COUNTRY PROFILE

Kenya

A reassessment of the case detection rate in Kenya suggests that it is higher than was previously estimated, and that the 70% target was probably met in 2006. Treatment success rates, however, are below target, due in part to high default rates. Collaborative TB/HIV activities are now in place across the country, despite constraints in terms of financing, staffing and infrastructure. These constraints will also affect the planned introduction of programmatic management of MDR-TB, and the scaling up of community-based TB care and PPM initiatives. Funding for TB control in 2007 was almost double that in 2006, but a significant gap remains. Improving the infrastructure of laboratories and their performance will be essential to improving the standards of diagnosis for all TB cases, both drug sensitive and drug resistant.

SURVEILLANCE AND EPIDEMIOLOGY, 2006

Population (thousands)[a]	36 553

Estimates of epidemiological burden[1]	
Incidence (all cases/100 000 pop/yr)	384
Trend in incidence rate (%/yr, 2005–2006)[2]	**-9.2**
Incidence (ss+/100 000 pop/yr)	153
Prevalence (all cases/100 000 pop)[2]	**334**
Mortality (deaths/100 000 pop/yr)[2]	**72**
Of new TB cases, % HIV+[b]	52
Of new TB cases, % MDR-TB (1995)[c]	0.0
Of previously treated TB cases, % MDR-TB (1995)[c]	0.0

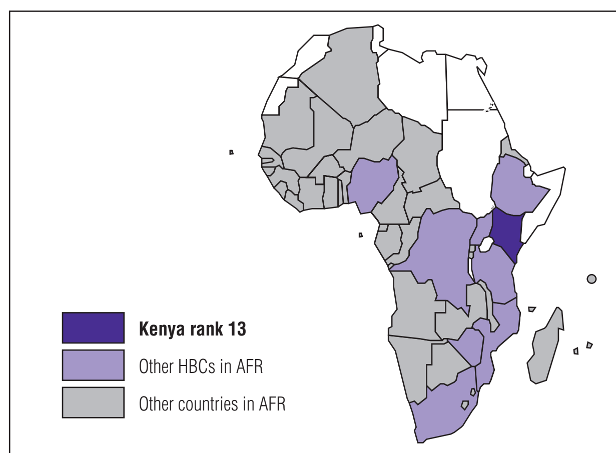
Surveillance and DOTS implementation	
Notification rate (new and relapse/100 000 pop/yr)	296
Notification rate (new ss+/100 000 pop/yr)	107
DOTS case detection rate (new ss+, %)	**70**
DOTS treatment success (new ss+, 2005 cohort, %)	82
Of new pulmonary cases notified under DOTS, % ss+	45
Of new cases notified under DOTS, % extrapulmonary	17
Of new ss+ cases notified under DOTS, % in women	43
Of sub-national reports expected, % received at next reporting level[d]	100

Laboratory services[3]	
Number of laboratories performing smear microscopy	770
Number of laboratories performing culture	2
Number of laboratories performing DST	2
Of laboratories performing smear microscopy, % covered by EQA	52

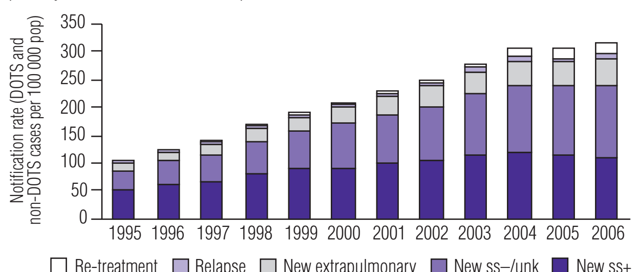
Management of MDR-TB	
Of new cases notified, % receiving DST at start of treatment	0.0
Of new cases receiving DST at start of treatment, % MDR-TB	–
Of re-treatment cases notified, % receiving DST	10
Of re-treatment cases receiving DST, % MDR-TB	8.5

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	60
Of TB patients tested for HIV, % HIV+	52
Of HIV+ TB patients detected, % receiving CPT	141
Of HIV+ TB patients detected, % receiving ART	43

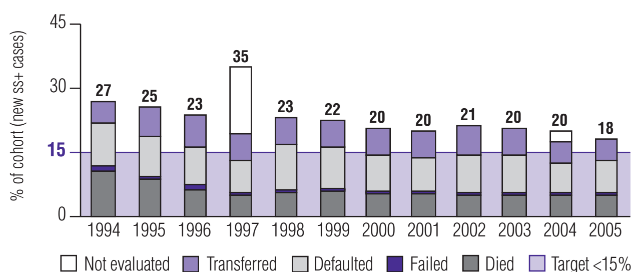
WHO Africa Region (AFR)
Rank based on estimated number of incident cases (all forms) in 2006



Case notifications
Notifications increased steadily over many years of full DOTS coverage, stabilizing in the past 3 years with an increase in reported re-treatment cases



Unfavourable treatment outcomes, DOTS
Treatment success rate still below target, but higher than in other high-HIV prevalence settings in Africa; reducing default rate could help in achieving target



DOTS expansion and enhancement	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
DOTS coverage (%)	15	100	100	100	100	100	100	100	100	100	100	100
DOTS notification rate (new and relapse/100 000 pop)	103	124	137	165	188	186	228	244	271	290	288	296
DOTS notification rate (new ss+/100 000 pop)	51	60	66	81	89	84	98	104	113	119	113	107
DOTS case detection rate (all new cases, %)	43	45	43	45	46	43	52	54	58	61	66	75
DOTS case detection rate (new ss+, %)	57	58	54	59	58	51	59	61	63	66	68	70
Case detection rate within DOTS areas (new ss+, %)[e]	377	58	54	59	58	51	59	61	63	66	68	70
DOTS treatment success (new ss+, %)	75	77	65	77	78	80	80	79	80	80	82	–
DOTS re-treatment success (ss+, %)	72	59	55	64	73	76	77	77	75	76	77	–

IMPLEMENTING THE STOP TB STRATEGY[1]

DOTS EXPANSION AND ENHANCEMENT

Political commitment, standardized treatment, and monitoring and evaluation system

Achievements

- NTP established as separate division within Ministry of Health, ensuring greater visibility of programme
- Finalized plan for monitoring and evaluating programme performance, based on national strategic plan and including management of MDR-TB
- Organized national award ceremony for best performing facilities, districts and provinces, attended by the Permanent Secretary for Health
- Produced 27th annual report of activities of NTP

Planned activities

All planned activities reported for 2007 are described under the headings below.

Quality-assured bacteriology

Achievements

- Trained 570 laboratory personnel in EQA
- Enabled NRL to increase supervision of provincial microscopy centres by providing per diems, vehicles and additional staff
- Introduced EQA in all 8 provinces
- Established culture centres at Moi Teaching and Referral Hospital and at Homa Bay Hospital in 2007
- Renovated infrastructure in 13 diagnostic centres

Planned activities

- Continue strengthening the NRL through recruitment of additional staff
- Renovate and equip the NRL to level 3 when earmarked funds are released
- Introduce rapid diagnosis of MDR-TB using molecular diagnostic techniques

Drug supply and management system

Achievements

- Appointed pharmacist to manage anti-TB drug supply and distribution
- Implemented the logistics management information system (LMIS) in Eastern South Province
- Introduced 6-month regimen in 1 out of 12 regions
- NTP pharmacist participated in the development of pharmacovigilance guidelines

Planned activities

- Roll out the LMIS to the rest of the country with on-the-job training; formal training planned for 2008
- Introduce anti-TB paediatric dispersible formulations; meeting on paediatric anti-TB drugs to be held in January 2008, involving Measure Evaluation and University of Turin
- Introduce 6-month regimen in remaining 11 regions
- Begin post-marketing surveillance of anti-TB drugs

TB/HIV, MDR-TB AND OTHER CHALLENGES

Collaborative TB/HIV activities

Achievements

- Established good working relationship with NAP, including some shared funding
- Scaled up collaborative TB/HIV activities to whole country, including prisons; offered HIV testing to all TB patients; referred HIV-positive patients to HIV care centres
- Trained health-care workers at service delivery points to ensure comprehensive care for TB/HIV patients

Planned activities

- Collaborate with the NAP to ensure that all HIV patients are screened for TB before initiation of treatment
- Improve TB infection control in hospitals by effective triage of patients, and in prisons by screening new inmates then isolating TB suspects
- Pilot provision of ART in TB clinics

Diagnosis and treatment of multidrug-resistant TB

Achievements

- Developed national guidelines for the management of MDR-TB (printed December 2007)
- Increased staff of NRL from 3 to 5 and purchased equipment for DST
- Trained 5 MDR-TB core group members in Latvia, 3 MDR-TB staff trained by WHO office in Dar es Salaam and 30 staff trained in-country
- Introduced policy of routine DST for re-treatment cases nationwide

Planned activities

- Distribute MDR-TB guidelines
- Begin treating 40 MDR-TB patients as outpatients of Kenyatta National Hospital; delivery of second-line drugs expected for January 2008
- Introduce treatment of MDR-TB in 3 additional hospitals
- Construct isolation facilities for MDR-TB treatment at Kenyatta National Hospital and in Kisumu, Nakuru, Eldoret and Mombasa

High-risk groups and special situations

Achievements

- Pilot tested screening of prisoners for TB on admission

Planned activities

- Introduce routine screening of prisoners for TB on admission

HEALTH SYSTEM STRENGTHENING, INCLUDING HUMAN RESOURCE DEVELOPMENT

Achievements

- Collaborated with Ministry of Justice and with NGOs in the process of planning for TB control
- Provided microscopes and slides to laboratories, which are used for other diseases as well as for TB
- Trained over 500 laboratory staff on AFB microscopy, improving motivation of those staff

Planned activities

- Hire 100 laboratory technicians, 40 nurses and 15 clinical officers using Global Fund money
- Renovate and replace broken equipment in TB clinics and laboratories in general health facilities
- Provide integrated support and supervision at all levels of the health system

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

- Renovated 20 high-volume facilities, the majority in TB laboratories
- Deployed 3 additional staff at central unit
- Strengthened use of TB supervision tool at all levels

- Pilot use of human resource quantification tool for collaborative TB/HIV activities
- Introduce PAL in 2009

ENGAGING ALL CARE PROVIDERS

Achievements

- Carried out PPM activities in 31 of 136 districts
- Conducted situation analysis for PPM, developed PPM operational guidelines and training material and trained private health-care providers in management of TB
- ISTC formally endorsed by the Kenya Medical Association and by Kenya Clinical Officers Association
- Introduced the ISTC to all care providers and training institutions

Planned activities

- Train additional non-NTP health-care providers in order to expand PPM activities
- Provide anti-TB drugs free of charge to selected collaborating non-NTP health-care providers
- Sensitize pharmacists and more private practitioners on TB to encourage referral of TB suspects for diagnosis
- Introduce accreditation system for health-care facilities offering TB care in line with ISTC

EMPOWERING PEOPLE WITH TB, AND COMMUNITIES

Advocacy, communication and social mobilization

Achievements

- Developed and disseminated the communication strategy, and drafted advocacy strategy
- Commemorated World TB Day
- Conducted training for employers on TB control in the workplace
- Trained groups on use of “Magnet Theatre” (initiative of PATH)
- Broadcast TB control messages through radio, TV and quarterly newspaper advertisements
- Sensitized provincial and district public health officers on ASCM in 90% of the country
- Developed and printed IEC materials

Planned activities

- Use case histories to communicate positive messages about the availability of effective treatment for TB
- Continue broadcasting TB control messages through various media
- Continue sensitization of community leaders
- Initiate school health education programmes with a module on TB control
- Continue Magnet Theatre training
- Finalize, print and disseminate the advocacy strategy
- Review existing IEC materials and develop new ones
- Finalize the community sensitization manual

Community participation in TB care

Achievements

- Increased number of districts implementing community-based DOTS to 37 by December 2007
- Printed community-based DOTS materials and developed recording and reporting tools for community health workers
- Held meetings with community leaders in 31 out of 136 districts; individuals were selected for training as community health-care workers following these meetings
- Enhanced community participation in development of annual plans which are used to guide NTP activities and funding

Planned activities

- Scale up community-based DOTS activities to 10 more districts
- Revise, print and distribute materials to the new districts implementing community-based DOTS

Patients’ Charter

Achievements

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

- Developed and began distributing general patients’ charter, covering many of the issues contained in the Patients’ charter for tuberculosis care

Planned activities

- Print and disseminate flyers on the *Patients’ charter for tuberculosis care*

RESEARCH, INCLUDING SPECIAL SURVEYS AND IMPACT MEASUREMENT

Achievements

- Conducted study on dispensing practices in the private sector
- Carried out study on commodity management in community-based DOTS initiatives

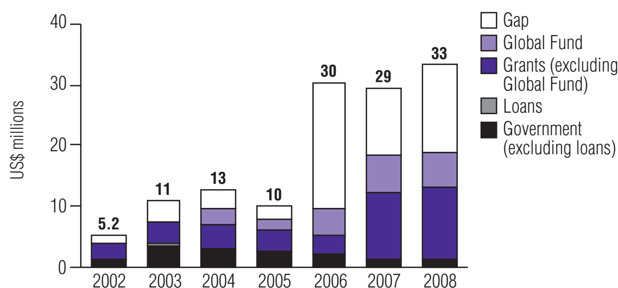
Planned activities

- Conduct survey on MDR-TB among smear-positive cases, establish sentinel sites for routine surveillance of drug resistance among new TB cases and conduct a rapid assessment of XDR-TB among identified and suspected MDR-TB cases (training completed in 2007)
- Identify private providers (nurses, medical assistants and traditional healers) providing or willing to provide free-of-charge treatment in collaboration with the NTP
- Study the micro- and macro-economic impact of TB
- Conduct annual surveys of impact of ACSM activities
- Support testing of data quality assessment tool in 24 districts
- Examine the role of the private sector in provision of TB diagnosis and treatment in Nairobi

FINANCING THE STOP TB STRATEGY

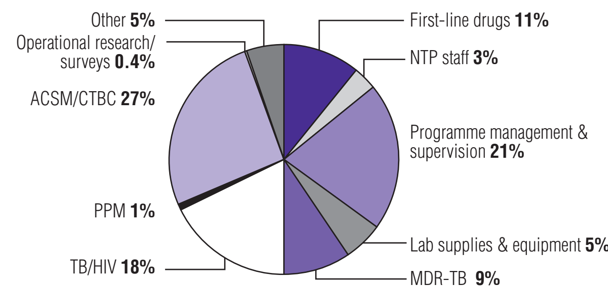
NTP budget by source of funding

NTP has developed plan and budget for 2006–2010 that covers all elements of the Stop TB Strategy and that is in line with or ahead of Global Plan targets; budget requirement is now much higher than previous years and while funding has grown, large funding gaps remain



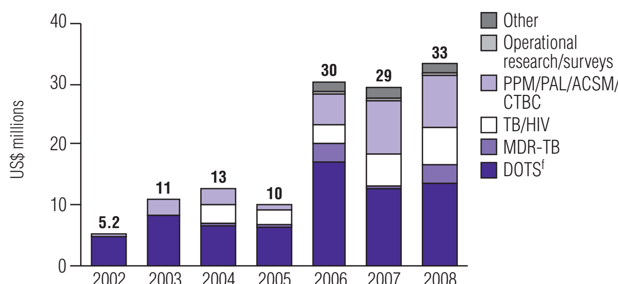
NTP budget by line item, 2008

The largest components of the budget are DOTS (40%) and ACSM including community TB care



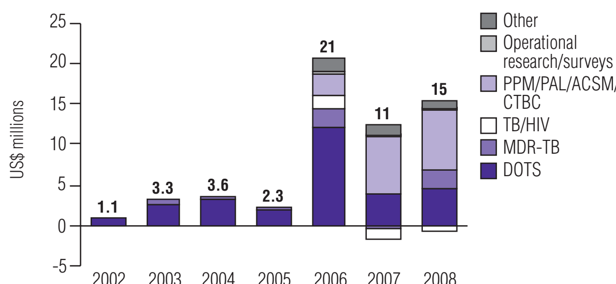
NTP budget by line item

Increased budget for collaborative TB/HIV activities, MDR-TB and ACSM in 2007–2008; MDR-TB budget 2008 mainly for the construction of an infection control facility



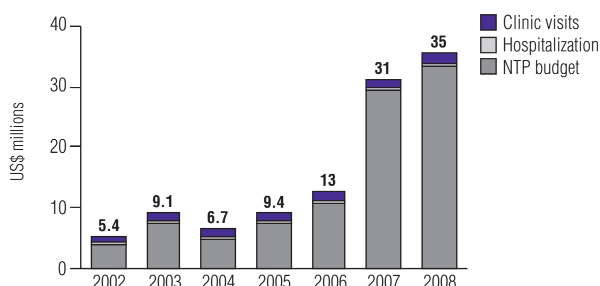
NTP funding gap by line item

Large funding gap for ACSM; funding gap within DOTS component mainly for first-line drugs and routine programme management and supervision activities



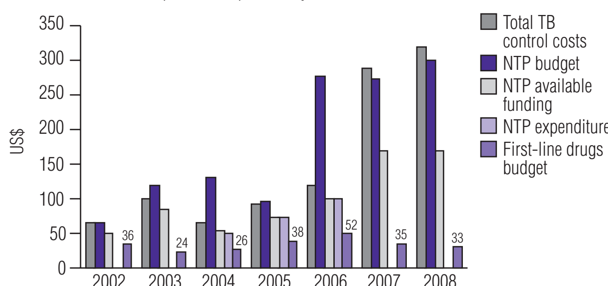
Total TB control costs by line item[4]

NTP accounts for the largest share of total TB control costs



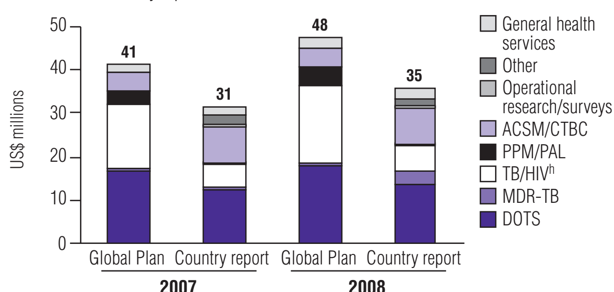
Per patient costs, budgets and expenditures[5]

Budget per patient much higher since 2006 and available funding per patient much higher in 2007 and 2008 compared with previous years



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

ACSM country plan ahead of Global Plan; TB/HIV activities implemented at scale of Global Plan but some of these costs not part of NTP budget, which explains lower amounts for TB/HIV in the country report



NTP budget and funding gap by Stop TB Strategy component

(US$ millions)	2007 BUDGET	2007 GAP	2008 BUDGET	2008 GAP
DOTS expansion and enhancement	13	4.0	14	4.5
TB/HIV, MDR-TB and other challenges	5.9	-1.5	9.1	1.7
Health system strengthening	0	0	0	0
Engage all care providers	0.3	0.01	0.3	0.01
People with TB, and communities	8.2	6.9	8.6	7.3
Research	0.4	0.3	0.1	0.02
Other	1.9	1.2	1.8	1.0

Financial indicators for TB

	2007	2008
Government contribution to NTP budget (including loans)	4.3%	4.7%
Government contribution to total cost TB control (including loans)	10%	10%
NTP budget funded	63%	56%
Per capita health financial indicators (US$)		
NTP budget per capita	0.8	0.9
Total costs for TB control per capita	0.9	1.0
Funding gap per capita	0.3	0.4
Government health expenditure per capita (2004)	8.6	
Total health expenditure per capita (2004)	20	

SOURCES, METHODS AND ABBREVIATIONS

a–h Please see footnotes page 169.

1 Incidence, prevalence and mortality estimates include patients infected with HIV. Estimates revised based on assessment of ss+ and ss– notifications and an assumption of improved case detection since 2000 following stabilization of HIV prevalence and expansion of NTP.

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 133/100 000 pop and mortality 29/100 000 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, most countries will need one culture facility per 5 million population and one DST facility per 10 million population.

4 Total TB control costs for 2002–2003 are based on available funding, whereas those for 2004–2006 are based on expenditure, and 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.