

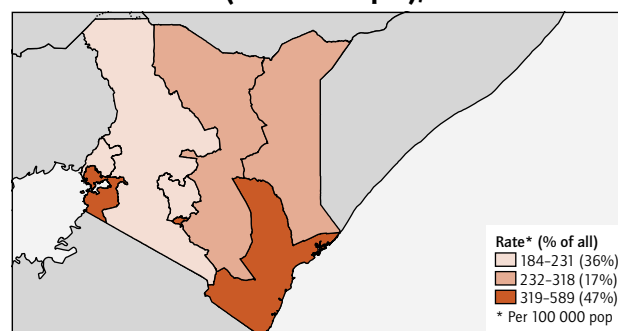
Kenya

According to the latest surveillance data and estimates of TB incidence, Kenya is the first country in sub-Saharan Africa to have achieved the global targets for both case detection and treatment success. The estimates of case detection were reassessed in 2007 following a thorough review of epidemiological and programmatic data, including of new data that became available when routine HIV testing of TB patients was introduced. Collaborative TB/HIV activities are widely implemented, with 79% of notified TB patients tested for HIV and 37% of HIV-positive TB patients accessing ART in 2007. Programmatic management of MDR-TB has been initiated in Nairobi. The NTP needs to continue expanding community TB care and PPM initiatives to further improve access to treatment. The main challenges to TB control include the high turnover of health staff, including those employed at the central TB unit, and high demand for training of health-care workers.

SURVEILLANCE AND EPIDEMIOLOGY

Population (thousands) ^a	37 538	
Estimates of epidemiological burden, 2007^b	ALL	IN HIV+ PEOPLE
Incidence		
All forms of TB (thousands of new cases per year)	132	63
All forms of TB (new cases per 100 000 pop/year)	353	169
Rate of change in incidence rate (%), 2006-2007	-4.8	-7.0
New ss+ cases (thousands of new cases per year)	53	22
New ss+ cases (per 100 000 pop/year)	142	59
HIV+ incident TB cases (% of all TB cases)	48	—
Prevalence		
All forms of TB (thousands of cases)	120	32
All forms of TB (cases per 100 000 pop)	319	84
2015 target for prevalence (cases per 100 000 pop)	63	—
Mortality		
All forms of TB (thousands of deaths per year)	24	15
All forms of TB (deaths per 100 000 pop/year)	65	39
2015 target for mortality (deaths per 100 000 pop/year)	13	—
Multidrug-resistant TB (MDR-TB)		
MDR-TB among all new TB cases (%)	1.9	—
MDR-TB among previously treated TB cases (%)	7.9	—

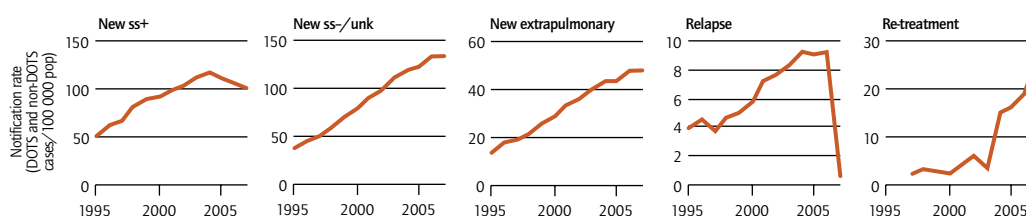
TB notification rate (new and relapse), 2007



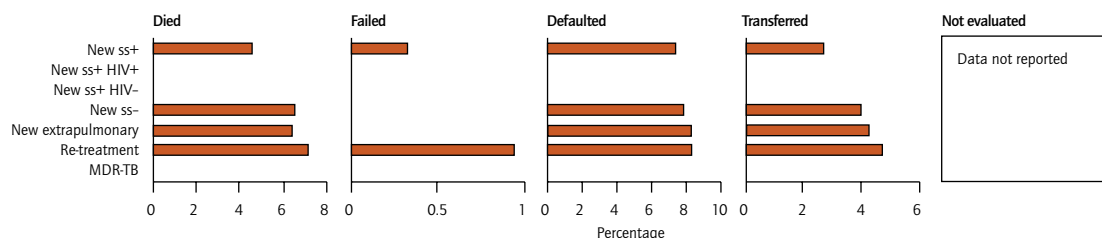
Total notifications, 2007

Notified new and relapse cases (thousands)	106
Notified new and relapse cases (per 100 000 pop/year)	284
Notified new ss+ cases (thousands)	38
Notified new ss+ cases (per 100 000 pop/year)	102
as % of new pulmonary cases	43
sex ratio (male/female)	1.4
DOTS case detection rate (% of estimated new ss+)	72
Notified new extrapulmonary cases (thousands)	18
as % of notified new cases	17
Notified new ss+ cases in children (<15 years) (thousands)	1.1
as % of notified new ss+ cases	2.8

Case notifications



Unfavourable treatment outcomes, 2006 cohorts



	2000	2001	2002	2003	2004	2005	2006	2007
DOTS coverage (%)	100	100	100	100	100	100	100	100
Notification rate (new & relapse cases/100 000 pop)	205	228	244	271	290	288	296	284
% notified new & relapse cases reported under DOTS	90	100	100	100	100	100	100	100
Notification rate (new ss+ cases/100 000 pop)	92	98	104	113	119	113	107	102
% notified new ss+ cases reported under DOTS	91	100	100	100	100	100	100	100
Case detection rate (all new cases, %)	49	54	56	60	64	69	77	80
Case detection rate (new ss+ cases, %)	58	61	63	65	68	70	72	72
Treatment success (new ss+ patients, %)	80	80	79	80	80	82	85	—
Re-treatment success (ss+ patients, %)	76	77	77	75	76	77	79	—

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	Health centre
Number of units (DOTS/total), 2007	136/136
Location of NTP services	
Rural	Dispensaries and health centres
Urban	Health centres
NTP services part of general primary health-care network?	Yes
Location where TB diagnosed	
Rural	Health centre
Urban	Health centre
Diagnosis free of charge?	Yes (all suspects)
Treatment supervised?	All patients in all 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: 2000 next: 2009

Political commitment

National strategic plan?	Yes (2006–2010)
Mechanism for national interagency coordination?	Yes (established 2001)
National Stop TB Partnership?	No (planned 2009)

Financial indicators, 2009

(see final page for detailed presentation)	%
Government contribution to NTP budget (incl loans)	21
Government contribution to total cost TB control (incl loans)	30
Government health spending used for TB control	11
NTP budget funded	60

Per capita health financial indicators, 2009

	US\$
NTP budget per capita	0.9
Total costs for TB control per capita	1.1
Funding gap per capita	0.4
Government health expenditure per capita (2005)	11
Total health expenditure per capita (2005)	24

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	930	2.5	37	100%	5	0.7	1	0.3	1.0	100%
2008	930	2.4	136	–	5	0.6	1	0.3	1.0	–

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	No	No	No

Monitoring and evaluation system, and impact measurement

NTP publishes annual report?	Yes (since 1994)	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	No	–	–
Treatment outcomes	100%	Prevalence of infection survey	Yes, sub-national	2007	2009
		Drug resistance survey	Yes, sub-national	1995	2009
		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	2 196	2 060	2 016
Diagnosed and notified	44 (2.0%)	89 (4.3%)	82 (4.1%)
Registered for treatment	– (–%)	– (–%)	6 (0.30%)
GLC	0	0	0
non-GLC	–	–	6

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	91 841
as % of all notified TB patients	79
TB patients with positive HIV test	43 954
as % of all estimated HIV+ TB cases	69
HIV+ TB patients started or continued on CPT	51,731
as % of HIV+ TB patients notified	100
HIV+ TB patients started or continued on ART	16 324
as % of HIV+ TB patients notified	37

Screening for TB in HIV-positive patients, 2007

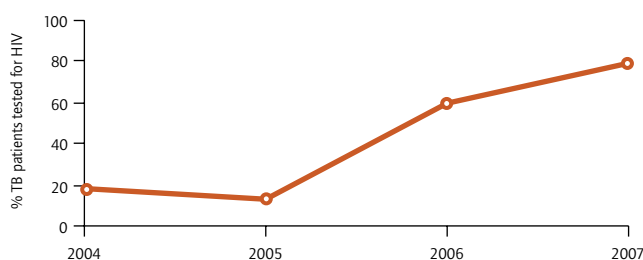
HIV+ patients in HIV care or ART register	461 483
Screened for TB	—
as % of HIV+ patients in HIV care or ART register	—
Started on TB treatment	—
as % of HIV+ patients in HIV care or ART register	—
Started on IPT	—
as % of HIV+ patients without TB in HIV care or ART register	—

High-risk groups, 2007

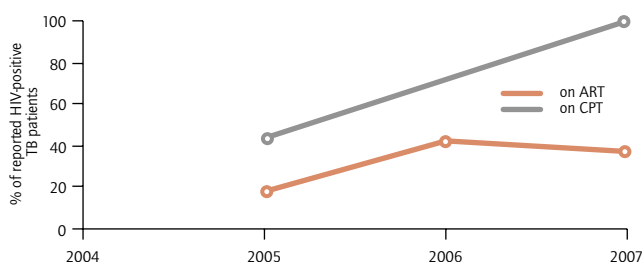
Number of close contacts of ss+ TB patients screened	—
Number of TB cases identified among contacts	—
% of contacts with TB	—
Contacts started on IPT	—
% of contacts without TB on IPT	—

HIV testing for TB patients

The proportion of TB patients screened for HIV continues to increase steadily, reaching 79% in 2007

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

The proportion of HIV-positive TB patients receiving ART declined slightly in 2007; no data on the provision of CPT were reported for 2006

**CONTRIBUTING TO HEALTH SYSTEM STRENGTHENING**

The capacity and coverage of the NTP have been improved through gradual integration into the primary health-care system. The NTP has also successfully engaged NGOs, FBOs, the business sector and the private sector in creating coordinated mechanisms for the delivery of TB control and, in the future, other public health interventions.

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	222 (296)	—	—
Private sector	382 (—)	—	—

International Standards for Tuberculosis Care (ISTC)

ISTC endorsed by professional organizations?	Yes
By which organizations:	KAPTLD-Kenya Association for the Prevention of TB and Lung Disease, KMA-Kenya Medical Association, KPA-Kenya Paediatric Association
ISTC included in medical curriculum?	No

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

An ACSM unit within the Division of Leprosy, TB and Lung Disease in the Ministry of Health has been established. A KAP survey is planned for 2008.

Community participation in TB care and Patients' Charter

Of 136 basic management units, 41 offer community-based treatment support. Patients in whom TB is diagnosed choose a relative, a friend or a neighbour to provide support during their treatment. In areas where community-based activities have been implemented, community health workers give talks about TB in the community, refer suspects for TB testing and trace defaulters. No data on use of the Patients' Charter were reported in 2008.

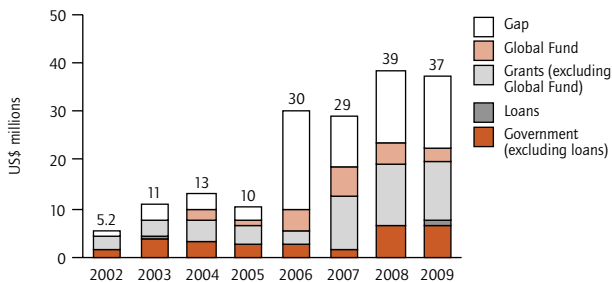
ENABLING AND PROMOTING RESEARCH**Programme-based operational research, 2007**

Operational research budget (% of NTP budget)	1.3%
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FINANCING

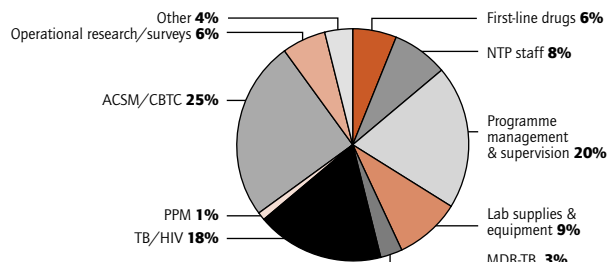
a. NTP budget by source of funding

Greatly increased NTP budget since 2005; while funding has also grown substantially from both government and grants, large funding gaps remain



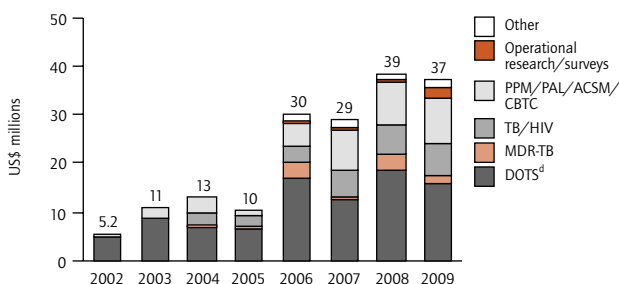
b. NTP budget line items in 2009

Large share of budget is for DOTS (43%) and TB/HIV (18%); share of budget for ACSM and community TB care is higher than in most other HBCs



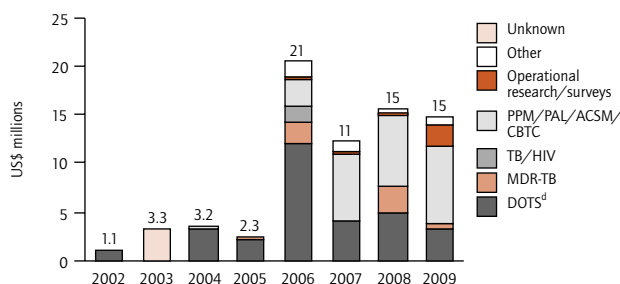
c. NTP budget by line item

Increased budget for NTP staff, laboratory supplies and equipment, and MDR-TB (mostly to ensure appropriate infection control in one inpatient facility) in 2008-2009; disease prevalence survey included in budget for 2009



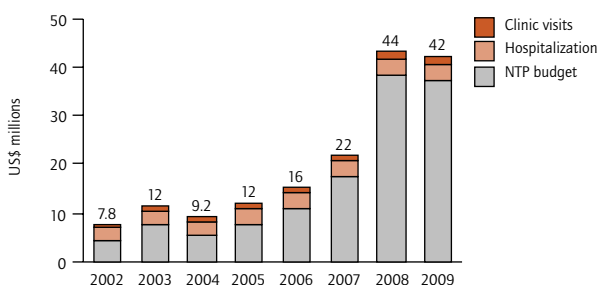
d. NTP funding gap by line item

Biggest funding gap is for ACSM; disease prevalence survey planned for 2009-2010 is also not funded



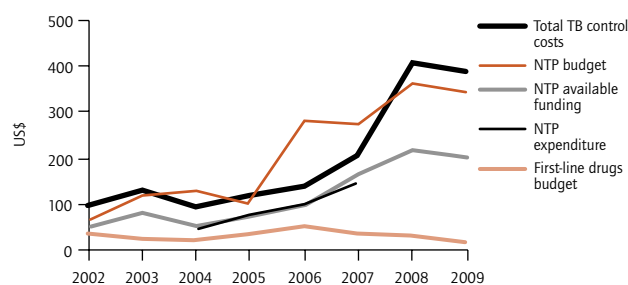
e. Total TB control costs by line item¹

Hospitalization costs are for 2000 dedicated TB beds



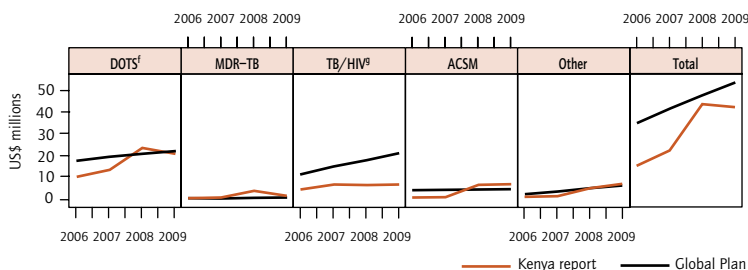
f. Per patient costs, budgets and expenditures²

Increased costs, budget, available funding and expenditures per patient; expenditure and available funding are very similar



g. Global Plan compared with country reports³

Country plan for 2008-2009 in line with Global Plan, including TB/HIV activities (although some TB/HIV costs are not part of the NTP budget, which explains the lower funding in the country report)



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

Component	2009 BUDGET	GAP
DOTS expansion and enhancement	16	3.1
TB/HIV, MDR-TB and other challenges	7.9	0.5
Health system strengthening	0	0
Engage all care providers	0.3	0.01
People with TB, and communities	9.2	8.0
Research and surveys	2.4	2.4
Other	1.4	0.8

SOURCES, METHODS AND ABBREVIATIONS

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

¹ Total TB control costs for 2002-2003 are based on available funding, whereas those for 2004-2007 are based on expenditure, and 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.