial level to ensure appropriate and relevant analysis of routinely collected data

Quality-assured bacteriology**Achievements**

- Implemented EQA in 40 out of 134 districts, covering 318 diagnostic centres and a population of 48 million people
- Established intermediate-level laboratories in above-mentioned 40 districts
- Initiated web-based reporting for laboratories, including EQA data (district-level data for 40 districts entered on-line at provincial reference laboratories)

Planned activities

- Expand EQA sputum smear microscopy to an additional 40 districts
- Strengthen and build technical capacity of reference laboratories for standardized culture and DST

Drug supply and management system**Achievements**

- Carried out drug management study in selected districts of Punjab and North-West Frontier Province
- Introduced patient-wise boxes in one district of Punjab
- Held coordination meeting on development of national guidelines for drug management

Planned activities

- Prepare procurement plan for anti-TB drugs
- Develop national policy and national guidelines for drug management
- Train provincial TB control programme managers, district TB coordinators, provincial staff responsible for drug management, and storekeepers at district and provincial levels in drug management in line with national guidelines

TB/HIV, MDR-TB AND OTHER CHALLENGES**Collaborative TB/HIV activities****Achievements**

- None mentioned, but both NTP and NAP had person responsible for collaborative TB/HIV activities

Planned activities

- Launch activities outlined in Global Fund round 6 grant
- Establish steering committee for collaborative TB/HIV activities
- Develop national guidelines on collaborative TB/HIV activities and conduct training on their implementation
- Establish sentinel surveillance for HIV infection among TB patients
- Begin implementation of collaborative TB/HIV activities

Diagnosis and treatment of multidrug-resistant TB**Achievements**

- Established 3 laboratories with capacity for culture and DST
- Provided culture and DST services to patients failing Category II treatment

Planned activities

- Establish national steering committee for DST
- Develop guidelines for management of drug-resistant TB
- Develop guidelines for culture and DST
- Establish routine monitoring system for chronic TB cases and analyse data collected through this system
- Implement management of MDR-TB on pilot scale (200 patients per year)

High-risk groups and special situations**Achievements**

- Provided TB control in earthquake-affected areas

Planned activities

- Adapt and develop strategy to make TB control services accessible to populations living in poor neighbourhoods of big cities
- Collaborate and coordinate with NGOs and NTP of Afghanistan in order to provide TB control services to refugees

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

HEALTH SYSTEM STRENGTHENING, INCLUDING HUMAN RESOURCE DEVELOPMENT**Achievements**

- Involved broad range of partners from health and other sectors in planning for TB control
- Rehabilitated health services in earthquake-affected areas
- Scaled up PPM initiatives, creating linkages between private and public health sectors

Planned activities

- Strengthen human resource capacities for more effective implementation of Stop TB strategy
- Strengthen training capacities at provincial and district levels

ENGAGING ALL CARE PROVIDERS**Achievements**

- Appointed full-time focal person for PPM activities
- Conducted situation analysis and pilot projects on PPM
- Established formal PPM activities in 50 of 134 districts
- Developed guidelines on TB management for medical practitioners working outside public health clinics
- Included tertiary care hospitals in Lahore and Karachi in PPM activities, resulting in increased case-finding
- NTP represented by NGOs in several PPM initiatives
- Continued the Greenstar TB control franchise (branded as "Goodlife") involving private practitioners in 5 major urban areas

Planned activities

- Develop operational plan for implementing and scaling up PPM activities
- Document PPM experiences in country
- Develop national operational guidelines for PPM
- Expand PPM activities in line with operational plan

EMPOWERING PEOPLE WITH TB, AND COMMUNITIES**Advocacy, communication and social mobilization****Achievements**

- Implemented ACSM activities in 57 of 134 districts targeting general public, TB suspects and patients, health-care providers, and policy-makers and planners
- Communicated messages about TB control using television, radio and print media
- Initiated social mobilization activities through NGOs, religious groups, local media and community health workers
- Promoted advocacy efforts at provincial and district levels

Planned activities

- Strengthen ACSM strategy and NTP, provincial TB control programmes and partner capacity to carry out evidence-based ACSM activities
- Continue using mass media, including television, radio and print, to create TB awareness
- Pursue social mobilization and district level advocacy through NGOs, local media, religious groups and community health workers in 57 districts

Community participation in TB care**Achievements**

- Involved community health workers, including "lady health workers", in identifying and referring TB suspects and in patient support in 79 of 134 districts
- Provided community-based treatment support through NGOs in 20 districts
- Generated mass public awareness through community events organized by NGOs

Planned activities

- Mobilize community-based NGOs to refer TB suspects to health facilities in 55 districts
- Maintain community events organized by NGOs
- Continue training community health workers and involving them in identification and referral of TB suspects to health facilities

Patients' Charter**Achievements**

The Patients' Charter was published in 2006 and was therefore not available for use in countries until then.

Planned activities

- Adapt and translate Charter into national and local languages
- Display Charter at NTP, provincial TB control programme and district health management offices
- Promote Charter through NTP activities, provincial TB programmes and partner NGOs

RESEARCH, INCLUDING SPECIAL SURVEYS AND IMPACT MEASUREMENT**Achievements**

- Conducted KAP survey
- Carried out study on gender disparity among TB suspects
- Conducted cross-sectional survey of HIV prevalence among TB patients diagnosed
- Completed research project to identify ways of collaboration between NTP and NAP and identify challenges in implementation
- Completed research project to assess acceptability of HIV diagnostic testing in TB patients
- Supported attendance of 2 participants from Pakistan in scientific writing skills workshop organized by WHO office for the Eastern Mediterranean Region to develop manuscripts originating from completed operational research projects
- Submitted 2 proposals for possible funding

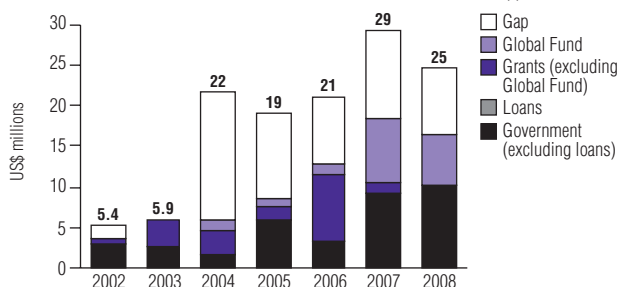
Planned activities

- Evaluate extent of underreporting by non-NTP providers
- Participate in or hold workshops on research methods, proposal development and scientific writing
- Track respiratory patients entitled for TB assessment in PHC settings
- Conduct prevalence of TB infection and disease surveys

FINANCING THE STOP TB STRATEGY

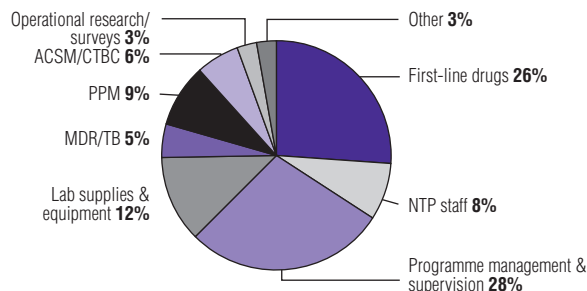
NTP budget by source of funding

Increased funding from the government, showing increased political commitment for TB control, and from the Global Fund 2007–2008 after successful Round 6 application



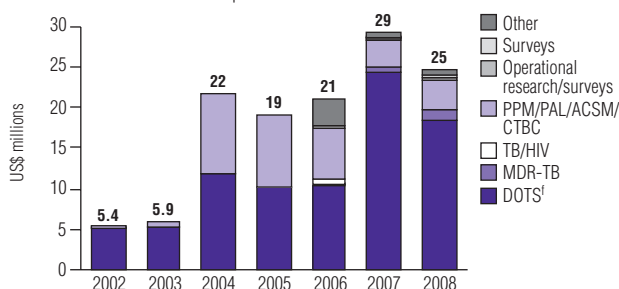
NTP budget by line item, 2008

Of the total budget, 75% is for DOTS implementation



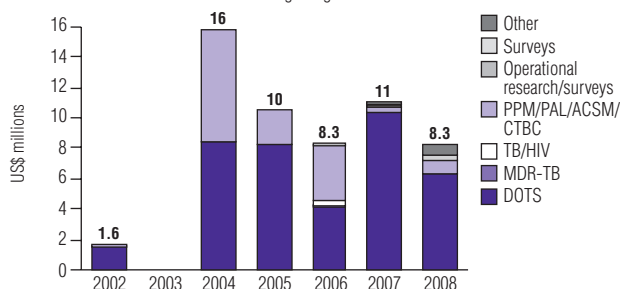
NTP budget by line item

Large increase in budget for DOTS in 2007, especially for first-line drugs, recruitment of additional staff and additional supervision activities



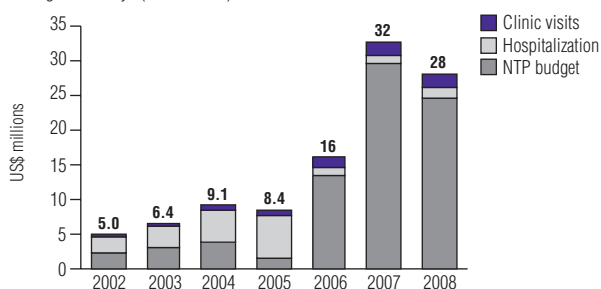
NTP funding gap by line item

Funding gap within DOTS mainly for first-line drugs: 80% of first-line drug budget not funded in 2007 and 50% of first-line drug budget not funded in 2008



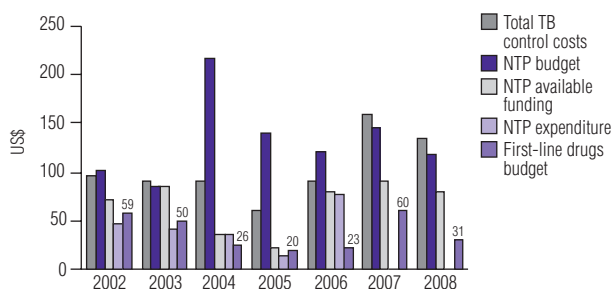
Total TB control costs by line item⁴

Lower use of hospitalization as DOTS expands; hospitalization costs based on estimate that 12–36% (2002–2005) and 3% (2006–2008) of new TB patients are hospitalized for an average of 45 days (2002–2008)



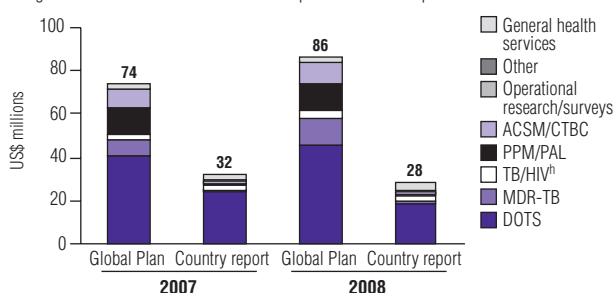
Per patient costs, budgets and expenditures⁵

Increasing expenditures per patient, suggesting improvement in absorption capacity; large budget for first-line drugs per patient in 2007



Comparison of country report and Global Plan:⁹ total TB control costs, 2007–2008

Costs based on country report lower than anticipated by Global Plan, even though expected number of patients to be treated is higher in country report; Global Plan allows budget for DOTS to increase in line with expected number of patients



NTP budget and funding gap by Stop TB Strategy component

(US\$ millions)	2007		2008	
	BUDGET	GAP	BUDGET	GAP
DOTS expansion and enhancement	24	10	18	6.4
TB/HIV, MDR-TB and other challenges	0.6	0	1.2	0
Health system strengthening	0	0	0	0
Engage all care providers	2.0	0.1	2.2	0.4
People with TB, and communities	1.5	0.4	1.5	0.4
Research	0.2	0.1	0.7	0.5
Other	0.7	0.2	0.7	0.7

Financial indicators for TB

Government contribution to NTP budget (including loans)	31%	41%
Government contribution to total cost of TB control (including loans)	38%	48%
NTP budget funded	62%	66%
<i>Per capita health financial indicators (US\$)</i>		
NTP budget per capita	0.2	0.1
Total costs for TB control per capita	0.2	0.2
Funding gap per capita	0.1	0.5
Government health expenditure per capita (2004)		2.7
Total health expenditure per capita (2004)		14

SOURCES, METHODS AND ABBREVIATIONS

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

¹ Incidence, prevalence and mortality estimates include patients infected with HIV. Estimates of TB burden based on 1987–1988 prevalence survey and on notifications in DOTS areas in 1996. Incidence rate assumed to be constant in absence of contrary evidence, but estimated prevalence and mortality rates declining with growing proportion of cases treated.

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 428/100 000 pop and mortality 49/100 000 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 7 provinces.

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.