

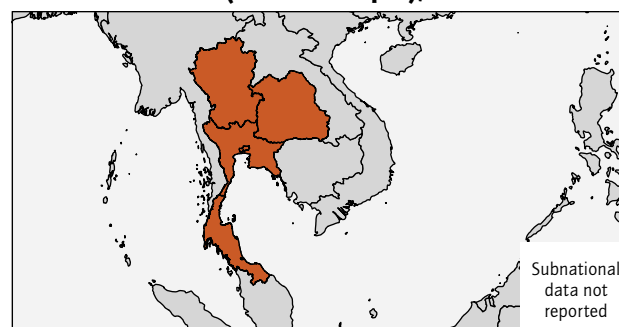
# Thailand

The case detection rate reached 72% in 2007, and the treatment success rate improved to 77% in 2006. Reasons why the treatment success rate is below the global target of 85% include high default and mortality rates, and incomplete reporting from care providers in Bangkok. Integrated TB/HIV services are widely available; in 2007, almost 70% of notified TB cases were screened for HIV, and 32% and 67% of HIV-positive TB patients were treated with ART and CPT, respectively. The latest survey of drug resistance found that 1.7% of new cases and 34.5% of previously treated cases have MDR-TB. Most patients with MDR-TB are managed by public and private providers that are not linked to the NTP. The NRL is a designated supranational laboratory for the region. However, quality assurance of the extensive laboratory network remains a challenge. In the context of recent health sector reforms, the TB cluster in Bangkok is responsible for technical guidance and surveillance. In 2008, a comprehensive analysis of the funding required for TB control indicated that around US\$ 50 million per year is needed.

## SURVEILLANCE AND EPIDEMIOLOGY

<b>Population</b> (thousands) <sup>a</sup>	63 884	
<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)	91	15
All forms of TB (new cases per 100 000 pop/year)	142	24
Rate of change in incidence rate (%), 2006-2007	<b>0</b>	<b>0.002</b>
New ss+ cases (thousands of new cases per year)	39	5.4
New ss+ cases (per 100 000 pop/year)	62	8.5
HIV+ incident TB cases (% of all TB cases)	17	—
<b>Prevalence</b>		
All forms of TB (thousands of cases)	123	7.7
All forms of TB (cases per 100 000 pop)	<b>192</b>	12
2015 target for prevalence (cases per 100 000 pop)	<b>168</b>	—
<b>Mortality</b>		
All forms of TB (thousands of deaths per year)	14	3.9
All forms of TB (deaths per 100 000 pop/year)	<b>21</b>	6.0
2015 target for mortality (deaths per 100 000 pop/year)	<b>15</b>	—
<b>Multidrug-resistant TB (MDR-TB)</b>		
MDR-TB among all new TB cases (%)	1.7	—
MDR-TB among previously treated TB cases (%)	35	—

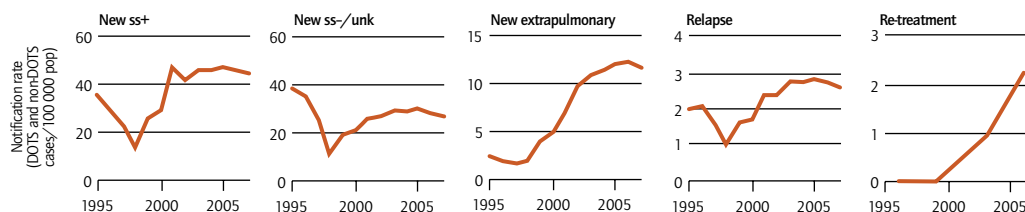
## TB notification rate (new and relapse), 2007



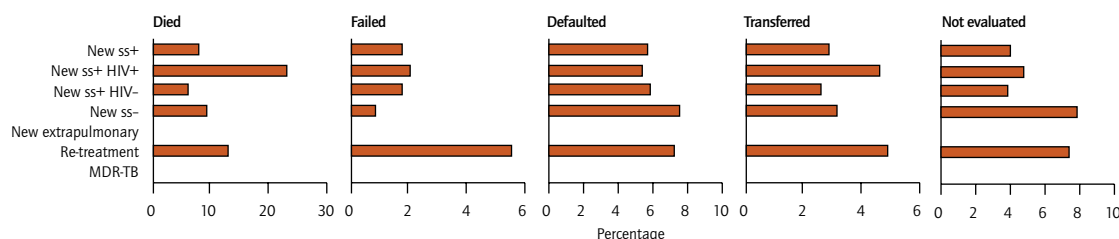
## Total notifications, 2007

Notified new and relapse cases (thousands)	55
Notified new and relapse cases (per 100 000 pop/year)	86
Notified new ss+ cases (thousands)	28
Notified new ss+ cases (per 100 000 pop/year)	45
as % of new pulmonary cases	62
sex ratio (male/female)	2.4
DOTS case detection rate (% of estimated new ss+)	<b>72</b>
Notified new extrapulmonary cases (thousands)	7.5
as % of notified new cases	14
Notified new ss+ cases in children (<15 years) (thousands)	0.1
as % of notified new ss+ cases	0.3

## Case notifications



## Unfavourable treatment outcomes, 2006 cohorts



	2000	2001	2002	2003	2004	2005	2006	2007
DOTS coverage (%)	70	82	100	100	100	100	100	100
Notification rate (new & relapse cases/100 000 pop)	56	81	80	88	88	92	89	86
% notified new & relapse cases reported under DOTS	100	100	100	100	100	100	100	100
Notification rate (new ss+ cases/100 000 pop)	29	46	41	46	45	47	46	45
% notified new ss+ cases reported under DOTS	100	100	100	100	100	100	100	100
Case detection rate (all new cases, %)	38	55	55	60	60	63	60	58
Case detection rate (new ss+ cases, %)	48	76	68	74	74	77	74	72
Treatment success (new ss+ patients, %)	69	75	74	73	74	75	77	—
Re-treatment success (ss+ patients, %)	—	49	62	62	56	74	62	—

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	Provincial hospitals
Number of units (DOTS/total), 2007	847/847
<b>Location of NTP services</b>	
Rural	Community Hospital
Urban	General and regional hospital or BMA health centre
NTP services part of general primary health-care network?	Yes
<b>Location where TB diagnosed</b>	
Rural	District hospitals
Urban	Provincial 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	2HRZE/4HR
Treatment free of charge	All patients in all units
External review missions	last: 2007 next: 2009

## Political commitment

National strategic plan?	Yes (2006–2015)
Mechanism for national interagency coordination?	No (planned 2010)
National Stop TB Partnership?	No (planned 2010)

## Financial indicators, 2009

(see final page for detailed presentation)	%
Government contribution to NTP budget (incl loans)	92
Government contribution to total cost TB control (incl loans)	92
Government health spending used for TB control	1.3
NTP budget funded	94

## Per capita health financial indicators, 2009

	US\$
NTP budget per capita	0.8
Total costs for TB control per capita	0.8
Funding gap per capita	0.05
Government health expenditure per capita (2005)	63
Total health expenditure per capita (2005)	98

## 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	1 023	1.6	1 023	–	65	5.1	14	2.2	14	–
2008	1 023	1.6	1 023	–	65	5.1	14	2.2	14	–

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	No
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 2007)	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	89%	Prevalence of disease survey	Yes	2006	2012
Treatment outcomes	89%	Prevalence of infection survey	No	–	–
		Drug resistance survey	Yes, national	2006	–
		Mortality survey	No	–	–
		Analysis of vital registration data	No	–	–

## MDR-TB, TB/HIV AND OTHER CHALLENGES

	2005	2006	2007
	Number (% of estimated ss+ MDR-TB)		
Estimated incidence of ss+ MDR cases	1 896	1 910	1 923
Diagnosed and notified	– (–%)	– (–%)	– (–%)
Registered for treatment	– (–%)	– (–%)	– (–%)
GLC	0	0	0
non-GLC	–	–	–

**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	37 744
as % of all notified TB patients	69
TB patients with positive HIV test	7 615
as % of all estimated HIV+ TB cases	49
HIV+ TB patients started or continued on CPT	5 080
as % of HIV+ TB patients notified	67
HIV+ TB patients started or continued on ART	2 456
as % of HIV+ TB patients notified	32

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

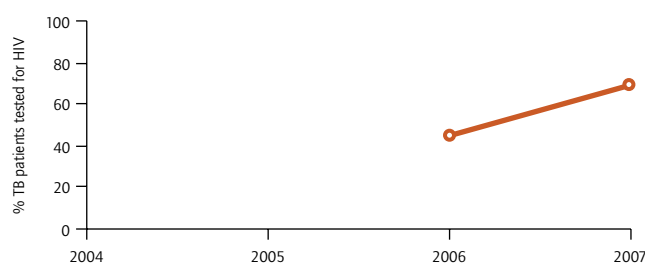
HIV+ patients in HIV care or ART register	–
Screened for TB	23 593
as % of HIV+ patients in HIV care or ART register	–
Started on TB treatment	2 747
as % of HIV+ patients in HIV care or ART register	–
Started on IPT	–
as % of HIV+ patients without TB in HIV care or ART register	–

**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 increased substantially between 2006 and 2007

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

The proportion of HIV-positive TB patients receiving ART in 2007 was the same as in 2006; the proportion of patients receiving CPT has increased slightly

**CONTRIBUTING TO HEALTH SYSTEM STRENGTHENING**

Extensive reform of the health sector, including decentralization and the establishment of a national health insurance scheme, has generated challenges for TB control. Notable examples include their effect on managerial capacity, human resources, and monitoring and evaluation. Reform has also presented opportunities in the form of better coverage of basic health-care services and reduced bureaucracy. The NTP has repositioned itself by shifting its focus from service delivery to technical assistance, and is working towards strengthened and integrated management and surveillance.

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

Number of health-care facilities providing PAL services	0	As % of total number of health-care facilities	0
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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	985 (985)	100	100
Private sector	78 (354)	–	–

**International Standards for Tuberculosis Care (ISTC)**

ISTC endorsed by professional organizations?	No
ISTC included in medical curriculum?	No

**EMPOWERING PEOPLE WITH TB, AND COMMUNITIES****Advocacy, communication and social mobilization (ACSM)****Community participation in TB care and Patients' Charter**

Activities to involve communities in TB control are mostly restricted to migrant populations. There are plans to scale-up community-based activities throughout the country. No data on use of the Patients' Charter were reported in 2008.

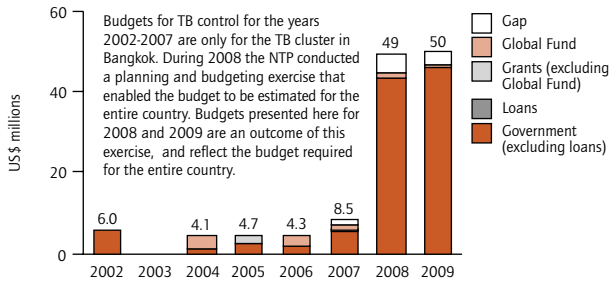
**ENABLING AND PROMOTING RESEARCH****Programme-based operational research, 2007**

Operational research budget (% of NTP budget)	0%
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FINANCING

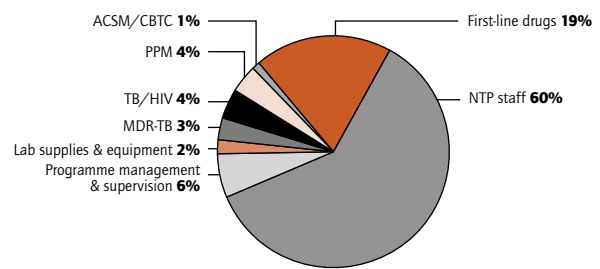
a. NTP budget by source of funding

National budget for TB control is mainly financed by the Government; funding gap expected to be closed with Global Fund round 8



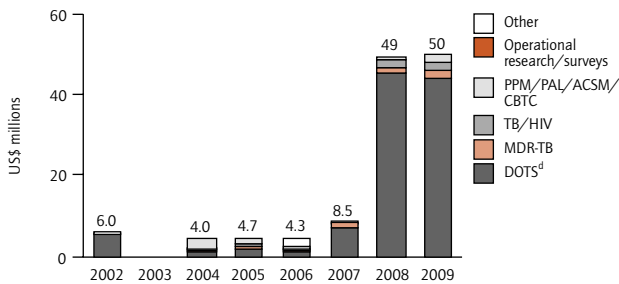
b. NTP budget line items in 2009

Largest share of the budget is for staff, first-line drugs and programme management and supervision



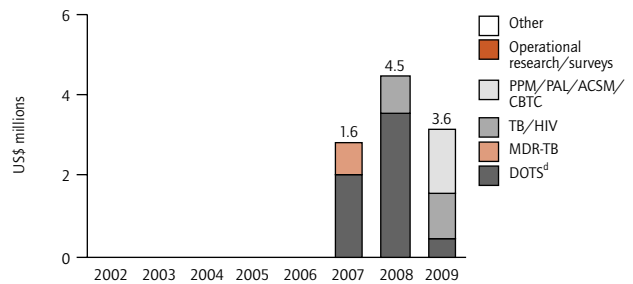
c. NTP budget by line item

Within DOTS, the largest budget is for NTP staff; budget for PPM increased in 2009



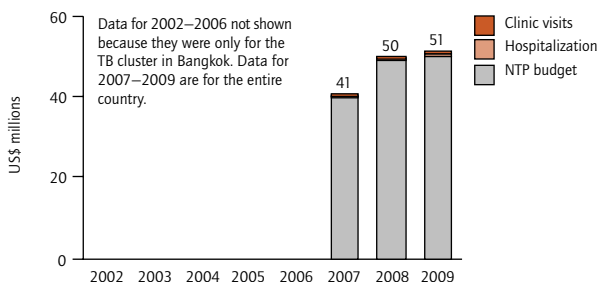
d. NTP funding gap by line item

Funding gap within DOTS is mainly for dedicated NTP staff; almost 80% of budget for PPM is unfunded



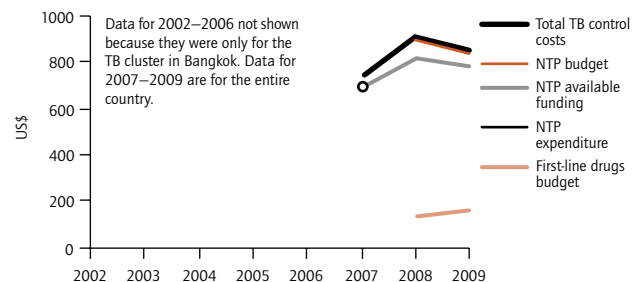
e. Total TB control costs by line item<sup>1</sup>

Costs for hospitalization and clinic visits represent a very small share of total costs, with hospitalization of 5% of new TB patients for an average of 5 days, and 8 clinic visits for new cases during treatment



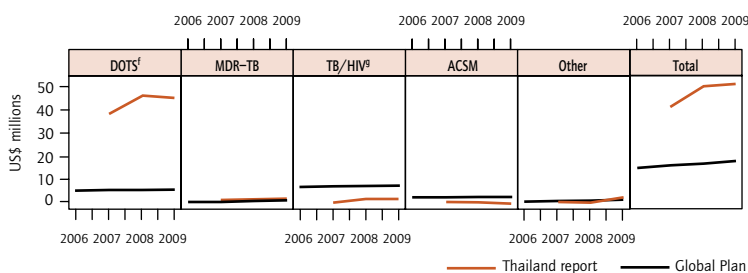
f. Per patient costs, budgets and expenditures<sup>2</sup>

NTP budget per patient is high compared with other HBCs in South-East Asia Region, as expected given Thailand's middle-income status; budget per patient for first-line drugs specifically highest among HBCs



g. Global Plan compared with country reports<sup>3</sup>

Country assessment of funding required for TB control far higher than Global Plan estimate, mainly due to higher budget for first-line drugs and NTP staff



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

Component	2009 BUDGET	GAP
DOTS expansion and enhancement	44	0.4
TB/HIV, MDR-TB and other challenges	3.6	1.1
Health system strengthening	0	0
Engage all care providers	2.0	1.6
People with TB, and communities	0.4	0
Research and surveys	0	0
Other	0	0

SOURCES, METHODS AND ABBREVIATIONS

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

<sup>1</sup> Total TB control costs for 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 2007 is based on the amount of funding actually received, using retrospective data; available funding for 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.