

# Nigeria

Among African countries, Nigeria has the highest estimated number of new TB cases annually. Following the Abuja Declaration<sup>1</sup> in 2001, the DOTS strategy was adopted nationally and is now being applied in all states. There has been rapid progress in DOTS expansion in 2003, with relatively high treatment success. Unfortunately, political commitment has not yet been translated into strong support for the health system, and much of the approved government funding for health care has not been released for use in health programmes. This situation has discouraged a number of external donors, including the GFATM, who are reluctant to provide additional funds while government funding is very limited. Although Nigeria has an extensive national health infrastructure, it lacks the resources needed to function effectively. Nigeria is now decentralizing its health system and clarifying the responsibilities and services at each level, which should result in better management and

coordination. The spread of HIV infection is adding to the burden of TB; more than a quarter of adults with TB are coinfecting with HIV. Notwithstanding the hesitation of some external donors, Nigeria now has an excellent opportunity to develop a programme of collaborative TB/HIV activities with the help of an award from the President's Emergency Plan for AIDS Relief.

## System of TB control

Although the NTP was launched in 1991, the nationwide adoption and expansion of the DOTS strategy began only recently, following the Abuja Declaration to Stop TB in October 2001. Previously, only half of the states in Nigeria were supported by international NGOs (mainly dealing with leprosy) that were able to provide TB diagnosis and treatment; these did not include Lagos or the Federal Capital Territory (FCT), Abuja. All 37 states have at least one local government area (LGA) that is implementing DOTS.

The public health sector accounts for less than half of the health services provided in Nigeria, the rest being met by NGOs and the private sector, including hospitals, clinics and pharmacies. Health sector reform is under way in order to clearly establish the roles and responsibilities for health service provision at each level, and a Health Act will define the decentralization of functions. Tertiary care is provided and health regulations and technical guidelines developed at the federal level. States are responsible for secondary care and specialized services, while the LGAs are responsible for providing primary health care. The basic unit of health care is the ward. Each ward has 10 000–20 000 people and there are an average of 10 wards per LGA. Ward staff utilize community resources to help deliver the minimum package of care. Public health services will be decentralized from the LGA to the ward, and TB and leprosy control will be included in the minimum package of health services.

The NTP is organized at the federal, state and LGA levels. There is a central unit at the federal level led by a national coordinator. Each of the 37 state programmes is run by a state TB and leprosy control officer. The LGA is the main operational level of the programme, and most LGAs have a TB/leprosy control supervisor. The LGA TB/leprosy control supervisor is, in most cases, a community health officer or nurse who oversees activities in the health facilities.

The NRL in the National Institute for Medical Research in Lagos is responsible for overall supervision and quality assurance of the laboratory network. Six zonal reference laboratories supervise peripheral laboratories. The peripheral laboratories in PHC facilities, NGOs and private facilities all do direct smear microscopy.

## PROGRESS IN TB CONTROL IN NIGERIA

### Indicators

DOTS treatment success, 2002 cohort	79%
DOTS case detection rate, 2003	18%
NTP budget available, 2004	73%
Government contribution to NTP budget, including loans, 2004	37%
Government contribution to total TB control costs, including loans, 2004	66%
Government health spending used for TB control, 2004	4%

### Major achievements

- Establishment of DOTS services in three more LGAs in each of 17 states, including training of general health workers and laboratory technicians, and purchase and distribution of laboratory materials
- Approval of a second year of funding from the GDF for anti-TB drugs and distribution of current anti-TB drugs to DOTS facilities throughout the country
- Appointment of a focal point for collaborative TB/HIV activities by the National AIDS and STD Control Programme
- Referral of TB patients with HIV/AIDS for HIV care and support, including ART in 25 pilot sites

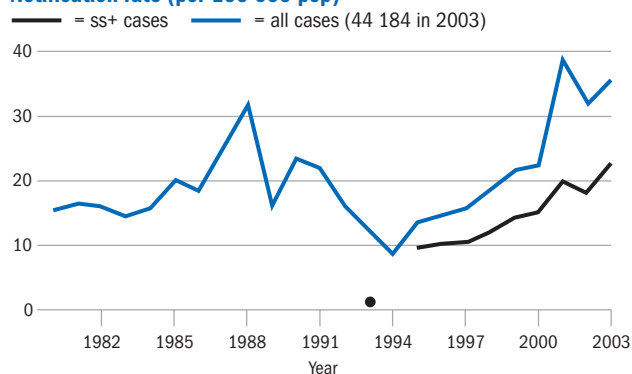
### Major planned activities

- Assess HR needs and strengthen capacity of general PHC and hospital staff in integrated TB control activities
- Establish at least one microscopy centre in each of the remaining LGAs, and strengthen collaboration between the microscopy centres and the NRL
- Establish a standardized quality assurance system for the entire country in 2005

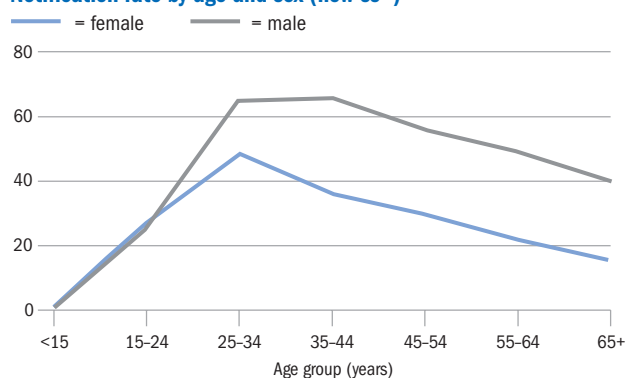
<sup>1</sup> Abuja declaration on HIV/AIDS, tuberculosis and other related infectious diseases. Addis Ababa, The Economic Commission for Africa, 2001.

LATEST ESTIMATES <sup>a</sup>		TRENDS	2000	2001	2002	2003
<b>Population</b>	<b>124 009 171</b>	DOTS coverage (%)	47	55	55	60
Global rank (by est. number of cases)	4	Notification rate (all cases/100 000 pop)	23	39	32	36
Incidence (all cases/100 000 pop/year)	293	Notification rate (new ss+/100 000 pop)	15	20	18	23
Incidence (new ss+/100 000 pop/year)	126	Detection of all cases (%)	8.9	15	11	12
Prevalence (all cases/100 000 pop)	546	Case detection rate (new ss+, %)	14	17	15	18
TB mortality (all cases/100 000 pop/year)	85	DOTS case detection rate (new ss+, %)	14	14	13	18
TB cases HIV+ (adults aged 15-49, %)	27	DOTS case detection rate (new ss+)/coverage (%)	30	25	24	30
New cases multidrug resistant (%)	1.7	DOTS treatment success (new ss+, %)	79	79	79	—

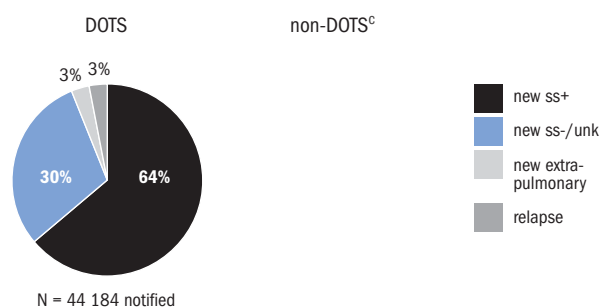
### Notification rate (per 100 000 pop)



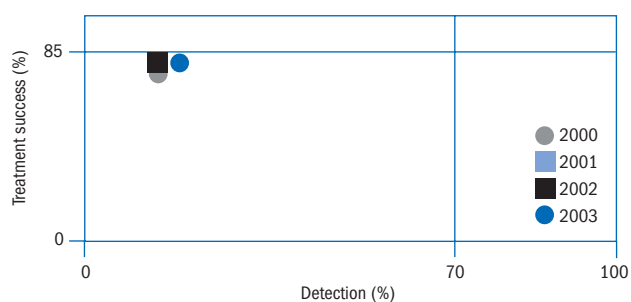
### Notification rate by age and sex (new ss+)<sup>b</sup>



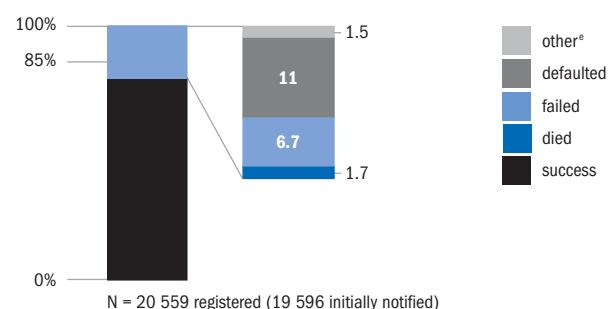
### Case types notified



### DOTS progress towards targets<sup>d</sup>



### DOTS treatment outcomes (new ss+)



### Non-DOTS treatment outcomes (new ss+)



### Notes

ss+ indicates smear-positive; ss-, smear-negative; pop, population; unk, unknown.

Absence of a graph indicates that the data were not available or applicable.

<sup>a</sup> See Methods for data sources. Prevalence and mortality estimates include patients with HIV.

<sup>b</sup> The sum of cases notified by age and sex is less than the number of new smear-positive cases notified for some countries.

<sup>c</sup> Non-DOTS is blank for countries which are 100% DOTS, or where no non-DOTS data were reported.

<sup>d</sup> DOTS case detection rate for given year, DOTS treatment success rate for cohort registered in previous year.

<sup>e</sup> "Other" includes transfer out and not evaluated, still on treatment, and other unknown.

### Surveillance and monitoring

Among African countries, Nigeria has the highest estimated number of new TB cases each year. An estimated 6% of all adults, and 27% of adult TB patients, are infected with HIV. The increase in case notifications since 1994 is almost certainly due to a rise in TB incidence associated with the spread of HIV, rather than to improvements in case detection. DOTS coverage has changed little over the nine years for which data have been submitted to WHO (1995–2003), although there was a small increase between 2002 (55%) and 2003 (60%). The proportion of cases that were smear-positive fell between 1995 and 2003. While this could be due in part to increases in TB among HIV-infected people, the reasons for the observed trend need to be investigated further. Although the DOTS case detection rate has increased, the estimate for 2003 remains low at 18%. The treatment success rate was 79% in the 2002 DOTS cohort, with a high default rate (11%). Treatment success has increased only slightly since 1997. Nigeria has not yet taken steps to evaluate the impact of DOTS in reducing transmission, incidence, prevalence or deaths.

### Improving programme performance

A major constraint for PHC and the TB control programme is the failure of the government to release funds that have been budgeted and allocated for health and TB control services at all levels. This reflects a low level of political commitment and results in reliance on external funding for TB control operations, mostly from CIDA, DFB, GLRA, NLR and USAID. CIDA funding from mid-2002 to the end of 2003 has made it possible to expand DOTS to the remaining 16 non-DOTS states and FCT Abuja (thus expanding DOTS to all the 36 states of the Federation, including FCT Abuja), to strengthen the central unit's infrastructure and coordination and to establish three zonal TB coordination and control offices. A TBCTA/USAID grant has provided funds for some TB control activities in 2004, including the expansion of the TB laboratory network, providing

supervision and monitoring activities at the central and zonal levels, and training staff and developing human resources for collaborative TB/HIV activities.

Another challenge facing the NTP in Nigeria is the lack of professional health staff in the LGAs. The PHC facilities are staffed mainly by nurses and community health workers, and the physician to population ratio is between 1:160 000 and 1:400 000. Although the TB programme trains supervisors and other senior staff, very few general PHC and hospital staff have been trained in integrated TB control activities. HR needs are being assessed with a view to revising the HRD plan. Currently, states are responsible for training their own staff, while the federal government supports training programmes for TB control in collaboration with research institutions and universities. The National TB and Leprosy Training Centre in Zaria, established in 1991, is responsible for providing the necessary staff training at the LGA and health facility levels. The centre provides a three-month course for LGA TB control supervisors and a two-week course for laboratory technicians.

The supply of anti-TB drugs is adequate, and an application to the GDF for a second year of support has been approved. However, the country's drug policy dates from 1990 and is currently under revision. The federal government is responsible for legislation concerning drugs, while the management and procurement of drugs are decentralized to individual facilities. There is no system of drug control at national or provincial levels once drugs have been approved. There are no drug resistance data for the country.

### Diagnostic and laboratory services

The number of TB laboratories is increasing, and smear microscopy is now available in 504 out of 774 LGAs. However, few of these laboratories are covered by a quality assurance system. Nigeria plans to establish a standardized quality assurance system for the whole country in 2005. Stocks of laboratory reagents are low because of the lack of government funding. Most laboratories receive reagents

from the NTP (funded by WHO) or from NGOs, and some are charging patients. In 2005, the NTP plans to establish at least one microscopy centre in each of the remaining LGAs and to strengthen collaboration between the microscopy centres and the NRL.

### TB/HIV coordination

The National AIDS and STD Control Programme has appointed a staff member to act as the focal point for collaborative TB/HIV activities. An NPO will be recruited to support these activities using funds provided by the Norwegian government. Many DOTS and ART centres are now starting collaborative TB/HIV activities. In 25 sites, TB patients with HIV/AIDS will have access to comprehensive HIV/AIDS care and support, including the provision of ART.

At the central level, a proposal to develop a strategy document for collaborative TB/HIV activities has been finalized and preparations for a high-level mission are being made in relation to the "3 by 5" initiative. Collaborative TB/HIV activities are constrained by the shortage and high cost of HIV test kits and the shortage of antiretrovirals and drugs for opportunistic infections at both HIV and TB treatment centres. Following a recent award from the President's Emergency Plan for AIDS Relief, collaborative TB/HIV activities will be expanded in 2005.

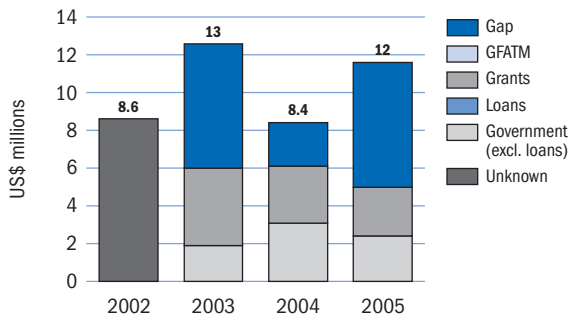
### Links with other health-care providers

The NTP has successfully pilot tested the involvement of private clinics in the delivery of DOTS services; this initiative is being expanded to six states with financial support from FIDELIS. Several NGOs are already involved, with efforts being made to strengthen collaboration with general hospitals, specialist TB clinics, medical colleges and prison health services.

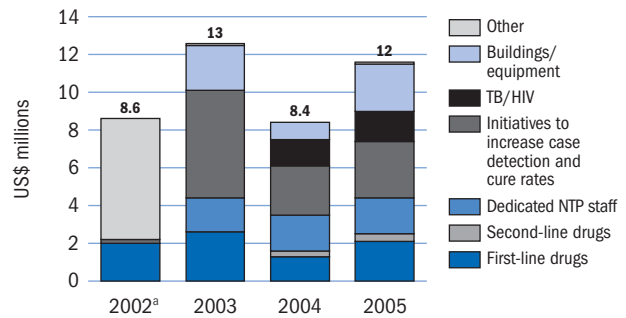
### Partnerships

Major technical partners include DFB, DFID, GLRA, IUATLD, Netherlands Leprosy Relief and WHO. CIDA and USAID (TBCTA) are the main funding partners. The GDF provides anti-TB drugs and will start to provide laboratory test kits

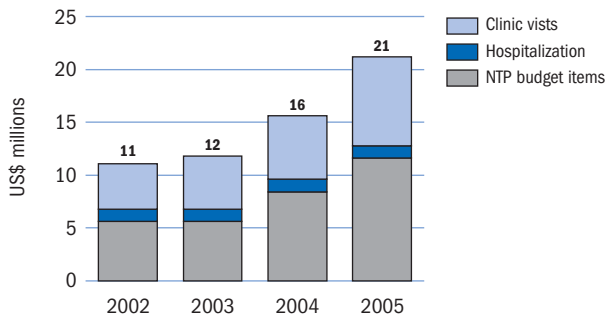
(a) NTP budget by source of funding



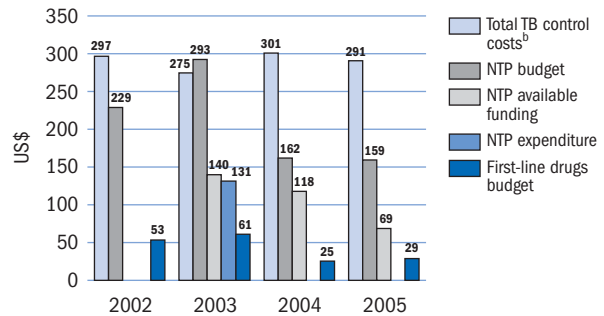
(b) NTP budget by line item



(c) Total TB control costs by line item<sup>b</sup>



(d) Per patient costs, budgets, available funding and expenditures



<sup>a</sup> In the 2002 budget, the costs of dedicated staff and of building and equipment were not evaluated.

<sup>b</sup> Total TB control costs for 2002 and 2003 are based on expenditures, whereas those for 2004 and 2005 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.

in 2005. International leprosy organizations have provided technical assistance for TB control for more than a decade.

## Budgets and expenditures

The NTP budget increased from US\$ 8.6 million in 2002 to US\$ 12 million in 2005. However, funding from both the government and donors has been declining since 2003, and in 2005 the funding gap is expected to be around US\$ 7 million, equivalent to 57% of the budget. There are two main reasons for persistent funding gaps. One is that, while a GFATM grant was approved in January 2003, this

was subsequently revoked because of lack of counterpart funds from the government. In 2003, a second reason was that funding from the government was planned at US\$ 3.9 million but reached only US\$ 1.9 million. The largest budget line item each year between 2003 and 2005 is for expansion of DOTS to new LGAs (included in the line item "initiatives to increase case detection and cure rates"). Dedicated TB staff, first-line drugs and buildings and equipment are also relatively large budget items. The budget per patient treated has ranged from US\$ 160 to US\$ 300. Actual expenditures in 2003 were US\$ 5.6 million

(equivalent to US\$ 131 per patient treated), slightly lower than the available funding of US\$ 6.0 million.

Total TB control costs, including visits to health clinics and spending on dedicated TB hospital beds as well as items covered by the NTP budget, are estimated at US\$ 12 million in 2003 (about US\$ 300 per patient treated). If the budget gap for 2005 is filled and the number of patients treated increased to nearly 73 000 as projected, then total TB control costs would reach about US\$ 20 million in 2005 (also about US\$ 300 per patient treated).

# Pakistan

DOTS coverage has increased rapidly in Pakistan since 2000, reaching 63% in 2003. With plans to include the remaining districts, nationwide DOTS coverage should be achieved in 2005. Pakistan has been highly successful in mobilizing financial support for TB control from the international community, and this has given impetus to the programme. The NTP is well structured and has created a strong TB control network during the past five years, with an effective mechanism for coordinating a range of activities and partnerships. Both case detection and treatment outcomes are improving, but remain below the global targets at 17% and 77% respectively. Recent health sector reforms give increased responsibility to the districts for setting priorities for health programmes and to the NTP for ensuring that TB control is a priority at district level. As the programme advances towards nationwide DOTS coverage, the NTP will have to respond to the increasing demand for anti-TB drugs, equipment and reagents, and to ensure that the quality of the services continues to improve.

## System of TB control

The NTP is responsible, under the MoH, for the overall coordination of TB control in the country. The specific responsibilities of the NTP include formulation of policy, strategic planning, technical support and supervision, monitoring and evaluation, coordination and communication with partners and research. The provincial and regional TB control managers are responsible for planning, implementing, monitoring and evaluating TB control activities in each province and region. However, districts serve as the main administrative units for the programme; the district authorities are primarily responsible for activities at that level. District hospitals and rural health centres provide diagnostic and treatment services; the basic health units and dispensaries provide treatment. In rural areas, "lady health workers" play an important role in referring TB suspects from communities and in providing DOT. In some big cities, treatment is not yet provided in all health centres.

Pakistan has one national, four provincial and two regional reference laboratories. The national laboratory and three of the provincial labo-

ratories have facilities for culture and drug susceptibility testing. In the districts, 619 diagnostic centres do microscopy.

## Surveillance and monitoring

No national survey of TB infection or disease has been carried out in Pakistan, and case notifications were erratic until the introduction of DOTS in the early 1990s. The incidence of TB and its trend are uncertain. DOTS coverage increased rapidly from 9% in 2000 to 63% by 2003. During the same period, the smear-positive case detection rate increased from 3% to 17%. While these two indicators have increased, their ratio has not changed, suggesting that the case detection rate within DOTS areas has stayed in the range 20–30% since 2000. A possible reason for the low rate of case detection is that only 30% of all notified TB cases were diagnosed as smear-positive in 2003. Since it is expected that about 45% of incident cases would be smear-positive, the low proportion of reported smear-positives suggests that some smear-positive cases may have been notified as smear-negative.

The treatment success rate in the 2002 cohort was 77%, similar to that in 2001; the default rate remained high at 14%. Furthermore, 13% of treated patients, who were counted as successfully treated, completed treatment without evidence of smear conversion. Information on treatment success outside the DOTS programme is not available. Among relapse cases treated under DOTS, the treatment success was high (81%), but the proportion of patients whose cure was not laboratory confirmed was even higher than among new patients (53%). Among patients who had defaulted on previous treatment, treatment success was only 58%, mostly as a result of patients defaulting again (22% of the cohort).

## PROGRESS IN TB CONTROL IN PAKISTAN

### Indicators

DOTS treatment success, 2002 cohort	77%
DOTS detection rate, 2003	17%
NTP budget available, 2004	27%
Government contribution to NTP budget, including loans, 2004	7%
Government contribution to total TB control costs, including loans, 2004	26%
Government health spending used for TB control, 2004	5%

### Major achievements

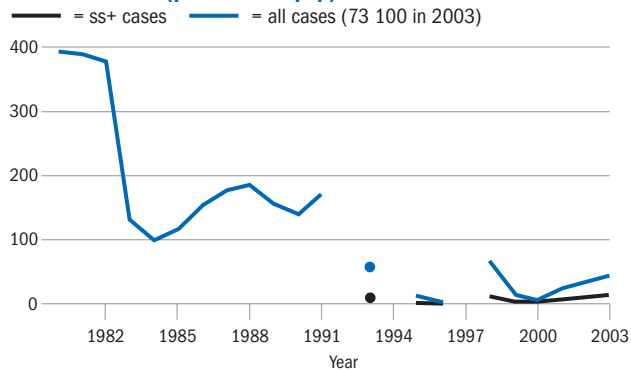
- Rapid DOTS expansion to cover a total of 94 out of 121 districts
- Provincial and district capacity-building to improve monitoring and supervision
- Establishment of the National Pakistan Stop TB Partnership to increase TB awareness and political commitment of local authorities

### Major planned activities

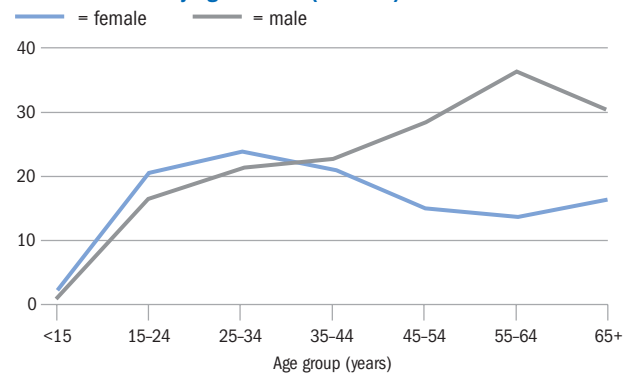
- Expand DOTS to cover all districts by 2005
- Develop an EQA system for smear microscopy
- Implement PPM-DOTS through FIDELIS and GFATM funding
- Launch communication strategies to improve TB awareness among health-care providers and the public

LATEST ESTIMATES <sup>a</sup>		TRENDS	2000	2001	2002	2003
<b>Population</b>	<b>153 577 848</b>	DOTS coverage (%)	9.0	24	45	63
Global rank (by est. number of cases)	6	Notification rate (all cases/100 000 pop)	7.7	23	35	48
Incidence (all cases/100 000 pop/year)	181	Notification rate (new ss+/100 000 pop)	2.3	7.5	11	14
Incidence (new ss+/100 000 pop/year)	82	Detection of all cases (%)	4.3	13	19	26
Prevalence (all cases/100 000 pop)	359	Case detection rate (new ss+, %)	2.8	9.2	13	17
TB mortality (all cases/100 000 pop/year)	43	DOTS case detection rate (new ss+, %)	2.8	5.2	13	17
TB cases HIV+ (adults aged 15-49, %)	0.6	DOTS case detection rate (new ss+)/coverage (%)	31	22	28	27
New cases multidrug resistant (%)	9.6	DOTS treatment success (new ss+, %)	74	77	77	-

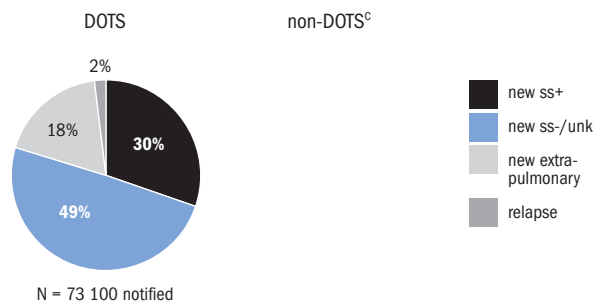
**Notification rate (per 100 000 pop)**



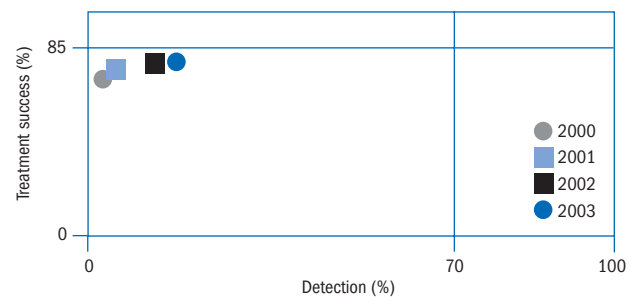
**Notification rate by age and sex (new ss+)<sup>b</sup>**



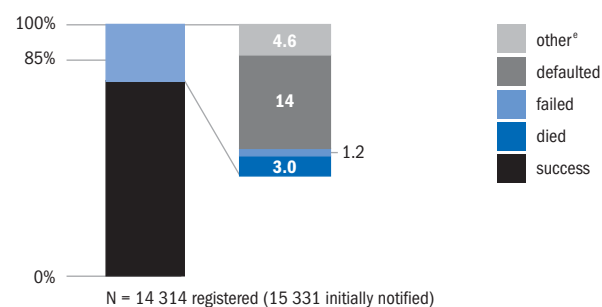
**Case types notified**



**DOTS progress towards targets<sup>d</sup>**



**DOTS treatment outcomes (new ss+)**



**Non-DOTS treatment outcomes (new ss+)**

**Notes**

ss+ indicates smear-positive; ss-, smear-negative; pop, population; unk, unknown.

Absence of a graph indicates that the data were not available or applicable.

<sup>a</sup> See Methods for data sources. Prevalence and mortality estimates include patients with HIV.

<sup>b</sup> The sum of cases notified by age and sex is less than the number of new smear-positive cases notified for some countries.

<sup>c</sup> Non-DOTS is blank for countries which are 100% DOTS, or where no non-DOTS data were reported.

<sup>d</sup> DOTS case detection rate for given year, DOTS treatment success rate for cohort registered in previous year.

<sup>e</sup> "Other" includes transfer out and not evaluated, still on treatment, and other unknown.

### Improving programme performance

Under the recent health reforms, district governments were authorized to prioritize their district health needs. The NTP needs to ensure that districts take ownership of their local TB control effort and make it a priority. The new National TB Control Programme Plan for 2006–2010 and Provincial TB Control Programme Strategic Plans for each of the four provinces for the same period have been drafted. These will be used to advocate for TB control at the national, provincial and district levels. The induction of national programme officers through USAID funding has helped to develop provincial and district capacity for monitoring and supervision.

The Government of Pakistan is committed to TB control under the DOTS strategy, and the programme is receiving adequate attention from policy-makers, as evidenced by the rapid expansion of DOTS since 2000. DOTS coverage will be expanded to the remaining 20 districts in 2005. With the rapid expansion of DOTS, the NTP faces constraints including inadequate public sector resources. As coverage is increased, the new national plan will progressively focus on the quality of care, enhanced case detection, monitoring and supervision and activities to de-stigmatize the disease. The Pakistan Stop TB Partnership is being launched and has appointed a Stop TB Ambassador. This is the first initiative in Pakistan to include non-traditional partners in TB control activities.

In 2002, the NTP received a two-year grant from the GDF, and this was extended to cover 2005. However, the current level of drug procurement will not be sufficient to meet the increasing needs arising from rapid DOTS expansion. As the use of FDCs is being advocated in the four provinces, the NTP has revised the treatment guidelines and has drafted training materials on their use. There are no drug resistance data available for Pakistan, although WHO estimates a prevalence of MDR in new TB patients of 10%. Patients in whom MDR-TB is diagnosed are not treated under the NTP.

The NTP has recognized the importance of behaviour change, communication and community mobilization in achieving countrywide implementation of DOTS, and support from various donors has been sought to develop effective strategies. Television spots, posters, leaflets, videos and other materials have been developed to raise public awareness. These strategies will be launched in 2005, with the aim of spreading public awareness among both health-care providers and the general public. Innovative approaches, coupled with operational research, are being explored to involve non-traditional partners such as politicians, industrialists, local district governments and religious leaders in TB control activities.

Three areas in which programme performance needs to be improved are diagnostic and laboratory services, TB/HIV coordination and links with other health-care providers.

#### *Diagnostic and laboratory services*

The NTP plans to establish an intermediate level laboratory network consisting of one reference laboratory in each district in 2004–2005 and to expand the number of hospitals and rural health centres that serve as diagnostic centres. The national and provincial reference laboratories have been strengthened with the procurement of laboratory equipment, materials and vehicles. Supervision and overall support for the provincial laboratories need further strengthening; guidelines need to be developed as well as tools for supervision, appropriate for the country setting. There are currently no systems in place for quality assurance of microscopy services at the district level, and this is a priority in the 2006–2010 national TB control plan. Other needs include training of laboratory staff and improvement in laboratory operating procedures.

#### *TB/HIV coordination*

The prevalence of HIV in the general population appears to be low, but the lack of adequate epidemiological data precludes an accurate assessment of the HIV situation in Pakistan. A TB/HIV plan and a national TB/HIV coord-

inating body are both being developed. TB/HIV awareness activities have been undertaken in conjunction with the South Asian Association for Regional Cooperation (SAARC) TB/HIV Awareness Year (2004).

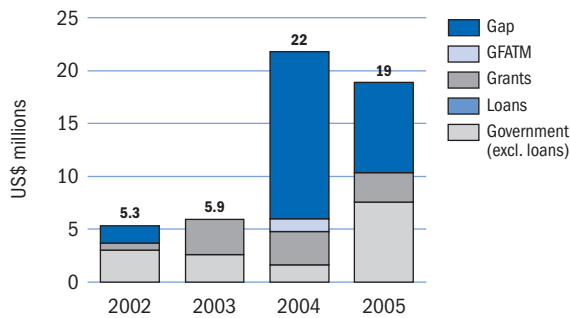
#### *Links with other health-care providers*

Pakistan has developed a national strategy for PPM DOTS. Few initiatives have been launched so far, but there is a strong commitment to encourage the active involvement of more health-care providers, including governmental, semigovernmental and the private sector, in DOTS expansion. Funds from the GFATM are being used to expand PPM and BCC (behaviour change and communication) activities. Several FIDELIS projects linking the NTP to other health-care providers are planned, including improving TB case detection by encouraging intersectoral collaboration in three urban areas and strengthening DOTS implementation in four districts of Punjab. NGOs are involved in some districts of each province and territory of the country; these include the Abaseen Foundation, Aga Khan Foundation, Asia Foundation, Association for Social Development, Marie Adelaide Leprosy Center, Mercy Corps International, Pakistan Anti-TB Association and many other local NGOs.

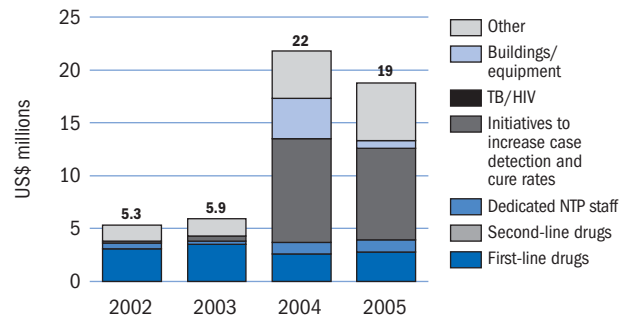
#### **Partnerships**

Partnerships for TB control in Pakistan have been strengthened, and technical and financial support has increased significantly. The NTP has launched the National Pakistan Stop TB Partnership to increase TB awareness and the political commitment of local authorities. Major technical partners include GLRA, GTZ, IUATLD, JICA and WHO. DFID has offered assistance to develop PPM partnerships; USAID has provided support to strengthen the capacity for DOTS implementation in the districts. The governments of Canada, Germany and Japan are the main financial partners for TB control activities. Pakistan will receive ISAC initiative funding (through CIDA) for DOTS expansion and sustainability through the involvement of district governments.

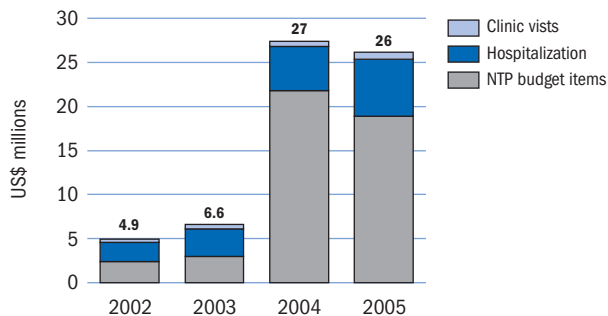
(a) NTP budget by source of funding



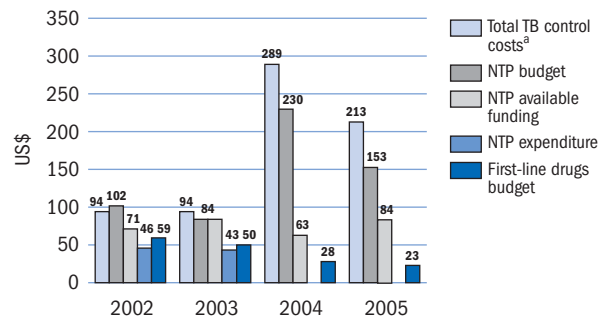
(b) NTP budget by line item



(c) Total TB control costs by line item<sup>a</sup>



(d) Per patient costs, budgets, available funding and expenditures



<sup>a</sup> Total TB control costs for 2002 and 2003 are based on expenditures, whereas those for 2004 and 2005 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.

**Budgets and expenditures**

The budgets for both 2004 and 2005 are substantially higher than in previous years, at about US\$ 20 million compared with US\$ 5–6 million in 2002 and 2003 (US\$ 153 per patient in 2005 compared with around US\$ 100 in both 2002 and 2003). These budgetary increases reflect the development of more ambitious plans to accelerate DOTS expansion (to achieve 100% coverage by 2005) and to increase case detection and cure rates throughout the country, and the associated revision of existing national and provincial strategic plans and budgets in 2004 (most of the budgetary increase between 2003 and 2004 is in the category “initiatives to increase case detection and cure rates”). The revised plans include PPM-DOTS strategies and community mobilization activities.

While the funding available for 2004 and 2005 is similar to that in 2002 and 2003, the considerably increased budgets for 2004 and 2005 mean that large funding gaps currently exist: US\$ 16 million in the fiscal year 2004 and US\$ 8.6 million in 2005 (the fiscal year starts in July). The NTP is already engaged in efforts to mobilize funds to fill these gaps. For example, it is expected that PPM-DOTS strategies will be funded through the national health and population facility (this is supported by the Pakistani government and DFID), and a further application to the GFATM is planned. In addition, provinces are revising their budgetary allocations in the context of the revised strategic plans. Some positive results are already apparent: in December 2004, the Punjab government approved a revised three-year budget allocation of US\$ 8.6 million

for TB control activities in the province, including US\$ 2.4 million for the first year (of which US\$ 1.3 million is for drugs).

If the revised NTP budget is fully funded, the total cost of TB control (including health clinic visits for observation of treatment and monitoring and limited hospitalization as well as NTP budget items) will increase from around US\$ 5 million in 2002 to US\$ 26 million in 2005 (and from around US\$ 100 to US\$ 213 per patient treated). It remains to be seen whether increased funding can be absorbed effectively and whether increased expenditures result in improved case detection and cure rates.

# Philippines

The Philippines achieved full DOTS coverage in 2003, has met the global target for treatment success in each of the past four years and is coming close to the target for case detection. TB control has progressed thanks to strong government commitment and a relatively well-staffed programme, while innovative partnership arrangements are making important contributions to TB control activities and resource mobilization. The financial position is favourable, with the budget for TB control activities fully funded for 2004 and 2005. The use of barangay (small local district) health workers to treat and follow patients has been a very beneficial national policy that has helped to achieve high treatment success rates. Involving medical schools and private physicians in DOTS services is now a government priority because this will increase case detection and ensure that standard methods for diagnosis and treatment are used in the private sector. Surveillance for TB drug resistance is in progress. The Philippines is one of the few high-burden countries that has started to implement DOTS-Plus treatment for MDR-TB

cases. Providing TB control and other health services to population groups in remote mountainous areas and small islands, and accessing insecure areas, present continuing challenges.

## System of TB control

The NTP has recently been reorganized as part of the national health sector reform process. Following restructuring and considerable decentralization of the Department of Health, the number of staff at central level was substantially reduced. Although additional staff have subsequently been employed at central level, there are still too few to carry out regular monitoring of programme activities in the regions. This means that regional coordinators are now responsible for most coordination and technical assistance, even though they may be responsible for more than one health programme and thus have limited time for TB control activities. Fortunately, the number of staff in the provinces and in rural health units is sufficient, and most staff have adequate training in all aspects of TB control. Each of the country's 16 regions has a centre for health devel-

opment that provides technical support to the provincial health offices. Provincial TB coordinators supervise staff in the rural health units, which are the main focus of TB control in the Philippines.

The TB laboratory network is structured as follows: the NRL is responsible for developing policy, management, training of microscopists, supervision of intermediate laboratories and DRS. Regional and provincial laboratories implement the policies developed by the NRL and provide EQA to the peripheral laboratories. The primary role of the peripheral laboratories at the rural and city health units is sputum smear microscopy. Culture and drug susceptibility testing are carried out by the NRL, one private laboratory and one NGO-affiliated laboratory. Seven regional laboratories have the capacity to perform culture.

## Surveillance and monitoring

The TB case notification rate was decreasing before 2001 but has increased slightly since then. In 2003, as in previous years, the highest notification rates were among adults aged 45 years and older. These observations suggest that the TB incidence rate is probably in decline in the Philippines, with this reduction obscured since 2000 by DOTS expansion and the greater effort given to case-finding. The DOTS case detection rate increased rapidly to 48% in 2000 and then more slowly to 68% in 2003. Treatment success was reported as 88% in the 2000, 2001 and 2002 DOTS cohorts, and 91% of new smear-positive cases notified in 2002 were registered for treatment in that year.

With the public sector DOTS programme nearing full implementation, greater efforts are being made to diagnose and treat patients in collaboration with the private sector. The NTP must now also consider how to evaluate the epidemiological impact of the DOTS programme. Two prevalence surveys were done in the Philippines before the implementation of DOTS

## PROGRESS IN TB CONTROL IN THE PHILIPPINES

### Indicators

DOTS treatment success, 2002 cohort	88%
DOTS case detection rate, 2003	68%
NTP budget available, 2004	100%
Government contribution to NTP budget, including loans, 2004	36%
Government contribution to total TB control costs, including loans, 2004	82%
Government health spending used for TB control, 2004	3%

### Major achievements

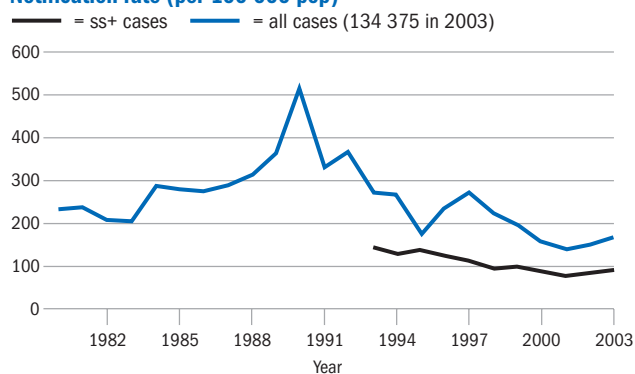
- Scaling up of PPM DOTS in two thirds of medical schools and more than 2000 private providers to increase the case detection rate
- Nationwide implementation of FDC anti-TB drugs, with increased health-worker capacity
- TB control in children was piloted in urban and rural areas, and TB control in high-risk populations started

### Major planned activities

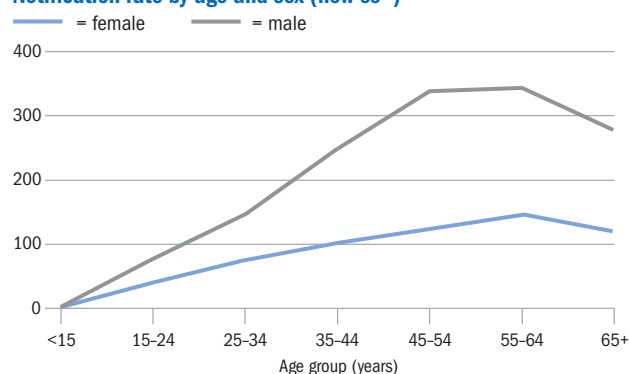
- Establish additional PPM-DOTS sites to cover the entire country
- Implement EQA for smear microscopy nationwide, including hospitals and private laboratories
- Strengthen the national reference laboratory function in laboratory networking

LATEST ESTIMATES <sup>a</sup>		TRENDS	2000	2001	2002	2003
<b>Population</b>	<b>79 999 016</b>	DOTS coverage (%)	90	95	98	100
Global rank (by est. number of cases)	9	Notification rate (all cases/100 000 pop)	158	139	151	168
Incidence (all cases/100 000 pop/year)	296	Notification rate (new ss+/100 000 pop)	89	77	83	91
Incidence (new ss+/100 000 pop/year)	133	Detection of all cases (%)	52	46	50	57
Prevalence (all cases/100 000 pop)	458	Case detection rate (new ss+, %)	65	57	62	68
TB mortality (all cases/100 000 pop/year)	49	DOTS case detection rate (new ss+, %)	48	57	62	68
TB cases HIV+ (adults aged 15-49, %)	0.1	DOTS case detection rate (new ss+)/coverage (%)	54	60	63	68
New cases multidrug resistant (%)	3.2	DOTS treatment success (new ss+, %)	88	88	88	—

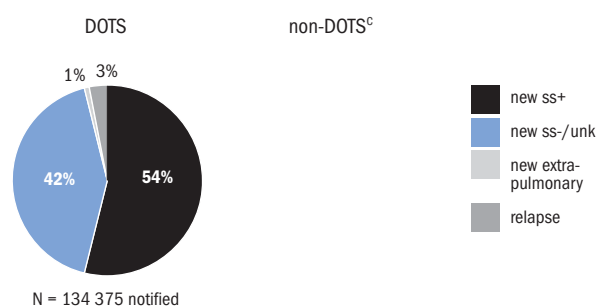
### Notification rate (per 100 000 pop)



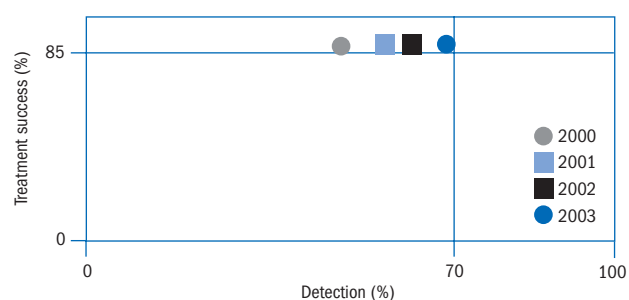
### Notification rate by age and sex (new ss+)<sup>b</sup>



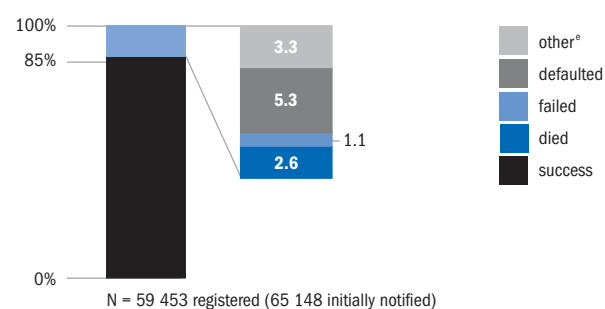
### Case types notified



### DOTS progress towards targets<sup>d</sup>



### DOTS treatment outcomes (new ss+)



### Non-DOTS treatment outcomes (new ss+)



### Notes

ss+ indicates smear-positive; ss-, smear-negative; pop, population; unk, unknown.

Absence of a graph indicates that the data were not available or applicable.

<sup>a</sup> See Methods for data sources. Prevalence and mortality estimates include patients with HIV.

<sup>b</sup> The sum of cases notified by age and sex is less than the number of new smear-positive cases notified for some countries.

<sup>c</sup> Non-DOTS is blank for countries which are 100% DOTS, or where no non-DOTS data were reported.

<sup>d</sup> DOTS case detection rate for given year, DOTS treatment success rate for cohort registered in previous year.

<sup>e</sup> "Other" includes transfer out and not evaluated, still on treatment, and other unknown.

that showed little reduction in culture-positive or smear-positive disease between 1981–1983 and 1997. A new national TB prevalence survey is scheduled for 2007. This will show whether or not the Philippines can meet, or has already met, the Millennium Development Goal of halving prevalence between 1990 and 2015.

### Improving programme performance

The Philippines reached 100% DOTS coverage in 2003 as a result of strengthened DOTS expansion efforts, backed by government commitment and funding for TB control as a priority public health programme. As part of the health sector reform process, management capacity and programme infrastructure were upgraded, and TB control activities became the responsibility of the Infectious Diseases Office under the National Centre for Disease Control and Prevention. Following the reorganization of the Department of Health, the procedural manual for the NTP and the Comprehensive and Unified Policy for TB Control in the Philippines will be revised. This policy provides a framework for collaboration with other government agencies and with the private sector, which in turn will help to harmonize and unify TB control efforts in the Philippines.

Nationwide implementation of FDC anti-TB drugs started after successful training for health-care workers. To improve case detection, TB control initiatives focused on children were pilot tested in urban and rural areas, and TB control activities in high-risk populations begun. A TB outpatient benefit package, PhilHealth, was introduced to improve treatment success rates.

The first nationwide DRS survey started in June 2003. This will provide the first reliable estimate of the magnitude of MDR-TB in the country. In 2000, the GLC approved a DOTS-Plus project at Makati Medical Center in Manila (a private medical centre collaborating with the NTP), with an initial cohort of 200 patients. With support from the GFATM, this cohort has been expanded to 750 MDR-TB patients in 2004. As yet, no MDR-TB

patients are treated in the public sector.

In addition to management of MDR-TB, diagnostic and laboratory services, TB/HIV coordination and links with other health-care providers could also be improved.

### Diagnostic and laboratory services

The laboratory service at intermediate and peripheral levels is good and staff are well-trained; however, EQA for sputum smear microscopy is not in place in every laboratory and needs to be strengthened where it already exists. An updated national manual for EQA for direct sputum smear microscopy was developed and distributed in late 2004. A priority for 2005 is to establish models for EQA, to monitor and evaluate the model EQA implementation and to expand to other laboratories. Eventually, hospitals and private laboratory facilities will be included in EQA activities. Laboratory networking is to be developed at all levels of the health service; successful networking will require reinforcement of the NRL.

### TB/HIV coordination

There are no existing data on TB/HIV coinfection in the Philippines. However, HIV prevalence in the general population, and among TB patients, remains low (<1%). Given the worsening HIV/AIDS epidemics in neighbouring countries, it is important to monitor HIV prevalence in the general population as well as among high-risk groups including TB patients.

### Links with other health-care providers

With the aim of consolidating and scaling up initiatives to involve private health-care providers in DOTS, the Philippines issued guidelines on PPM DOTS in 2004, and a national committee for PPM DOTS has been established. Operational guidelines for PPM DOTS in the Philippines were published, endorsed by the Secretary of Health and distributed. PPM-DOTS units, whose role is to coordinate private sector involvement in provision of DOTS services, have been set up in over 50 sites nationwide. More than 2000 private providers have been trained, and six professional societies have introduced the DOTS strategy in

their training curricula. Two thirds of medical schools have become or are in the process of becoming involved in DOTS activities. The positive impact of these initiatives on case detection has been demonstrated in a few sites, but there is a need to incorporate a careful and more comprehensive strategy for monitoring and evaluation of the current scale-up of PPM DOTS in the Philippines.

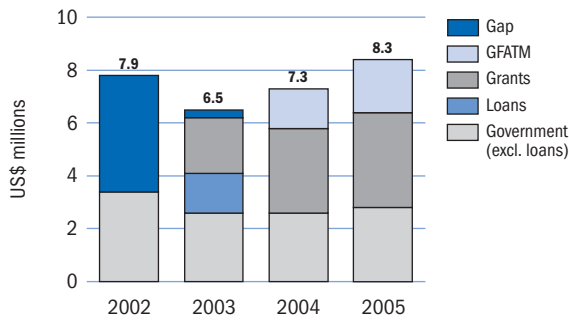
### Partnerships

The Philippines benefits from several partnerships that strengthen the programme and support DOTS expansion. Overall external technical collaboration is coordinated by WHO. Other external technical support is provided by CDC, JICA, KNCV, Medicos del Mundo (Spain), USAID and World Vision, which has helped to maintain technical quality during the expansion phase. An important innovation led by the Department of Health is the organization of the Philippines Coalition Against TB (PhilCAT). This includes a substantial group of NGO and private sector entities that collaborate to help private sector TB control activities and to mobilize local resources. The major funding partners are CIDA, GFATM, JICA and USAID.

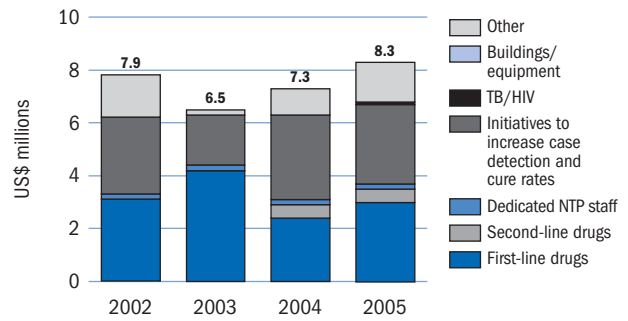
### Budgets and expenditures

The budget specifically for TB control activities has been similar in the four years 2002–2005, at about US\$ 7–8 million. However, funding gaps existed in 2002 and 2003, whereas no funding gap has been reported for 2004 or 2005. This improved funding situation is linked to an increasing level of grant funding, much of which is related to initiatives to increase case detection – in particular, USAID funds for PPM DOTS. Funding from the government has fallen, related to austerity measures that affect public spending as a whole. In contrast to most other HBCs, there is also a budget for second-line drugs in 2004 and 2005, linked to implementation of DOTS-Plus in Manila. On a per patient basis, the overall NTP budget has fallen from US\$ 66 in 2002 to US\$ 48 in 2005. This is mainly explained by a reduction in the cost of first-line drugs, which has fallen from US\$ 26 per pa-

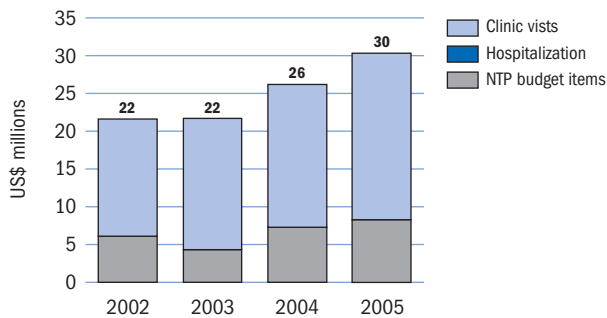
(a) NTP budget by source of funding



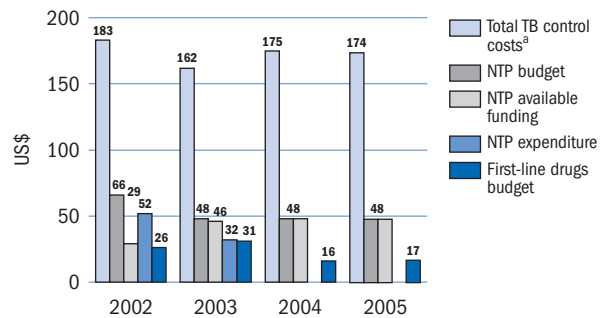
(b) NTP budget by line item



(c) Total TB control costs by line item<sup>a</sup>



(d) Per patient costs, budgets, available funding and expenditures



<sup>a</sup> Total TB control costs for 2002 and 2003 are based on expenditures, whereas those for 2004 and 2005 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.

tient treated in 2002 to US\$ 17 per patient treated in 2005. When costs beyond those reflected in the budget specifically for TB control are also included, i.e. health clinic visits for DOT and monitoring during treatment, the cost per patient has been about US\$ 160–180 for the past four years, and total TB control costs have been around US\$ 22–30 million per year.

# Russian Federation

Following a considerable rise in the TB burden in the Russian Federation during the 1990s, a peak was reached in 2000 when some 132 000 cases of TB were notified. Since then, a progressive reduction in the number of reported cases has occurred, mainly because of a decline in the number of cases registered in the prison sector. However, the number of cases in the general population has increased, particularly among children. The DOTS strategy is not widely used in the Russian Federation. In oblasts where it is being applied, both case detection and treatment outcomes are still low. However, government commitment to TB control is strong, and a recent World Bank loan will allow accelerated expansion of both TB and HIV/AIDS programmes. In addition, the Russian Federation made a successful application to the GFATM in 2004, opening up additional opportunities to extend and improve these programmes. The

increasing public health importance of TB/HIV coinfection is being addressed through a national TB/HIV coordinating body, which has developed a national strategy for TB/HIV control. Also receiving special attention is the growing MDR-TB epidemic in the Russian Federation; links between the MDR-TB and TB/HIV epidemics are being investigated. A major challenge is to improve the laboratory network to meet international standards and provide reliable diagnostic services for the TB control programme.

## System of TB control

The Russian Federal Target Programme "Prevention and Control of Social Diseases (2002–2006)", with the subprogramme "Urgent Measures of TB Control in Russia" was approved in 2001. The Programme aims to stabilize the epidemiological situation of social diseases through improvement of current organizations and newly

established services. The plan covers strengthening the capacities of health facilities, research institutes and centres that carry out prevention, timely detection, diagnosis and treatment.

Several federal laws and regulations were developed to strengthen the foundation of the TB control programme. The national five-year plan, "Provision of guaranteed diagnostic and treatment procedures for TB patients and the development of TB services in Russia (2003–2006)", was developed as the main framework for activities and cooperation with international partners. Reduction of TB incidence, disability and mortality is currently one of the priorities of state policy in the Russian Federation.

Within the federal TB control programme, five research institutes are responsible for organizing and supervising research, training and implementation of TB control in a wide network of more than 500 TB control facilities in 88 regions of the Russian Federation. These are the Research Institute of Phthisiopulmonology of Sechenov Moscow Medical Academy (RIPP MMA), the Central TB Research Institute of the Russian Academy of Medical Sciences (CTRI RAMS), St Petersburg Institute of Phthisiopulmonology, Ural Research Institute of Phthisiopulmonology and the Novosibirsk TB Research Institute. The TB dispensaries in turn supervise and monitor regional TB hospitals, sanatoria and TB units at district polyclinics. Under the Ministry of Justice, 37 hospitals and 57 treatment facilities provide treatment for TB patients within the penitentiary system.

The five federal TB research institute laboratories and 377 TB dispensary laboratories perform culture and drug susceptibility testing. In the territories, 348 centres with hospitals and sanatoria perform culture, and more than 11 000 centres perform smear microscopy.

## PROGRESS IN TB CONTROL IN THE RUSSIAN FEDERATION

### Indicators

DOTS treatment success, 2002 cohort	67%
DOTS case detection rate, 2003	8.8%
NTP budget available, 2004	84%
Government contribution to NTP budget, including loans, 2004	83%
Government contribution to total TB control costs, including loans, 2004	87%
Government health spending used for TB control, 2004	4%

### Major achievements

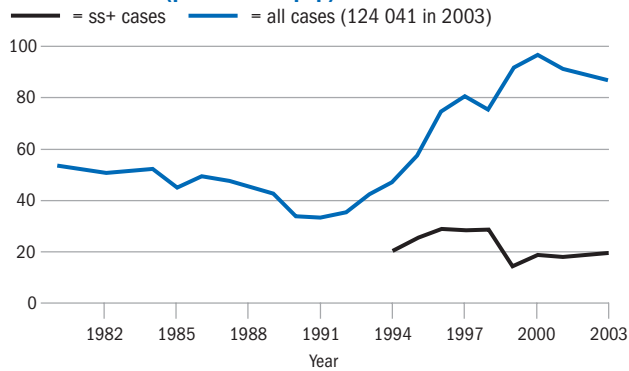
- Beginning of implementation of the AIDS and TB control project funded by a World Bank loan
- Approval by the MoH of the new recording and reporting system, including cohort analysis, introduced in 37 regions in 2004 and countrywide in 2005
- Successful application to the GFATM round 4 for TB control
- Development of a strategy on TB/HIV control and countrywide training of regional TB/HIV coordinators
- Training of trainers in the revised TB control strategy
- Substantial progress in the Thematic Working Group on MDR-TB control

### Major planned activities

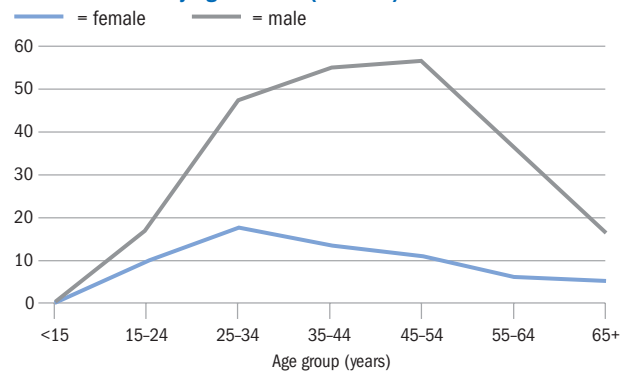
- Expand the revised TB control strategy through the World Bank loan project and prepare for GFATM project implementation
- Develop national guidelines and a framework for the management of MDR-TB
- Implement TB/HIV control strategy
- Strengthen laboratory system: capacity development for smear, culture and drug susceptibility testing; establish the national reference laboratories network and quality assurance system; implement drug resistance surveillance in 10 oblasts
- Improve anti-TB drug supply system

LATEST ESTIMATES <sup>a</sup>		TRENDS	2000	2001	2002	2003
<b>Population</b>	<b>143 246 223</b>	DOTS coverage (%)	12	16	25	25
Global rank (by est. number of cases)	12	Notification rate (all cases/100 000 pop)	97	91	89	87
Incidence (all cases/100 000 pop/year)	112	Notification rate (new ss+/100 000 pop)	19	18	19	20
Incidence (new ss+/100 000 pop/year)	50	Detection of all cases (%)	79	76	77	77
Prevalence (all cases/100 000 pop)	160	Case detection rate (new ss+, %)	35	34	37	40
TB mortality (all cases/100 000 pop/year)	20	DOTS case detection rate (new ss+, %)	4.6	5.2	6.9	8.8
TB cases HIV+ (adults aged 15-49, %)	6.2	DOTS case detection rate (new ss+)/coverage (%)	39	33	28	35
New cases multidrug resistant (%)	6.0	DOTS treatment success (new ss+, %)	68	67	67	-

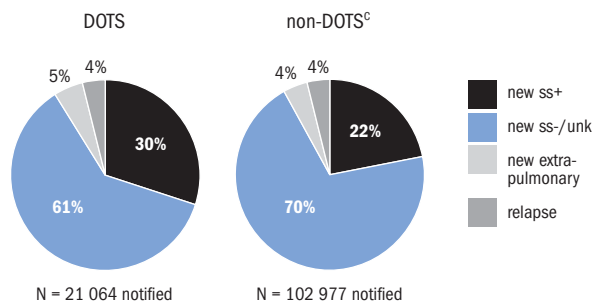
### Notification rate (per 100 000 pop)



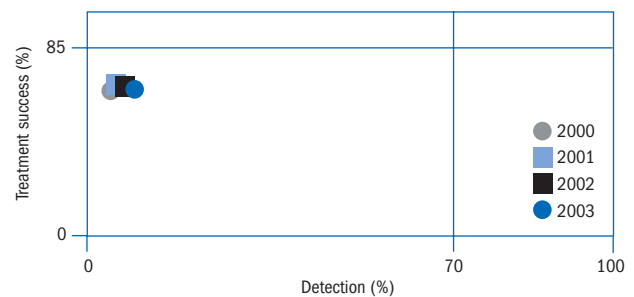
### Notification rate by age and sex (new ss+)<sup>b</sup>



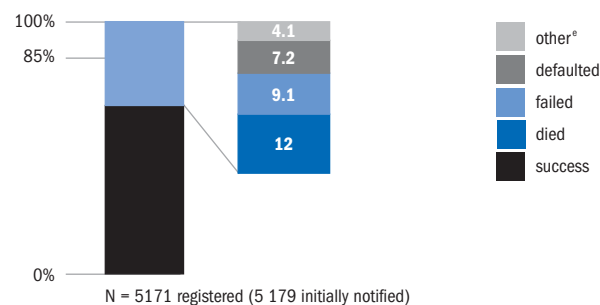
### Case types notified



### DOTS progress towards targets<sup>d</sup>



### DOTS treatment outcomes (new ss+)



### Non-DOTS treatment outcomes (new ss+)

### Notes

ss+ indicates smear-positive; ss-, smear-negative; pop, population; unk, unknown.

Absence of a graph indicates that the data were not available or applicable.

<sup>a</sup> See Methods for data sources. Prevalence and mortality estimates include patients with HIV.

<sup>b</sup> The sum of cases notified by age and sex is less than the number of new smear-positive cases notified for some countries.

<sup>c</sup> Non-DOTS is blank for countries which are 100% DOTS, or where no non-DOTS data were reported.

<sup>d</sup> DOTS case detection rate for given year, DOTS treatment success rate for cohort registered in previous year.

<sup>e</sup> "Other" includes transfer out and not evaluated, still on treatment, and other unknown.

### Surveillance and monitoring

The increase in the number of annual TB case notifications after 1990 reached a peak of around 141 000 cases in 2000, and the number of reported cases has fallen each successive year since then. Similar trends have also been observed in other countries of the former Soviet Union that have also reported fewer cases, or at least a slowing in the rate of increase in the number of patients. This stabilization in notification rates in the Russian Federation could be the result of improved TB control or of general improvements in peoples' health, but is most likely because of the decline in notified cases over the past few years observed in the prison sector. Since 2001, a decline of notified cases in the prison sector has occurred from more than 24 000 cases to around 16 000 in 2003. TB mortality rates remain increasingly high at around 20 per 100 000 population.

In 2003, DOTS coverage was low, with only 8.8% of cases detected under DOTS. It is therefore unlikely that the DOTS strategy had a major impact on incidence. In 2004, DOTS was implemented in 37 regions of the Russian Federation, with increased coverage to around 45% of the population; however, detection and treatment outcomes remain suboptimal. Moreover, treatment success in the 2002 cohort was low even in DOTS areas (67%) because many patients died (13%), failed treatment (9%) or were lost to follow-up (11%). The treatment outcomes for new smear-positive patients under DOTS have not improved in eight successive cohorts (1995–2002). Among the 962 DOTS relapse cases in 2002, fewer than half were successfully treated (46%), mainly because 26% failed re-treatment.

Treatment outcomes are not available for re-treatment after default or failure. Given the high prevalence of MDR-TB in the Russian Federation, it is important that these data be collated and analysed in future. Although sputum smear microscopy is increasingly used for diagnosis, the proportion of new pulmonary TB patients with a positive sputum smear was still only 33% in 2003 in DOTS regions and did not exceed 24% in non-DOTS regions,

with an overall average for the Russian Federation of 25.3%. Nevertheless, the Russian Federation is different from many other HBCs in having a fairly comprehensive system for recording and reporting the total numbers of TB cases and deaths. This system of routine surveillance (rather than population-based surveys) should, with some refinements, be adequate for monitoring epidemiological trends and the future impact of TB control.

### Improving programme performance

The current state policy aims to stabilize and improve the epidemiological situation, which is evidenced by an increase in federal budget allocations for TB control. The commitment of the federal government to TB control continues to grow, with sustained activities of the high-level working group (HLWG), one of the mechanisms of international cooperation in the field of medicine. The HLWG comprises representatives of the Ministry of Health and Social Development of the Russian Federation, the Ministry of Justice, RIPP MMA, CTRI RAMS, WHO and the Council of Europe. The federal government has adopted a number of regulations for TB control including: the Executive Order No. 109 of 21 March 2003 "On Improvement of TB Control in the Russian Federation" that focuses on laboratory diagnosis, chemotherapy standards, organization of treatment, prevention of TB transmission, system of centralized control and management of main TB interventions at the level of TB facilities in regions of the Russian Federation, and the introduction of the new reporting and dispensary follow-up system; the Executive Order No. 50 of 13 February 2004 "On Implementation of Registration and Reporting Documentation for Tuberculosis Monitoring" that includes cohort analysis and assessment of detection and treatment effectiveness in line with international standards; a recording form "Individual Card of TB/HIV Patient"; and recommendations on decreasing TB burden among high HIV prevalence populations.

Registers for recording and report-

ing TB based on cohort analysis were introduced by the Russian MoH in February 2004. From April 2004, new reporting forms were being introduced in 37 territories in both the civil and penitentiary sectors, and will be used country-wide from January 2005.

The activities of the federal TB control programme and expansion of the revised strategy are constrained by the shortage of staff and age of the existing medical staff working in TB services, many of whom are retiring. A detailed assessment of HR needs is under way and several activities are in progress to address HR capacity, including a staff development plan, as part of the overall TB plan for 2003–2007, and further training of TB service personnel supported by the World Bank-funded TB/AIDS project. New national guidelines and recommendations have been developed, published and distributed on case detection, TB treatment, laboratory services and TB/HIV control.

MDR-TB is a major challenge for TB control in the Russian Federation. MDR-TB patients outside the DOTS-Plus projects are treated on an individual basis and according to the availability of second-line drugs. Data on the prevalence of drug resistance are reported routinely from Ivanovo, Orel and Tomsk oblasts where the prevalence of MDR-TB among new cases ranges from 2.6% in Orel to 13.7% in Tomsk. Data from a few additional oblasts will be available shortly, and a plan to survey oblasts systematically is being developed. GLC-approved DOTS-Plus projects are being implemented in Archangelsk, Ivanovo, Orel and Tomsk. The GLC has approved the treatment of 2830 MDR-TB patients. The project in Tomsk, which was the first of these projects to start, has been successful in treating MDR-TB patients and has recently been expanded with financial support from the GFATM.

### Diagnostic and laboratory services

The physical infrastructure of many diagnostic facilities in the Russian Federation does not meet Russian and international standards for laboratory design and safety. In addition, in many instances, laboratory equipment is

outdated. Updating infrastructure of existing facilities and ensuring availability of quality equipment and supplies is an enormous challenge facing the national TB control programme.

Quality assurance is being addressed by the introduction of a federal system of EQA for smear microscopy approved by the MoH. However, given the financial constraints, the system has not yet been introduced in all diagnostic centres, nor have internal quality control procedures. The TB laboratory network faces a serious shortage of staff; HR capacity building through training and development of a model for effective laboratory services at the central level should lead to improvements in laboratory diagnosis at all levels.

### TB/HIV coordination

HIV/AIDS is becoming a significant public health problem in the Russian Federation. A thematic working group, "TB in HIV-infected people", has been established within the HLWG on TB and has developed recommendations on decreasing the TB burden among PLWHA. The group comprises leading national TB and HIV experts from re-

search institutes, health facilities, WHO and international partners. Its basic objective is to develop a framework for establishment of the national system of TB care among HIV-infected people. The first stage resulted in the preparation of the "Recommendations on decreasing TB burden in high HIV prevalence populations" based on national and international practices.

Regional TB/HIV coordinators have been appointed in many regions of the Russian Federation. A number of federal-level seminars were held in 2004 where these coordinators were trained in principles of the newly developed TB/HIV strategy.

### Links with other health-care providers

Collaboration between all relevant public sector health-care providers and related institutions is being strengthened, including general hospitals, TB hospitals, medical colleges, prison health services and the health services of the armed forces and of the police. The Ministry of Railway Communication, the Federal Security Service and a number of other ministries and departments have their own TB control services, and links with them

need to be strengthened. The private sector plays a minor role in TB diagnosis and treatment.

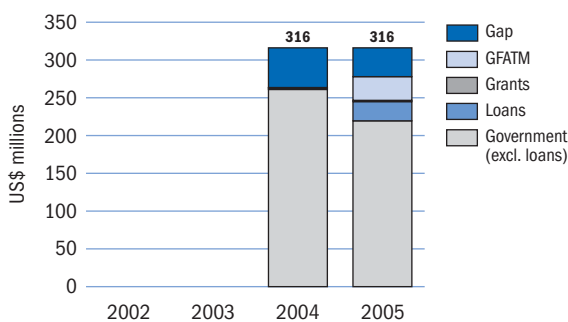
### Links with the community

Several community groups contribute to the provision of TB control activities in the Russian Federation, including an NGO of TB patients (NABAT), the Russian Red Cross, Russian TB Society and other regional foundations and societies. These groups participate in annual World TB Day campaigns and provide health education and social support for TB patients.

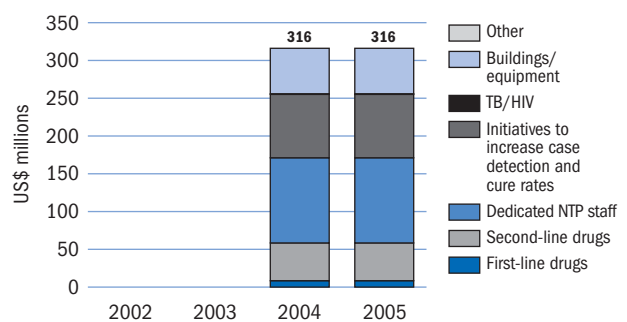
### Partnerships

The HLWG, established in 1999, continues to play an important role in the development of TB control. It is responsible for coordinating TB activities between the national and international partners, and it works on recommendations for executive policy documents (prikaz) that regulate implementation of national TB control. Many national and international NGOs and technical agencies are partners in TB control within the 88 territories of the Russian Federation. Major donors include USAID, the Swedish

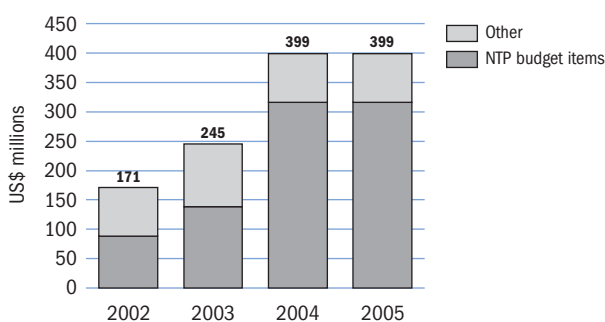
(a) NTP budget by source of funding



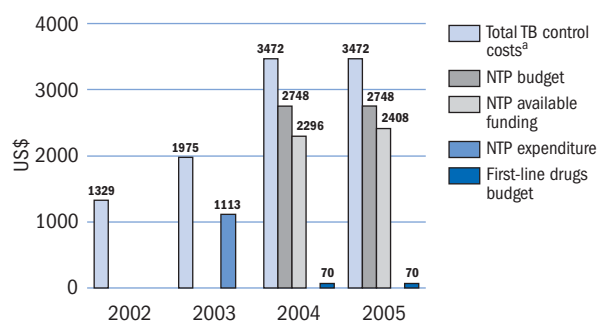
(b) NTP budget by line item



(c) Total TB control costs by line item<sup>a</sup>



(d) Per patient costs, budgets, available funding and expenditures



<sup>a</sup> Total TB control costs for 2002 and 2003 are based on expenditures, whereas those for 2004 and 2005 are based on budgets. "Other" includes costs for hospitalization and fluorography not reflected in the budget estimates submitted to WHO.

International Development Agency, the EU, the Government of Finland and DFID. The Russian Federation successfully applied to the GFATM in round 4; funds for TB control activities should be available in 2005. A loan agreement between the Russian Federation and the World Bank to fund the project on "AIDS and TB Control" was signed in September 2003 and became effective in December 2003.

### Budgets and expenditures

Financial data were prepared by WHO staff (Moscow office) using data available in the public domain, and are therefore estimates rather than official figures. Sources of data included the Ministry of Health and Social Development and the Federal Agency for Health Care and Social Development of the Russian Federation.

The total budget for TB control in both 2004 and 2005 is estimated at US\$ 316 million (almost US\$ 3000

per new TB patient). About US\$ 250–260 million is available from the government in both 2004 and 2005 (including funds from a World Bank loan), a substantial increase compared with 2003. In 2005, the GFATM is expected to provide a further US\$ 30 million, but grants from other sources are limited. While the available funding of about US\$ 270 million in 2004 and 2005 is substantial by the standards of other HBCs, a funding gap of about US\$ 40–50 million has been estimated for both years, primarily for the purchase of second-line drugs (US\$ 18 million) and for investment in buildings and equipment (US\$ 24 million). The Russian Federation accounts for almost one third of the total funding gap reported by the 22 HBCs.

The largest budget line items are for staff working exclusively on TB control (US\$ 113 million in both years), initiatives to increase case

detection and cure rates (US\$ 84 million in both years), investment in buildings and equipment (US\$ 60 million in both years) and second-line drugs (about US\$ 45 million in both years). The budgets for staff, investment in buildings and equipment and second-line drugs are relatively large compared with those in other HBCs, and reflect the country's extensive network of dedicated TB control facilities and the large number of patients with MDR-TB. When costs beyond those reflected in the reported budgets are included (i.e. the operating costs of a network of 81 425 dedicated TB beds and the cost of mass screening using fluorography), the total cost of TB control is estimated to be about US\$ 400 million in both 2004 and 2005 (about US\$ 3500 per patient treated), up from an estimated US\$ 245 million in 2003.