

WHO REPORT 2006

Global Tuberculosis Control Surveillance, Planning, Financing



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Global Tuberculosis Control

Surveillance, Planning, Financing



**World Health
Organization**

WHO Library Cataloguing-in-Publication Data

World Health Organization.

Global tuberculosis control : surveillance, planning, financing : WHO report 2006.

1.Tuberculosis, Pulmonary – prevention and control 2.Tuberculosis, Multidrug-resistant – drug therapy
4.Directly observed therapy 5.Treatment outcome 6.National health programmes – organization and
administration 7.Financing, Health 7.Statistics I. Title.

ISBN 92 4 156314 1

(NLM classification: WF 300)

WHO/HTM/TB/2006.362

Suggested citation:

Global tuberculosis control: surveillance, planning, financing. WHO report 2006. Geneva, World Health Organization (WHO/HTM/TB/2006.362).

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For reasons of space, the names of Member States are sometimes shortened in certain figures.

Cover: Gross national income per capita of 19 high-burden countries compared with the proportion of funds for TB control that is provided by their governments (rather than by donor agencies). Countries with a higher average income per capita tend to contribute more to the cost of TB control. The financial contributions made by governments will be crucial to the success of *The Global Plan to Stop TB, 2006–2015*. The data are presented in detail in Figure 33 of the main text.

Designed by minimum graphics

Printed in Switzerland

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Acknowledgements

The WHO Global TB Surveillance, Planning and Financing Project is coordinated by Christopher Dye, Léopold Blanc and Katherine Floyd. The 2006 report was written by Daniel Bleed, Christopher Dye, José Figueroa-Muñoz, Katherine Floyd, Mehran Hosseini, Eva Nathanson, Andrea Pantoja, Amy Piatek, Alasdair Reid, Catherine Watt, Brian Williams and Abigail Wright.

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WHO Western Pacific Region: Dong Il Ahn (WPRO), Maarten Bosman (Viet Nam), Daniel Chin (China), Philippe Glaziou (WPRO), Pratap Jayavanth (Cambodia), Wang Lixia (China), Pieter van Maaren (WPRO), Bernard Tomas (WPRO), Michael Voniatis (Philippines).

The primary aim of this report is to share information from national TB control programmes. The data presented here are supplied largely by programme managers, who have been instrumental in driving much of the work on surveillance, planning and financing. We thank all of them, and their staff, for their contributions. The WHO TB Surveillance, Planning and Financing Project is carried out with the financial backing of USAID. The WHO DOTS Expansion Project is supported by funding from the governments of Australia, Belgium, Canada, Germany, Ireland, the Netherlands, Norway, Switzerland, the United Kingdom and the United States. Data for the European Region were collected and validated jointly with EuroTB, a dedicated European TB surveillance network funded by the European Commission; we thank Dennis Falzon of EuroTB for his collaboration. Rhehab Chimzizi and Tony Harries kindly allowed us to present their important data on antiretroviral therapy in Malawi. We also thank Pam Baillie, Kreena Govender and Sue Hobbs for their usual efficiency in helping to get this report published by 24 March, World TB Day.

Copies of *Global tuberculosis control* are available from the World Health Organization, 20 Avenue Appia, CH-1211 Geneva 27, Switzerland, and at www.who.int/tb.

Abbreviations

ACSM	Advocacy, communication and social mobilization	IPT	Isoniazid preventive therapy
AFB	Acid-fast bacilli	ISAC	Intensified support and action in countries, an emergency initiative to reach targets for DOTS implementation by 2005
AFR	WHO African Region	IUATLD	International Union Against Tuberculosis and Lung Disease
AFRO	WHO Regional Office for Africa	JICA	Japan International Cooperation Agency
AIDS	Acquired immunodeficiency syndrome	LACEN	Brazilian public health laboratories
AMR	WHO Region of the Americas	LGU	Local government unit
AMRO	WHO Regional Office for the Americas	LGA	Local government area
ART	Antiretroviral therapy	MDG	Millennium Development Goal
BPHS	Basic package of health-care services	MDR	Multidrug resistance
BRAC	Bangladesh Rural Advancement Committee	MDR-TB	Multidrug-resistant tuberculosis
CAREC	Caribbean Epidemiology Centre	MoH	Ministry of Health
CDP	Community DOT providers	MoPH	Ministry of Public Health
CPT	Co-trimoxazole preventive therapy	MSH	Management Sciences for Health
DCT	Diagnostic counselling and testing for HIV	NAP	National AIDS control programme or equivalent
DFB	Damien Foundation Belgium	NGO	Nongovernmental organization
DFID	UK Department for International Development	NHLS	National Health Laboratory Services
DoH	Department of Health	NPO	National professional officer (WHO-appointed)
DOT	Directly observed treatment	NRL	National reference laboratory
DOTS	The internationally recommended strategy for TB control	NTP	National tuberculosis control programme or equivalent
DRS	Drug resistance surveillance or survey	PAHO	Pan-American Health Organization
DST	Drug susceptibility testing	PAL	Practical Approach to Lung Health
EMR	WHO Eastern Mediterranean Region	PhilTIPS	Philippine Tuberculosis Initiatives for the Private Sector
EMRO	WHO Regional Office for the Eastern Mediterranean	PPM	Public-private or public-public mix
EQA	External quality assurance	SEAR	WHO South-East Asia Region
EUR	WHO European Region	SEARO	WHO Regional Office for South-East Asia
EURO	WHO Regional Office for Europe	SILT	Brazilian laboratory information system
FDC	Fixed-dose combination (or FDC anti-TB drug)	SINAN	Brazilian health information system
FIDELIS	Fund for Innovative DOTS Expansion, managed by IUATLD	TB	Tuberculosis
GDF	Global TB Drug Facility	TBCTA	Tuberculosis Coalition for Technical Assistance
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria	UNAIDS	Joint United Nations Programme on HIV/AIDS
GLC	Green Light Committee	UNDP	United Nations Development Programme
GLRA	German Leprosy and TB Relief Association	USAID	United States Agency for International Development
GNI	Gross national income	VCT	Voluntary counselling and testing for HIV infection
HBC	High-burden country of which there are 22 that account for approximately 80% of all new TB cases arising each year	VHV	Village health volunteers
HEW	Health extension workers	WHO	World Health Organization
HIV	Human immunodeficiency virus	WPR	WHO Western Pacific Region
HNPSP	Health Nutrition and Population Sector Programme	WPRO	WHO Regional Office for the Western Pacific
HR	Human resource(s)		
IEC	Information, education, communication		

Key points

TB EPIDEMIC

- There were 9 million new TB cases and approximately 2 million TB deaths in 2004.
- The number of TB cases was stable or falling in 5 of 6 WHO regions, but growing in Africa where the TB epidemic is still driven by the spread of HIV.
- More than 80% of all TB patients live in sub-Saharan Africa and Asia.

DOTS AND THE NEW STOP TB STRATEGY

- DOTS, which remains at the heart of the new Stop TB Strategy, was being applied in 183 countries in 2004; population coverage was complete in 9 of 22 high-burden countries (HBCs), and almost complete in 5 others.
- Expanding areas of work within the new strategy include: community and NGO participation in TB care; advocacy, communication and social mobilization; and improved management of multidrug-resistant TB and TB/HIV.
- Six Asian countries and Kenya have already improved links between national TB control programmes (NTPs), hospitals and other health-care providers, but PPM-DOTS is still at an early stage in most other HBCs.
- Areas of particular weakness are laboratory services, human resource development and the monitoring of TB/HIV control.

FINANCES

- The total cost of TB control in 2006, including NTP budgets and costs to the general health-care system, has grown to US\$ 1.6 billion in the 22 HBCs. This increases to US\$ 2.0 billion for all 74 countries that provided financial data.
- Funding to support TB control in the 22 HBCs has increased by almost US\$ 500 million since 2002, reaching US\$ 1.4 billion in 2006.
- Governments of the wealthier HBCs (notably Brazil, China, the Russian Federation and South Africa) provide most of the funding needed for TB control in their countries; other countries rely more on grants from donors, including the Global Fund to Fight AIDS, Tuberculosis and Malaria.
- The funding gap reported by the 22 HBCs for 2006 was US\$ 141 million; it was US\$ 180 million in total for the 74 countries that reported data.
- NTP budgets for 2006 are broadly in line with the Global Plan to Stop TB, 2006–2015, except for TB/HIV control where NTP budgets are much lower.

TARGETS

- Case detection was 53% globally in 2004, and is likely to exceed 60% in 2005, falling short of the 70% target.
- Treatment success was 82% in the 2003 cohort of 1.7 million patients, approaching the 85% target.
- Three WHO regions are expected to have met both of the 2005 targets: the Region of the Americas and the South-East Asia and Western Pacific regions.
- At least 7 HBCs should have met the 2005 targets: Cambodia, China, India, Indonesia, Myanmar, the Philippines and Viet Nam.
- Implementation of the Global Plan is expected to reverse the rise in incidence globally by 2015, as specified by the Millennium Development Goals, and to halve 1990 prevalence and death rates globally and in most regions by 2015, though not in Africa and eastern Europe.

Summary

Background and methods

- 1.** The 10th WHO annual report on surveillance, planning and financing for global tuberculosis (TB) control includes data on case notifications, treatment outcomes, activities, budgets, costs and expenditures. Results are given for all national TB control programmes (NTPs) that have reported to WHO, although the emphasis is on progress in 22 high-burden countries (HBCs).
- 2.** Eleven consecutive years of data (1994–2004) are now available to assess progress towards the Millennium Development Goals (MDGs) for TB control, and towards targets set by the World Health Assembly (WHA) and the Stop TB Partnership. WHA targets are to detect, by 2005, 70% of new sputum smear-positive cases and to successfully treat 85% of these cases. MDG target 8 (of 18) is to have halted and begun to reverse the TB incidence rate by 2015. The Stop TB Partnership has endorsed additional targets of halving 1990 prevalence and deaths rates by 2015.

Improving case detection and treatment

- 3.** A total of 200 (of 211) countries and territories reported to WHO on their strategies for TB control, and on TB case notifications and/or treatment outcomes.
- 4.** Using surveillance and survey data to update estimates of incidence, we calculate that there were 8.9 million new cases of TB in 2004 (140/100 000 population), of which 3.9 million (62/100 000) were smear-positive and 741 000 were in adults infected with the human immunodeficiency virus (HIV). There were 14.6 million prevalent cases (229/100 000), of which 6.1 million were smear-positive (95/100 000). More than 80% of all new TB patients in 2004 were in the African, South-East Asia and Western Pacific regions. An estimated 1.7 million people (27/100 000) died from TB in 2004, including those coinfecting with HIV (248 000).
- 5.** A total of 183 countries and territories were implementing the DOTS strategy during 2004. By the end of 2004, 83% of the world's population lived in countries, or parts of countries, covered by DOTS. DOTS programmes notified 4.4 million new and relapse TB cases in 2004, of which 2.1 million were new smear-positive. In total, 21.5 million TB patients, and 10.7 million smear-positive patients, were treated in DOTS programmes over the 10 years 1995–2004.
- 6.** At the end of 2004, DOTS expansion was complete in nine HBCs and nearing completion in five others. Pakistan reported full DOTS coverage by the end of 2005, and coverage has increased considerably in Afghanistan, Brazil, India and the Russian Federation.
- 7.** The 2.1 million smear-positive cases notified by DOTS programmes in 2004 represent 53% of the estimated incidence. The increment in smear-positive cases notified under DOTS between 2003 and 2004 (350 000) was greater than ever before (the average annual increment from 1995–2000 was 134 000). If the observed acceleration in case-finding is maintained, DOTS programmes will detect more than 60% of cases in 2005, but they will fall short of the 70% target.
- 8.** The acceleration in case-finding since 2000 has been observed in the case reports from all sources, as well as from DOTS programmes. We infer that case detection has continued to improve because patients are being reported from new sources, including public and private clinics and hospitals, especially in the South-East Asia and Western Pacific regions.
- 9.** Of the additional smear-positive cases reported under DOTS in 2004, three-quarters (75%) were in China, India and Indonesia. These three countries have been driving the global acceleration in case detection, backed by Bangladesh, Brazil and Myanmar. Among patients who suffered a first episode of TB in 2004 but were not detected by DOTS programmes, 61% lived in eight countries: Bangladesh, China, Ethiopia, India, Indonesia, Nigeria, Pakistan and the Russian Federation.
- 10.** The smear-positive case detection rate within established DOTS areas remained stable at an average of 51% up to 2001, but increased to 64% in 2004. These recent improvements in case-finding within DOTS areas have taken place predominantly in Bangladesh, Brazil, China, India, Indonesia, Myanmar and the Philippines.
- 11.** While WHO measures case detection principally with reference to smear-positive disease, statistics for detection based on other diagnostic methods give a different view of programme performance. A comparison of 25 European countries in 2004 showed that the proportion of estimated smear-positive cases detected was always higher than the proportion of estimated culture-positive cases detected, but lower than the proportion of all estimated TB cases detected. In the Region of the Americas, by contrast, smear-positive detection rates were typically higher than the detection rates of all TB cases. These differences need further investigation because they are likely to be important in evaluating TB epidemiology and control now, and when assessing the role of new and more sensitive diagnostic tools.
- 12.** Treatment success in the 2003 DOTS cohort of 1.7 million patients was 82% on average, edging closer to the 85% target. As in previous DOTS cohorts, treatment suc-

cess was substantially below average in the African Region (72%) and the European Region (75%). The relatively poor outcomes in these two regions can be attributed, in part, to the complications of HIV coinfection and drug resistance, respectively. Equally important, though, is the failure of DOTS programmes in these two regions to monitor the outcome of treatment for all patients. To reach the target of 85% treatment success globally, a special effort must be made to improve cure rates in the African and European regions.

13. Based on case reports and WHO estimates, 26 countries had reached the targets for case detection and treatment success by the end of 2004. The Philippines and Viet Nam were the only HBCs among them. Cambodia, China, India, Indonesia and Myanmar may also have reached the targets by the end of 2005 (i.e. a total of 7 out of 22 HBCs), but this will not be known until the end of 2006.

Epidemiological trends and the impact of TB control

14. In 2004, per capita TB incidence was stable or falling in five out of six WHO regions, but growing at 0.6% per year globally. The exception is the African Region, where TB incidence was still rising, following the spread of HIV. However, the annual increase in case notifications from the African Region is declining each year, probably because the HIV epidemics in African countries are also slowing. In eastern Europe (mostly countries of the former Soviet Union), incidence per capita increased during the 1990s, but peaked around 2001, and has since fallen.

15. There are few good data with which to establish TB prevalence and death rates for the MDG baseline year of 1990 and for 2004. Our best estimates are that prevalence fell from 297 per 100 000 population globally in 1990 to 229 per 100 000 in 2004 (including HIV-positive TB patients), partly as a consequence of DOTS expansion. TB mortality declined from 29 per 100 000 in 1990 to 27 per 100 000 in 2004. But for the strongly adverse trends in Africa, prevalence and death rates would be falling more quickly worldwide.

16. The epidemiological forecast for 2005 and beyond is set out in the Global Plan to Stop TB, 2006–2015, which will cost US\$ 56 billion to implement. The improvements in case detection proposed in the Global Plan, when implemented alongside other elements of the Stop TB Strategy, should reverse the rise in TB incidence by 2015, and halve prevalence and death rates globally and in all regions except Africa and eastern Europe.

DOTS implementation and planning

17. Although laboratory networks have expanded through national and international efforts, TB laboratory services need to be improved in many countries. The areas requiring

special attention include national reference laboratories, external quality assurance for all laboratories, and the development of capacity and infrastructure for culture and for drug susceptibility testing.

18. A total of 15 HBCs have plans for the development of human resources, but most of these plans are limited to training; 18 HBCs listed investments in staff among the five most beneficial ways to improve DOTS and to strengthen health systems. NTPs supported health system development during 2005 mostly by bringing TB control programmes into line with the process of health service decentralization.

19. The decentralization of diagnostic and treatment services is intended to improve access for all patients, but especially for those who are poor. NTPs are beginning to involve communities and NGOs so as to improve awareness of, and access to, these services.

20. Community participation in TB control is part of NTP strategy in 14 HBCs. The number of HBCs with national strategies for advocacy, communication and social mobilization (ACSM) has increased from 2 in 2002 to 11 in 2005, and is expected to reach 19 by 2007.

21. HBCs are in various stages of developing collaborations within and among public and private health sectors (through PPM-DOTS). While Bangladesh, China, India, Indonesia, Kenya, Myanmar and the Philippines have already improved links between NTPs, hospitals and other health-care providers, PPM-DOTS is still at an early stage in most other HBCs.

22. The treatment of drug-resistant TB is still inadequate in many countries. In some, laboratory diagnosis is of poor quality; others lack national policies on MDR-TB management; first- and second-line anti-TB drugs of uncertain quality are widely available; and large numbers of MDR-TB patients are subject, outside NTPs, to inappropriate diagnostic and treatment procedures. Part of the remedy will be to implement widely new WHO guidelines on the programmatic management of drug-resistant TB.

23. Many of the countries that are most affected by HIV/AIDS have national plans and policies for collaborative TB/HIV activities, and for providing ART. But most have still to make ART available to more than a small proportion of eligible people. In those countries that have rapidly increased access to ART, and where the prevalence of HIV infection is high, the challenge will be to maintain access to and fund ART without draining resources from other programmes.

Financing DOTS expansion

24. Financial reports were received from 140 out of 211 (66%) countries. These countries account for 91% of the estimated global burden of TB. Complete budget data for 2005 and 2006 were reported by 87 and 71 countries respectively, while 73 countries provided complete expendi-

ture data for 2004. All of the 22 HBCs except South Africa provided complete budget data, and 17 provided complete expenditure data. The quantity and quality of financial data have continued to improve since WHO began collecting financial data in 2002.

25. NTP budgets reported by the 22 HBCs amount to a combined total of US\$ 990 million in 2006, double the US\$ 446 million total for 2002. The Russian Federation, China, India and Indonesia have by far the largest budgets (amounting to 72% of the total for the 21 HBCs that reported data).

26. Funding for NTP budgets in the 22 HBCs has increased by almost US\$ 500 million in the past five years, reaching a total of US\$ 830 million in 2006. This is mainly a result of increased funding from the governments of China and the Russian Federation, and the Global Fund to Fight AIDS, Tuberculosis and Malaria. In Afghanistan, Uganda, the United Republic of Tanzania and Viet Nam, funding in 2006 was similar to or less than funding in 2002.

27. Among the 21 HBCs that reported data, national governments will provide US\$ 600 million (61%) of the funding required by NTPs in 2006, US\$ 230 million (23%) will be funded by donor agencies and for US\$ 19 million (2%) the source of funding is currently unknown. This leaves a reported funding gap of US\$ 141 million (14%). These figures conceal important variation, with many countries relying extensively on donor financing.

28. The total cost of TB control, which includes the general health-system staff and infrastructure used for TB control in addition to NTP budget requirements, is projected to be US\$ 1.6 billion in the 22 HBCs in 2006, compared with US\$ 876 million in 2002. The Russian Federation and South Africa have by far the largest costs, with a combined total of US\$ 810 million. Assuming that health systems have the capacity to manage a growing number of TB patients in 2006, the funding gap for total TB control costs in 2006 is the same as for NTP budgets, i.e. US\$ 141 million. Total costs increase to US\$ 2.0 billion, and the funding gap increases to US\$ 180 million when all 74 countries that reported data are included. These 74 countries represent 89% of TB cases globally.

29. All but one of the 22 HBCs that increased spending between 2003 and 2004 also increased the number of new smear-positive cases that were detected and treated in DOTS programmes. Cambodia increased spending, but did not increase the total number of smear-positive patients treated under DOTS.

30. Among the 22 HBCs, 5 (India, Indonesia, Myanmar, the Philippines and Viet Nam) were in the best financial position to reach the WHA targets in 2005; 2 (Cambodia and China) were well placed to do so, if able to make up funding shortfalls.

31. Estimates of the investment that is required to achieve the MDG and Stop TB Partnership targets for TB control are set out in the Global Plan. These estimates have been made for each year 2006–2015 for 7 regions that collectively include 172 countries. The investment needs detailed in the Global Plan for 2006 are similar to those reported by countries, with two important exceptions. The first is that in the African Region, the Global Plan includes much greater investment in collaborative TB/HIV activities and ACSM. The second is that the Global Plan includes a budget of US\$ 243 million globally for technical cooperation in 2006, which is usually not part of NTP budgets and for which the gap is estimated to be US\$ 183 million. If planned investment in collaborative TB/HIV activities and ACSM in the African Region was increased in line with the Global Plan, and needs for technical cooperation included, the funding gap would be much higher than the reported total of US\$ 180 million.

32. There are four priorities for further work on the financing of TB control: (a) to ensure that country budgets and plans from 2006 onwards are based on the Stop TB Strategy and that they are in line with the Global Plan; (b) to conduct financial assessments of how the additional resources required to implement these plans can be mobilized; (c) to conduct more accurate assessments of the investment in health systems that is required to support expansion in TB and other disease control efforts; (d) to improve financial data for South Africa and the European Region.

Points clés

L'ÉPIDÉMIE DE TUBERCULOSE

- En 2004, il y a eu 9 millions de nouveaux cas de tuberculose et près de 2 millions de décès dus à la tuberculose.
- Le nombre de cas de tuberculose est resté stable ou a diminué dans cinq des six régions de l'OMS. Cependant ce nombre a progressé en Afrique où l'épidémie de tuberculose est aggravée par la propagation du VIH.
- Plus de 80% de l'ensemble des patients souffrant de tuberculose vivent en Afrique subsaharienne ou en Asie.

LA STRATÉGIE DOTS ET LA NOUVELLE STRATÉGIE HALTE À LA TUBERCULOSE

- La stratégie DOTS, qui reste au cœur de la nouvelle stratégie Halte à la tuberculose, était appliquée dans 183 pays en 2004 ; une couverture complète de la population par cette stratégie a été atteinte dans 9 des 22 pays les plus touchés, et la couverture est presque complète dans 5 autres pays.
- Dans le cadre de la nouvelle stratégie, les domaines de travail seront plus étendus et comprendront la participation de la communauté et des ONG au traitement de la tuberculose ; sur la sensibilisation, la communication et la mobilisation sociale ; et sur l'amélioration de la prise en charge de la tuberculose multirésistante et de la co-infection tuberculose-VIH.
- Six pays d'Asie ainsi que le Kenya ont d'ores et déjà amélioré les liens existant entre les programmes nationaux de lutte antituberculeuse (PNT), les hôpitaux et les autres prestataires de soins, mais les initiatives public-privé (PPM-DOTS) en sont encore à un stade précoce dans la plupart des autres pays les plus touchés par la tuberculose.
- Les domaines particulièrement fragiles sont ceux des services de laboratoire, du développement des ressources humaines et du suivi de la lutte contre l'association tuberculose-VIH.

FINANCES

- En 2006, le coût total de la lutte antituberculeuse a atteint US\$ 1,6 milliard dans les 22 pays les plus touchés, y compris les budgets nationaux et les coûts relatifs au système de santé en général. Ce montant s'élève à US\$ 2 milliards pour l'ensemble des 74 pays qui ont fourni des données financières.
- Les fonds visant à soutenir la lutte antituberculeuse dans les 22 pays les plus touchés ont augmenté de près de US\$ 500 millions depuis 2002, pour atteindre US\$ 1,4 milliard en 2006.
- Les gouvernements des pays les plus touchés ayant le plus de ressources (notamment l'Afrique du Sud, le Brésil, la Chine et la Fédération de Russie) fournissent la majeure partie des fonds nécessaires pour lutter contre la tuberculose dans leurs pays ; d'autres pays sont davantage tributaires des subventions de donateurs, notamment du Fonds mondial de lutte contre le SIDA, la tuberculose et le paludisme.
- Le déficit de financement signalé par les 22 pays les plus touchés était de US\$ 141 millions pour 2006 ; il s'élevait à US\$ 180 millions au total pour les 74 pays qui ont fourni des données financières.
- Les budgets des PNT pour 2006 sont dans l'ensemble conformes au Plan mondial Halte à la tuberculose pour la période 2006–2015, à l'exception de la lutte contre l'association tuberculose-VIH pour laquelle les budgets des programmes nationaux sont nettement inférieurs.

OBJECTIFS

- Le dépistage était de 53% à l'échelle mondiale en 2004 et devrait dépasser 60% en 2005, mais rester inférieur à l'objectif de 70%.
- Le succès thérapeutique a été de 82% dans la cohorte de l'année 2003 (1,7 million de patients), soit proche de l'objectif de 85 % pour 2005.
- Trois des régions de l'OMS devraient atteindre les deux objectifs de 2005 : la Région des Amériques et celles de l'Asie du Sud-Est et du Pacifique occidental.
- Au moins 7 des pays les plus touchés devraient avoir atteint les objectifs de 2005 : le Cambodge, la Chine, l'Inde, l'Indonésie, le Myanmar, les Philippines et le Viet Nam.
- La mise en œuvre du Plan mondial devrait permettre d'inverser la tendance à l'augmentation de l'incidence à l'échelle mondiale d'ici à 2015, comme le prévoient les objectifs du Millénaire pour le développement, et de réduire de moitié en 2015 à l'échelle mondiale et dans la plupart des régions, les taux de prévalence et de mortalité de 1990. Deux exceptions toutefois pour l'Afrique et l'Europe de l'Est.

Résumé

Contexte et méthodes

1. Le dixième rapport annuel de l'OMS sur la surveillance, la planification et le financement de la lutte antituberculeuse contient des informations sur le nombre de cas notifiés, les résultats thérapeutiques, les activités, les budgets, les coûts et les dépenses, pour l'ensemble des programmes nationaux de lutte antituberculeuse (PNT) qui ont communiqué des données à l'OMS, bien que l'accent soit mis sur les progrès réalisés dans les 22 pays les plus touchés par la tuberculose.

2. On dispose désormais de données sur 11 années consécutives (1994–2004) pour évaluer les progrès accomplis en vue d'atteindre les objectifs du Millénaire pour le développement (OMD) qui concernent la lutte antituberculeuse, et les objectifs fixés par l'Assemblée mondiale de la Santé et le partenariat Halte à la tuberculose. Les objectifs de l'Assemblée mondiale de la Santé sont de dépister, en 2005, 70% des nouveaux cas à frottis positif et de traiter avec succès 85% d'entre eux. Dans le cadre des OMD, la cible 8 (sur 18) est d'avoir maîtrisé la tuberculose et d'avoir commencé à inverser la tendance de l'incidence d'ici à 2015. Le partenariat Halte à la tuberculose s'est fixé des objectifs supplémentaires : diminuer de moitié d'ici 2015, le taux de prévalence de la tuberculose et le taux de mortalité lié à cette maladie observés en 1990.

Améliorer le dépistage et le traitement

3. Au total, 200 pays et territoires (sur 211) ont fait parvenir à l'OMS un rapport sur leur stratégie de lutte contre la tuberculose, sur le nombre de cas de tuberculose notifiés et/ou sur les résultats du traitement.

4. Nous avons calculé, en utilisant les données de surveillance et d'enquête pour établir de nouvelles estimations de l'incidence, qu'il y a eu 8,9 millions de nouveaux cas de tuberculose en 2004 (140/100 000 habitants), dont 3,9 millions (62/100 000) avaient un frottis positif et 741 000 d'entre eux étaient des adultes porteurs du virus de l'immunodéficience humaine (VIH). Le nombre total de cas était de 14,6 millions (229/100 000), parmi lesquels 6,1 millions avaient un frottis positif (95/100 000). Plus de 80% de tous les nouveaux patients atteints de tuberculose en 2004 habitaient la Région africaine, la Région de l'Asie du Sud-Est ou celle du Pacifique occidental. Le nombre de décès dus à la tuberculose en 2004 est estimé à 1,7 million (27/100 000) ; ce chiffre englobe les cas de co-infection tuberculose-VIH (248 000).

5. En 2004, 183 pays et territoires appliquaient la stratégie DOTS. A la fin de 2004, 83% de la population mondiale

le vivait dans des pays, ou dans des régions de pays, où la stratégie était appliquée. Les programmes DOTS ont notifié 4,4 millions de cas nouveaux et de rechutes en 2004, parmi lesquels on recense 2,1 millions de cas nouveaux à frottis positif. Au total, 21,5 millions de patients atteints de la tuberculose et 10,7 millions de sujets à frottis positif ont suivi un traitement dans le cadre des programmes DOTS entre 1995 et 2004.

6. A la fin de 2004, l'extension de la stratégie DOTS était achevée dans 9 des pays les plus touchés et sur le point de l'être dans 5 autres. Le Pakistan a fait état d'une couverture complète par la stratégie à fin 2005, et cette couverture s'est considérablement étendue en Afghanistan, au Brésil, en Inde et dans la Fédération de Russie.

7. Les 2,1 millions de cas à frottis positif signalés par les programmes DOTS en 2004 représentent 53% du taux d'incidence estimé. L'augmentation du nombre de cas à frottis positif notifiés dans le cadre de la stratégie DOTS n'a jamais été aussi forte qu'entre 2003 et 2004 (350 000) (l'augmentation annuelle moyenne entre 1995 et 2000 était de 134 000). Si l'accélération observée dans le dépistage se poursuit, les programmes DOTS permettront de détecter plus de 60% des cas en 2005, mais n'atteindront pas l'objectif de 70%.

8. L'accélération du dépistage depuis 2000 a été observée dans tous les rapports, toutes sources confondues, y compris dans les programmes DOTS. Nous en déduisons que le dépistage a continué de s'améliorer du fait que les patients sont signalés par de nouvelles sources, y compris les cliniques et les hôpitaux publics et privés, en particulier dans les Régions de l'Asie du Sud-Est et du Pacifique occidental.

9. Trois pays, la Chine, l'Inde et l'Indonésie, concentraient les trois quarts (75%) de tous les cas supplémentaires à frottis positif signalés dans le cadre de la stratégie DOTS en 2004. Ces 3 pays sont à la pointe de l'accélération mondiale du dépistage des cas, suivis du Bangladesh, du Brésil et du Myanmar. Parmi les patients qui ont souffert d'un premier épisode de tuberculose en 2004, mais qui n'ont pas été détectés par les programmes DOTS, 61% habitaient dans 8 pays : le Bangladesh, la Chine, l'Éthiopie, la Fédération de Russie, l'Inde, l'Indonésie, le Nigéria et le Pakistan.

10. Le taux de dépistage des cas à frottis positif dans les zones où la stratégie DOTS est établie est resté stable, se situant à 51% en moyenne jusqu'en 2001, puis augmentant pour atteindre 64% en 2004. Ces améliorations récentes dans le dépistage des cas au sein des zones DOTS ont essentiellement eu lieu au Bangladesh, au Brésil, en

Chine, en Inde, en Indonésie, au Myanmar et aux Philippines.

11. Tandis que l'OMS mesure le dépistage des cas en se référant essentiellement aux cas à frottis positif, les statistiques de dépistage reposant sur d'autres méthodes de diagnostic donnent une image différente des résultats des programmes. Une comparaison effectuée dans 25 pays européens en 2004 a montré que la proportion de cas à frottis positif estimés qui sont détectés était toujours supérieure à la proportion de cas à culture positive estimés qui sont détectés, mais inférieure à la proportion de l'ensemble des cas de tuberculose estimés qui sont détectés. Dans la Région des Amériques, à l'inverse, la proportion des cas à frottis positif estimés qui sont détectés était nettement supérieure à la proportion de l'ensemble des cas de tuberculose estimés qui sont détectés. Ces différences doivent faire l'objet de recherches plus approfondies, car elles seront sans doute importantes pour l'évaluation de l'épidémiologie et de la lutte actuelles contre la tuberculose, et lorsqu'il s'agira de déterminer le rôle de nouveaux outils de diagnostic plus sensibles.

12. Le taux de succès thérapeutique dans la cohorte DOTS de 2003 (1,7 million de patients) était de 82% en moyenne, se rapprochant de l'objectif de 85%. Comme pour les précédentes cohortes DOTS, il était nettement inférieur à la moyenne dans la Région africaine (72%) et dans la Région européenne (75%). Ces résultats relativement médiocres dans ces deux régions s'expliquent en partie par les complications de l'association tuberculose-VIH dans la Région africaine, et par la pharmacorésistance dans la Région européenne. Cependant, un autre facteur tout aussi important dans ces deux régions est l'incapacité des programmes DOTS à assurer le suivi des résultats du traitement pour l'ensemble des patients. Pour atteindre l'objectif d'un taux de succès thérapeutique de 85% à l'échelle mondiale, des efforts particuliers doivent être faits pour améliorer les taux de guérison dans les Régions africaine et européenne.

13. Sur la base des cas notifiés et des estimations de l'OMS, fin 2004, 26 pays avaient atteint les objectifs en matière de détection et de succès thérapeutique. Les Philippines et le Viet Nam sont, parmi ceux-ci, les seuls pays du groupe des pays les plus touchés. Il est possible que le Cambodge, la Chine, l'Inde, l'Indonésie et le Myanmar aient aussi atteint ces objectifs avant la fin de 2005 (soit un total de 7 pays sur les 22 pays les plus touchés), mais on ne le saura pas avant fin 2006.

Tendances épidémiologiques et impact de la lutte antituberculeuse

14. En 2004, le taux d'incidence de la tuberculose par habitant fléchissait ou se stabilisait dans cinq des six régions de l'OMS, mais augmentait de 0,6% par an à l'échelle mondiale. La région qui fait exception est la Région africai-

ne, où l'incidence continuait de progresser, parallèlement à la propagation du VIH. Toutefois, l'augmentation annuelle des cas notifiés en provenance de la Région africaine régresse chaque année, probablement parce que l'épidémie de VIH ralentit également dans les pays africains. En Europe de l'Est (essentiellement dans les pays de l'ex-Union soviétique), l'incidence par habitant a augmenté pendant les années 90, pour atteindre un pic vers 2001, et baisse depuis.

15. Nous disposons de peu de données valables permettant d'établir les taux de prévalence et de mortalité pour 1990, années de référence pour les OMD, et pour 2004.. Selon nos estimations les plus fiables, le taux de prévalence mondiale est passé de 297 pour 100 000 habitants en 1990 à 229 pour 100 000 en 2004 (cas de co-infection tuberculose-VIH compris), en partie du fait de l'extension de la stratégie DOTS. Le taux de mortalité due à la tuberculose a diminué, passant de 29 décès pour 100 000 en 1990 à 27 pour 100 000 en 2004. Si les tendances n'étaient pas si défavorables en Afrique, les taux de prévalence et de mortalité baisseraient beaucoup plus rapidement à l'échelle mondiale.

16. Les prévisions épidémiologiques pour 2005 et au-delà figurent dans le Plan mondial Halte à la tuberculose, pour la période 2006–2015, dont la mise en œuvre est évaluée à US\$ 56 milliards. Les améliorations que le Plan mondial propose pour le dépistage des cas devraient, lorsqu'elles seront mises en pratique conjointement à d'autres éléments de la nouvelle stratégie Halte à la tuberculose, permettre d'arrêter la progression de l'incidence de la tuberculose d'ici à 2015, et d'inverser la tendance pour réduire de moitié les taux de prévalence et de mortalité à l'échelle mondiale et dans toutes les régions, à l'exception de l'Afrique et de l'Europe de l'Est.

Mise en œuvre et planification de la stratégie DOTS

17. Bien que les réseaux de laboratoire se soient étendus grâce aux efforts déployés aux niveaux national et international, les services de laboratoire consacrés à la tuberculose doivent être améliorés dans de nombreux pays. Parmi les domaines qui requièrent une attention particulière figurent notamment les laboratoires de référence nationaux, les systèmes de contrôle de qualité pour tous les laboratoires, et l'amélioration des capacités et des infrastructures permettant de mener à bien les cultures et les tests de sensibilité aux médicaments.

18. Quinze pays parmi les 22 plus touchés ont des plans pour le développement des ressources humaines, mais la plupart de ceux-ci se limitent à la formation ; 18 de ces pays ont mentionné les investissements en matière de ressources humaines parmi les cinq moyens les plus efficaces pour améliorer la stratégie DOTS et renforcer les systèmes de santé. Au cours de l'année 2005, les PNT ont contribué

au développement des systèmes de santé, essentiellement en mettant leurs programmes de lutte antituberculeuse en conformité avec le processus de décentralisation des services sanitaires.

19. La décentralisation des services de diagnostic et de traitement vise à améliorer l'accès pour tous les patients, mais en particulier pour les plus démunis. Les PNT commencent à intégrer la participation des communautés et des ONG de façon à améliorer la sensibilisation et l'accès à ces services.

20. La participation des communautés à la lutte contre la tuberculose fait partie de la stratégie adoptée par les PNT dans 14 des pays les plus touchés. Le nombre de ces pays disposant d'une stratégie nationale favorisant la sensibilisation, la communication et la mobilisation sociale est passé de 2 en 2002 à 11 en 2005, et devrait atteindre le chiffre de 19 d'ici à 2007.

21. Les pays les plus touchés mettent actuellement au point des initiatives de collaboration qui ont atteint des stades différents, au sein des secteurs public et privé de la santé et d'un secteur à l'autre (par l'intermédiaire des initiatives PPM-DOTS). Tandis que le Bangladesh, la Chine, l'Inde, l'Indonésie, le Kenya, le Myanmar et les Philippines ont déjà amélioré les liens existant entre les PNT, les hôpitaux et les autres prestataires de soins, les initiatives PPM-DOTS n'en sont encore qu'à un stade précoce dans la plupart des autres pays les plus touchés.

22. Le traitement de la tuberculose pharmacorésistante reste inapproprié dans de nombreux pays. Dans certains d'entre eux, le diagnostic en laboratoire est de qualité médiocre; d'autres ne disposent pas de politique nationale pour la prise en charge de la tuberculose à bacilles multirésistants (TB-MR); les médicaments antituberculeux de première et de deuxième intention de qualité douteuse sont largement répandus; et un nombre important de patients atteints de tuberculose à bacilles multirésistants font l'objet, en dehors des PNT, de procédures de diagnostic et de traitement inappropriées. Ces problèmes seront en partie résolus par la mise en œuvre sur une grande échelle des nouvelles directives de l'OMS sur la prise en charge de la tuberculose pharmacorésistante.

23. Bon nombre des pays qui sont les plus touchés par le VIH/SIDA disposent de plans et de politiques au niveau national prévoyant des activités concertées TB/VIH et la fourniture de traitements antirétroviraux (ARV). Mais, pour bon nombre d'entre eux, il faut encore que le traitement ARV ne soit pas seulement mis à la disposition d'un petit pourcentage des personnes justiciables du traitement. Dans les pays où l'accès au traitement ARV a rapidement progressé et où la prévalence de l'infection à VIH est élevée, le défi consistera à maintenir l'accès au traitement ARV et à le financer, sans pour autant épuiser les ressources destinées à d'autres programmes.

Financement de l'extension des programmes DOTS

24. Des rapports financiers ont été reçus de 140 pays sur 211 (66%). Ces pays représentent 91% de la charge de morbidité estimée de la tuberculose au niveau mondial. Des données complètes concernant le budget 2005 ont été fournies par 87 pays et par 71 pays pour le budget 2006, tandis que 73 pays fournissaient des données complètes concernant les dépenses 2004. Les 22 pays les plus touchés ont tous fourni des données complètes concernant le budget, à l'exception de l'Afrique du Sud, et 17 d'entre eux ont également fourni des données concernant les dépenses. La quantité et la qualité des données financières n'ont cessé de s'améliorer depuis que l'OMS a commencé leur collecte en 2002.

25. Les budgets des PNT dont font état les 22 pays les plus touchés représentent un montant total de US\$ 990 millions en 2006, soit le double du montant total de US\$ 446 millions correspondant à l'année 2002. La Chine, la Fédération de Russie, l'Inde et l'Indonésie ont, de loin, les budgets les plus importants (s'élevant à 72% du total pour les 21 pays les plus touchés ayant fourni des données).

26. Les crédits destinés aux budgets des PNT dans les 22 pays les plus touchés ont augmenté de près de US\$ 500 millions au cours des cinq dernières années, pour atteindre un montant total de US\$ 830 millions en 2006. Cette augmentation est essentiellement due aux fonds supplémentaires alloués par les Gouvernements de la Chine et de la Fédération de Russie, ainsi que par le Fonds mondial de lutte contre le SIDA, la tuberculose et le paludisme. En Afghanistan, en Ouganda, en République-Unie de Tanzanie et au Viet Nam, les fonds alloués en 2006 ont été identiques ou inférieurs à ceux de 2002.

27. Dans les 21 pays les plus touchés qui ont transmis des données, les gouvernements fourniront US\$ 600 millions (61%) au fonds requis par les PNT en 2006, les organismes donateurs US\$ 230 millions (23%), et, pour US\$ 19 millions (2%), la source de financement n'est pas encore connue, ce qui correspond à un déficit de financement de US\$ 141 millions (14%). Ces chiffres masquent d'importantes variations, de nombreux pays étant largement tributaires des subventions des donateurs.

28. Le coût total de la lutte contre la tuberculose, qui comprend, outre les budgets des PNT, le financement du personnel des services de santé généraux et des infrastructures utilisées pour la lutte antituberculeuse, est estimé pour 2006 à US\$ 1,6 milliard dans les 22 pays les plus touchés, à comparer avec les US\$ 876 millions de 2002. C'est en Afrique du Sud et dans la Fédération de Russie que les coûts sont les plus élevés puisqu'ils représentent un total combiné de US\$ 810 millions. A supposer que les systèmes de santé aient la capacité de prendre en charge un nombre croissant de patients atteints de la tuberculose en 2006, le

déficit de financement pour l'ensemble des coûts de la lutte contre la tuberculose en 2006 est le même que pour les budgets des PNT, soit US\$ 141 millions. Les coûts totaux atteignent US\$ 2 milliards et le déficit de financement s'élève à US\$ 180 millions lorsqu'on inclut l'ensemble des 74 pays qui ont transmis des données. Ces 74 pays représentent 89% des cas de tuberculose à l'échelle mondiale.

29. Parmi les 22 pays les plus touchés, tous – sauf un – dont les dépenses ont augmenté entre 2003 et 2004 ont aussi vu progresser le nombre des nouveaux cas à frottis positif détectés et traités dans le cadre des programmes DOTS. Le Cambodge a augmenté ses dépenses, mais le nombre total de patients à frottis positif traités dans le cadre de la stratégie DOTS n'a pas bougé.

30. Parmi les 22 pays les plus touchés, 5 (l'Inde, l'Indonésie, le Myanmar, les Philippines et le Viet Nam) sont dans une position financière propice pour atteindre les objectifs de l'Assemblée mondiale de la Santé en 2005 et 2 (le Cambodge et la Chine) sont bien placés pour y parvenir s'ils arrivent à combler le déficit financier.

31. Les estimations des investissements nécessaires pour atteindre les OMD et les objectifs fixés par le partenariat Halte à la tuberculose sont données dans le Plan mondial. Ces estimations ont été effectuées par année, de 2006 à 2015, et pour sept régions qui, ensemble, représentent 172 pays. Les besoins d'investissement détaillés dans le Plan mondial pour 2006 sont semblables à ceux dont font état les pays, à deux importantes exceptions près. La

première tient au fait que, dans la Région africaine, le Plan mondial prévoit un investissement beaucoup plus important dans les activités concertées TB/VIH et les activités de sensibilisation, de communication et de mobilisation sociale. La seconde tient au fait que le Plan mondial prévoit un budget de US\$ 243 millions au niveau mondial pour la coopération technique en 2006, qui ne fait habituellement pas partie du budget des PNT, et pour lequel le déficit est estimé à US\$ 183 millions. Si l'investissement planifié dans les activités concertées TB/HIV et les activités de sensibilisation, de communication et de mobilisation sociale dans la Région africaine progressait conformément au Plan mondial, et si les besoins de coopération technique étaient inclus, le déficit financier serait beaucoup plus important que le montant total rapporté de US\$ 180 millions.

32. Dans les futurs travaux sur le financement de la lutte antituberculeuse, les priorités seront au nombre de quatre : a) veiller à ce que les budgets et les plans des pays soient, à partir de 2006 et par la suite, basés sur la nouvelle stratégie Halte à la tuberculose et qu'ils soient conformes au Plan mondial ; b) mener des évaluations financières sur les moyens de mobiliser les ressources supplémentaires nécessaires pour mettre en œuvre ces plans ; c) mener des évaluations plus précises de l'investissement nécessaire dans les systèmes de santé pour soutenir les efforts visant à élargir les efforts de lutte contre la tuberculose et d'autres maladies ; d) améliorer les données financières pour l'Afrique du Sud et la Région européenne.

Puntos clave

EPIDEMIA DE TUBERCULOSIS

- En 2004 hubo nueve millones de casos nuevos y dos millones de muertes por tuberculosis (TB).
- El número de casos de TB se mantuvo estable o descendió en cinco de las seis regiones de la OMS pero aumentó en África, donde la epidemia de TB sigue estando dirigida por la propagación del VIH.
- Más del 80% de los pacientes de TB del mundo viven en el África subsahariana y Asia.

DOTS Y LA NUEVA ESTRATEGIA ALTO A LA TUBERCULOSIS

- El tratamiento DOTS, que sigue siendo el núcleo de la nueva Estrategia Alto a la Tuberculosis, se estaba aplicando en 183 países en 2004; la cobertura de la población fue completa en 9 de 22 países de alta carga de tuberculosis (PACT), y casi completa en otros cinco.
- Las áreas de trabajo que van a ampliarse en la nueva estrategia son, entre otras: participación comunitaria y de ONG en atención de la tuberculosis; promoción, comunicación y movilización social; y mejora de la gestión de la TB multirresistente y la TB/VIH.
- Seis países de Asia y Kenya ya han mejorado los vínculos entre los programas nacionales de lucha antituberculosa, los hospitales y otros proveedores de atención, pero el PPM-DOTS (cooperación entre los sectores público y privado) sigue en una fase temprana en la mayoría de los PACT.
- Las áreas particularmente deficientes son los servicios de laboratorio, el desarrollo de los recursos humanos y la supervisión de la lucha contra la TB/VIH.

FINANCIACIÓN

- El costo total de la lucha contra la tuberculosis en 2006, incluidos los presupuestos de los programas nacionales contra la tuberculosis (PNT) y los costos del sistema sanitario general, ha aumentado hasta US\$ 1600 millones en los 22 PACT. Este costo aumenta hasta US\$ 2000 millones para todos los 74 países que proporcionaron datos financieros.
- La financiación para apoyar la lucha antituberculosa en los 22 PACT ha aumentado en casi US\$ 500 millones, llegando a US\$ 1400 millones en 2006.
- Los Gobiernos de los PACT en mejor situación económica (el Brasil, China, la Federación de Rusia y Sudáfrica) proporcionan la mayor parte de los fondos necesarios para combatir la tuberculosis en sus países; otros países dependen más de los fondos de donantes, entre ellos el Fondo Mundial de Lucha contra el SIDA, la Tuberculosis y la Malaria.
- El déficit de financiación comunicado por los 22 PACT respecto de 2006 era de US\$ 141 millones, y de US\$ 180 millones en total respecto de los 74 países que comunicaron datos.
- Los presupuestos de los PNT para 2006 concuerdan en general con el Plan Mundial para Detener la Tuberculosis, 2006–2015, salvo en la lucha contra la TB/VIH, en la que los presupuestos de los PNT son mucho menores.

METAS

- La detección de casos en todo el mundo fue del 53% en 2004 y probablemente pase del 60% en 2005, pero permanece por debajo de la meta del 70%.
- El éxito del tratamiento llegó al 82% en la cohorte de 2003 de 1,7 millones de pacientes, lo que se aproxima a la meta del 85%.
- Está previsto que tres regiones de la OMS alcancen las dos metas previstas para 2005: la Región de las Américas y las Regiones de Asia Sudoriental y del Pacífico Occidental.
- Al menos siete PACT deberán haber alcanzado las metas de 2005: Camboya, China, Filipinas, la India, Indonesia, Myanmar y Viet Nam.
- Está previsto que con la ejecución del Plan Mundial se invierta el aumento de la incidencia en todo el mundo de aquí a 2015, como se especifica en los Objetivos de Desarrollo del Milenio, y se reduzcan a la mitad las tasas de prevalencia y de mortalidad de 1990 en el nivel mundial y en la mayoría de las regiones de aquí a 2015, aunque no en África ni en Europa oriental.

Resumen

Antecedentes y métodos

1. El décimo informe anual de la OMS sobre vigilancia, planificación y financiación de la lucha mundial contra la tuberculosis (TB) incluye datos sobre las notificaciones de casos, los resultados del tratamiento, las actividades, los presupuestos, los costos y los gastos. Se ofrecen los resultados correspondientes a todos los programas nacionales de lucha contra la TB (PNT) que han informado a la OMS, aunque se hace hincapié en los progresos realizados en 22 países con alta carga de TB (PACT).

2. En la actualidad se dispone de datos reunidos durante once años consecutivos (1994–2004), que permiten evaluar los progresos realizados hacia el logro de los Objetivos de Desarrollo del Milenio (ODM) relativos a la lucha contra la TB, así como hacia las metas fijadas por la Asamblea Mundial de la Salud y la Alianza Alto a la Tuberculosis. Las metas de la Asamblea Mundial de la Salud son detectar, para 2005, el 70% de los nuevos casos bacilíferos y tratar con éxito el 85% de esos casos. La meta 8 de los ODM (de 18) es haber detenido y comenzado a reducir la incidencia de la TB para 2015. La Alianza Alto a la Tuberculosis ha respaldado las metas adicionales de reducir a la mitad, para 2015, las tasas de prevalencia y mortalidad de la TB de 1990.

Mejora de la detección y el tratamiento de casos

3. Un total de 200 países (de 211) han informado a la OMS de sus estrategias de lucha contra la TB, así como de las notificaciones de casos y/o de los resultados del tratamiento.

4. Tras actualizar las estimaciones de la incidencia tomando como base los datos de la vigilancia y de las encuestas, hemos calculado que en 2004 hubo 8,9 millones de nuevos casos de TB (140/100 000 habitantes), de los cuales 3,9 millones (62/100 000) eran bacilíferos y 741 000 se presentaron en adultos infectados por el virus de la inmunodeficiencia humana (VIH). Hubo 14,6 millones de casos prevalentes (229/100 000), de los cuales 6,1 millones eran bacilíferos (95/100 000). Más del 80% de los nuevos pacientes de TB en 2004 vivían en las regiones de África, Asia Sudoriental y Pacífico Occidental. Se estima que 1,7 millones de personas (27/100 000) murieron de TB en 2004, incluidos los casos de coinfección por el VIH (248 000).

5. Un total de 183 países y territorios aplicaron la estrategia DOTS en 2004. A finales de 2004, el 83% de la población mundial vivía en países (o regiones de países) que disponían de cobertura de DOTS. Los programas DOTS notificaron 4,4 millones de casos de TB nuevos y recidivan-

tes, de los cuales 2,1 millones eran nuevos bacilíferos. En los diez años comprendidos entre 1995 y 2004, un total de 21,5 millones de pacientes con TB y 10,7 millones de pacientes bacilíferos recibieron tratamiento en los programas DOTS.

6. A finales de 2004, la expansión de DOTS era completa en nueve PACT y casi completa en otros cinco. El Pakistán comunicó que su cobertura con DOTS era completa a finales de 2005; además, la cobertura ha aumentado considerablemente en el Afganistán, el Brasil, la India y la Federación de Rusia.

7. Los 2,1 millones de casos bacilíferos notificados por los programas DOTS en 2004 representan el 53% de la incidencia estimada. El aumento de los casos bacilíferos notificados en el ámbito de los programas DOTS entre 2003 y 2004 (350 000) fue mayor que nunca (el incremento medio anual entre 1995 y 2000 había sido de 134 000). Si la aceleración observada en la detección de casos se mantiene, los programas de DOTS detectarán más del 60% de los casos en 2005, aunque no llegarán a la meta del 70%.

8. La aceleración de la detección de casos desde 2000 se ha observado en las notificaciones de casos de todas las procedencias, así como en las de los programas DOTS. Deducimos de ello que la detección de casos ha seguido mejorando porque se están notificando pacientes de nuevas fuentes, incluidos dispensarios y hospitales públicos y privados, especialmente en las regiones de Asia Sudoriental y del Pacífico Occidental.

9. Las tres cuartas partes (75%) de los casos bacilíferos adicionales notificados a través de DOTS en 2004 provenían de China, la India e Indonesia. Esos tres países han sido los motores de la aceleración mundial de la detección de casos, apoyados por Bangladesh, el Brasil y Myanmar. De los pacientes que sufrieron un primer episodio de TB en 2004 pero no fueron detectados por los programas DOTS, el 61% vivía en ocho países: Bangladesh, China, Etiopía, la Federación de Rusia, la India, Indonesia, Nigeria y el Pakistán.

10. La tasa de detección de casos bacilíferos en las zonas donde se aplica la estrategia DOTS se mantuvo estable hasta 2001 (media del 51%), pero aumentó hasta el 64% en 2004. Estas recientes mejoras en la localización de casos dentro de las zonas DOTS se han producido sobre todo en Bangladesh, el Brasil, China, Filipinas, la India, Indonesia y Myanmar.

11. Mientras que la OMS mide la detección de casos principalmente en relación con la forma bacilífera de la enfermedad, las cifras de detección basadas en otros métodos

de diagnóstico ofrecen un panorama distinto del desempeño de los programas. Una comparación de 25 países europeos en 2004 mostró que la proporción de casos bacilíferos detectados era siempre mayor que la proporción de casos de cultivo positivo que se detectan, aunque menor que la proporción del total de casos de TB encontrados. En la Región de las Américas, por el contrario, las tasas de detección de casos bacilíferos fueron típicamente mayores que las tasas de detección respecto del total de casos de TB. Estas diferencias deben ser investigadas más a fondo porque probablemente sean importantes para la evaluación de la epidemiología y la lucha contra la TB en la actualidad, y cuando se valore el papel de los medios de diagnóstico nuevos y más sensibles.

12. La tasa media de éxito del tratamiento en la cohorte de DOTS de 2003 (1,7 millones de pacientes) fue del 82%, lo que se acerca a la meta del 85%. Como en anteriores cohortes de DOTS, dicha tasa fue considerablemente inferior a la media en las regiones de África (72%) y Europa (75%). Las bajas tasas de éxito del tratamiento en esas dos regiones pueden atribuirse en parte a las complicaciones de la coinfección por el VIH y a la farmacoresistencia, respectivamente. Sin embargo, igualmente importante es el fracaso de los programas DOTS en la vigilancia de los resultados del tratamiento en todos los pacientes en esas dos regiones. Para alcanzar la meta del 85% de éxito del tratamiento a nivel mundial, hay que hacer un esfuerzo especial para mejorar las tasas de curación en las regiones de África y Europa.

13. Con base en los casos notificados y las estimaciones de la OMS, 26 países habían alcanzado a finales de 2004 las metas fijadas en materia de detección de casos y éxito del tratamiento. Filipinas y Viet Nam eran los únicos PACT entre ellos. Camboya, China, la India, Indonesia y Myanmar tal vez hayan alcanzado también las metas a finales de 2005 (lo que supone siete PACT de un total de 22), pero esto no se sabrá hasta finales de 2006.

Tendencias epidemiológicas e impacto de la estrategia DOTS

14. En 2004, la incidencia de la TB por habitante estaba disminuyendo o se mantenía estable en cinco de las seis regiones de la OMS, si bien a escala mundial aumentaba a razón de un 0,6% al año. La excepción fue la región de África, donde la incidencia seguía aumentando, de la mano de la propagación del VIH. Sin embargo, el aumento anual de la notificación de casos en la Región de África va disminuyendo de año en año, probablemente porque la epidemia de VIH en los países africanos también se está frenando. En Europa oriental (principalmente en los países de la ex Unión Soviética), la incidencia por habitante aumentó durante los años noventa, pero alcanzó su valor máximo en 2001 y desde entonces ha disminuido.

15. Hay pocos datos de calidad que permitan determinar las tasas de prevalencia y mortalidad de la TB entre 1990, año de referencia de los ODM, y 2004. Según nuestras mejores estimaciones, la prevalencia disminuyó desde 297 por 100 000 habitantes a escala mundial en 1990 hasta 229 por 100 000 habitantes en 2004 (incluidos los pacientes tuberculosos con VIH), en parte como consecuencia de la expansión de la estrategia DOTS. La mortalidad disminuyó desde 29 por 100 000 habitantes en 1990 hasta 27 por 100 000 habitantes en 2004. De no ser por las tendencias extremadamente adversas que se observan en África, las tasas de prevalencia y de mortalidad estarían disminuyendo más rápidamente en todo el mundo.

16. Las previsiones epidemiológicas para 2005 y más adelante se presentan en el Plan Mundial para Detener la Tuberculosis, 2006-2015, para cuya ejecución se necesitarán US\$ 56 000 millones. Las mejoras de la detección de casos propuestas en el Plan Mundial, cuando se apliquen junto con otros elementos de la nueva Estrategia Alto a la Tuberculosis, probablemente inviertan el aumento de la incidencia de la TB en el mundo para 2015, y reduzcan a la mitad las tasas de prevalencia y mortalidad en el mundo y en todas las regiones salvo África y Europa oriental.

Planificación y aplicación de la estrategia DOTS

17. Aunque se han ampliado las redes de laboratorio gracias a los esfuerzos nacionales e internacionales, aún es necesario mejorar los servicios de laboratorio para la TB en muchos países. Los aspectos que requieren especial atención son los laboratorios nacionales de referencia, la garantía de la calidad externa para todos los laboratorios, y la mejora de la capacidad y la infraestructura para realizar cultivos y pruebas de susceptibilidad a los medicamentos.

18. Un total de 15 PACT tienen planes para el desarrollo de los recursos humanos, pero la mayoría se limitan a la capacitación; 18 PACT citaron las inversiones en personal entre las cinco maneras más ventajosas de mejorar la estrategia DOTS y fortalecer los sistemas de salud. Los programas nacionales de TB apoyaron el desarrollo de los sistemas de salud durante 2005 principalmente incorporando los programas de TB al proceso de descentralización de los servicios de salud.

19. La descentralización de los servicios de diagnóstico y tratamiento tiene por objeto mejorar el acceso para todos los pacientes, pero especialmente para los pobres. Los programas nacionales de TB están empezando a hacer participar a las comunidades y las ONG con el fin de mejorar el conocimiento de estos servicios y el acceso a ellos.

20. La participación comunitaria en la lucha contra la TB forma parte de la estrategia de los programas nacionales de 14 PACT. El número de PACT que cuentan con estrategias nacionales de promoción, comunicación y movilización

social ha pasado de dos en 2002 a 11 en 2005, y está previsto que llegue a 19 de aquí a 2007.

21. Los PACT se encuentran en distintas fases del desarrollo de la colaboración entre los sectores de salud público y privado (PPM-DOTS). Mientras que Bangladesh, China, Filipinas, la India, Indonesia, Kenya y Myanmar ya han mejorado los vínculos entre los programas nacionales contra la TB, los hospitales y otros proveedores de atención sanitaria, la PPM-DOTS sigue en una fase temprana en la mayoría de los otros PACT.

22. El tratamiento de la TB farmacorresistente aún presenta deficiencias en muchos países. En algunos, el diagnóstico de laboratorio es de escasa calidad; otros carecen de políticas nacionales sobre la gestión de la TB multirresistente; pueden encontrarse fácilmente en muchos lugares medicamentos antituberculosos de primera y segunda línea de dudosa calidad, y gran número de pacientes de TB multirresistente son sometidos, fuera de los PNT, a procedimientos inapropiados de diagnóstico y tratamiento. Parte de la solución consistirá en aplicar de modo generalizado las nuevas directrices de la OMS sobre la gestión de la TB multirresistente.

23. Muchos de los países más afectados por el VIH/SIDA cuentan con planes y políticas nacionales para las actividades de colaboración en la lucha contra la TB/VIH, así como para la administración de TAR. Sin embargo, la mayoría de ellos sólo proporcionan TAR a una pequeña parte de las personas que lo necesitarían. En los países que han aumentado rápidamente el acceso al TAR y donde la prevalencia de la infección por el VIH es elevada, lo difícil será mantener el acceso al TAR y financiarlo sin distraer recursos de otros programas.

Financiación de la expansión de la estrategia DOTS

24. Se ha recibido información financiera de 140 países sobre un total de 211 (66%). Esos países representan el 91% de la carga mundial estimada de TB. Ochenta y siete y 71 países han presentado datos completos en materia de presupuestos para 2005 y 2006, respectivamente, mientras que 73 países han presentado datos completos sobre gastos correspondientes a 2004. Se recibieron datos presupuestarios completos de los 22 PACT, con excepción de Sudáfrica; 17 de ellos presentaron datos completos sobre gastos. La cantidad y calidad de los datos financieros han seguido mejorando desde que la OMS empezó a acopiar datos financieros en 2002.

25. Los presupuestos de los programas nacionales de TB presentados por los 22 PACT suman un total de US\$ 990 millones en 2006, el doble de la cifra correspondiente a 2002 (US\$ 446 millones). La Federación de Rusia, China, la India e Indonesia son los países con mayores presupuestos (que combinados representan el 72% del total correspondiente a los 21 PACT que han presentado datos).

26. En los últimos cinco años, la financiación de los presupuestos de los PNT en los 22 PACT ha aumentado en casi US\$ 500 millones, para alcanzar un total de US\$ 830 millones en 2006. Ello se debe principalmente a los nuevos recursos proporcionados por los Gobiernos de China y la Federación de Rusia, así como del Fondo Mundial de Lucha contra el SIDA, la Tuberculosis y la Malaria. En Afganistán, Uganda, la República Unida de Tanzania y Viet Nam, la financiación durante 2006 fue parecida o menor que la correspondiente a 2002.

27. De los 21 PACT que presentaron datos, los gobiernos nacionales proporcionarán US\$ 600 millones (61%) de los fondos que necesitan los PNT en 2006, los organismos donantes proporcionarán US\$ 230 millones (23%), y para US\$ 19 millones (2%) la fuente de financiación es actualmente desconocida. Con ello, el déficit de financiación comunicado es de US\$ 141 millones (14%). Estas cifras esconden una variación importante, pues muchos países dependen en gran medida de la financiación de donantes.

28. El costo total de la lucha contra la TB, que incluye al personal del sistema de salud general y la infraestructura utilizada para combatir la enfermedad además de las necesidades presupuestarias de los PNT, se eleva a una cifra proyectada de US\$ 1600 millones en los 22 PACT en 2006, frente a US\$ 876 millones en 2002. La Federación de Rusia y Sudáfrica son los que tienen mayores costos; el total combinado asciende a US\$ 810 millones. Suponiendo que los sistemas de salud tengan la capacidad necesaria para atender a un número cada vez mayor de pacientes de TB en 2006, el déficit de financiación en el costo total de lucha contra la TB en 2006 es el mismo que el correspondiente a los presupuestos de los PNT, es decir, US\$ 141 millones. Los costos totales aumentan hasta US\$ 2000 millones, y el déficit de financiación se eleva a US\$ 180 millones cuando se incluye todos los 74 países que presentaron datos. Esos 74 países representan el 89% de los casos de TB en el mundo.

29. Salvo uno, los 22 PACT que aumentaron sus gastos entre 2003 y 2004 también aumentaron el número de nuevos casos bacilíferos detectados y tratados en programas de DOTS. Camboya aumentó el gasto pero no el número total de pacientes bacilíferos tratados con DOTS.

30. De los 22 PACT, cinco (Filipinas, la India, Indonesia, Myanmar y Viet Nam) eran los mejor situados desde el punto de vista financiero para alcanzar las metas de la Asamblea Mundial de la Salud en 2005: dos más, Camboya y China, estaban en buenas condiciones de conseguirlo siempre que puedan resolver sus déficit de financiación.

31. En el Plan Mundial figuran las estimaciones de inversión que se necesita para alcanzar las metas de los ODM y de la Alianza Alto a la Tuberculosis para controlar la enfermedad. Esas estimaciones se han calculado para cada uno de los años del periodo 2006–2015 respecto de siete regio-

nes que en conjunto abarcan 172 países. Las necesidades de inversión que se detallan en el Plan Mundial para 2006 son análogas a las comunicadas por los países, salvo dos importantes excepciones. La primera es que en la Región de África, el Plan Mundial prevé inversiones mucho mayores en actividades de colaboración en materia de TB/VIH y de promoción, comunicaciones y movilización social. La segunda es que el Plan Mundial incluye un presupuesto mundial de US\$ 243 millones para actividades de cooperación técnica en 2006, que no suele formar parte de los presupuestos de los PNT y respecto de lo cual se calcula un déficit de US\$ 183 millones. Si se aumentaran las inversiones previstas en actividades de colaboración en materia de TB/VIH y de promoción, comunicación y movilización social en la Región de África en consonancia con el Plan Mundial, y se incluyeran las necesidades en materia de cooperación técnica, el déficit de financiación sería mucho mayor que el total comunicado de US\$ 180 millones.

32. La continuación de la labor en materia de financiación de la lucha contra la TB tiene cuatro prioridades: a) garantizar que los presupuestos y planes de los países desde 2006 en adelante estén basados en la nueva Estrategia Alto a la Tuberculosis y en consonancia con el Plan Mundial; b) realizar estimaciones financieras sobre la forma de movilizar los recursos suplementarios que se necesitan para aplicar esos planes; c) llevar a cabo evaluaciones más precisas de la inversión que es necesario hacer en los sistemas de salud para apoyar la expansión de las actividades de control de la TB y otras enfermedades; y d) mejorar los datos financieros correspondientes a Sudáfrica y la Región de Europa.

Introduction

The goal of this series of annual reports, published since 1997, is to chart the course of the global tuberculosis (TB) epidemic and to evaluate progress in TB control. This tenth report in the series retreads some familiar ground but also expands into new territory. The new landscape of TB control has been shaped, during 2005, by the new *International standards for tuberculosis care*¹ and by their incorporation, with DOTS, into the expanded Stop TB Strategy.² The strategy is to be implemented over the next 10 years as described in the *Global Plan to Stop TB, 2006–2015*.³ The Global Plan also outlines the technological developments that can be expected in the coming decade, which will almost certainly include new diagnostics and improved drug regimens by 2010.

Against this background we present, as usual, WHO's assessment of the scale and direction of the epidemic, expressed in terms of incidence, prevalence and deaths for 22 high-burden countries (HBCs), for the six WHO regions, for selected subregions and for the world as a whole. Within the framework of the United Nations Millennium Development Goals (MDGs), the principal target for TB control is to ensure that the global incidence rate is falling by 2015.^{4,5} Supplementary targets, endorsed by the Stop TB Partnership, are to halve the 1990 prevalence and death rates by 2015. The tables and annexes in this report therefore give estimates of all three key indicators and their trends, for all countries and regions in 1990 and 2004.

The principal mechanism for achieving these impact targets is the treatment of patients with active TB, following the DOTS strategy. DOTS has been central to effective TB control for more than a decade, and continues to be the primary component of the expanded Stop TB Strategy. The broader strategy makes explicit some aspects of TB control that need to be given more emphasis than they have received under DOTS. These include the management of multidrug-resistant TB (MDR-TB) and of TB associated with HIV. That HIV is among the most important risk factors for TB is now well known, but work to address the TB/HIV problem was given greater impetus when African ministers of health declared TB a continent-wide emergency in 2005.

The Stop TB Strategy also includes measures to assess TB control in the context of health system performance, to encourage the participation of all health-care providers (not just those working for government health institutions), to empower TB patients and communities that suffer from TB, and to enable and promote research. This report presents information and data on all these aspects of TB control (see, e.g., country profiles in Annex 1), except the last (because we presently have no method of collecting

information on TB research). It also sets out the costs and budgets needed to implement DOTS and other components of the strategy, together with funding sources, budget gaps and expenditures.

Because DOTS remains at the heart of global TB control this report gives, like its predecessors, our best assessment of progress towards the targets for DOTS implementation; that is, to achieve 70% case detection and 85% treatment success by the end of 2005.^{6,7} Case detection is traditionally expressed in terms of the diagnosis and treatment of patients with sputum smear-positive pulmonary disease, because these patients are typically more infectious and usually have more severe illness than patients with smear-negative disease. However, "definite cases" of TB are patients in whom TB has been bacteriologically confirmed, including those found to be positive by the more sensitive technique of culture. In addition, it is widely accepted that a faster, more sensitive and more specific technique is needed to replace sputum smear microscopy, and new diagnostic methods are under development.⁸ For these reasons, we have continued in this report to explore other methods of evaluating case detection, comparing in particular case detection rates calculated in terms of smear and culture for countries in the European Region.

Between 1980 and 2004, 86 million TB patients were registered in national surveillance systems and reported to WHO, including 22 million notified by DOTS programmes since 1995. With each annual round of data collection, our epidemiological assessments are based on better surveillance and survey data. Planning for TB control, and reports on the process of planning and implementation, are more comprehensive and better targeted to the needs of national control programmes. The financial monitoring system has accounted for nearly US\$ 6 billion spent on TB in the

¹ Tuberculosis Coalition for Technical Assistance (TBCTA). *International standards for tuberculosis care*. The Hague, TBCTA, 2005.

² Raviglione MC, Uplekar MW. The new Stop TB Strategy of WHO. *Lancet*, 2006 [in press].

³ *The Global Plan to Stop TB, 2006–2015*, launched by the Stop TB Partnership in January 2006, describes how the Stop TB Strategy should be implemented over the next decade, including costs and the expected epidemiological impact in seven regions of the world.

⁴ The MDGs are described in full at <http://unstats.un.org/unsd/>

⁵ Dye C et al. Targets for global tuberculosis control. *International Journal of Tuberculosis and Lung Disease*, 2006 [in press].

⁶ Resolution WHA44.8. Tuberculosis control programme. In: *Handbook of resolutions and decisions of the World Health Assembly and the Executive Board*. Volume III, 3rd ed. (1985–1992). Geneva, World Health Organization, 1993 (WHA44/1991/REC/1).

⁷ *Stop Tuberculosis Initiative. Report by the Director-General*. Fifty-third World Health Assembly. Geneva, 15–20 May 2000 (A53/5, 5 May 2000); available at www.who.int/gb/ebwha/pdf_files/WHA53/ea5.pdf

⁸ A range of new approaches to diagnosis is described at <http://www.finddiagnostics.org/>

HBCs between 2002 and 2006, and is now beginning to show how greater investment leads to more effective TB control.

The Global TB Surveillance, Planning and Financing Project generates, in short, the information needed to make the best possible case for investing in the Stop TB Strategy. The 2006 report is a further step towards evaluating, with still greater precision, progress towards the MDGs, and ultimately towards TB elimination.

Methods

Monitoring progress in TB control Goals, target and indicators for TB control

The target and indicators for TB control, defined within the framework of the MDGs, have been supplemented and endorsed by the Stop TB Partnership (Table 1).¹ These will be used to measure progress made under the Stop TB Strategy,² which extends and enhances the DOTS strategy (Tables 2, 3). The Global Plan³ describes how the Stop TB Strategy should be implemented over the next decade (2006–2015).

This report focuses on the five principal indicators that are used to measure the implementation and impact of TB control: case detection and treatment success, and incidence, prevalence and deaths. The objective of reducing incidence is made explicit by MDG Target 8; the targets for case detection and treatment success have been set by WHO's World Health Assembly;⁴ the targets for prevalence

TABLE 1
Goals, target and indicators for TB control

Millennium Development Goal	
Combat HIV/AIDS, malaria and other diseases	
Target 8:	Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases
Indicator 23:	Prevalence and death rates associated with tuberculosis
Indicator 24:	Proportion of tuberculosis cases detected and cured under DOTS (the internationally recommended strategy for TB control)
Stop TB Partnership targets	
By 2005:	At least 70% of people with sputum smear-positive TB will be diagnosed (i.e. under the DOTS strategy), and at least 85% cured. These are targets set by the World Health Assembly of WHO.
By 2015:	The global burden of TB (prevalence and death rates) will be reduced by 50% relative to 1990 levels. This means reducing prevalence to ≈150 per 100 000 or lower and deaths to ≈15 per 100 000 per year or lower by 2015 (including TB cases coinfecting with HIV). The number of people dying from TB in 2015 should be less than approximately 1 million, including those coinfecting with HIV.
By 2050:	The global incidence of TB disease will be less than or equal to 1 case per million population per year.

¹ Dye C et al. Targets for global tuberculosis control. *International Journal of Tuberculosis and Lung Disease*, 2006 [in press].
² Raviglione MC, Uplekar MW. The new Stop TB Strategy of WHO. *Lancet*, 2006 [in press].
³ *The Global Plan to Stop TB, 2006–2015*. Geneva, World Health Organization, 2006 (WHO/HTM/STB/2006.35).
⁴ Resolution WHA44.8. Tuberculosis control programme. In: *Handbook of resolutions and decisions of the World Health Assembly and the Executive Board*. Volume III, 3rd ed. (1985–1992). Geneva, World Health Organization, 1993 (WHA44/1991/REC/1).

TABLE 2
The Stop TB Strategy

Vision:	A world free of TB
Goal:	To dramatically reduce the global burden of TB by 2015 in line with the Millennium Development Goals and the Stop TB Partnership targets
Objectives:	<ul style="list-style-type: none"> — Achieve universal access to high-quality diagnosis and patient-centred treatment — Reduce the human suffering and socioeconomic burden associated with TB — Protect poor and vulnerable populations from TB, TB/HIV and MDR-TB — Support development of new tools and enable their timely and effective use
Targets:	<p>MDG 6, Target 8: Halt and begin to reverse the incidence of TB by 2015.</p> <p>Targets linked to the MDGs and endorsed by the Stop TB Partnership:</p> <ul style="list-style-type: none"> — By 2005: detect at least 70% of infectious TB cases and cure at least 85% of these cases — By 2015: reduce TB prevalence and deaths rates by 50% relative to 1990 — By 2050: eliminate TB as a public health problem (≤1 case per million population)
Components of the strategy and implementation approaches	<ol style="list-style-type: none"> 1. Pursuing high-quality DOTS expansion and enhancement <ol style="list-style-type: none"> a. Political commitment with increased and sustained financing b. Case detection through quality-assured bacteriology c. Standardized treatment with supervision and patient support d. An effective drug supply and management system e. Monitoring and evaluation system, and impact measurement 2. Addressing TB/HIV, MDR-TB and other challenges <ul style="list-style-type: none"> — Implement collaborative TB/HIV activities — Prevent and control MDR-TB — Address prisoners, refugees, other high-risk groups and special situations 3. Contributing to health system strengthening <ul style="list-style-type: none"> — Actively participate in efforts to improve system-wide policy, human resources, financing, management, service delivery and information systems — Share innovations that strengthen health systems, including the Practical Approach to Lung Health (PAL) — Adapt innovations from other fields 4. Engaging all care providers <ul style="list-style-type: none"> — Public–Public and Public–Private Mix (PPM) approaches — Implement International Standards for Tuberculosis Care 5. Empowering people with TB, and communities <ul style="list-style-type: none"> — Advocacy, communication and social mobilization — Community participation in TB care — Patients' Charter for Tuberculosis Care 6. Enabling and promoting research <ul style="list-style-type: none"> — Programme-based operational research — Research to develop new diagnostics, drugs and vaccines

TABLE 3
Technical elements of the DOTS strategy

Case detection through quality-assured bacteriology

Case detection among symptomatic patients self-reporting to health services, using sputum smear microscopy. Sputum culture is also used for diagnosis in some countries, but direct sputum smear microscopy should still be performed for all suspected cases.

Standardized treatment with supervision and patient support

Standardized short-course chemotherapy using regimens of 6–8 months for at least all confirmed smear-positive cases. Good case management includes directly observed treatment (DOT) during the intensive phase for all new smear-positive cases, during the continuation phase of regimens containing rifampicin and during the entirety of a re-treatment regimen. In countries that have consistently documented high rates of treatment success, DOT may be reserved for a subset of patients, as long as cohort analysis of treatment results is provided to document the outcome of all cases.

An effective drug supply and management system

Establishment and maintenance of a system to supply all essential anti-TB drugs and to ensure no interruption in their availability.

Monitoring and evaluation system, and impact measurement

Establishment and maintenance of a standardized recording and reporting system, allowing assessment of treatment results (Table 4).

and deaths are based on a resolution of the year 2000 meeting of the Group of Eight (G8) industrialized countries, held in Okinawa, Japan.

Data collection and verification

Every year, WHO requests information from national TB control programmes (NTPs) or relevant public health authorities in 211 countries or territories via a standard data collection form (posted at www.who.int/tb). The latest form was distributed in mid-2005. The section dealing with monitoring and surveillance asked for data including the following: whether DOTS was implemented during 2004; DOTS population coverage in 2004; TB case notifications in 2004; TB patients tested for HIV and MDR-TB in 2003–2004, and treatment outcomes for TB patients registered during 2003, following definitions given in Table 4. The most recent form can be found at www.who.int/tb.

As NTPs respond to WHO, they are also asked to update information for earlier years if they are able to do so. As a result of such revisions, the data (case notifications, treatment outcomes, etc.) presented in this report for years preceding 2003 and 2004 could differ from those published in previous reports.

The standard data collection form is used to compile aggregated national data. The process of national and international reporting is distinct from WHO's recommendations about procedures for recording and reporting data by NTPs within countries, from district level upwards.¹

¹ Revised procedures for recording and reporting at district level, to be field-tested during 2006, are described at www.who.int/tb/publications/recording_and_reporting_draft/en/index.html

Completed forms are collected and reviewed at all levels of WHO, by country offices, regional offices and at headquarters. An acknowledgement form that tabulates all submitted data is sent back to the NTP correspondent in order to complete any missing responses and to resolve any inconsistencies. Then, using the complete set of data for each country, we construct a profile that tabulates all key indicators, including epidemiological and financial data and estimates, and this too is returned to each NTP for review. In the WHO European Region only, data collection and verification are performed jointly by the regional office and a WHO collaborating centre, EuroTB (Paris). EuroTB subsequently publishes an annual report with additional analyses, using more detailed data for the European Region (www.eurotb.org).

High-burden countries, WHO regions and other subregions of the world

Much of the data submitted to WHO is shown, country by country, in the annexes of this report. The analysis and interpretation that precedes these annexes focus on 22 HBCs and the six WHO regions. The 22 HBCs account for approximately 80% of the estimated number of new TB cases (all forms) arising worldwide each year. These countries are the focus of intensified efforts in DOTS expansion (Annex 1). The HBCs are not necessarily those with the highest incidence rates per capita; many of the latter are medium-sized African countries with high rates of TB/HIV coinfection. The WHO regions are the African Region, the Region of the Americas, the Eastern Mediterranean Region, the European Region, the South-East Asia Region and the Western Pacific Region. All essential statistics are summarized for each of these regions and globally. However, to make clear the differences in epidemiological trends within regions, we divide the African Region into countries with low and high rates of HIV infection (high is greater than an estimated infection rate of 4% in adults aged 15–49 years). We also distinguish central from eastern Europe (countries of the former Soviet Union plus Bulgaria and Romania), and combine western European countries with the other established market economies. The countries within each of the resulting nine regions are listed in the legend to Figure 5.

DOTS classification

DOTS remains central to the public health approach to TB control, which is now presented as the Stop TB Strategy (Table 2). Before the launch of the strategy during 2006, NTPs reporting to WHO classified their programmes as either DOTS or non-DOTS, referring to the elements listed in Tables 2 and 3. To be classified as DOTS in this report, a country must have officially accepted and adopted the strategy in 2004, and must have implemented the four technical components of DOTS in at least part of the country (Annex 2). Based on NTP responses to standard questions about policy – and usually on further discussion with

TABLE 4
Definitions of tuberculosis cases and treatment outcomes

A. Definitions of tuberculosis cases

Case of tuberculosis A patient in whom tuberculosis has been confirmed by bacteriology or diagnosed by a clinician.

Definite case A patient with positive culture for the *Mycobacterium tuberculosis* complex. In countries where culture is not routinely available, a patient with 2 sputum smears positive for acid-fast bacilli (AFB+) is also considered a definite case.

Pulmonary case A patient with TB disease involving the lung parenchyma.

Smear-positive pulmonary case A patient with at least 2 initial sputum smear examinations (direct smear microscopy) AFB+; or one sputum examination AFB+ and radiographic abnormalities consistent with active pulmonary tuberculosis as determined by a clinician; or one sputum specimen AFB+ and culture positive for *M. tuberculosis*.

Smear-negative pulmonary case A patient with pulmonary tuberculosis not meeting the above criteria for smear-positive disease. Diagnostic criteria should include: at least 3 sputum smear examinations negative for AFB; and radiographic abnormalities consistent with active pulmonary TB; and no response to a course of broad-spectrum antibiotics; and decision by a clinician to treat with a full course of anti-TB therapy; or positive culture but negative AFB sputum examinations.

Extrapulmonary case A patient with tuberculosis of organs other than the lungs (e.g. pleura, lymph nodes, abdomen, genitourinary tract, skin, joints and bones, meninges). Diagnosis should be based on one culture-positive specimen, or histological or strong clinical evidence consistent with active extrapulmonary disease, followed by a decision by a clinician to treat with a full course of anti-TB chemotherapy.

Note: a patient in whom both pulmonary and extrapulmonary tuberculosis has been diagnosed should be classified as a pulmonary case.

New case A patient who has never had treatment for tuberculosis or who has taken anti-TB drugs for less than 1 month.^a

Relapse case A patient previously declared cured but with a new episode of bacteriologically positive (sputum smear or culture) tuberculosis.

Re-treatment case A patient previously treated for tuberculosis, undergoing treatment for a new episode of bacteriologically-positive tuberculosis.

B. Definitions of treatment outcomes

(expressed as a percentage of the number registered in the cohort)

Cured An initially smear-positive patient who was smear-negative in the last month of treatment and on at least one previous occasion.

Completed treatment A patient who completed treatment but did not meet the criteria for cure or failure.

Died A patient who died from any cause during treatment.

Failed A smear-positive patient who remained smear-positive at month 5 or later during treatment.

Defaulted A patient whose treatment was interrupted for 2 consecutive months or more.

Transferred out A patient who transferred to another reporting unit and whose treatment outcome is not known.

Successfully treated A patient who was cured *and* who completed treatment.

Cohort A group of patients in whom TB has been diagnosed, and who were registered for treatment during a specified time period (e.g. the cohort of new smear-positive cases registered in the calendar year 2003). This group forms the denominator for calculating treatment outcomes. The sum of the above treatment outcomes, plus any cases for which no outcome is recorded (e.g. still on treatment) should equal the number of cases registered. Some countries monitor outcomes among cohorts defined by smear and/or culture, and define cure and failure according to the best laboratory evidence available for each patient.

^a Cases reported as "history unknown" in the European Region are included as new cases in this report.

the NTP – WHO has accepted or revised each country's own determination of its DOTS status.

DOTS coverage

Coverage is defined as the percentage of the national population living in areas where health services have adopted DOTS. "Areas" are the lowest administrative or management units in the country (townships, districts, counties, etc). If an area (with its one or more health facilities) is considered by the NTP to have been a DOTS area in 2004, then all the cases registered and reported by the NTP in that area are considered DOTS cases and the population living within the boundaries of that area counts towards the national DOTS coverage. In some cases, treatment providers that are not following DOTS guidelines (e.g. private practitioners, or public health services outside the NTP

such as those within prisons) notify cases to the NTP. These cases are considered non-DOTS cases, even if they are notified from within DOTS areas. However, when certain groups of patients treated by DOTS services receive special regimens or management (e.g. nomads placed on longer courses of treatment), these are considered DOTS cases. Where possible, additional information about these special groups of patients is provided in the country notes in Annex 2. Ideally, the DOTS coverage in any one year should be calculated by evaluating the number of person-years covered in each quarter, and then summing across the four quarters of the year (although some countries simply report the population coverage achieved by the end of the year).

DOTS coverage calculated as described above is a crude indicator of the actual proportion of people who have access to DOTS, but it is easy to calculate and is most useful

during the early stages of DOTS expansion. As a measure of patient access to diagnosis and treatment under DOTS, coverage is an approximation, and usually an overestimate. Where countries are able to provide more precise information about access to DOTS services, this information is reported in the country notes of Annex 2. The case detection rate (defined below) is a more precise measure of DOTS implementation but is also more demanding of data.

Estimating TB incidence, prevalence and death rates

Estimates of TB incidence, prevalence and deaths are based on a consultative and analytical process; they are revised annually to reflect new information gathered through surveillance and from special studies, such as surveys of the prevalence of infection and disease. The details of estimation are described elsewhere.^{1,2,3} In brief, estimates of incidence (number of new cases per year) for each country are derived using one or more of four approaches, depending on the available data:

$$\text{incidence} = \frac{\text{case notifications}}{\text{proportion of cases detected}} \quad (1)$$

$$\text{incidence} = \frac{\text{prevalence}}{\text{duration of condition}} \quad (2)$$

$$\text{incidence} = \text{annual risk of infection} \times \text{Stýblo coefficient} \quad (3)$$

$$\text{incidence} = \frac{\text{deaths}}{\text{proportion of incident cases that die}} \quad (4)$$

The Stýblo coefficient in equation (3) is taken to be a constant, with an empirically derived value in the range 40–60, relating risk of infection (% per year) to the incidence of sputum smear-positive cases (per 100 000 per year). Given two of the quantities in any of these equations, we can calculate the third, and these formulae can be rearranged to estimate incidence, prevalence and death rates. The available data differ from country to country but include case notifications and death records (from routine surveillance and vital registration), and measures of the prevalence of infection and disease (from population-based surveys).

For each country, estimates of incidence for each year during the period 1995–2004 are made as follows. We first select a reference year for which we have a best estimate of incidence; this may be the year in which a survey was carried out, or the year for which incidence was first estimated. We then use the series of case notifications (all new and relapse cases) to determine how incidence changed before and after that reference year. The time series of estimated incidence rates is constructed from the notification series in one of two ways: if the rate of change of incidence is

roughly constant through time, we fit exponential trends to the notifications; if the rate varies through time (eastern Europe, central Europe and high-HIV Africa), we use a three-year moving average of the notification rates. If the notifications for any country are considered to be an unreliable guide to trend (e.g. because reporting effort is known to have changed; or because reports are clearly erratic, changing in a way that cannot be attributed to TB epidemiology), we apply the aggregated trend for all other countries from the same epidemiological region that have reliable data. For some countries (China, Indonesia and Nepal), we have used an assessment of the trend in incidence based on risk of infection derived from other sources (tuberculin surveys for China and Nepal; disease prevalence surveys for Indonesia). For those countries that have no reliable data from which to assess trends in incidence (e.g. for countries such as Iraq, for which data are hard to interpret, and which are atypical within their own regions), we assume that incidence is stable. Further details are available at www.who.int/tb.

Since most countries have not yet measured HIV infection rates in TB patients directly, we have used, for all countries, an indirect estimate derived from estimates of the HIV prevalence in the general population, and from the incidence rate ratio (the TB incidence rate in HIV-infected people divided by the incidence rate in HIV-uninfected people).²

Estimates of incidence form the denominator of the case detection rate. Trends in incidence are determined by underlying epidemiological processes, modified by control programmes.

The prevalence of TB is calculated from the product of incidence and duration of disease, and the TB mortality rate from the product of incidence and case fatality (proportion of incident cases that ever die from TB). The duration of disease and the case fatality are estimated, country by country, for patients treated within or outside DOTS programmes and for patients who receive no recognized TB treatment. Because the duration of disease and case fatality are typically shorter for patients treated under DOTS than for patients who are treated elsewhere or untreated, the average duration of disease and average case fatality decrease as the proportion of patients treated under DOTS increases.^{1,2,3}

Where population sizes are needed to calculate TB indicators, we use the latest revision of estimates provided by

¹ Dye C et al. Global burden of tuberculosis: estimated incidence, prevalence and mortality by country. *Journal of the American Medical Association*, 1999, 282:677–686.

² Corbett EL et al. The growing burden of tuberculosis: global trends and interactions with the HIV epidemic. *Archives of Internal Medicine*, 2003, 163: 1009–1021.

³ Dye C et al. Evolution of tuberculosis control and prospects for reducing tuberculosis incidence, prevalence, and deaths globally. *Journal of the American Medical Association*, 2005, 293:2767–2775.

the United Nations Population Division.¹ These estimates sometimes differ from those made by the countries themselves, some of which are based on more recent census data. The estimates of some TB indicators, such as the case detection rate, are derived from data and calculations that use only rates per capita, and discrepancies in population sizes do not affect these indicators. Where rates per capita are used as a basis for calculating numbers of TB cases, these discrepancies sometimes make a difference. Some examples of important differences are given in the country notes in Annex 2.

Case detection

Sputum smear-positive cases are the focus of DOTS programmes because they are the principal sources of infection to others, because sputum smear microscopy is a highly specific (if somewhat insensitive) method of diagnosis, and because patients with smear-positive disease typically suffer higher rates of morbidity and mortality than smear-negative patients. As a measure of the quality of diagnosis, we calculate the proportion of new smear-positive cases out of all new pulmonary cases, which has an expected value of 65–80% in areas with negligible HIV prevalence.²

While the emphasis is on new smear-positive cases, we also present the numbers of all TB cases reported – smear-positive and smear-negative pulmonary cases – in addition to those in whom extrapulmonary disease is diagnosed. The number of cases notified in any year is given primarily as the sum of new and relapse cases, i.e. the sum of new (or presumed to be new) episodes of TB. Case reports that represent a second registration of the same patient/episode (i.e. re-treatment after failure or default) are presented separately.

The term “case detection”, as used here, means that TB is diagnosed in a patient and is reported within the national surveillance system, and then to WHO. The case detection rate is calculated as the number of cases notified divided by the number of cases estimated for that year, expressed as a percentage. Detection is presented in four main ways: (i) for new smear-positive cases (excluding relapses), (ii) for all new and relapse cases (i.e. all forms of TB), (iii) for DOTS programmes only, or (iv) for cases notified from all sources. The next section describes, as part of a special investigation carried out for this report, case detection based on diagnosis by culture. For new smear-positive cases aggregated as in (iii) and (iv):

$$\text{DOTS case detection rate} = \frac{\text{annual new smear-positive notifications (DOTS)}}{\text{estimated annual new smear-positive incidence (country)}} \quad (5)$$

$$\text{case detection rate} = \frac{\text{annual new smear-positive notifications (country)}}{\text{estimated annual new smear-positive incidence (country)}} \quad (6)$$

The target of 70% case detection applies to the DOTS case detection rate in formula (5). Even when a country is not 100% DOTS, we use the incidence estimated for the whole country as the denominator of the case detection rate, as in equation (5). The DOTS detection rate and the case detection rate for the whole country are identical when a country reports only from DOTS areas. This generally happens when DOTS coverage is 100%, but in some countries where DOTS is implemented in only part of the country, no TB notifications are received from the non-DOTS areas. Furthermore, in some countries where DOTS coverage is 100%, patients may seek treatment from non-DOTS providers, that in some cases notify TB cases to the national authorities.

Although these indices are termed “rates”, they are actually ratios. The number of cases notified is usually smaller than estimated incidence because of incomplete coverage by health services, under-diagnosis, or deficient recording and reporting. However, the calculated detection rate can exceed 100% if case-finding has been intense in an area that has a backlog of chronic cases, if there has been over-reporting (e.g. double-counting) or over-diagnosis, or if estimates of incidence are too low. If the expected number of cases per year is very low (especially if it is less than one), the case detection rate can vary markedly from year to year because of chance. Whenever this index comes close to or exceeds 100%, we attempt to investigate, as part of the joint planning and evaluation process with NTPs, which of these explanations is correct.

The ratio of the DOTS case detection rate to coverage is an estimate of the case detection rate within DOTS areas (as distinct from the case detection rate nationwide), assuming that the TB incidence rate is homogeneous across counties, districts, provinces or other administrative units. The detection rate within DOTS areas should exceed 70% as DOTS coverage increases within any country. Where the value of this indicator is much lower, it is clear that the DOTS programme has been poorly implemented, at least in some parts of the designated DOTS area. Changes in the value of this ratio through time are a measure of changes in the quality of TB control, after the DOTS programme has been established.

¹ *World population prospects – the 2004 revision*. New York, United Nations Population Division, 2005.

² *Tuberculosis handbook*. Geneva, World Health Organization, 1998 (WHO/TB/98.253).

Comparison of methods for evaluating case detection

Since sputum smear microscopy is an insensitive method of diagnosing pulmonary TB, and since culture and other new diagnostic methods are likely to be used more frequently in the near future, we have continued to explore alternative methods of evaluating case detection and the outcome of treatment.¹

We compared case detection rates based on smears and cultures in two steps. First, by examining the results of smears and cultures for individual patients with pulmonary TB in 25 European countries, we obtained an estimate of the proportion of culture-positive patients that are also smear-positive. Second, we used this estimate in the following formula to derive culture-positive incidence rates for European countries:

$$\text{culture-positive incidence} = \frac{\text{smear-positive incidence}}{\text{proportion culture-positive patients that are also smear-positive}} \quad (7)$$

These estimated incidence rates are the denominators of the culture-positive case detection rates for countries in the European region. The numerators are the numbers of pulmonary TB patients reported to be positive by culture.

Broadening the analysis, we also compared the smear-positive detection rates (for countries in the European and other regions) with the detection rates of all laboratory-confirmed cases of TB (i.e. smear-positive and/or culture-positive) and the detection rates of all cases of TB (new and relapse, pulmonary and extrapulmonary, diagnosed by smear, culture, radiography or by clinical examination).

Outcomes of treatment

Treatment success in DOTS programmes is the percentage of new smear-positive patients that are cured (negative on sputum smear examination), plus the percentage that complete a course of treatment, without bacteriological confirmation of cure (Table 4). Cure and completion are among the six mutually exclusive treatment outcomes.² The sum of cases assigned to these outcomes, plus any additional cases registered but not assigned to an outcome, adds up to 100% of cases registered (i.e. the treatment cohort).

We also compare the number of new smear-positive cases registered for treatment (for this report, in 2003) with the number of cases notified as smear-positive (also in 2003). All notified cases should be registered for treatment, and the numbers notified and registered should therefore be the same (discrepancies arise, for example, when subnational reports are not received at national level).

¹ A comparison of treatment outcomes evaluated by smear and culture conversion is in *Global tuberculosis control. WHO report 2001*. Geneva, World Health Organization, 2001 (WHO/CDS/TB/2001.287), p.22.

² *Treatment of tuberculosis: guidelines for national programmes*. 3rd ed. Geneva, World Health Organization, 2003 (WHO/CDS/TB/2003.313).

If the number registered for treatment is not provided, we take as the denominator for treatment outcomes the number notified for that cohort year. If the sum of the six outcome categories is greater than the number registered (or the number notified), we use this sum as the denominator.

The number of patients presenting for a second or subsequent course of treatment, and the outcome of further treatment, are indicative of NTP performance and levels of drug resistance. We present in this report the numbers of patients registered for re-treatment, and the outcomes of re-treatment, for each of three registration categories: re-treatment after relapse, failure and default. However, some countries do not yet compile data on cases registered for re-treatment after failure and default separately at national level. Furthermore, some countries do not have outcome data for each of these re-treatment case categories.

The assessment of treatment outcomes for a given calendar year always lags case notifications by one year, to ensure that all patients registered during that calendar year have completed treatment. A DOTS country must report treatment outcomes, unless it is newly-classified as DOTS, in which case it would take an additional year to report outcomes from the first cohort of patients treated.

NTPs should ensure high treatment success before expanding case detection. The reason is that a proportion of patients given less than a fully-curative course of treatment remain chronically infectious and continue to spread TB. Thus DOTS programmes must be shown to achieve high cure rates in pilot projects before attempting countrywide coverage.

DOTS implementation and planning

The information on DOTS implementation and planning presented and analysed in this report reflects activities carried out mostly between July 2004 and June 2005. Country plans and activities are monitored through several mechanisms, including direct discussion with NTP managers, analysis of the responses to a questionnaire on DOTS implementation and planning sent by WHO to all HBCs during 2005, e-mail and telephone communications with NTPs, consultation with international technical agencies, monitoring missions, comprehensive programme reviews, applications to the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), regional NTP managers' meetings and the annual DOTS Expansion Working Group Meeting of the Stop TB Partnership. In writing this report, WHO staff worked closely with NTP managers of the 22 HBCs to:

- assess main national TB control activities carried out and planned, focusing on improving political commitment, expanding access to DOTS, strengthening laboratory and diagnostic services, ensuring human resource development, strengthening drug management, and improving programme monitoring and supervision;

- summarize the progress made by the end of 2005 in implementing, or scaling up, national plans for DOTS expansion;
- identify challenges to reaching the targets for case detection and treatment success;
- determine the status of collaborative TB/HIV activities;
- assess levels of drug resistance and activities planned to address MDR-TB, including mechanisms of drug-resistance surveillance, MDR-TB diagnosis and treatment policies, and the availability of second-line anti-TB drugs;
- identify barriers faced by poor and disadvantaged communities in accessing services for TB diagnosis and treatment;
- describe the contribution of TB control activities to the strengthening of health systems;
- determine the status of additional strategies to expand DOTS, including community participation in TB care, advocacy, communication and social mobilization (ACSM) strategies, and public-private mix (PPM) approaches;
- review and revise the list of partners supporting DOTS implementation and expansion.

A questionnaire (posted at www.who.int/tb) on DOTS implementation and expansion was sent by e-mail to NTP managers of the 22 HBCs in July 2005. The questionnaire was structured around the components of the Stop TB Strategy (Table 2) and included questions on: general DOTS expansion, including major activities carried out and planned; health system strengthening and TB control; human resource (HR) development; laboratory and diagnostic services; community TB care; PPM-DOTS; collaborative TB/HIV activities; drug management; drug resistance surveys and treatment of MDR-TB; the GFATM; ACSM; TB and poverty; and national coordination activities. The questionnaire did not include the sixth component of the Stop TB Strategy on enabling and promoting research.

Country profiles were developed from the responses to questionnaires, and from reports on monitoring missions and programme reviews. Additional information and clarifications were obtained from NTP staff and collaborating technical agencies by e-mail and telephone.

Collaborative TB/HIV activities

The WHO policy on collaborative TB/HIV activities¹ describes ways in which HIV and TB control programmes can collaborate to their mutual benefit, with the emphasis on three areas. First, organizational structures should be put in place to plan and manage collaborative TB/HIV activities. Second, people should be screened for TB when they test positive for HIV and again whenever they attend the health services; if they have active disease they should be treated

for TB; if they have latent but not active TB they should be offered isoniazid preventive therapy (IPT). Third, all TB patients should be offered HIV counselling and testing; if they are HIV positive, they should be offered co-trimoxazole preventive therapy (CPT) and should be assessed for, and if necessary started on, antiretroviral therapy (ART). HIV testing, and provision of CPT or ART may be done at any time during TB treatment. Information and advice on HIV prevention should be given to all TB patients. Indicators for monitoring and evaluating collaborative TB/HIV activities are available from WHO.²

In the TB/HIV section of the standard WHO data collection form, NTP managers or their correspondents were asked if they had a national policy of HIV testing for TB patients in 2004 and asked to report on the number of TB patients who were tested for HIV, the number who tested positive for HIV, and those who started CPT and ART in 2003. For 41 countries³ with a high burden of HIV-positive TB cases, the TB/HIV section of the data collection form was expanded, and included questions about screening for TB and provision of IPT among people with HIV in 2003 (posted at www.who.int/tb). The data were reviewed at WHO regional offices and headquarters, and inconsistencies or missing data were discussed with the national correspondent.

Surveillance and management of drug resistance

Data on the prevalence of drug resistance among TB patients are collected through the WHO/IUATLD Global Project on Antituberculosis Drug Resistance Surveillance (Global DRS Project), which began in 1994.⁴ The project carries out surveys of drug resistance, using established and agreed methods, among patients who present to clinics, hospitals and other health institutions. The profiles of the 22 HBCs (Annex 1) contain estimates of the national prevalence of MDR-TB among both new and previously-treated TB patients, based on survey data for those countries participating in the Global DRS Project and for which data

¹ *Interim policy on collaborative TB/HIV activities*. Geneva, World Health Organization, 2004 (WHO/HTM/TB/2004.330; WHO/HTM/HIV/2004.1; available at http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.330.pdf).

² *A guide to monitoring and evaluation for collaborative TB/HIV activities*. Geneva, World Health Organization, 2004 (WHO/HTM/TB/2004.342 and WHO/HIV/2004.09; available at http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.342.pdf).

³ These 41 countries are the focus of intensified efforts to implement collaborative TB/HIV activities: Angola, Botswana, Brazil, Burkina Faso, Burundi, Cambodia, Cameroon, Central African Republic, Chad, China, Congo, Côte d'Ivoire, Djibouti, Democratic Republic of the Congo, Ethiopia, Ghana, Haiti, India, Indonesia, Kenya, Lesotho, Malawi, Mali, Mozambique, Myanmar, Namibia, Nigeria, Russian Federation, Rwanda, Sierra Leone, South Africa, Sudan, Swaziland, Thailand, Togo, Uganda, Ukraine, United Republic of Tanzania, Viet Nam, Zambia, Zimbabwe.

⁴ The WHO/IUATLD Global Project on Anti-tuberculosis Drug Resistance Surveillance. *Anti-tuberculosis drug resistance in the world. Third global report*. Geneva, World Health Organization, 2003 (WHO/HTM/TB/2004.343). More information about the project can be found at: www.who.int/tb/dots/dotsp/surveillance/en/index.html

are considered reliable. For those countries that have not carried out surveys, or that do not have representative data on previously-treated cases, the figures given in the country profiles are estimates based on a regression model described in detail elsewhere.^{1,2}

Besides the survey data available from the Global DRS Project, many NTPs also compile information on drug susceptibility testing (DST) carried out as part of their routine surveillance activities, and they record the number of patients with MDR-TB. We therefore asked NTPs this year, for the first time, to provide the following information via the standard data collection form (part 3):

- The number of laboratory-confirmed cases of MDR-TB that were identified among new and re-treatment TB patients diagnosed in 2004.
- The number of new and re-treatment patients, registered in 2004, who received DST at the start of treatment.
- The number of new and re-treatment patients who were identified as MDR-TB cases based on DST at the start of treatment.

Drawing on information from all these sources, this report summarizes the number and status of drug resistance surveys carried out for the Global DRS Project, and compares the estimates of MDR-TB prevalence derived from these surveys with those measured by routine surveillance.

WHO has a global policy for managing MDR-TB, and facilitates access to second-line anti-TB drugs through the Green Light Committee (GLC). Projects approved by the GLC have access to quality-assured, second-line drugs at reduced prices and benefit from independent external monitoring. This report also lists the GLC-approved projects that had been established by 2005.

In addition to the standard data collection form, the questionnaire on DOTS implementation (see above) sent to HBCs provided further information on plans for DRS and MDR-TB diagnosis and treatment, and identified the principal obstacles to implementing these activities.

Financing TB control

Financial analysis was introduced into the annual WHO report on global tuberculosis control in 2002.³ The main developments in this year's report are (a) to include analysis of whether increased funding for TB control has resulted in an increase in the number of cases detected and treated in DOTS programmes, and (b) to compare funding needs based on data reported by countries with the funding needs set out in the Global Plan.⁴ The report has eight objectives:

- For each HBC, and for all HBCs combined, to present and assess total NTP budgets and expenditures for the period 2002–2006, with breakdowns by funding source and line item.

- For each HBC and for all HBCs combined, to present and assess total TB control costs⁵ for the period 2002–2006, with breakdowns by funding source and line item.
- For each HBC, to estimate and compare per patient costs, budgets and available funding for the period 2002–2006 and per patient expenditures for 2002–2004.
- For each HBC, to assess whether increased spending on TB control is resulting in an increase in the number of cases detected and treated in DOTS programmes.
- For the HBCs, to summarize progress in financing for TB control by categorizing countries according to financial criteria.
- To assess the contribution of the GFATM to funding for TB control.
- For countries other than the HBCs, to quantify NTP budgets, total TB control costs and funding gaps in 2006.
- For the HBCs and other countries, to compare funding needs based on data reported by countries with the funding needs set out in the Global Plan.

Data collection

We collected data from four main sources: NTPs, the WHO-CHOICE team,⁶ GFATM proposals and databases, and previous WHO reports in this series. In 2005, data were collected directly from countries by means of a two-page questionnaire included in the standard WHO data collection form. NTP managers were asked to complete three tables. The first two tables required a summary of the NTP budget for fiscal years 2005 and 2006 in US\$, broken down by line item and funding source (including a column for funding gaps). The third table requested NTP expenditure data for 2004, broken down by line item and source of funding. The form also requested information about infrastructure dedicated to TB control and the way in which general health infrastructure is used for TB control (for example, the number of dedicated TB beds that exist, the number of outpatient visits that patients need to make to a health facility during treatment and the average number of days for which patients are hospitalized). We also asked for

¹ Dye C et al. Worldwide incidence of multidrug-resistant tuberculosis. *Journal of Infectious Diseases* 2002, 185:1197–1202.

² Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].

³ *Global tuberculosis control: surveillance, planning, financing. WHO report 2002*. Geneva, World Health Organization, 2002 (WHO/CDS/TB/2002.295).

⁴ *The Global Plan to Stop TB, 2006–2015*. Geneva, World Health Organization, 2006 (WHO/HTM/STB/2006.35).

⁵ i.e. including costs not reflected in NTP budget data.

⁶ The WHO-CHOICE (Choosing Interventions that are Cost-Effective) team conducts work on the costs and effects of a wide range of health interventions.

an estimate of the number of patients that would be treated in 2005 and 2006. We used a costing database developed by the WHO-CHOICE team to identify the average costs, in local currency units, of a hospital bed-day and an outpatient clinic visit in every country. These were converted into US\$ using exchange rate data provided in the *IMF Financial statistics yearbook*.¹

Data entry and analysis

High-burden countries

Data entry and analysis focused on the 22 HBCs. We created a standardized workbook, with one worksheet for each country. Additional worksheets were included for summary analyses and for the data required as inputs to the country-specific analyses (e.g. notification data, unit costs for bed-days and outpatient clinic visits). For each country worksheet, seven tables were created:

- NTP budget by source of funding for each year 2002–2006, with the funding sources defined according to the 2005 data collection form, i.e. government (excluding loans), loans, GFATM, grants (excluding GFATM) and budget gap.
- NTP budget by line item for each year 2002–2006, with the line items defined according to the 2005 data collection form, i.e. first-line drugs, second-line drugs, dedicated NTP staff, initiatives to increase case detection and cure rates, collaborative TB/HIV activities, buildings/equipment/vehicles and other.
- NTP expenditures by source of funding for 2002–2004, with funding sources as defined for NTP budgets.
- NTP expenditures by line item for 2002–2004, with line items as defined for NTP budgets.
- Total TB control costs by funding source for each year 2002–2006, with funding sources as defined for NTP budgets.
- Total TB control costs by line item for each year 2002–2006, with the line items defined as NTP budget items, hospitalization and clinic visits.
- Per patient costs, NTP budget, available funding, expenditures and budget for first-line drugs.

Budget data for 2005 and 2006 were taken from the 2005 data collection form. Budget data for 2002–2004 were taken from the 2005 annual report. Expenditure data for 2002, 2003 and 2004 were based on the 2003, 2004 and 2005 data collection forms, respectively. Total TB control costs were estimated by adding costs for hospitalization and outpatient clinic visits to either NTP expenditures (for 2002–2004) or NTP budgets (for 2005–2006).² Expenditures were used in preference to budgets for 2002–2004 because they reflect actual costs, whereas budgets can be higher than actual expenditures (for example, when large

budgetary funding gaps exist or the NTP does not spend all the available funding). When expenditures are known for 2005 and 2006, they will be used instead of budget data to calculate, retrospectively, the total cost of TB control in these years. For some HBCs, expenditures were not available for 2002–2004. When this was the case, we estimated expenditures based on available funding, which was calculated as the total budget minus the funding gap.

The total cost of outpatient clinic visits was estimated in two steps. First, the unit cost (in US\$) of a visit was multiplied by the average number of visits required per patient (estimated on the WHO data collection form), to give the cost per patient treated. This was done separately for (a) new smear-positive cases and (b) new smear-negative and extrapulmonary cases. Second, we multiplied the cost per patient treated by the number of patients notified (for 2002–2004) or the number of patients that the NTP projects will be treated (for 2005–2006). The total costs for the two categories of patient were then summed. The cost of hospitalization was generally calculated in the same way, replacing the unit cost of a clinic visit with the unit cost of a bed-day. The procedure differed for eight countries that have dedicated TB beds and where the total cost of these beds is higher than when the total cost is estimated by multiplying bed-days per patient by the number of patients treated (this applied to Bangladesh, Brazil, Cambodia, India, Myanmar, the Russian Federation, the United Republic of Tanzania and Zimbabwe). We assumed that all clinic visits and hospitalization are funded by the government, because staff and facility infrastructure are the major inputs included in the unit cost estimates and these are typically not funded by donors.

Per patient costs, budgets, available funding and expenditures were calculated by dividing the relevant total by the number of cases notified (for 2002–2004) and the number of patients that the NTP projects will be treated (for 2005–2006). Since the total costs of TB control for 2002–2004 were based on expenditure data, it is possible for the total TB control cost per patient treated to be less than the NTP budget per patient treated when the funding gap is large or there is an important budgetary under-spend. In addition, for 2002–2004, expenditures per patient were sometimes higher than the available funding per patient. This can occur when the NTP budget funding gap is reduced after the reporting of budget data to WHO (since available funding is estimated as the total budget minus the funding gap). To try to eliminate this problem, from 2005 the data collection form allows countries to update budget data reported in the previous round of data collection (for

¹ *International financial statistics yearbook*. Washington, DC, International Monetary Fund, 2003.

² The exception was South Africa, because no data on hospitalization and clinic visits, or on NTP budgets, were provided in the data collection form. Costs were therefore estimated based on recent costing studies, as described in the country profile (Annex 1).

example in the 2005 round of data collection, countries were able to update 2005 budget data originally reported in 2004).

All data are reported in nominal prices (i.e. they have not been adjusted for inflation) rather than constant prices (i.e. all data are adjusted to a common year of prices) for two reasons. First, this means that values reported in the 2002–2005 reports in this series do not have to be adjusted, which makes it easier for country staff to review the data for previous years. Second, the adjustment only makes a small difference to the numbers reported (about 8% to 2002 values and less for other years). However, as data are collected for an increasing number of years, presentation of data in constant prices will be necessary.

Once the data were entered, any queries were discussed with NTP staff and the appropriate WHO regional and country office and a final set of charts was produced. Four of these charts appear in the profiles for each country at Annex 1: NTP budget by funding source, NTP budget by line item, total TB control costs by line item, and per patient costs, budgets, available funding, expenditures and budget for first-line drugs. These charts were chosen because they illustrate the most important trends in financing. A full set of charts and data is available upon request. In some instances, the review process led to revisions to data included in previous annual reports. For this reason, figures sometimes differ from those reported in the 2002–2005 reports.

To assess whether increased spending on TB control has resulted in an increase in the number of cases detected and treated in DOTS programmes, we compared total NTP expenditures and total TB control costs in 2003 and 2004 with the total number of TB cases treated in DOTS programmes in 2003 and 2004 for all HBCs for which the necessary data existed (not all countries have reported expenditure data for both years). The relationship between the change in total expenditures and total costs and the change in the total number of cases treated was explored.

Finally, we compared the total costs of TB control with total government health expenditure to estimate the percentage of total government health expenditure that is used for TB control.¹ We also explored the association between GNI (gross national income) per capita in 2004 and (a) government contributions to total NTP budgets and TB

control costs, and (b) the cost per patient treated. Data on GNI per capita were taken from *World development indicators 2005*.²

Other countries

For countries other than the HBCs, we used the data provided on the 2005 data collection form to assess NTP budgets by region in 2006, and compared these data with the budgets reported by the HBCs. Only countries that submitted complete data of sufficient quality (e.g. subtotals and totals were consistent by both line item and funding source) were used.

GFATM contribution to TB control

We evaluated GFATM funding for both HBCs and other countries, as announced after the first five rounds of funding. We assessed total approved funding at the end of 2005, disbursements to the end of 2005, the time taken between approval of a proposal and the signature of grant agreements, and the time taken between the signing of the grant agreement and the first disbursement of funds.

Country reports compared with the Global Plan

The data collected from countries through the annual WHO questionnaire allowed us to estimate total TB control costs in the 22 HBCs and 52 other countries in 2006. These costs should reflect actual country plans for TB control. An important question is whether these costs are in line with the Global Plan,³ which provides costing projections for each year 2006–2015 for 7 regions that collectively comprise 172 countries. Differences may occur if the intervention coverage and rates of scale-up planned by countries in 2006 are more or less ambitious than the projections included in the Global Plan, and if country-specific budget development is based on input prices that are more or less than the average regional prices used in the Global Plan. To make fair comparisons, we grouped countries according to the regions used in the Global Plan. We adjusted Global Plan cost estimates according to the fraction of regional cases accounted for by the countries reporting data and, where relevant, adjusted unit prices so that they reflected prices in the subset of 74 countries being considered.

¹ See www.who.int/nha/country/en

² Consulted in December 2005: devdata.worldbank.org/data-query

³ *The Global Plan to Stop TB, 2006–2015*. Geneva, World Health Organization, 2006 (WHO/HTM/STB/2006.35).

Results

Monitoring progress in TB control Countries reporting to WHO

By the end of 2004, 200 (95%) of 211 countries and territories reported case notifications for 2004 and/or treatment outcomes for patients registered in 2003 (Annex 2). These countries include 99.9% of the world's population. Reports were submitted by all 22 HBCs.

Case notifications and incidence estimates

The 200 countries reporting to WHO in 2004 notified 4.9 million new and relapse cases, of which 2.2 million (46%) were new smear-positive (Table 5; Figure 1). Among these notifications, 4.4 million were from DOTS areas, including 2.1 million new smear-positives. A total of 21.5 million new and relapse cases, and 10.7 million new smear-positives, were notified by DOTS programmes between 1995 and

2004. Based on surveillance and survey data, we estimate that there were 8.9 million new cases of TB in 2004 (140 per 100 000), including 3.9 million (62 per 100 000) new smear-positive cases (Table 6; Figures 2, 3).

Comparing different parts of the world, the African Region (24%), South-East Asia Region (35%) and Western Pacific Region (24%) together accounted for 83% of all notified new and relapse cases and similar proportions of new smear-positive cases in 2004. Since DOTS emphasizes diagnosis by sputum smear microscopy, 47% of all new and relapse cases were new smear-positive (45–60% expected) in DOTS areas, compared with 30% elsewhere. Among new pulmonary cases reported by DOTS programmes, 58% were new smear-positive (55–70% expected), compared with 40% elsewhere (Table 5).

The ranking of countries by number of incident TB cases has given prominence to the 22 HBCs, but the magnitude

TABLE 5
Case notifications, 2004

	NEW AND RELAPSE CASES		NEW CASES						RE-TREATMENT CASES EXCLUDING RELAPSE		OTHER ^a		% OF NEW PULMONARY CASES SMEAR-POSITIVE ^b	
			SMEAR-POSITIVE		SMEAR-NEGATIVE/ UNKNOWN		EXTRAPULMONARY		DOTS	WHOLE COUNTRY	DOTS	WHOLE COUNTRY	DOTS	WHOLE COUNTRY
	DOTS	WHOLE COUNTRY	DOTS	WHOLE COUNTRY	DOTS	WHOLE COUNTRY	DOTS	WHOLE COUNTRY						
1 India	1 053 364	1 136 506	465 354	489 031	381 198	432 862	144 471	151 263	136 112	139 492	—	—	55	53
2 China	763 035	790 603	377 546	384 886	269 226	284 433	37 566	39 395	85 409	86 459	7 592	7 830	58	58
3 Indonesia	210 229	—	128 981	—	76 981	—	4 267	—	4 429	—	—	—	63	—
4 Nigeria	57 246	—	33 755	—	20 134	—	1 876	—	1 940	—	307	—	63	—
5 South Africa	256 667	264 183	114 227	117 971	66 547	68 923	39 797	40 718	14 762	15 077	—	—	63	63
6 Bangladesh	98 234	—	62 500	—	23 871	—	8 630	—	—	—	—	—	72	—
7 Pakistan	101 562	—	33 746	—	50 311	—	15 476	—	3 280	—	—	—	40	—
8 Ethiopia	123 127	—	41 430	—	37 119	—	42 477	—	1 096	—	—	—	53	—
9 Philippines	130 530	—	78 163	—	47 937	—	1 275	—	79	—	—	—	62	—
10 Kenya	100 573	—	41 167	—	41 220	—	14 949	—	5 245	—	—	—	50	—
11 DR Congo	93 336	—	62 192	—	9 229	—	18 359	—	1 907	—	669	—	87	—
12 Russian Federation	35 204	121 426	9 926	30 890	20 002	83 614	2 774	4 420	2 374	31 012	—	—	33	27
13 Viet Nam	98 389	—	58 389	—	17 106	—	16 218	—	773	—	—	—	77	—
14 UR Tanzania	62 512	—	25 823	—	21 591	—	13 320	—	3 153	—	—	—	54	—
15 Uganda	43 721	—	20 986	—	17 674	—	3 469	—	891	—	—	—	54	—
16 Brazil	44 230	86 881	22 532	42 881	13 349	26 186	5 619	11 781	2 299	4 974	—	—	63	62
17 Afghanistan	18 404	—	8 273	—	5 437	—	3 800	—	—	—	—	—	60	—
18 Thailand	55 306	—	28 421	—	18 088	—	7 093	—	—	—	—	—	61	—
19 Mozambique	31 150	—	17 058	—	8 830	—	3 950	—	522	—	—	—	66	—
20 Zimbabwe	56 162	—	14 581	—	31 610	—	7 996	—	4 956	—	—	—	32	—
21 Myanmar	96 662	—	31 408	—	34 332	—	26 216	—	2 769	—	—	—	48	—
22 Cambodia	30 838	—	18 978	—	5 800	—	5 415	—	267	—	—	—	77	—
High-burden countries	3 560 481	3 807 580	1 695 436	1 771 510	1 217 592	1 363 288	425 013	442 363	272 263	308 321	8 568	8 806	58	57
AFR	1 154 428	1 173 743	529 956	541 849	349 337	353 688	205 962	208 110	44 303	45 203	2 231	—	60	61
AMR	175 100	235 187	95 663	126 289	42 173	59 509	25 354	33 581	9 481	12 686	1 333	1 359	69	68
EMR	240 146	243 232	96 776	96 971	81 131	82 848	54 627	55 798	3 992	—	—	—	54	54
EUR	163 167	354 954	50 690	92 233	77 982	161 595	22 226	36 944	21 401	59 680	221	498	39	36
SEAR	1 602 810	1 686 903	755 121	779 172	566 530	618 597	205 140	212 089	151 922	155 314	134	180	57	56
WPR	1 097 378	1 161 201	560 632	579 594	370 103	400 509	73 346	81 372	88 645	92 095	9 218	11 272	60	59
Global	4 433 029	4 855 220	2 088 838	2 216 108	1 487 256	1 676 746	586 655	627 894	319 744	368 970	13 137	15 540	58	57

— Indicates all cases notified as DOTS, no additional cases notified as non-DOTS.

^a Cases not included elsewhere in table.

^b Expected percentage of new pulmonary cases that are smear-positive is 65–80%.

FIGURE 1
Tuberculosis notification rates, 2004

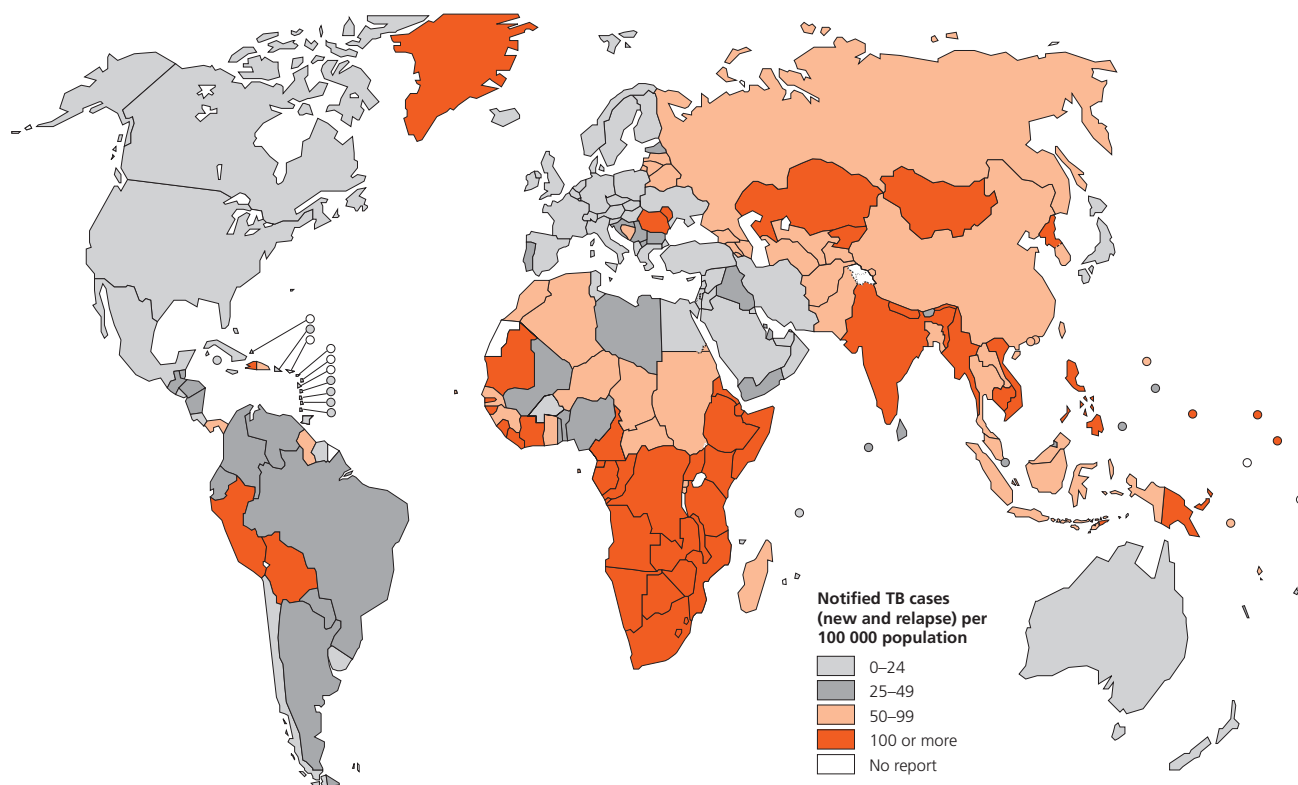


TABLE 6
Estimated TB burden, 2004

	POPULATION 1000s	INCIDENCE ^a				PREVALENCE		MORTALITY		HIV PREV. IN INCIDENT TB CASES ^b %
		ALL FORMS		SMEAR-POSITIVE		ALL FORMS		ALL FORMS		
		NUMBER 1000s	PER 100 000 POP	NUMBER 1000s	PER 100 000 POP PER YEAR	NUMBER 1000s	PER 100 000 POP PER YEAR	NUMBER 1000s	PER 100 000 POP PER YEAR	
1 India	1 087 124	1 824	168	815	75	3 394	312	329	30	5.2
2 China	1 307 989	1 325	101	595	46	2 892	221	217	17	0.9
3 Indonesia	220 077	539	245	242	110	606	275	101	46	0.9
4 Nigeria	128 709	374	290	161	125	684	531	106	82	27
5 South Africa	47 208	339	718	138	293	316	670	64	135	60
6 Bangladesh	139 215	319	229	144	103	606	435	70	51	0.1
7 Pakistan	154 794	281	181	126	81	509	329	63	40	0.6
8 Ethiopia	75 600	267	353	116	154	403	533	60	79	21
9 Philippines	81 617	239	293	108	132	378	463	39	48	0.1
10 Kenya	33 467	207	619	89	266	297	888	45	133	29
11 DR Congo	55 853	204	366	89	159	308	551	44	79	21
12 Russian Federation	143 899	166	115	74	51	231	160	30	21	6.8
13 Viet Nam	83 123	147	176	66	79	193	232	19	22	3.0
14 UR Tanzania	37 627	131	347	55	147	180	479	29	78	36
15 Uganda	27 821	112	402	49	175	180	646	26	92	19
16 Brazil	183 913	110	60	48	26	141	77	14	7.8	17
17 Afghanistan	28 574	95	333	43	150	189	661	26	92	0.0
18 Thailand	63 694	91	142	40	63	132	208	12	19	8.5
19 Mozambique	19 424	89	460	37	191	123	635	25	129	48
20 Zimbabwe	12 936	87	674	35	271	87	673	20	151	68
21 Myanmar	50 004	85	171	38	76	90	180	10	21	7.1
22 Cambodia	13 798	70	510	31	226	98	709	13	94	13
High-burden countries	3 996 465	7 102	178	3 140	79	12 037	301	1 362	34	0.0
AFR	721 955	2 573	356	1 098	152	3 741	518	587	81	33
AMR	880 036	363	41	161	18	466	53	52	5.9	10
EMR	530 359	645	122	289	55	1 090	206	142	27	2.4
EUR	881 211	445	50	199	23	575	65	69	7.8	4.7
SEAR	1 632 982	2 967	182	1 327	81	4 965	304	535	33	3.9
WPR	1 740 099	1 925	111	865	50	3 765	216	307	18	1.4
Global	6 386 642	8 918	140	3 939	62	14 602	229	1 693	27	13

^a All estimates include TB in people with HIV.

^b Prevalence of HIV in incident TB cases in adults aged 15–45 years.

FIGURE 2
Estimated number of new TB cases, 2004

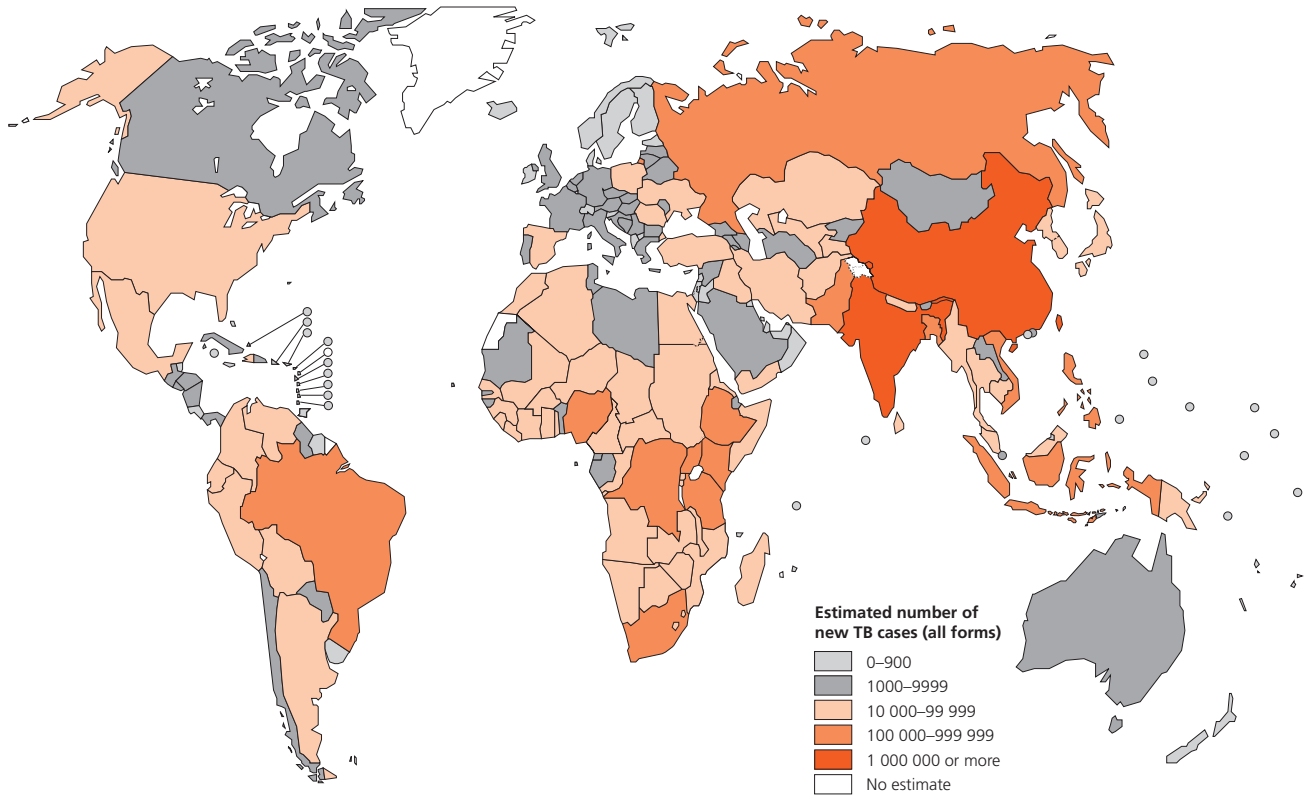
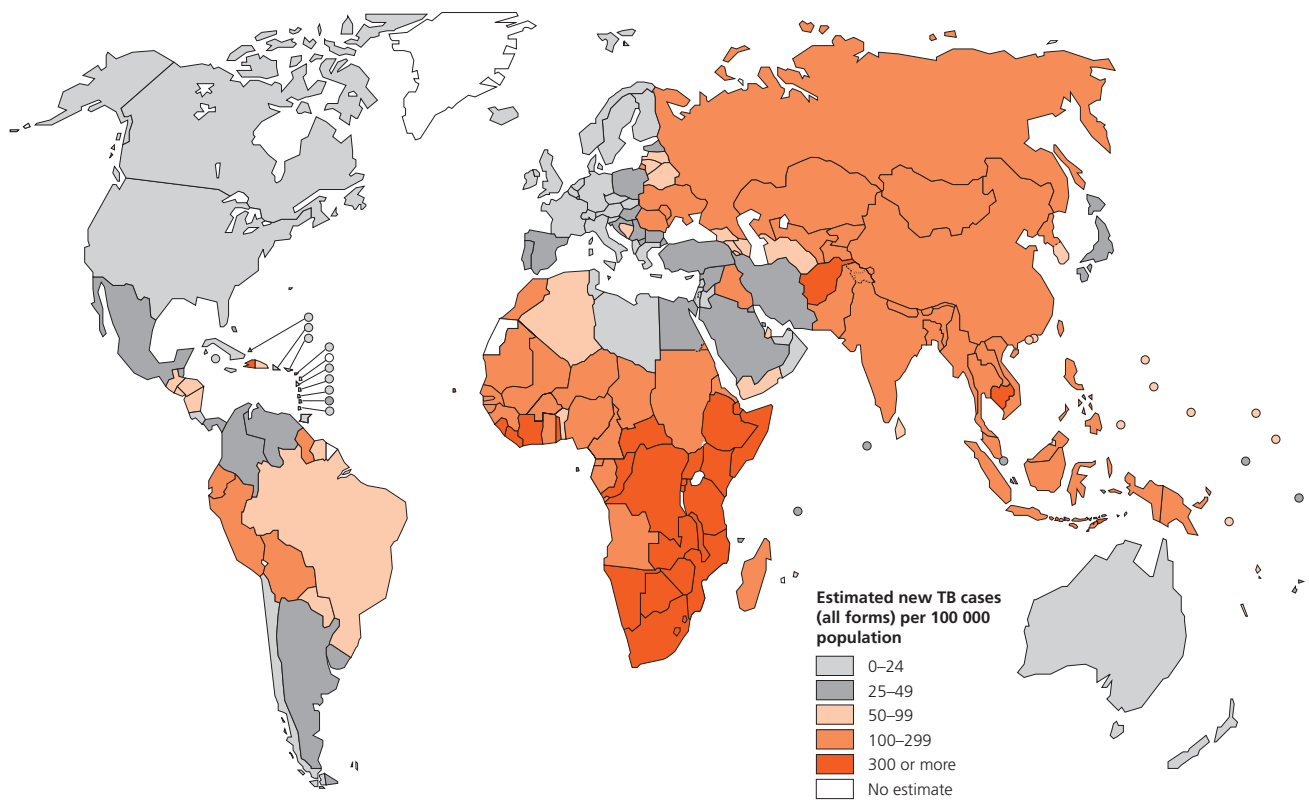


FIGURE 3
Estimated TB incidence rates, 2004



of the TB burden in individual countries can also be expressed as the incidence rate per capita. Among the 15 countries with the highest estimated TB incidence rates per capita, 11 are in Africa (Figure 4).

Using the series of notifications of all TB cases from countries thought to have reliable data, and scaling by the estimated rates of case detection, we have estimated the trends in TB incidence rate (all forms) for nine epidemiologically different regions of the world (which are subdivisions of the six WHO regions) for the period 1990 to 2004. In six of these regions, the incidence rate was stable or falling (Figure 5). As reported in 2005, incidence rates have been increasing for most of the period since 1990 in African countries with low and high rates of HIV infection, and in eastern Europe, although the patterns of change in the three regions are quite different. In African countries with high rates of HIV infection, incidence has been driven upwards by the spread of HIV, but the rate of increase has fallen from a maximum exceeding 14% per year in the early 1990s to less than 3% per year by 2004 (Figure 5). In African countries with lower rates of HIV infection, TB incidence has increased more slowly (1–2% per year), but there are no signs that the increase is slowing. Where HIV infection rates are higher in adult populations, they are also estimated to be higher among new TB patients. Figure 6 maps the distribution of HIV among TB patients, showing the relatively high rates in countries of eastern and southern Africa.

In eastern Europe, the rate of increase reached nearly 14% annually by 1995, but the increase appears to have

halted around year 2000, and incidence is once again in decline. The resurgence of TB in eastern Europe during the 1990s has been associated with (but primarily not caused by) relatively high rates of MDR-TB among new and previously treated patients.

Worldwide, the incidence rate of TB was growing at a maximum of 1.2% per year in 1997, but at 0.6% per year by 2004 (Figure 5).

DOTS coverage

The total number of countries implementing DOTS increased steadily since 1995 and is approaching a limit at 183 in 2004 (Figure 7). All 22 HBCs have had DOTS programmes since 2000, many of which have been established for much longer. DOTS coverage within countries has steadily increased since 1995 (Figure 8; Table 7). By the end of 2004, 83% of the world's population lived in counties, districts, oblasts and provinces of countries that had adopted DOTS. Coverage was reported to be more than 80% in all regions except Europe (Figure 9).

FIGURE 4
Fifteen countries with the highest estimated TB incidence rates per capita (all ages, all forms; grey bars) and corresponding incidence rates of HIV-infected TB in adults aged 15–49 years (red bars), 2004

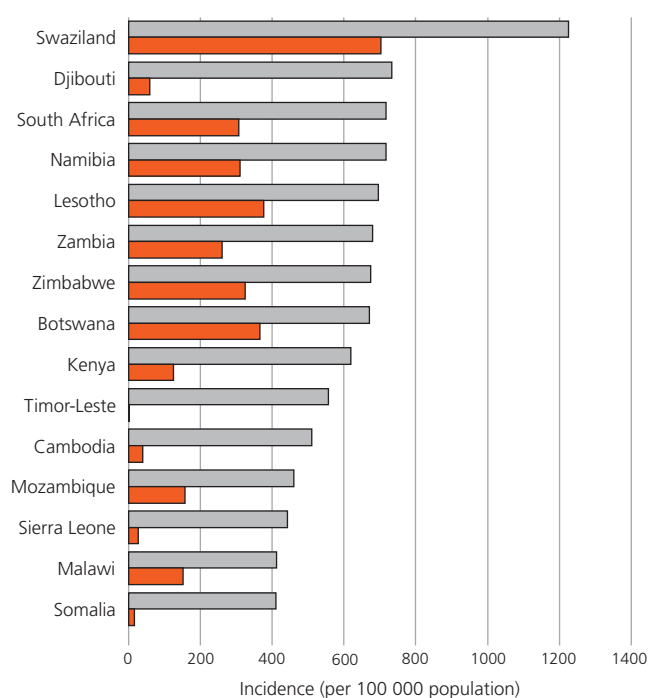


FIGURE 5

Africa – high HIV: Botswana, Burkina Faso, Burundi, Cameroon, Central African Rep, Chad, Congo, Côte d'Ivoire, DR Congo, Ethiopia, Equatorial Guinea, Gabon, Kenya, Lesotho, Malawi, Mozambique, Namibia, Nigeria, Rwanda, South Africa, Swaziland, Uganda, UR Tanzania, Zambia, Zimbabwe. **Africa – low HIV:** Algeria, Angola, Benin, Cape Verde, Comoros, Eritrea, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Madagascar, Mali, Mauritania, Mauritius, Niger, Sao Tome & Principe, Senegal, Seychelles, Sierra Leone, Togo. **Central Europe:** Albania, Bosnia & Herzegovina, Croatia, Cyprus, Hungary, Poland, Serbia & Montenegro, Slovakia, Slovenia, TFYR Macedonia, Turkey. **Eastern Europe:** Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Rep Moldova, Romania, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan. **Eastern Mediterranean:** Afghanistan, Bahrain, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Rep, Tunisia, United Arab Emirates, West Bank & Gaza Strip, Yemen. **Established Market Economies:** Andorra, Australia, Austria, Belgium, Canada, Czech Rep, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, Malta, Monaco, Netherlands, New Zealand, Norway, Portugal, San Marino, Singapore, Spain, Sweden, Switzerland, United Kingdom, United States. **Latin America:** Anguilla, Antigua & Barbuda, Argentina, Bahamas, Barbados, Belize, Bermuda, Bolivia, Brazil, British Virgin Is, Cayman Is, Chile, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Honduras, Jamaica, Mexico, Montserrat, Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, St Kitts & Nevis, St Lucia, St Vincent & the Grenadines, Suriname, Trinidad & Tobago, Turks & Caicos Is, Uruguay, US Virgin Is, Venezuela. **South-East Asia:** Bangladesh, Bhutan, DPR Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand, Timor-Leste. **Western Pacific:** American Samoa, Brunei Darussalam, Cambodia, China, China Hong Kong SAR, China Macao SAR, Cook Is, Fiji, French Polynesia, Guam, Kiribati, Lao PDR, Malaysia, Marshall Is, Micronesia, Mongolia, Nauru, New Caledonia, Niue, N Mariana Is, Palau, Papua New Guinea, Philippines, Rep Korea, Samoa, Solomon Is, Tokelau, Tonga, Vanuatu, Viet Nam, Wallis & Futuna Is.

FIGURE 5
Trends in estimated TB incidence rates (all forms, black lines), and the annual change in incidence rates (red lines), for nine groups of countries and the world, 1990–2004

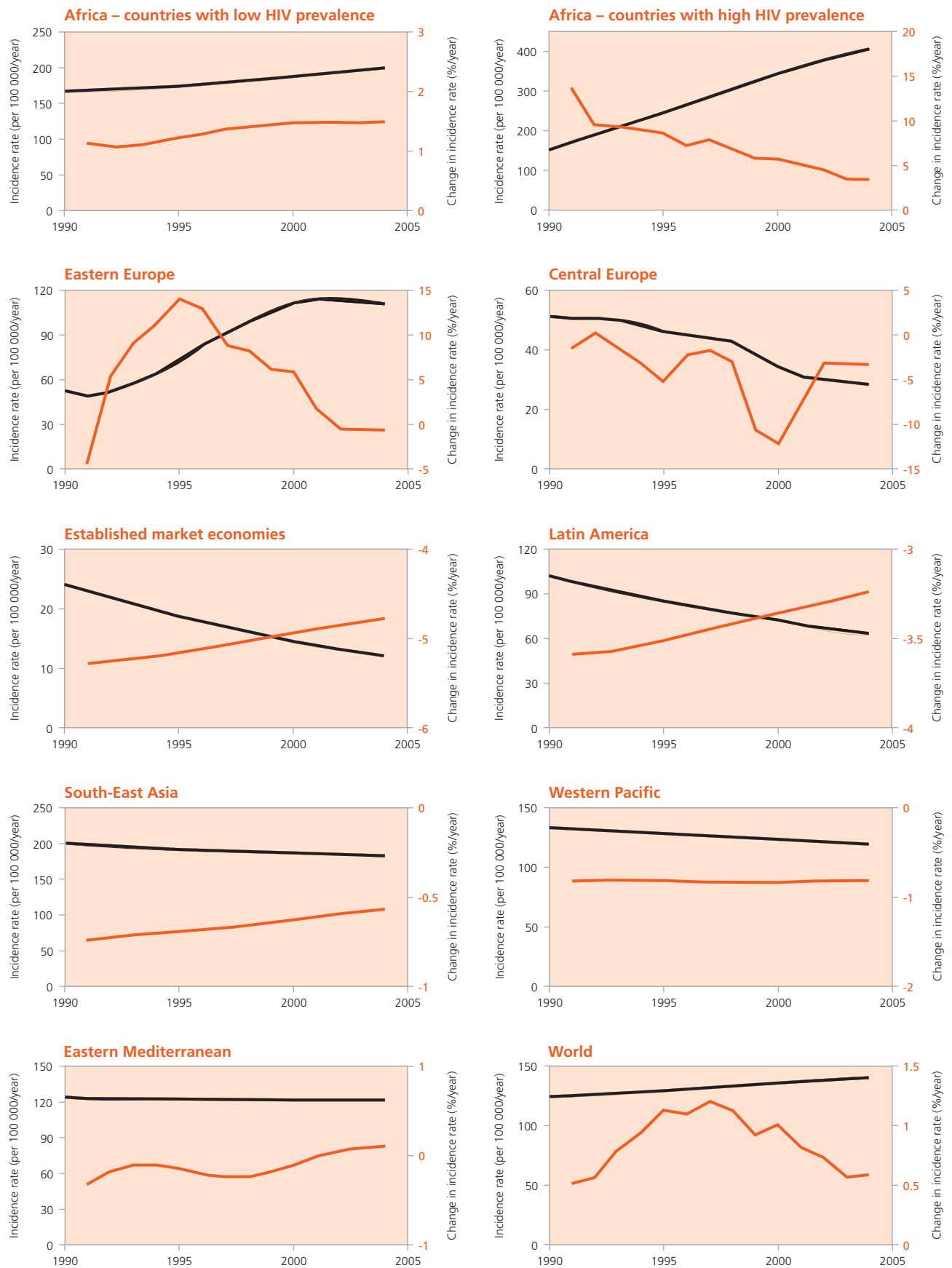


FIGURE 6
Estimated HIV prevalence in new adult TB cases, 2004

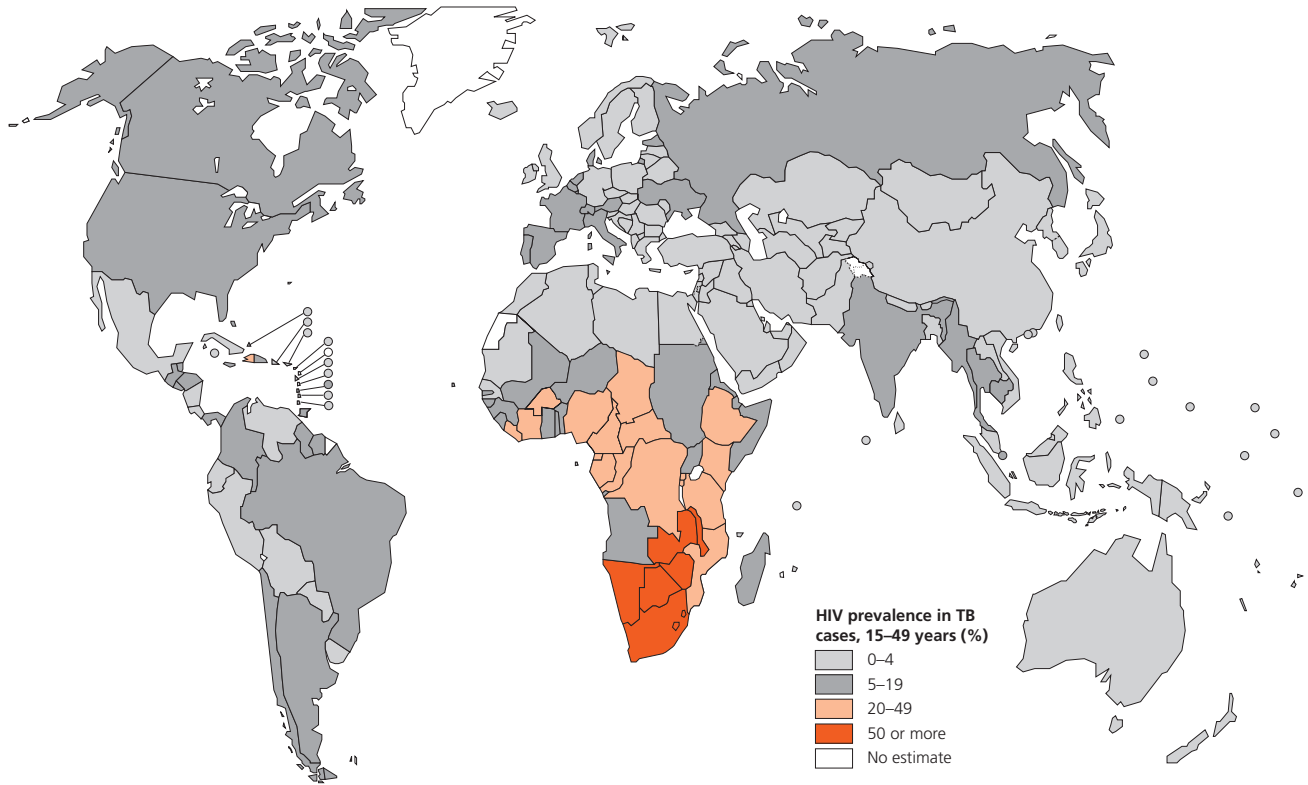


FIGURE 7
Number of countries implementing DOTS (out of a total of 211 countries), 1991-2004

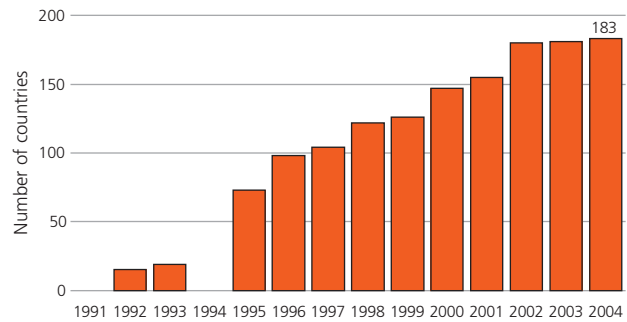


FIGURE 8
DOTS coverage, 1995-2004

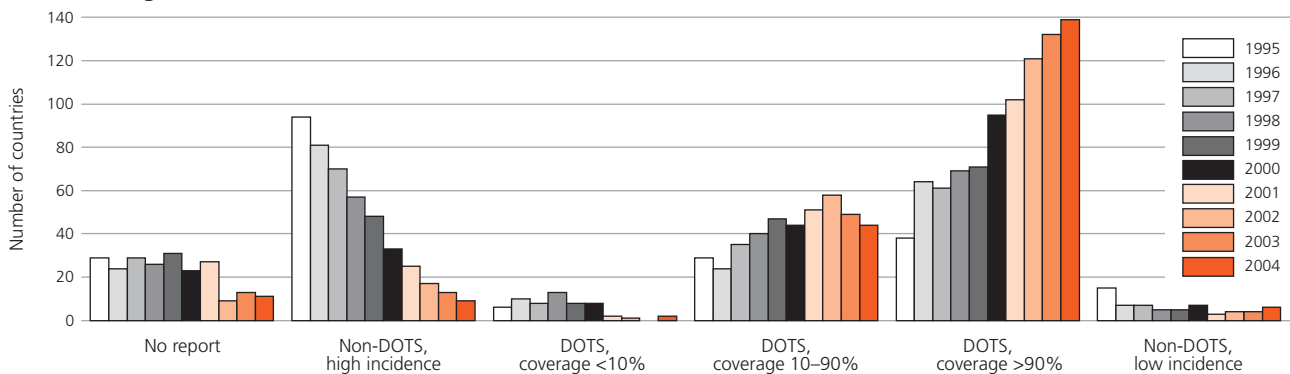


TABLE 7
Progress in DOTS implementation, 1995–2004

	PERCENT OF POPULATION COVERED BY DOTS									
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
1 India	1.5	2	2.3	9	13.5	30	45	51.6	67.2	84.0
2 China	49	60.4	64.2	63.9	64	68	68	77.6	91	96
3 Indonesia	6	13.7	28.3	80	90	98	98	98	98	98
4 Nigeria	47	30	40	45	45	47	55	55	60	65
5 South Africa	—	0	13	22	66	77	77	98	99.5	93
6 Bangladesh	40.5	65	80	90	90	92	95	95	99	99
7 Pakistan	2	8	—	8	8	9	24	45	63	79
8 Ethiopia	39	39	48	64.4	63	85	70	95	95	70
9 Philippines	4.3	2	15	16.9	43	89.6	95	98	100	100
10 Kenya	15	100	100	100	100	100	100	100	100	100
11 DR Congo	47	51.4	60	60	62	70	70	70	75	75
12 Russian Federation	—	2.3	2.3	5	5	12	16	25	25	45
13 Viet Nam	50	95	93	96	98.5	99.8	99.8	99.9	100	100
14 UR Tanzania	98	100	100	100	100	100	100	100	100	100
15 Uganda	—	0	100	100	100	100	100	100	100	100
16 Brazil	—	0	0	3	7	7	32	25	33.6	52
17 Afghanistan	—	—	12	11	13.5	15	12	38	53	67.9
18 Thailand	—	1.1	4	32	59	70	82	100	100	100
19 Mozambique	97	100	84	95	—	100	100	100	100	100
20 Zimbabwe	—	0	0	100	11.6	100	100	100	100	100
21 Myanmar	—	59	60	60.3	64	77	84	88.3	95	95
22 Cambodia	60	80	88	100	100	99	100	100	100	100
High-burden countries	24	32	36	43	46	55	61	68	79	87
AFR	43	46	56	61	56	71	69	81	85	84
AMR	12	48	50	55	65	68	73	73	78	83
EMR	16	12	18	33	50	66	71	77	86	90
EUR	5.4	8.2	17	22	23	26	32	40	42	47
SEAR	6.6	12	16	29	36	49	60	66	77	89
WPR	43	55	57	58	57	67	68	77	90	94
Global	22	32	37	43	47	57	62	69	77	83

Zero indicates that a report was received, but the country had not implemented DOTS; — indicates that no report was received.

Case detection

The 4.9 million new and relapse cases of TB notified in 2004 represent 54% of the 8.9 million estimated new cases; the 2.2 million new smear-positive cases notified account for 56% of the 3.9 million estimated (Tables 5, 6). The detection rate of all TB cases, from DOTS and non-DOTS programmes, remained approximately stable from 1995 to 2001, but increased between 2002 and 2004 (Figure 10b). The detection rate of new smear-positive cases from all sources slowly increased from 1995 to 2001, and then more quickly from 2002 to 2004 (Figure 10a). The increase from 2002 to 2004 is attributable mostly to increases in the numbers of new smear-positive cases reported in the South-East Asia and Western Pacific regions.

DOTS programmes detected an estimated 50% of all new and relapse cases and 53% of new smear-positive cases in 2004. The detection rate achieved by DOTS programmes, of both smear-positive and all TB cases, has accelerated sharply since 2000, rising more quickly than the overall (DOTS and non-DOTS) case detection rate (Figure 10). The key observation in relation to the WHA target is that DOTS case detection increased from 45% in 2003 to 53% in 2004 – an additional 350 000 new smear-positive cases – the largest annual increase so far reported. In order

FIGURE 9
DOTS coverage by WHO region, 2004

The shaded portion of each bar shows the DOTS coverage as a percent of the population. The numbers in each bar show the population (in millions) within (red portion) or outside (grey portion) DOTS areas.

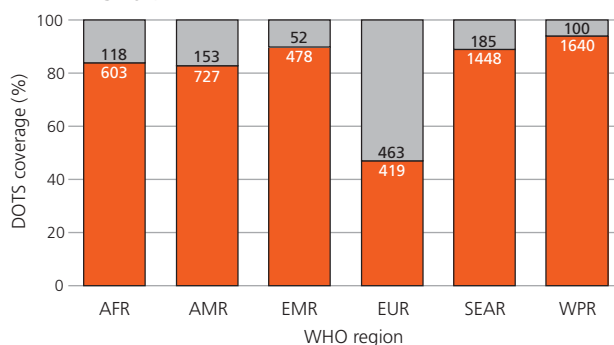
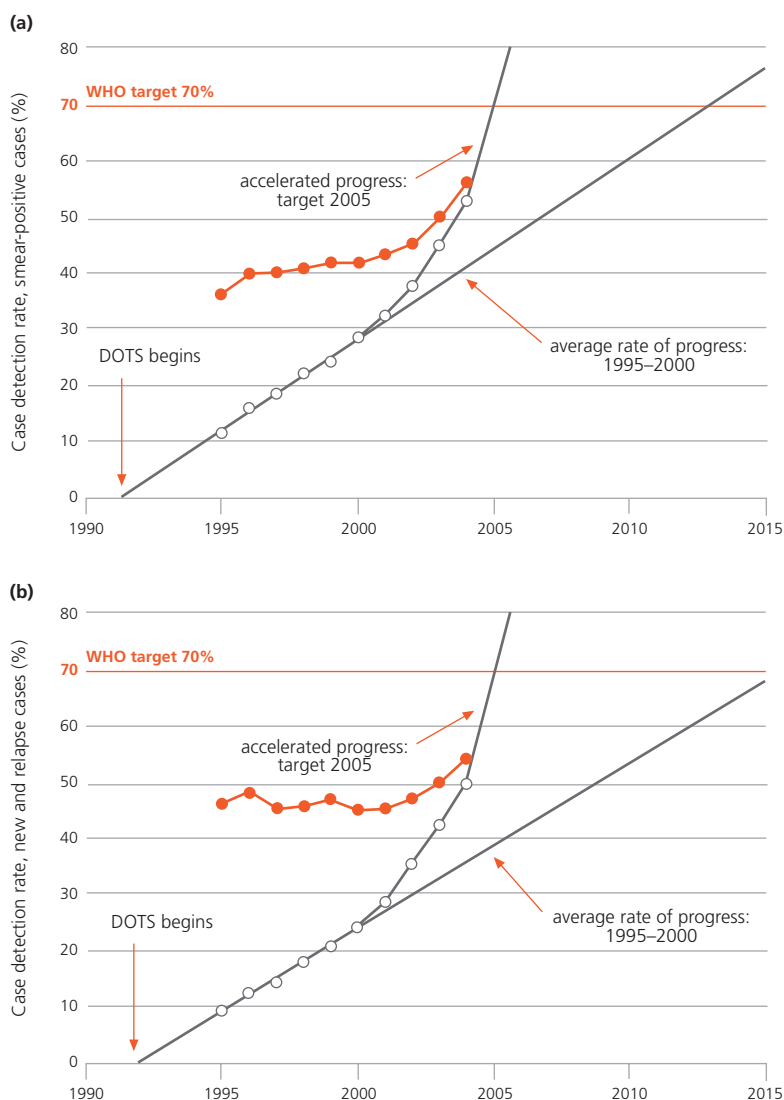


FIGURE 10
Progress towards the 70% case detection target. (a) Open circles mark the number of smear-positive cases notified under DOTS 1995–2004, expressed as a percentage of estimated new cases in each year. The solid line through these points indicates the average annual increment from 1995 to 2000 of about 134 000 new cases, compared with the increment from 2003 to 2004 of about 350 000 cases; the steeper line represents a higher increment of approximately 716 000 cases needed to reach the 70% target in 2005 (horizontal line). Closed circles show the total number of smear-positive cases notified (DOTS and non-DOTS) as a percentage of estimated cases. (b) As (a), but for all new and relapse cases.



to reach the target of 70% by the end of 2005, DOTS programmes must find 2 805 000 new smear-positive cases during 2005; that is, 716 000 more than the 2004 total.

Since case detection under DOTS has increased faster than the overall rate of case detection, the proportion of all notified new smear-positive cases that were notified by DOTS programmes has increased, reaching 94% in 2004. Thus, almost all (91%) TB cases reported to WHO in 2004 were reported by DOTS programmes.

The case detection rate within DOTS areas (measured by the ratio of case detection to population coverage) changed little between 1995 and 2001, averaging 51% worldwide, but had increased to 64% by 2004 (Figure 11). Similarly, the detection rate within DOTS areas in the HBCs was roughly stable from 1997 to 2001 (average 48%), but increased to 62% in 2004, mostly because of improvements in Bangladesh, Brazil, China, India, Indonesia, Myanmar and the Philippines (Figure 11).

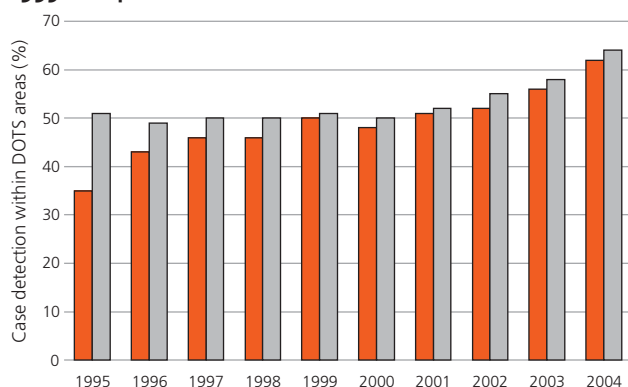
Returning to national detection rates, and comparing the WHO regions, new smear-positive case detection rates by DOTS programmes in 2004 were lowest in the European (26%) and Eastern Mediterranean regions (33%) and highest in the Region of the Americas (59%) and the Western Pacific Region (65%; Figure 12, Table 8).

The rate of improvement in case detection by DOTS programmes has been roughly the same in the African Region, the Eastern Mediterranean Region and the European Region. None of these three regions is on course to reach the 70% target by the end of 2005.

Case-finding in the South-East Asia Region has been accelerating since 1998, mainly as a result of the rapid implementation of DOTS in India, supported by improvements more recently in Bangladesh, Indonesia and Myanmar. There were marked increases in case detection in the Region of the Americas and the Western Pacific Region between 2003 and 2004 attributable mostly to improvements, respectively, in Brazil and China. If the rate of improvement in case-finding is maintained in these three regions, all will reach the 70% target by the end of 2005.

In the Region of the Americas and the European Region, significant numbers of smear-positive cases were reported, as usual, from outside DOTS programmes. In the Region of

FIGURE 11
Smear-positive case detection rate within DOTS areas^a for high-burden countries (red) and the world (grey), 1995–2004



^a Calculated as DOTS case detection rate of new smear-positive cases divided by DOTS coverage.

FIGURE 12
Smear-positive case detection rate by DOTS programmes, by WHO region, 1995–2004. Heavy line shows global DOTS case detection rate.

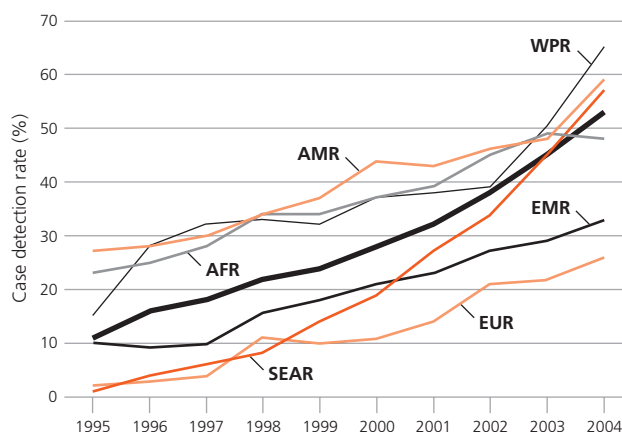


TABLE 8
Case detection rate of new smear-positive cases (%), 1995–2004

	DOTS PROGRAMMES										WHOLE COUNTRY									
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
1 India	0.3	0.9	1.1	1.7	7.0	12	24	31	45	57	38	41	38	38	46	46	49	50	54	60
2 China	15	28	32	32	29	31	31	30	43	63	22	34	39	33	33	34	34	32	45	65
3 Indonesia	1.3	4.4	7.4	12	19	20	22	31	38	53	12	*	*	*	*	21	*	*	*	*
4 Nigeria	11	12	11	12	13	14	14	13	18	21	*	*	*	*	*	*	17	15	*	*
5 South Africa	—	—	6.0	21	63	65	68	86	92	83	41	68	79	85	83	79	79	87	92	85
6 Bangladesh	7.0	15	19	24	25	26	28	32	38	44	16	22	25	28	28	28	29	33	*	*
7 Pakistan	1.0	1.8	—	3.7	2.0	2.8	5.3	13	17	27	2.5	*	—	14	5.5	*	9	13	*	*
8 Ethiopia	15	20	22	24	25	33	34	35	36	36	*	*	*	*	25	*	*	*	*	*
9 Philippines	0.4	0.5	3.2	10	20	48	57	61	68	73	96	87	80	68	71	64	*	*	*	*
10 Kenya	56	57	53	57	55	46	49	48	47	46	*	*	*	*	*	51	*	*	*	*
11 DR Congo	42	48	45	56	54	52	57	56	64	70	46	*	*	*	*	*	*	*	*	*
12 Russian Federation	—	0.4	0.9	0.9	1.6	4.4	5.0	6.6	8.3	13	68	66	60	56	27	33	32	35	38	42
13 Viet Nam	30	59	78	83	83	82	83	87	85	89	59	77	*	85	83	*	*	*	*	*
14 UR Tanzania	56	55	52	53	51	48	47	44	45	47	*	*	*	*	*	*	*	*	*	*
15 Uganda	—	—	57	57	56	49	44	44	44	43	49	54	*	*	*	*	*	*	*	*
16 Brazil	—	—	—	4.1	4.0	7.6	8.0	9.6	18	47	80	79	79	81	78	79	75	83	81	89
17 Afghanistan	—	—	1.9	5.4	4.8	8.1	13	17	16	19	—	—	*	*	*	*	*	*	*	*
18 Thailand	—	0.3	5.0	21	39	46	73	65	71	71	55	46	35	*	*	*	*	*	*	*
19 Mozambique	54	49	47	47	—	45	44	45	45	46	*	*	*	*	46	*	*	*	*	*
20 Zimbabwe	—	—	—	49	47	44	44	45	41	42	48	52	55	*	*	*	*	*	*	*
21 Myanmar	—	25	26	28	32	47	56	65	73	83	25	28	28	*	*	*	57	*	*	*
22 Cambodia	40	34	44	48	53	50	48	57	61	61	*	42	*	*	*	*	*	*	*	*
High-burden countries	8.4	14	17	20	23	27	31	35	44	54	32	36	37	37	39	39	41	43	49	56
AFR	23	25	28	34	34	37	39	45	49	48	37	42	40	44	43	42	43	46	49	49
AMR	27	28	30	34	37	44	43	46	48	59	72	72	77	74	76	75	76	76	77	78
EMR	10	8.9	10	16	18	21	23	27	29	33	20	24	23	29	27	23	25	27	29	34
EUR	2.5	3.3	4.4	11	10	11	14	21	22	26	61	61	56	56	44	45	41	41	50	46
SEAR	1.5	4.1	5.6	8.2	14	19	27	34	45	57	29	30	30	30	38	40	43	47	51	59
WPR	15	28	32	33	32	37	38	39	50	65	36	45	48	44	44	43	43	43	52	67
Global	11	16	18	22	24	28	32	38	45	53	36	40	40	40	42	42	43	45	50	56

— Indicates not available.

* No additional data beyond DOTS report, either because country is 100% DOTS, or because no non-DOTS report was received.

FIGURE 13
Proportion of estimated new smear-positive (a) and of new and relapse cases (b) notified under DOTS (grey portion of bars) and non-DOTS (red portion of bars), 2004. Numbers indicate the number of cases (in thousands) represented by each portion of each bar.

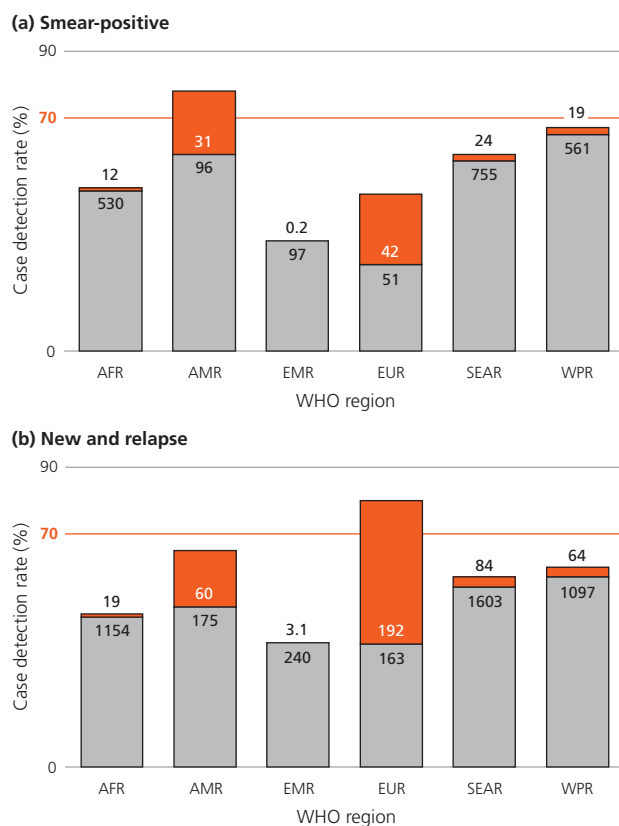
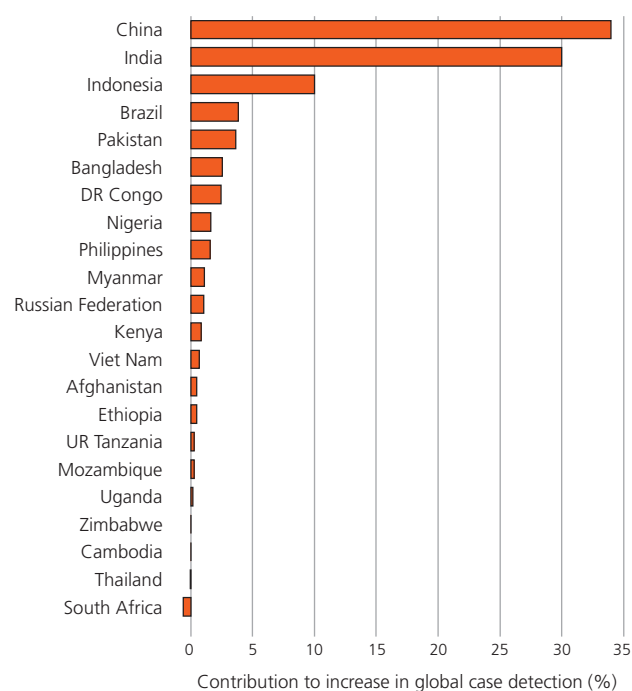


FIGURE 14
Contributions to the global increase in the number of new smear-positive cases notified under DOTS made by high-burden countries, 2003–2004



the Americas, and especially in Brazil, the estimated proportion of smear-positive cases detected from all sources exceeded 70% (Table 8, Figure 13a). Thus, the target for case detection would have been reached in this region if all patients in whom TB had been diagnosed had been treated under DOTS. The Region of the Americas and the European Region also reported significant numbers of new and relapse TB cases from outside DOTS programmes, and the total detected exceeded 70% in the European Region (Figure 13b).

Of the additional new smear-positive cases reported by DOTS programmes in 2004 (compared with 2003), 34% were in China and 30% were in India (Figure 14). Although China and India have made big improvements in case detection, these two countries still account for an estimated 31% of all undetected new smear-positive cases. They are among eight countries that together account for 61% of all cases that were not detected under DOTS in 2004 (Figure 15).

Comparison of methods for evaluating case detection

To estimate the proportion of culture-positive patients that are also smear-positive, we want, ideally, to compare smears and cultures for every patient, knowing whether each test for each patient was positive or negative. In fact, TB was diagnosed in some patients by smear but not culture, or vice versa, and the missing data could generate biased estimates. Figure 16 shows the ratio of smear-positive to culture-positive TB patients, reported from all sources in 25 countries of the European Region in 2004, where the proportion of patients that were classified by both smear and culture was (a) more than 75% ($n = 6$), (b) 50% to 75% ($n = 13$), or (c) less than 50% ($n = 6$). Because the data in group (a) are most reliable, and because the ratios calculated for countries in groups (b) and (c) mostly do not differ significantly from those in (a),¹ we have used the ratio estimated from countries in group (a), which is 0.59 (95% CL ± 0.04).

This calibration ratio allows us to estimate culture-positive incidence rates (formula 7) and culture-positive case detection rates for each country, so that the latter can be compared with the smear-positive case detection rates. In the European Region, the case detection rates based on culture alone were seldom better than those based on smears, and commonly much worse. Each point in Figure 17a represents a different country, and most points lie under the line of equality. Some countries reported no culture-positive TB cases (points on horizontal axis). By contrast, the case detection rates for all laboratory-

¹ Outliers are Italy, Portugal, Romania, Slovakia and Switzerland. A full account of the methods underpinning this analysis is given in an unpublished technical note available from WHO: *Estimating smear-positive and culture-positive case detection rates in Europe*.

confirmed cases were not systematically different from those calculated from smears (Figure 17b).

The diagnosis of all forms of TB by all methods (smear, culture, radiography, clinical examination), when compared with diagnosis by smear, shows a different pattern. The case detection rates for all TB patients in European countries are almost always higher than the detection rates based on smears (filled circles representing European countries lie above the line of equality in Figure 17c). This pattern is unique to the European Region, and different from countries in the Region of the Americas, for which points lie mostly below the line of equality in Figure 17c. Figure 17c shows, for the countries of the Americas and Europe, a difference that is also visible in the aggregated data in Figures 13a and 13b. For the other four WHO regions, there is no systematic difference between the detection rates of smear-positive and all forms of TB cases (Figure 17d).

Outcomes of treatment

More than 1.7 million new smear-positive cases were registered for treatment in DOTS programmes in 2003, approximately the same number that were notified that year (Table 9). Discrepancies between the numbers of cases notified and registered for treatment were small globally, by region and for most HBCs, the largest differences being in Kenya, the Philippines and South Africa (Table 9).

The cure rate among all cases registered under DOTS was 75%, and a further 7% completed treatment (no laboratory confirmation of cure), giving a reported, overall treatment success rate of 82%. An estimated 36% of all

FIGURE 15
Smear-positive TB cases undetected by DOTS programmes in six high-burden countries, 2004. Numbers indicate the proportion of all missed cases that are missed by each country.

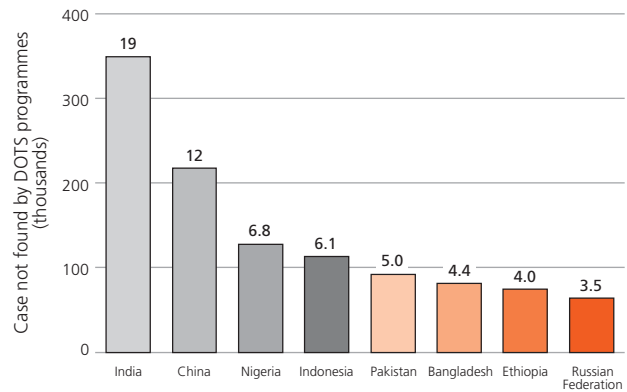


FIGURE 16
Ratio of new smear-positive to new culture-positive pulmonary TB patients in 25 European countries. The percentage of patients that were classified by both smear and culture varied among countries: group (a), more than 75%; group (b), 50% to 75%; group (c), less than 50%. Error bars are 95% binomial errors on the estimated ratio for each country. Horizontal lines mark the mean and 95% confidence limits for countries in groups (a), (b) and (c).

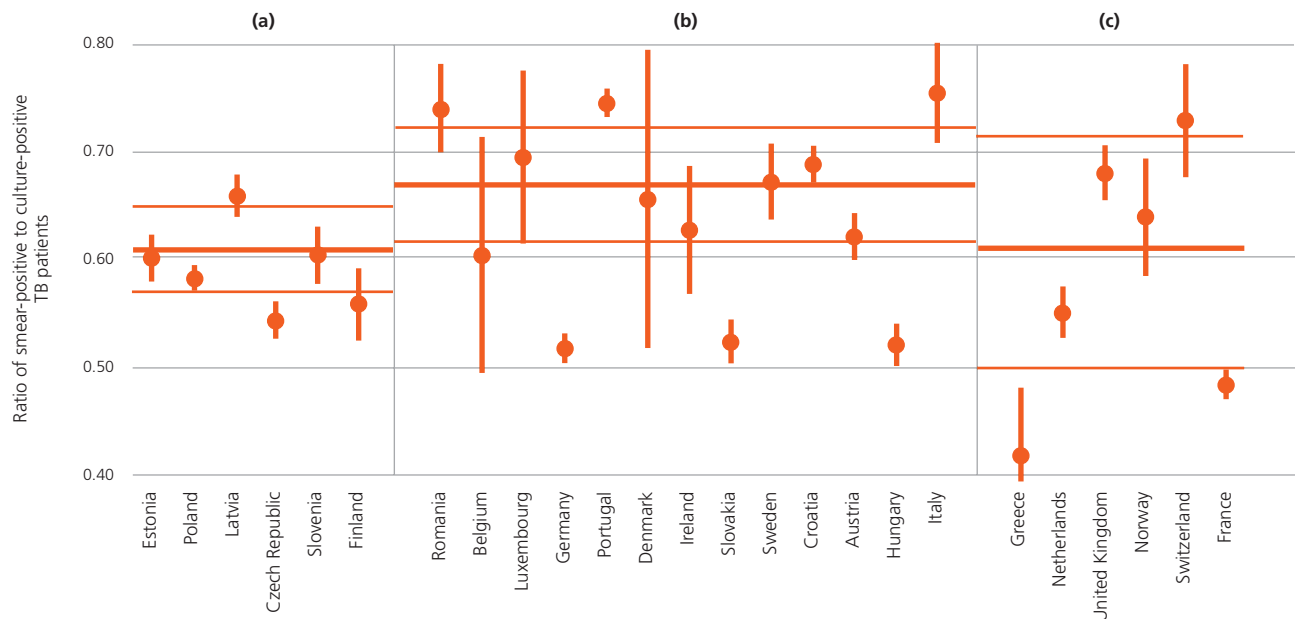


FIGURE 17

Comparison of pulmonary, smear-positive case detection rates (horizontal axes) with alternative methods for evaluating case detection: (a) pulmonary, culture-positive cases – European Region, (b) all laboratory-confirmed pulmonary cases (including smear- and culture-positive) – European Region, (c) all new and relapse cases, pulmonary and extrapulmonary – European Region (filled circles) or Region of the Americas (open circles), (d) all new and relapse cases, pulmonary and extrapulmonary – African, Eastern Mediterranean, South-East Asia and Western Pacific regions. Data are for 2004. Diagonal lines mark equal rates of case detection.

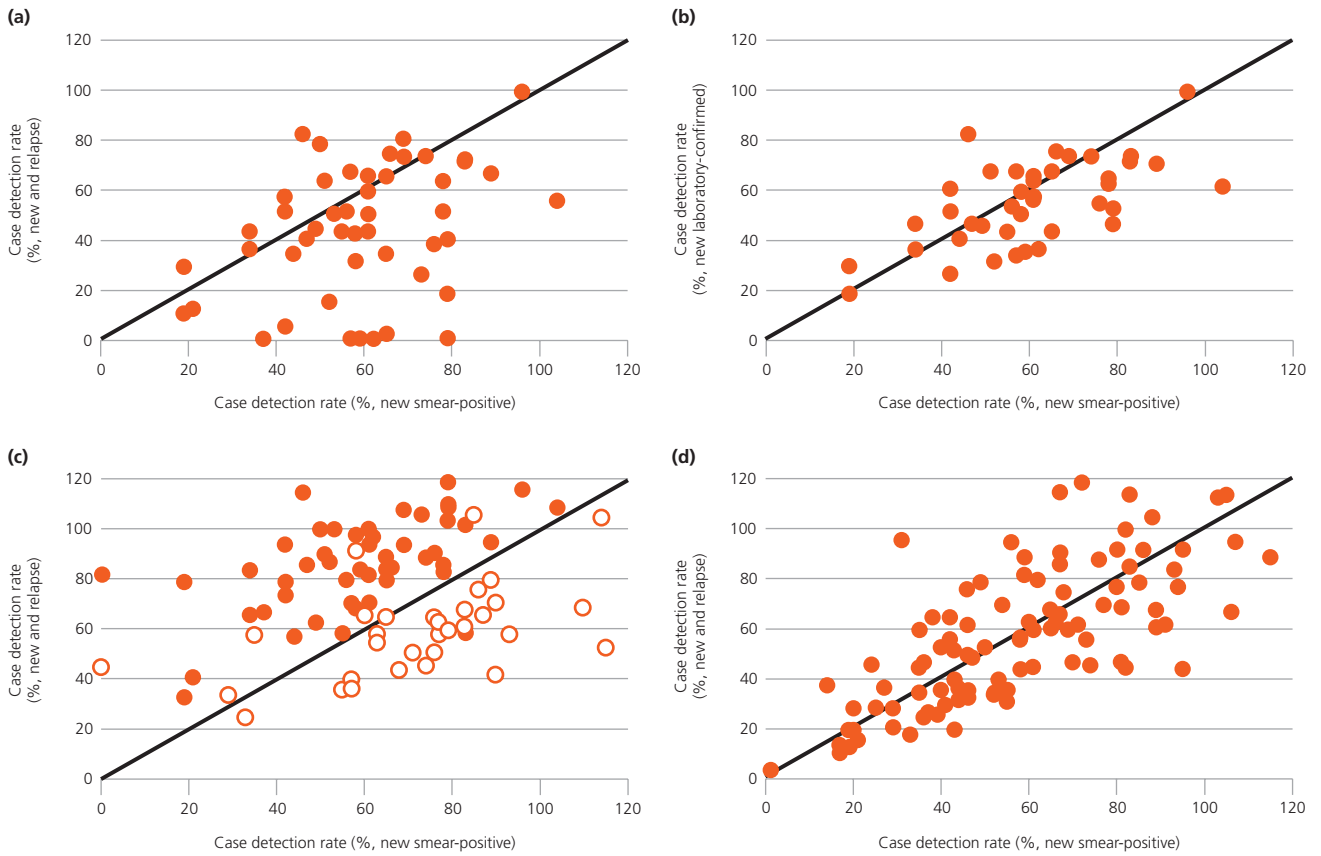


FIGURE 18

Outcomes for those patients not successfully treated in (a) DOTS and (b) non-DOTS areas, by WHO region, 2003 cohort

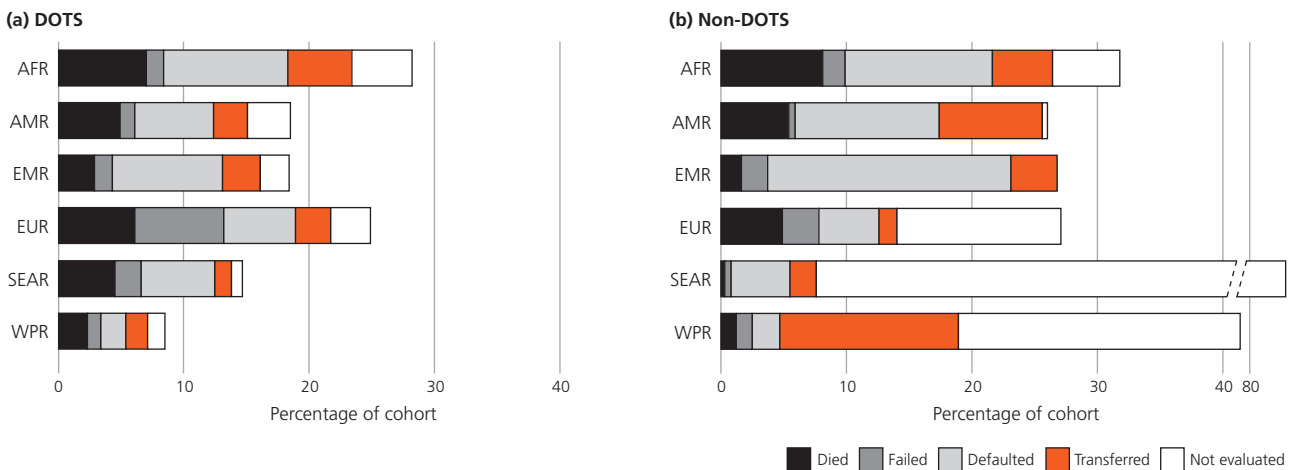


TABLE 9
Treatment outcomes for new smear-positive cases, DOTS strategy, 2003 cohort^a

	NOTIFIED	REGISTERED	REGST'D (%)	TREATMENT OUTCOMES (%)								TREATMENT SUCCESS (%)	% EST CASES SUCCESSFULLY TREATED UNDER DOTS
				CURED	COMPLETED TREATMENT	DIED	FAILED	DEFAULTED	TRANS-FERRED	NOT EVAL'D			
1 India	358 778	358 778	100	85	1.3	4.7	2.5	6.2	0.3	0.1	86†	39	
2 China	257 287	257 287	100	91	2.7	1.4	1.0	1.0	0.8	2.1	94†	40	
3 Indonesia	92 566	92 566	100	77	9.8	2.0	1.7	3.7	1.8	4.1	87†	33	
4 Nigeria	28 173	28 173	100	51	8.1	1.3	5.3	8.3	1.4	25	59	11	
5 South Africa	116 331	109 652	94	54	13	7.8	1.4	12	7.4	4.2	67	58	
6 Bangladesh	53 618	53 618	100	83	2.3	4.8	0.6	5.3	3.6	0.2	85†	32	
7 Pakistan	20 962	20 962	100	62	13	2.3	0.7	13	4.6	4.5	75	13	
8 Ethiopia	39 698	39 698	100	54	16	6.0	0.7	4.6	4.0	15	70	25	
9 Philippines	72 670	68 377	94	81	7.9	2.5	1.1	5.0	2.9	0.0	88†	57	
10 Kenya	38 158	34 068	89	67	13	5.1	0.2	8.8	6.0	0.0	80	34	
11 DR Congo	53 578	53 711	100	76	6.9	6.4	1.0	6.0	3.1	0.8	83	53	
12 Russian Federation	6 322	6 311	100	58	3.3	10	12	7.8	3.6	4.8	61	5.1	
13 Viet Nam	55 937	55 842	100	90	1.7	3.3	0.8	1.5	2.2	0.0	92†	79	
14 UR Tanzania	24 899	24 899	100	77	3.8	10	0.3	4.0	4.3	0.0	81	36	
15 Uganda	20 310	20 310	100	32	36	6.7	0.4	19	3.7	2.8	68	30	
16 Brazil	9 061	9 043	100	47	36	6.5	0.5	8.5	1.3	0.0	83	15	
17 Afghanistan	6 510	6 793	104	81	5.0	3.4	1.7	5.1	3.7	0.0	86†	14	
18 Thailand	28 459	28 459	100	68	4.8	9.5	1.7	8.0	3.5	4.5	73	52	
19 Mozambique	16 138	16 140	100	74	1.7	12	1.2	8.1	3.1	0.0	76	34	
20 Zimbabwe	14 488	14 488	100	61	4.4	12	0.2	12	10	0.0	66	27	
21 Myanmar	27 448	27 448	100	71	9.1	5.7	2.1	9.0	2.6	0.1	81	59	
22 Cambodia	18 923	19 098	101	90	2.6	3.5	0.2	2.1	1.4	0.0	93†	58	
High-burden countries	1 360 314	1 345 721	99	78	5.9	4.4	1.6	5.7	2.3	2.3	84	37	
AFR	506 102	481 970	95	60	12	7.0	1.4	9.9	5.1	4.8	72	33	
AMR	78 804	77 632	99	65	16	4.9	1.2	6.3	2.7	3.4	82	39	
EMR	80 783	81 541	101	71	10	2.9	1.4	8.8	3.0	2.3	82	24	
EUR	46 621	45 474	98	60	15	6.1	7.1	5.7	2.8	3.2	75	17	
SEAR	596 769	598 293	100	82	3.3	4.5	2.1	5.9	1.3	0.9	85†	39	
WPR	431 646	426 675	99	87	4.1	2.3	1.1	2.0	1.7	1.4	91†	45	
Global (DOTS)	1 740 725	1 711 585	98	75	7.2	4.6	1.7	6.2	2.6	2.4	82	36	

^a Cohort: cases diagnosed during 2003 and treated/followed-up through 2004. See Table 4 and accompanying text for definitions of treatment outcomes. If the number registered was provided, this (or the sum of the outcomes, if greater) was used as the denominator for calculating treatment outcomes. If the number registered was missing, then the number notified (or the sum of the outcomes, if greater) was used as the denominator. Est: estimated cases for 2003 (as opposed to notified or registered).

† Treatment success \geq 85%.

smear-positive cases arising in 2003 were treated successfully by DOTS programmes. For non-DOTS areas, only 4 of the 13 HBCs that do not have full DOTS coverage provided data for the 2003 cohort (Table 11).

Comparing WHO regions, the documented treatment success rates by DOTS programmes varied from 72% in the African Region to 85% in the South-East Asia Region and 92% in the Western Pacific Region, the latter two regions having apparently met the 85% target (Table 9, Figure 18). Fatal outcomes were most common in the African Region (7%), where a higher fraction of cases are HIV-positive, and in the European Region (6%), where a higher fraction of cases are drug-resistant (eastern Europe), or occur among the elderly (western and central Europe). Treatment interruption (default) was most frequent in the African Region (10%) and the Eastern Mediterranean Region (9%). Transfer without follow-up was also especially high in the African Region (5%). Treatment failure was conspicuously high in the European Region (7%), mainly because failure rates were high in eastern Europe.

DOTS treatment success exceeded 85% in eight HBCs

(Table 9). It was under 70% in Nigeria, the Russian Federation, South Africa, Uganda and Zimbabwe. Treatment results for individual African countries once again point to the effects of HIV: cohort death rates were more than 7% in Mozambique, South Africa, the United Republic of Tanzania and Zimbabwe. HIV may also have contributed to the high death rate in Thailand (10%) although, among Asian countries, Thailand has a relatively high proportion of elderly patients (Annex 1).

Treatment outcomes are persistently poor in some African countries. For example, 15% or more patients were lost to follow-up in Ethiopia, Kenya, Nigeria, South Africa, Uganda and Zimbabwe. Large proportions of patients completed treatment without confirming cure (a final, negative sputum smear) in Ethiopia (16%), Uganda and Brazil (36%). The aggregated treatment results for the European Region are strongly influenced by the performance in the Russian Federation, where 10% of patients died, 12% failed treatment and 16% were lost to follow-up. These relatively poor results are undoubtedly linked to the high prevalence of MDR-TB.

TABLE 10
Treatment success for new smear-positive cases (%), 1994–2003 cohorts^a

	DOTS PROGRAMMES										WHOLE COUNTRY									
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1 India	83	79	79	82	84	82	84	85	87	86	*	25	21	18	27	21	34	54	60	76
2 China	94	96	96	96	97	96	95	96	93	94	91	93	94	95	95	95	93	95	92	93
3 Indonesia	94	91	81	54	58	50	87	86	86	87	*	*	*	*	*	*	*	*	*	*
4 Nigeria	65	49	32	73	73	75	79	79	79	59	*	*	*	*	*	*	*	*	*	*
5 South Africa	—	—	69	73	74	60	66	65	68	67	78	58	61	68	72	57	63	61	68	67
6 Bangladesh	73	71	72	78	80	81	83	84	84	85	*	*	63	73	77	79	81	83	*	*
7 Pakistan	74	70	—	67	66	70	74	77	77	75	69	*	—	*	23	*	*	*	*	*
8 Ethiopia	74	61	73	72	74	76	80	76	76	70	*	*	71	*	*	74	*	*	*	*
9 Philippines	80	—	82	83	84	87	88	88	88	88	88	60	35	78	71	*	*	*	*	*
10 Kenya	73	75	77	65	77	78	80	80	79	80	*	*	*	*	*	79	*	*	*	*
11 DR Congo	71	80	48	64	70	69	78	77	78	83	72	74	48	64	*	*	*	*	*	*
12 Russian Federation	—	65	62	67	68	65	68	67	67	61	—	*	57	*	*	*	*	*	*	*
13 Viet Nam	91	91	90	85	93	92	92	93	92	92	*	89	89	85	92	92	*	*	*	*
14 UR Tanzania	80	73	76	77	76	78	78	81	80	81	*	*	*	*	*	*	*	*	*	*
15 Uganda	—	—	33	40	62	61	63	56	60	68	—	44	*	*	*	*	*	*	*	*
16 Brazil	—	—	—	—	91	89	73	67	75	83	70	17	20	27	40	78	71	55	80	77
17 Afghanistan	—	—	—	45	33	87	86	84	87	86	—	—	—	*	*	86	85	*	*	*
18 Thailand	—	—	78	62	68	77	69	75	74	73	58	64	*	58	*	*	*	*	*	*
19 Mozambique	67	39	54	67	—	71	75	77	78	76	*	*	55	65	—	*	*	*	*	*
20 Zimbabwe	—	—	—	—	70	73	69	71	67	66	52	53	32	69	*	*	*	*	*	*
21 Myanmar	—	66	79	82	82	81	82	81	81	81	77	67	79	*	*	*	*	*	*	*
22 Cambodia	84	91	94	91	95	93	91	92	92	93	*	*	*	*	*	*	*	*	*	*
High-burden countries	87	83	78	81	83	81	84	84	83	84	83	53	50	56	62	60	67	72	75	80
AFR	59	62	57	63	70	69	72	71	73	72	60	60	56	64	70	68	71	70	73	72
AMR	77	77	83	82	81	83	81	83	83	82	65	50	51	58	67	79	77	71	81	79
EMR	82	87	86	79	77	83	83	83	83	82	79	79	66	73	57	79	81	83	83	82
EUR	68	69	72	72	76	77	77	75	76	75	67	67	58	72	63	75	75	74	74	75
SEAR	80	74	77	72	72	73	83	84	85	85	66	33	31	29	40	34	50	63	68	79
WPR	90	91	93	93	95	94	92	93	91	91	87	80	72	91	92	91	90	91	90	91
Global	77	79	77	79	81	80	82	82	82	82	75	57	54	60	64	64	69	73	76	80

— Indicates not available.

* No additional data beyond DOTS report, either because country is 100%, or because no non-DOTS report was received.

^a See notes for Table 9.

A comparison of treatment results for 10 consecutive cohorts (1994–2003) of new smear-positive patients shows that the success rates have been 80% or more in DOTS areas since 1998, even though the number of patients has increased from 240 000 in 1994 to 1.7 million in 2003 (Tables 9, 10). Globally, treatment success rates since 1998 have been close to, but persistently below, the 85% target. The rates are mostly low outside DOTS programmes; the explanation, as in previous years, is that large fractions of registered cases are not evaluated, especially in South-East Asia (Table 11). Furthermore, a smaller proportion of notified cases were registered for treatment (65% globally for non-DOTS compared with 98% for DOTS).

About 323 000 re-treated patients were monitored under DOTS in 2003 (Table 12). Some patients remain on treatment (included with those not evaluated), but the latest data give an overall treatment success rate of 73%. When the three registration categories (re-treatment after relapse (post cure), failure and default) are distinguished and compared with new TB patients, we see three patterns that have been noted in previous WHO reports. First, the treatment success was lower on average for re-treatment (73%) than for new cases (82%). In the 2002 cohort of

re-treated patients, we found that success was highest for those re-treated after relapse, intermediate for previous defaulters and lowest for previous failures. Similarly, in the 2003 cohort, re-treatment success was higher post-relapse than post-default in 8 out of 9 HBCs that provided data, and higher post-default than post-failure in 5 out of 8 HBCs (Annex 2).

Second, patients who defaulted from their first course of treatment tended to default when treated again. In all 9 HBCs that submitted data, patients who were re-treated after default did not complete the subsequent course of treatment more often than patients who were re-treated after relapse or failure.

Third, the regional distribution of adverse re-treatment outcomes resembled the pattern observed for new cases. For example, countries in the African Region reported high death rates (11%; Table 12). Countries in the European Region reported high death rates (11%) and treatment failure (16%). Re-treatment success was much lower than 85% in all regions except the Western Pacific.

TABLE 12
Re-treatment outcomes for smear-positive cases, DOTS strategy, 2003 cohort^a

	REGISTERED	TREATMENT OUTCOMES (%)							TREATMENT SUCCESS (%)
		CURED	COMPLETED TREATMENT	DIED	FAILED	DEFAULTED	TRANSFERRED	NOT EVAL'D	
1 India	112 458	66	4.1	7.7	5.9	15	0.6	0.1	70
2 China	78 265	82	6.1	2.6	3.3	1.9	1.0	2.6	89†
3 Indonesia	4 086	59	19	2.4	2.3	4.8	3.0	8.9	78
4 Nigeria	—	—	—	—	—	—	—	—	—
5 South Africa	29 582	39	13	11	1.8	18	8.1	9.9	52
6 Bangladesh	4 328	69	4.0	4.2	2.6	9.6	5.4	4.9	73
7 Pakistan	4 836	49	16	2.2	1.8	17	7.1	6.5	65
8 Ethiopia	1 716	52	8.6	6.9	2.8	5.3	2.4	22	60
9 Philippines	2 963	57	19	5.0	6.2	9.1	3.4	0.0	76
10 Kenya	3 032	67	7.5	11	0.5	7.3	6.8	0.0	75
11 DR Congo	4 996	68	4.5	9.6	4.4	6.8	4.9	1.9	72
12 Russian Federation	946	40	4.3	14	29	6.9	5.4	0.6	45
13 Viet Nam	6 011	80	5.6	4.8	5.0	2.4	2.5	0.0	85†
14 UR Tanzania	2 196	71	4.2	13	1.3	5.5	4.8	0.1	75
15 Uganda	2 439	28	32	9.7	0.7	16	4.0	10	60
16 Brazil	1 498	32	32	11	2.3	18	5.1	0.0	64
17 Afghanistan	—	—	—	—	—	—	—	—	—
18 Thailand	2 051	56	6.6	16	7.0	9.0	5.8	0.0	62
19 Mozambique	1 682	65	2.5	13	2.3	9.3	7.3	0.0	68
20 Zimbabwe	1 330	56	5.4	18	0.9	10	9.2	0.0	62
21 Myanmar	5 585	57	13	8.5	5.1	10	3.8	2.7	70
22 Cambodia	833	80	7.4	5.8	3.1	2.4	1.3	0.0	87†
High-burden countries	269 887	67	6.9	6.5	4.3	11	2.3	2.5	74
AFR	58 187	48	11	11	2.3	13	6.7	7.5	59
AMR	9 094	56	9.8	6.0	4.0	13	3.0	8.5	66
EMR	11 801	55	16	3.4	3.7	13	5.2	4.3	70
EUR	13 749	40	12	11	16	12	2.9	6.3	52
SEAR	136 390	66	4.9	7.4	5.7	14	1.2	0.6	71
WPR	94 156	80	6.8	3.0	3.5	2.5	2.0	2.3	87†
Global (non-DOTS)	323 377	65	7.4	6.7	4.7	10	2.7	2.9	73

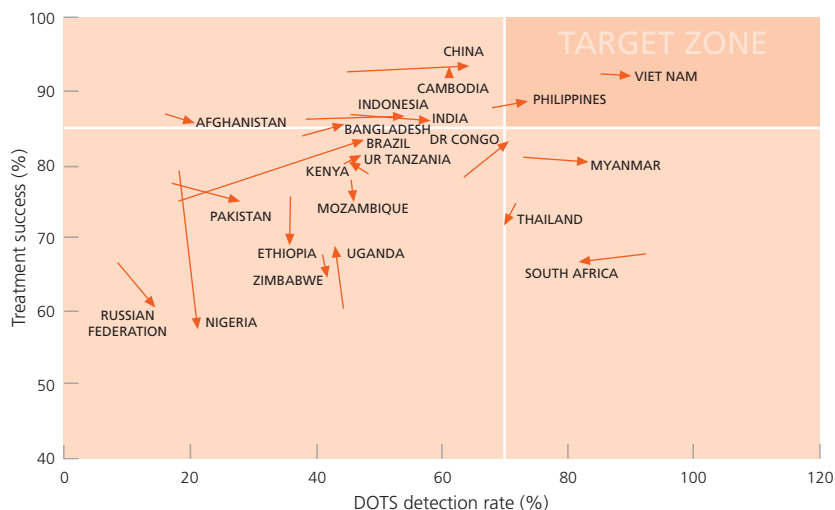
— Indicates not available.

^a See notes for Table 9.

† Treatment success ≥85%.

FIGURE 20

DOTS progress in high-burden countries, 2003–2004. Treatment success refers to cohorts of patients registered in 2002 or 2003, and evaluated, respectively, by the end of 2002 or 2004. The DOTS detection rate is the fraction of estimated incident smear-positive cases notified under DOTS in 2003 or 2004. Arrows mark progress in treatment success and DOTS detection rate. Countries should enter the graph at top left, and proceed rightwards to the target zone.



(Uganda and Zimbabwe) had low rates of both case detection (<50%) and treatment success (<70%). Of 166 countries that provided data for both the 2002 and the 2003 cohorts, 93 (56%) showed higher treatment success rates for the 2003 cohort, and 62 of 176 (35%) improved case detection by more than 5%.

Annex 1 has more details of progress in each of the 22 HBCs. Annex 2 tabulates case detection and treatment success rates by country over the 10 years for which data are available.

Trends in prevalence and death rates

In 2004, there were 14.6 million prevalent cases (229/100 000), of which 6.1 million were smear-positive (95/100 000). An estimated 1.7 million people (27/100 000) died from TB in 2004, including those coinfecting with HIV (248 000).

Figure 21 compares estimates of the prevalence and deaths rates in 1990 (baseline year for the MDGs) and 2004, for each of the six WHO regions. Consistent with trends in incidence (Figure 5), prevalence and death rates have increased over this period in the African and European regions, but most dramatically in the former. Estimates for these two regions in 2004 are very much larger than the 2015 MDG target values (which are half the 1990 rates). Prevalence and death rates have fallen in the other four WHO regions, and the rate of decline between 1990 and 2004 suggests that the MDG targets can be reached in these regions of the world.

DOTS implementation and planning

The results are organized under the component headings of the new Stop TB Strategy except for research developments (component 6), which are not covered by this report (Table 2).

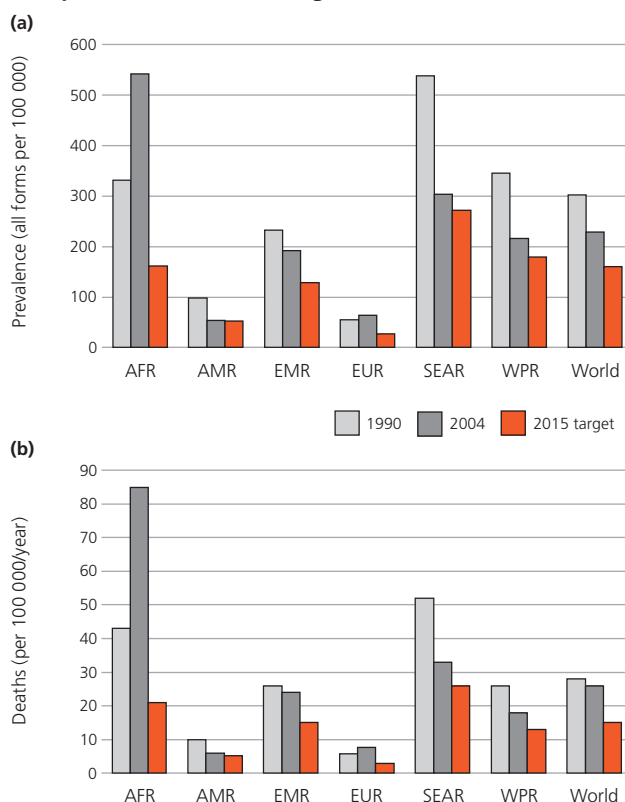
Pursuing high-quality DOTS expansion and enhancement

By the end of 2005, Pakistan reported full DOTS coverage and India reported a coverage of 1 020 million people in 616 districts. DOTS coverage has increased considerably in Afghanistan (53% in 2003 to 68% in 2004), Brazil (34% in 2003 to 52% in 2004) and the Russian Federation (25% in 2003 to 45% in 2004), and continues to increase in Nigeria (60% in 2003 and 65% in 2004).

A total of 9 HBCs (Afghanistan, Democratic Republic of the Congo, India, Mozambique, Myanmar, Nigeria, Pakistan, Uganda and Viet Nam) have developed a five-year strategic plan for 2006–2010. China has continued to promote political commitment at the provincial level and has further increased government funding of TB control activities. China, the Russian Federation and South Africa strengthened their recording and reporting systems. Pakistan has improved surveillance capacity through the development of a computerized district management system.

Drug supply and management have improved in several

FIGURE 21
Estimated TB prevalence (a) and death rates (b), by WHO region, for the MDG baseline year 1990, for 2004, and compared with the MDG target for 2015



HBCs. Both Mozambique and the United Republic of Tanzania have introduced four-drug fixed-dose combination (FDC) anti-TB drugs, and Indonesia has extended the use of FDCs to 12 provinces. Myanmar has secured anti-TB drugs of guaranteed quality up to 2008 with a second grant from the GDF. The Democratic Republic of the Congo has revised its drug management module and India has developed a comprehensive quality assurance system for anti-TB drugs.

Laboratory diagnostic services

Substantial progress has been made in the expansion of laboratory networks and in the decentralization of diagnostic services. Yet, despite national and international efforts, TB laboratory services still need to be improved in many countries. While 18 HBCs report that they have a national reference laboratory (NRL) to oversee the organization and performance of the laboratory network, three of these NRLs are not fully functional. Although 18 HBCs claim to have an external quality assurance (EQA) scheme for smear microscopy, more than half report limited implementation of EQA. The lack of staff and poor laboratory infrastructure are major impediments to performing diagnostic tests, especially where culture and DST are performed. Currently, 14 HBCs perform culture according to nationally-defined specifications, but which are not always consistent with international recommendations. The status of laboratory services in the HBCs is summarized in Table 13.

TABLE 13
TB laboratory services, high-burden countries, 2004–2005^a

	NATIONAL REFERENCE LABORATORY (NRL)	NUMBER OF LABORATORIES PERFORMING				EAQ (% OF LABORATORIES INCLUDED)	NATIONAL POLICY FOR USE OF CULTURE	DIAGNOSIS			CULTURE USED FOR DRUG SUSCEPTIBILITY TESTING				SHORTAGE OF / INSUFFICIENT			
		SPUTUM SMEAR (AVERAGE POPULATION PER LABORATORY)	MTB CULTURE	DST	PLAN FOR SUPERVISION			ALL TB SUSPECTS	SMEAR-NEGATIVE TB	EXTRA-PULMONARY TB	OTHER	NON-CONVERTERS	RE-TREATMENT CASES	TREATMENT FAILURES	DRS	OTHER	HUMAN RESOURCES	INFRASTRUCTURE/EQUIPMENT
1	India	Y	>12 000 (<90 000)	5	4	Y	Y (50)	N				Y		Y	Y	Y		
2	China	Y	3 327 (395 000)	data not available	187	Y	Y (100)	N							Y	Y		
3	Indonesia	N (one acting)	8 051 (25 000)	27	9	N	limited	N							Y	Y		
4	Nigeria	Y	598 (215 000)	2	2	Y	Y (67)	Y	Y							Y		
5	South Africa ^b	N (private)	266 (175 000)	16	14	N	N	Y	Y	Y						Y		
6	Bangladesh	Y	635 (220 000)	3	0	Y	Y (80)	N						Operational research	Y	Y		
7	Pakistan	Y (weak)	620 (250 000)	5	3	N	N	N							Y	Y		
8	Ethiopia	Y	645 (115 000)	6	1	Y	N	Y	on request of physician							Y		
9	Philippines	Y	1 858 (45 000)	3	3	limited	limited	Y							Y	Y		
10	Kenya	Y (weak)	620 (55 000)	5	5	limited	Y (20–40)	Y	Y	Y					Y	Y		
11	DR Congo	Y	991 (55 000)	3	3	Y	Y (100)	Y				Y (cat I, chronic cases)		DST in relapse after cat II	Y	Y		
12	Russian Federation ^c	N	12 805 (10 000)	519	data not available	Y	Y (40)	Y	Y					Monitoring of treatment	Y	Y		
13	Viet Nam	Y	729 (115 000)	15	2	Y	Y (100)	Y	Y	Paediatric TB					Y	Y (poor coverage in remote areas)		
14	UR Tanzania ^d	Y	581 (65 000)	3	1	Y	Y (86)	Y							Y	Y		
15	Uganda	Y (weak)	472 (60 000)	2	2	Y	Y (24)	Y						25% of new cases	Y	Y		
16	Brazil	Y	4 029 (45 000)	187	33	Y	Y (40)	Y	Y	HIV+					Y	Y (poor coverage in remote areas)		
17	Afghanistan	N	184 (155 000)	1	1	N	N (piloted in 2 regions)	N							Y	Y		
18	Thailand	Y	846 (75 000)	90	8	Y	Y (100)	Y						Confirmation of MTB, and of viability, monitoring of treatment	Y	Y		
19	Mozambique ^e	Y	206 (95 000)	1	1	Y	limited	Y								Y		
20	Zimbabwe	Y	180 (70 000)	1	1	limited	Y (50)	Y	Y (gastric aspirates)					On request of physician	Y	Y		
21	Myanmar	Y	384 (130 000)	2	1	limited	Y (75)	N							Y	Y (cat I, chronic cases)		
22	Cambodia	Y	180 (75 000)	3	0	Y	Y (100)	Y		HIV+					Y	Y		

"Y" or "N" indicates whether the service exists or activity is undertaken; "limited" indicates that the activity is restricted to certain parts of the country; HIV+ indicates HIV-positive TB suspects.

^a Information in this table comes from the questionnaire on DOTS implementation and expansion that was sent to HBCs.

^b Laboratory services in South Africa are not under the direct control of the Department of Health.

^c A large number of laboratories in the Russian Federation perform culture and DST without proper quality assurance or bio-safety conditions.

^d There is a need to reduce time taken for transport of sputum samples from periphery to culture facilities in UR Tanzania.

^e The collaboration between NTP and Department of Laboratories is poor in Mozambique.

Human resource development

A total of 17 NTPs in HBCs described improvements in the number and skills of staff as key achievements of DOTS expansion, or among the principal contributions of TB programmes to health system strengthening. It is clear, however, that many NTPs still lack competent staff. Only 3 of the 17 NTPs that reported improvements said that they have increased staff numbers in the NTP; improvements in the other 14 are mainly training activities carried out at different levels of the health service. Insufficient numbers of health-care workers, inadequate geographical distribution of staff, high staff turnover, low salaries and lack of incentives were consistently reported by the NTPs.

The emphasis on training, rather than recruitment, also appears in NTP human resource (HR) development plans; 15 NTPs reported that they have HR development plans, but these are mostly plans for training. The HR development plans do at least recognize that regular training activities are a necessity. These training activities become more diverse as countries expand their activities to reach the MDGs; 15 countries also reported that they do not have the information needed to develop and implement an HR development plan for comprehensive TB control.

Of the 22 HBCs, 18 listed investments in staff among the five investments that would be most beneficial in improving DOTS coverage and quality, and in strengthening health systems.

Addressing TB/HIV, MDR-TB and other challenges

Collaborative TB/HIV activities

The African Region alone accounts for 81% of the estimated 741 000 cases of TB among HIV-positive people in the world, but for only 4% of those reported to have begun ART in 2003. The Region of the Americas (mainly Brazil), on the other hand, accounts for 3% of the estimated cases but for 96% of the 9388 people reported to have started on ART in 2003.

Many countries, including those in the African Region, have developed policies for the provision of treatment to dually-infected patients. Of all the countries in the world, 106 indicated that they were implementing a policy of offering HIV testing and counselling to all TB patients. Of the 41 countries that were sent the extended data collection form, 32 provided data for all three years from 2002 and 2004 and among these TB/HIV collaboration improved steadily. The number of countries that had a TB/HIV focal person in the NTP increased to 23 and the number that had a formal system for referring patients from HIV to TB services and carrying out intensified case-finding increased. The number of countries that had a policy of providing HIV treat-

Box 1

Antiretroviral therapy and tuberculosis in Malawi

In February 2004 the Government of Malawi approved a national, two-year antiretroviral therapy (ART) scale-up plan. Since then, Malawi has expanded its ART programme rapidly while maintaining high levels of compliance and keeping good records of progress. The national TB control programme (NTP) is an important partner in the scale-up plan. All TB patients are offered HIV testing and those who are HIV positive are assessed for eligibility for ART. At the end of 2005, people were being started on ART at about one third of the rate at which people were becoming eligible for ART, and the same was true for HIV-positive TB patients.

During the four quarters from October 2004 to the end of September 2005, the number of people starting ART increased at a rate of 18% per year. In Malawi, an estimated 90 000 adults should start ART each year; in the third quarter of 2005, 7784 adults started ART, a rate of 31 136 per year or about one third of the number of HIV-positive TB patients in need of ART.

In 2004, 26 136 TB patients were registered in public health facilities, 26% were tested for HIV and 72% were HIV-positive. Among TB patients, the proportion starting ART was initially low but has increased at 43% per year; in the third quarter of 2005, 1363 TB patients started ART, a rate of 5000 per year, also about one third of the number in need of ART.

The plan for the next five years (2006–2010) in Malawi is to increase the rate of recruitment to ART so that an additional 45 000 patients begin treatment each year. This rate of recruitment will be maintained so that, by 2010, there will be 208 000 people on ART.

Of those who started ART in the third quarter of 2005, 9% were in WHO clinical Stages I and II but had low CD4 counts, 67% were in WHO Stage III and 24% were in WHO Stage IV. Among these, 18% had TB and were included in Stages III or IV.

Data on the survival of TB patients are not separately available for those with and without HIV, but survival outcomes for all those starting ART are reasonably good. At 6 months after starting treatment, 8.7% ± 0.3% had died, 13.9% ± 0.4% had been lost to follow-up or were transferred out and 0.76% ± 0.02% had stopped treatment. At 12 months after starting treatment, the corresponding figures were 7.8% ± 0.3%, 19.3% ± 0.7% and 0.78% ± 0.03%. In the first 6 months after the start of treatment, mortality is about 10% and in the 6 months after that it is close to zero, a pattern which is seen in other studies of ART. However, the number of people lost to follow-up and transferred out is of concern.

The provision of ART in Malawi provides an excellent example of what can be achieved in a poor country with limited resources and a high prevalence of HIV. Since TB patients are already in the health care system, it is easier to integrate them into long-term chronic care, and NTPs offer a good model for how to make ART accessible and sustainable. The challenge will be to maintain the programme as the number of people on ART accumulates. Much depends on whether or not the prevalence of HIV starts to fall, and there is a pressing need to find ways to reduce the transmission of HIV. Better data on the survival outcomes for TB patients according to their HIV status would enhance our understanding of the impact of HIV on TB and on how to deal with dually infected patients.¹

¹ Box 1 draws on information from: Chimzizi R et al. *Report of a country-wide survey of HIV/AIDS services in Malawi for the year 2004*. National Tuberculosis Control Programme, MOH, 2005; HIV Unit, Department of Clinical Services, MOH; National AIDS Commission, Lilongwe; Centers for Disease Control and Prevention, Malawi; four quarterly reports on the provision of ART, MOH; and *Treatment of AIDS: a five-year plan for the provision of antiretroviral therapy and good management of HIV-related diseases to HIV-infected patients in Malawi, 2006–2010*. MOH, December 2005.

FIGURE 22
Development of policies for collaborative TB/HIV activities, 2002–2004. Data for 32 countries (among the 41 countries with high burdens of HIV-positive TB cases) that have reported data for three years. The bars show the number of countries that had appointed a TB/HIV focal person within the NTP, that had a formal system for referring patients from HIV to TB services and that had policies to carry out intensified TB case-finding (ICF) among people with HIV, to provide HIV testing and counselling for all TB patients, to provide co-trimoxazole preventive therapy (CPT) to HIV-positive TB patients and to provide antiretroviral therapy (ART) to HIV-positive TB patients.

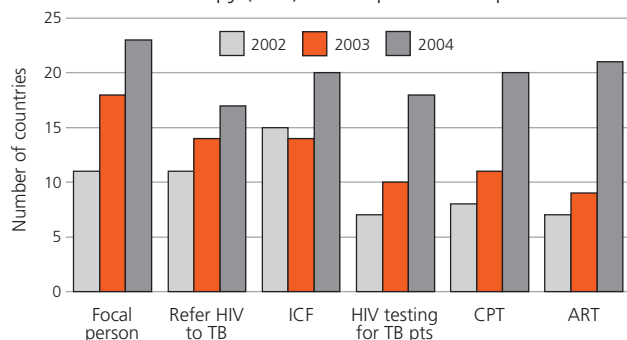
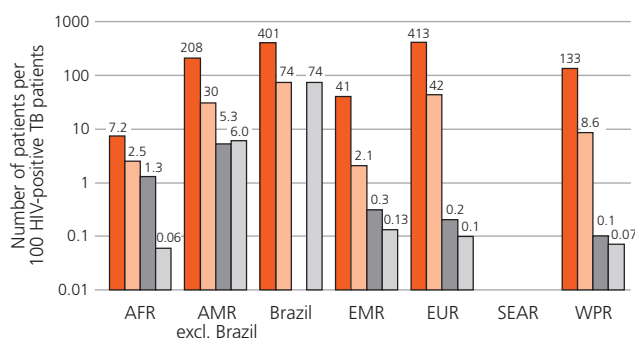


FIGURE 23
HIV testing and the provision of HIV care and treatment for TB patients, 2003. The number of TB patients tested for HIV (dark red), that were HIV-positive (light red), that were given CPT (dark grey) and that started ART (light grey) for every estimated 100 HIV-positive TB patients in each WHO region. For the European Region, the number of patients tested and HIV-positive are for 2004. The South-East Asia Region reported 5 HIV-positive TB cases in 2003. Data for the Region of the Americas exclude Brazil; data are presented separately.



ment and care, CPT and ART for HIV-positive TB patients increased two- to three-fold (Figure 22).

In 2003, these policies had still to make a substantial impact outside the Region of the Americas. Among TB cases notified in 2003, only 184 742 (2%) of the estimated 8.8 million incident cases were reported to have been tested for HIV and only 9388 (1.3%) of the estimated 741 000 HIV-positive TB patients were reported to have started ART (Table 14).

Regional differences in HIV testing, and in the provision of CPT and ART, are shown in Figure 23, where the denominator is the estimated number of new cases of TB in adults with HIV. Since not all TB patients that are tested will be HIV-positive, the number tested should exceed the number that are expected to be HIV-positive, as is the case in the Region of the Americas, the European Region and the Western Pacific Region. In Brazil, 71% of the estimated number of HIV-positive adult TB patients are started on ART, while in the rest of the Americas only 30% are tested and 6% start ART. In the rest of the world, the situation is considerably worse. The South-East Asia Region reported only five HIV-positive TB cases for 2003. Of the estimated number of HIV-positive people that develop TB, the proportion that are tested and found to be HIV-positive, outside the Region of the Americas, varies from 3% in the African Region and the Eastern Mediterranean Region to 42% in the European Region; while the proportion that are given CPT varies from 0.2% in the European Region to 1.4% in the African Region; and the proportion that are started on ART varies from 0.06% in the African Region to 0.13% in the Eastern Mediterranean Region.

While the number of TB patients being tested for HIV – and starting ART – is still very low, most countries have only recently begun to implement collaborative TB/HIV activities. In some countries, there has been rapid progress.¹ Between 2002 and 2004, the number of people with HIV screened for TB and the number found to have TB both increased 10-fold, while the number who began IPT more than doubled; between 2002 and 2003, the number of TB patients tested for HIV and the number found to be HIV-positive both increased four-fold (Table 14).

Of the 41 countries that have a high burden of HIV-positive TB cases, the number that reported having a national policy to offer HIV testing to all TB patients increased from 7 in 2003 to 19 in 2004. Furthermore, none of these countries reported any TB patients as having started ART in 2002, while they reported more than 9000 in 2003. In the third quarter of 2005, Malawi alone started 1363 TB patients on ART (Box 1), and at the end of 2005 about one third of all the TB patients that were notified to the TB control programme and who were HIV-positive were started on ART.

¹ Brazil, which has always had a policy of universal access to ART, remains the outstanding example of ART provision in the public sector.

Surveillance and surveys of drug resistance

In responses provided on the standard data collection form, 139 out of 203 countries (66%) reported data on MDR-TB (Figure 24; Annex 2). In the Region of the Americas and the European Region, about 80% of countries provided information on MDR-TB patients. In total, the 139 countries reported 17 283 MDR-TB cases in 2004, the majority from the European Region (10 595). Among new TB patients, 61 790 received DST and 6149 were diagnosed with MDR-TB; among re-treatment cases the corresponding figures were 28 828 and 5485.

The assessment of MDR-TB prevalence around the world has been done primarily with survey data from the Global DRS Project. The ultimate goal, however, is to evaluate MDR-TB burden and trends from routine surveillance data. As a step in that direction, we compared measures and estimates of MDR-TB prevalence from the Global DRS Project with those derived from the large number of patients reported through routine surveillance. In general, the variation in MDR-TB prevalence between countries was greater in the routine surveillance data than in the survey data from the Global DRS Project. Estimates of MDR-TB prevalence obtained from both sources for more than 100 countries around the world were poorly correlated. Estimates were, however, more closely associated for a restricted sample of 37 European countries ($r^2 = 0.97$; Figure 25).

Management of drug resistance in high-burden countries

Among the 22 HBCs, 10 had carried out nationwide drug resistance surveys by 2005, and 7 have plans to repeat them; 6 have subnational data and plan to carry out nationwide surveys in the next two years. Afghanistan, Indonesia, Nigeria, Pakistan and the United Republic of Tanzania have never reported drug resistance data, but all except Afghanistan have plans to carry out surveys.

Based on a combination of surveys and estimates, approximately 460 000 MDR-TB cases emerge every year, about half of them among new TB patients and the other half among patients that have been previously treated. China, India and the Russian Federation account for 68% of the estimated annual incidence of MDR-TB cases, but all three countries have ambitious plans to carry out DRS and improve MDR-TB management.

In 8 HBCs (Brazil, Democratic Republic of the Congo, Kenya, Mozambique, Philippines, South Africa, Russian Federation and Thailand) MDR-TB is managed by the NTP; 3 of these (Kenya, Philippines and the Russian Federation) receive support from the GLC in limited pilot areas, and India has a GLC-approved project in New Delhi. Among the HBCs that do not have a programme for managing MDR-TB, all except Afghanistan

TABLE 14

Collaborative TB/HIV activities, 2002–2004. Data are from the 41 countries with a high burden of HIV-positive TB cases (and that received the supplementary questions on TB/HIV).

	2002		2004	
	NUMBER OF PEOPLE (NUMBER OF COUNTRIES RESPONDING TO QUESTION)			
HIV-positive people screened for TB	11 013	(5)	97 370	(8)
HIV-positive people diagnosed with TB	1 330	(4)	11 727	(4)
HIV-positive people given isoniazid preventive therapy (IPT)	4 886	(8)	12 017	(5)
TB patients tested for HIV	20 920	(9)	84 947 ^a	(14)
TB patients found to be HIV-positive	5 284	(9)	22 746 ^a	(13)

^a Data for 2003.

FIGURE 24

Reporting on MDR-TB patients, by WHO region, 2004.

The red portion of each bar shows the number of countries providing information about MDR-TB; the grey portion shows the number of countries not providing such information. The number of laboratory-confirmed cases of MDR-TB identified among patients in whom TB disease was diagnosed in 2004 is shown above each bar.

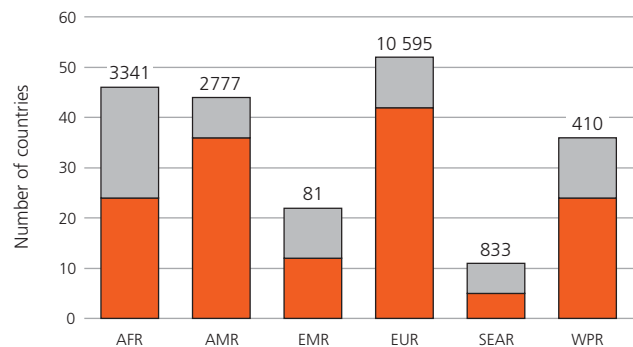
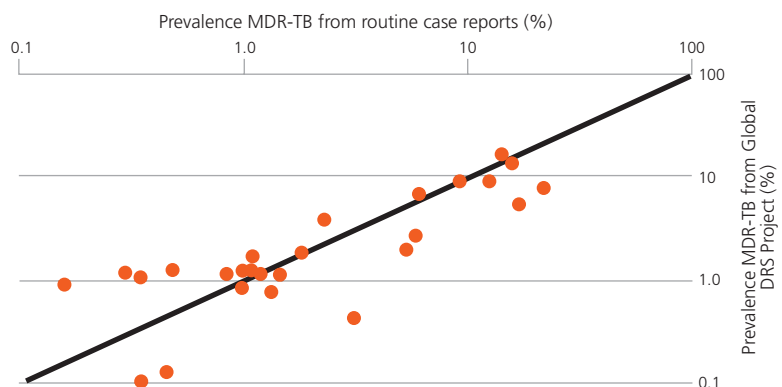


FIGURE 25

Comparison of two methods for evaluating prevalence of MDR-TB in new TB cases in 26 countries of the European Region.

The vertical axis shows prevalence estimated from surveys carried out within the Global DRS Project. The horizontal axis shows prevalence measured among patients reported through routine surveillance in 2004. The correlation coefficient, $r = 0.98$.



and Pakistan plan to develop MDR-TB programmes in the next two years.

In the few HBCs where NTPs do manage MDR-TB, diagnosis and treatment often fail to meet acceptable standards. In many countries, substandard MDR-TB treatment is available in the private sector or at specialized health centres not linked to the NTP, often for a fee. Second-line anti-TB drugs are available in the majority of HBCs, and are locally-produced in Bangladesh, Brazil, China, Kenya, India, Indonesia, Pakistan, the Philippines, the Russian Federation, South Africa, Thailand and Viet Nam.

As of June 2005, the GFATM had approved or was providing funds for DRS in 5 HBCs (Cambodia, China, India, Kenya and Thailand), and funds to manage MDR-TB in 4 (the Democratic Republic of the Congo, India, the Philippines and the Russian Federation). HBCs including Bangladesh, China and Indonesia had MDR-TB projects approved by the GFATM in round five.

The three major obstacles identified by HBCs to DRS implementation were: weak laboratories, lack of funding and a lack of qualified staff. The major obstacles to setting up an MDR-TB diagnosis and treatment programme were: the lack of laboratory skills and infrastructure to perform quality-assured culture and drug susceptibility testing, and failures in the organization of treatment (e.g. hospitalization or ambulatory treatment, the delivery of DOT over two years and poor case-holding), with insufficient funding and too few qualified staff. The main forms of support needed for DRS and MDR-TB management, as identified by the NTPs, are financial resources and technical assistance to design, pilot and scale-up appropriate surveillance, diagnosis and treatment programmes. The planning of activities related to MDR-TB is described in the individual profiles of the 22 HBCs (Annex 1).

Management of drug resistance globally

By December 2005, the Global DRS Project had collected data from areas representing more than 40% of the world's smear-positive TB cases, and the GLC had approved 37 pilot projects for almost 13 000 MDR-TB patients in 31 countries.¹

Treatment outcomes from GLC-approved projects are available from Estonia, Latvia, Peru (Lima), the Philippines (Manila) and the Russian Federation (Tomsk Oblast).² In brief, of 1047 MDR-TB patients evaluated, 119 (11%) were new cases and 928 (89%) had received treatment previously. More than 50% of previously-treated patients had received both first- and second-line anti-TB drugs, and 65% of all patients were resistant to both first- and second-line drugs. Treatment was successful in 70% of all patients, but higher among new (77%) than previously-treated patients (69%).

Studies of the cost and cost-effectiveness of MDR-TB management under programmatic conditions have been completed in Estonia, the Russian Federation (Tomsk

Oblast), the Philippines (Manila) and Peru. The cost per patient treated was about US\$ 2500–3500 in Peru and the Philippines, and about US\$ 9000–10 000 in Estonia and the Russian Federation. The cost per DALY (disability adjusted life year) gained was about US\$ 200 in Peru and the Philippines, and higher at about US\$ 500–1000 in Estonia and the Russian Federation. These estimates of cost per DALY gained compare favourably with benchmarks that are widely used for assessing whether a health intervention is cost-effective (for example, average income per capita), suggesting that MDR-TB management can be considered a cost-effective strategy. It should be emphasized that these costs are derived from studies carried out in populations that have high proportions of severe chronic cases, with patterns of drug resistance that make these patients more difficult to treat and cure. In other areas of the world, the treatment of MDR-TB may pose fewer challenges, and therefore the costs may be lower.

TB control in the context of poverty

Various geographical, economic and sociocultural barriers limit the access of patients to health services, especially poor populations. The factors most commonly linked to the inaccessibility of health services are: distance, time, money, and knowledge about where to obtain diagnosis and treatment free-of-charge. These factors often cause TB patients to first seek care in the private sector. Accessibility is further limited by the centralization of TB control activities in many HBCs.

To improve access to health facilities, especially for impoverished patients, NTPs are decentralizing diagnosis and treatment services to peripheral units (and sometimes to the communities themselves), and incorporating DOTS services into government plans to fight poverty. NTPs are also improving the awareness of services for TB diagnosis and treatment, reinforcing treatment policies that are free-of-charge and seeking funds to reduce patient travel costs. Improving partnerships with NGOs and strengthening community TB care are among the steps believed by NTPs to be most useful in improving access to health care.³

Contributing to health system strengthening

Past political and social conflict and/or high levels of poverty have seriously weakened health system infrastructure in Afghanistan, Cambodia, the Democratic Republic of the Congo and Ethiopia. By the end of 2005, however, these NTPs were actively contributing to the extension of basic

¹ Azerbaijan, Bolivia, Costa Rica, Dominican Republic, El Salvador, Egypt, Estonia, Georgia, Haiti, Honduras, India, Jordan, Kenya, Kyrgyzstan, Latvia, Lebanon, Lithuania, Malawi, Mexico, Republic of Moldova, Mongolia, Nepal, Nicaragua, Peru, Philippines, Romania, Russian Federation, Syrian Arab Republic, Timor-Leste, Tunisia and Uzbekistan.

² Nathanson E et al. Multidrug-resistant tuberculosis can be successfully treated in resource-limited settings [submitted for publication].

³ See also: *Addressing poverty in TB control: options for national TB control programmes*. Geneva, World Health Organization, 2005 (WHO/HTM/TB/2005.352).

packages of health care and were involved in training staff from all parts of the health system. In sub-Saharan African countries, such as Kenya, Mozambique and Uganda, building quality-assured laboratory diagnostic networks to meet the needs presented by HIV/AIDS, TB and malaria, has become an increasingly urgent task.

In 2004–2005, NTPs have been involved in health system strengthening mainly through the process of service decentralization. India's NTP is expanding DOTS services to other ministries (besides the Ministry of Health) that have health facilities, and is increasing management capacity at state and district levels, particularly in rural areas. In Pakistan, the NTP is contributing to health system strengthening through the engagement of district leaders, primary care managers and private partners in DOTS services, and by supporting urgent needs in areas affected by the 2005 earthquake. The NTP in Brazil has advanced DOTS by using a sector-wide health information system, and by making use of family health teams. In China, the integration of TB surveillance, diagnosis and treatment within basic township hospitals has been a priority.

Engaging all care providers

Among the 22 HBCs, 16 (cf. 7 in 2004) have tested PPM as an approach to improve TB control; 9 countries have begun scaling up PPM beyond the pilot phase, and 7 (China, Bangladesh, India, Indonesia, Kenya, Myanmar and the Philippines) have made noteworthy progress towards mainstreaming PPM into national TB control strategies and implementation plans. However, PPM is still at an early stage in most other HBCs; 15 HBCs reported the involvement of all public hospitals in TB control, 13 reported that they have involved all medical colleges in TB control, while 12 said that all military health facilities collaborate with the NTP. Less than half of NTPs reported that other health providers were fully involved in DOTS. Many NTPs report that corporate health services, and health facilities belonging to special health insurance schemes, are not involved in DOTS (Figure 26).

In order to boost public-private collaboration, 10 HBCs have appointed a PPM focal point at national level, and 10 countries have developed guidelines to involve the full range of health-care providers.

Empowering people with TB, and communities

Community TB care

Until recently, DOTS implementation has relied mainly on government health services. However, many countries have now started to decentralize TB care beyond health facilities into the community. Community participation in TB control is now part of the NTP strategy in 14 of 22 HBCs; an additional 4 NTPs are piloting community participation, and expect to include this approach in future strategic plans, and 11 NTPs (Bangladesh, Brazil, India, Indonesia, Kenya, Myanmar, Pakistan, the Philippines, South Africa, Uganda,

and Viet Nam) provide community-based TB care to at least 25% of the population. These initiatives include DOT supervised by a family or community member, the identification and referral of people with symptoms of TB, and default and contact tracing.

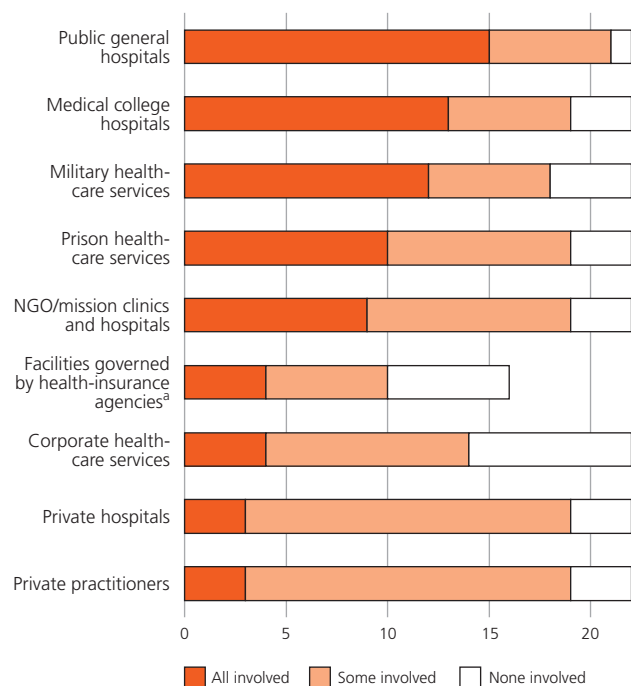
Advocacy, communication and social mobilization (ACSM)

In the context of the new Stop TB Strategy, ACSM is being scaled up significantly. In February 2005, the Stop TB Partnership inaugurated a new ACSM Working Group to sustain political, social and financial commitment to eliminate TB, and to foster the development of more effective ACSM activities for TB control at country level.

ACSM at global level during 2004–2005 increased the importance of TB on the international agenda. This included intensified advocacy in G8 countries, the declaration of a continent-wide TB emergency in Africa and extensive media coverage for the 2005 edition of this report.

The number of NTPs with national ACSM strategies increased from 2 in 2002 to 11 in 2005, and is expected to

FIGURE 26
Involvement of different types of providers in TB control, high-burden countries, 2004–2005. Number of high-burden countries reporting formal involvement in national TB control efforts (referral, diagnosis, treatment initiation, treatment supervision and/or notification) for different types of provider.



^a Information about involvement of health-insurance agencies provided by only 16 high-burden countries.

reach 19 during 2007. Many countries with national ACSM strategies are well into the implementation phase. In the Philippines, community-based TB task forces are used in active case-finding and for the dissemination of information. Indonesia is rapidly scaling up ACSM through activities at district level, further stimulated by the development of a national ACSM handbook. Viet Nam has integrated ACSM into all levels of its TB control programme, placing particular emphasis on local dissemination of materials for health education. A total of 11 countries have completed, or are close to completing, studies of knowledge, attitudes and practice (KAP), prior to fully launching ACSM activities.

Financing TB control

Data received

Financial data were received from 140 out of 211 (66%) countries (Table 15), more in total than for 2005 (135 countries). Complete budget data for 2005 were provided by 87 countries (up from 70 in last year's report), 71 countries provided complete budget data for 2006 and 73 provided complete expenditure data for 2004 (compared with 69 that provided complete expenditure data for 2003). The countries that provided financial reports accounted for 94–99% of the regional burden of TB in four regions, with lower figures of 79% and 58% for the African and European Regions respectively. If data had been reported by

South Africa, the figure for the African Region would have been 92%.

Data were received from all 22 HBCs except South Africa (Table 16). Complete budget data were provided for 19 countries; data were partially complete for Afghanistan and Thailand. Complete expenditure data for 2004 were provided for 17 countries; the only change from the set of expenditure data for 2003 was that Kenya provided complete expenditure data for 2004, whereas Zimbabwe (along with South Africa and Uganda) did not. A total of 21 countries provided data on the utilization of health services and made projections of the number of cases they would treat in 2005 and 2006, up from 20 last year. While considerable follow-up of data is still required, the quality of the data when first submitted to WHO is improving; Bangladesh, Brazil, China, Democratic Republic of the Congo, India and Nigeria provided exemplary data that required almost no follow-up.

Total NTP budgets and funding in high-burden countries

NTP budgets in 20 of the 22 HBCs have increased during the period 2002–2006, sometimes by substantial amounts (Figures 27–29; Table 17). There are insufficient data to make an assessment for South Africa and Thailand. The total combined budget for 2006 is US\$ 990 million, double

TABLE 15
Budget, expenditure and utilization data received, all countries, 2006

	NUMBER OF COUNTRIES	FINANCIAL REPORTS RECEIVED	BUDGET 2005			BUDGET 2006			EXPENDITURE 2004			UTILIZATION OF HEALTH SERVICES	PROP. OF ESTIMATED REGIONAL TB BURDEN ACCOUNTED FOR BY COUNTRIES THAT REPORTED FINANCIAL DATA (%)
			COMPLETE	PARTIAL	NONE	COMPLETE	PARTIAL	NONE	COMPLETE	PARTIAL	NONE		
AFR	46	37	28	7	2	23	6	8	22	3	12	32	79 ^a
AMR	44	32	17	13	2	14	12	6	13	13	6	24	94
EMR	22	20	13	5	2	11	5	4	10	4	6	15	97
EUR	52	17	11	5	1	8	4	5	10	4	3	16	58
SEAR	11	9	7	2	0	5	2	2	6	2	1	7	98
WPR	36	25	11	13	1	10	14	1	12	11	2	21	99
Global	211	140	87	45	8	71	43	26	73	37	30	115	91

^a The figure would be 92% if South Africa had reported data.

TABLE 16
Budget, expenditure and utilization data received, high-burden countries, 2006

	NUMBER OF COUNTRIES	FINANCIAL REPORTS RECEIVED	BUDGET 2005			BUDGET 2006		EXPENDITURE 2004			UTILIZATION OF HEALTH SERVICES
			COMPLETE	PARTIAL	NONE	COMPLETE	NONE	COMPLETE	PARTIAL	NONE	
AFR	9	8	8	0	1	7	2	6	1 ^a	2 ^a	8
AMR	1	1	1	0	0	1	0	1	0	0	1
EMR	2	2	1	1 ^b	0	2	0	1	0	1 ^b	2
EUR ^c	1	1	1	0	0	1	0	1	0	0	1
SEAR	5	5	4	1 ^d	0	4	1 ^d	4	0	1 ^d	5
WPR	4	4	4	0	0	4	0	4	0	0	4
Global	22	21	19	2	1	19	3	17	1	4	21

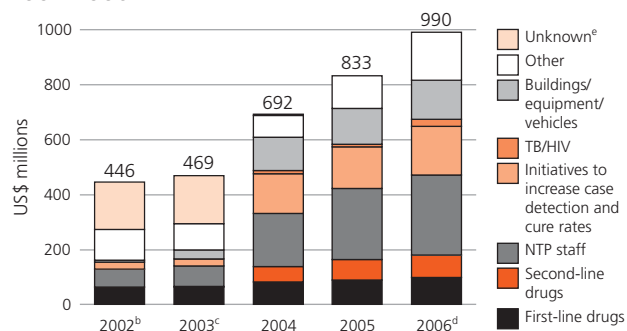
^a Zimbabwe provided partial expenditure data, South Africa and Uganda did not provide expenditure data.

^b Afghanistan.

^c Data for the Russian Federation were compiled by WHO (Moscow Office) in collaboration with the Ministry of Health and Social Development and the Federal Agency for Health and Social Development.

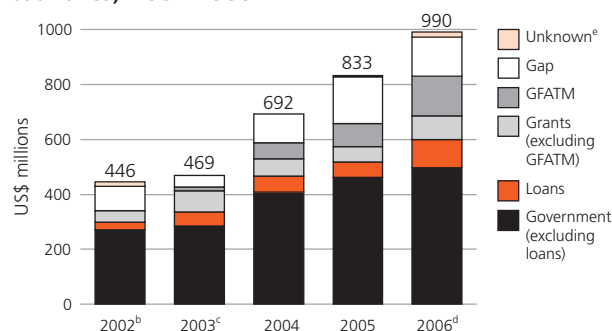
^d Thailand.

FIGURE 27
Total NTP budgets by line item, 21 high-burden countries,^a 2002–2006



- ^a Data not available for South Africa.
- ^b Estimates assume budget 2002 equal to expenditure 2002 (Ethiopia), budget 2003 (Afghanistan, Bangladesh, Mozambique and Uganda) or expenditure 2003 (Russian Federation and Zimbabwe).
- ^c Estimates assume budget 2003 equal to expenditure 2003 (Russian Federation and Zimbabwe) or equal to budget 2004 (Thailand).
- ^d 2006 budget for Thailand and UR Tanzania based on 2005 data.
- ^e "Unknown" applies to Afghanistan 2002–2004, Russian Federation 2002–2003 and Mozambique 2002–2003, as breakdown by line item not available.

FIGURE 28
Total NTP budgets by source of funding, 21 high-burden countries,^a 2002–2006



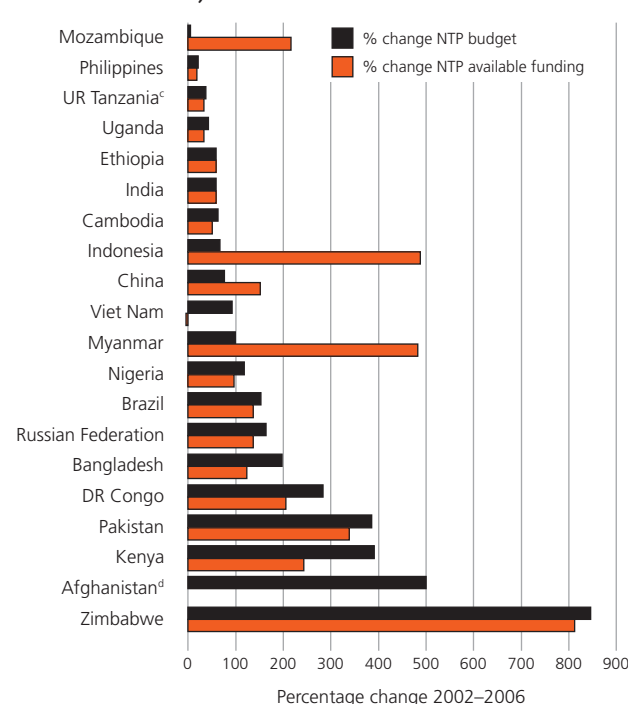
- ^a Data not available for South Africa.
- ^b Estimates assume budget 2002 equal to expenditure 2002 (Ethiopia), budget 2003 (Afghanistan, Bangladesh, Mozambique and Uganda) or expenditure 2003 (Russian Federation and Zimbabwe).
- ^c Estimates assume budget 2003 equal to expenditure 2003 (Russian Federation and Zimbabwe) or equal to budget 2004 (Thailand).
- ^d 2006 budget data for Thailand and UR Tanzania based on 2005 data.
- ^e "Unknown" applies to Afghanistan 2005–2006, Nigeria 2002 and DR Congo 2002, as breakdown by funding source not available.

the US\$ 446 million budgeted in 2002. The Russian Federation has by far the largest budget (US\$ 428 million), followed by China (US\$ 173 million) and then by India and Indonesia (both at US\$ 57 million), making a combined total that is 72% of the NTP budgets reported by HBCs. There are 7 countries with budgets in the range US\$ 20–34 million, while the rest (10 countries) have budgets of under US\$ 20 million.

In absolute terms, the budgetary increase in the Russian Federation dwarfs that in any other HBC, at US\$ 266 million; the second largest increase (in China) was US\$ 75 million. In relative terms, the increases in Afghanistan, the Democratic Republic of the Congo, Kenya, Pakistan and Zimbabwe stand out, with three- to eight-fold increases over five years (Table 17). Countries with relatively small increases are Mozambique, the Philippines, Uganda and the United Republic of Tanzania. The budget increases for initiatives to increase case detection and cure rates, capital items (typically vehicles and microscopes), second-line anti-TB drugs and NTP staff are particularly striking (Figure 27). Budgets for collaborative TB/HIV activities remain small, though Kenya is an exception (see Annex 1).

These large budget increases have been accompanied by big improvements in available funding for NTP budgets (Figures 28, 29; Table 17). For all HBCs, funding for NTP budgets has increased by almost US\$ 500 million since 2002, reaching US\$ 830 million in 2006. Viet Nam is the only country where projected funding for 2006 is less than in 2002 (reflecting a decline in loans and non-GFATM grant funding). Most of the extra US\$ 500 million has come from the governments of the Russian Federation and China (an extra US\$ 260 million including loans since 2002). While almost all other HBC governments have also

FIGURE 29
Changes in NTP budget and available funding, 20 high-burden countries,^{a,b} 2002–2006



- ^a Complete data not available for South Africa or Thailand.
- ^b Countries ranked by percentage change in NTP budget.
- ^c Latest available data for UR Tanzania are for 2005; comparison is 2002–2005.
- ^d Sources of funding for Afghanistan for 2006 not available.

TABLE 17
NTP budgets and available funding, high-burden countries, 2006

	TOTAL NTP BUDGET (US\$ MILLIONS)	CHANGE FROM 2002 ^a (US\$ MILLIONS)	CHANGE FROM 2002 (%)	AVAILABLE FUNDING (US\$ MILLIONS)				FUNDING GAP	CHANGE IN AVAILABLE FUNDING SINCE 2002 ^b (US\$ MILLIONS)				CHANGE IN FUNDING GAP SINCE 2002
				GOVERNMENT (EXCL. LOANS)	LOANS	GRANTS (EXCL. GFATM)	GFATM		GOVERNMENT (EXCL. LOANS)	LOANS	GRANTS (EXCL. GFATM)	GFATM	
1 India	57	21	59	8	27	9	12	0	2	3	4	12	0
2 China	173	75	77	103	11	5	19	35	50	11	3	19	-8
3 Indonesia	57	23	67	25	0	8	25	0	18	0	5	25	-25
4 Nigeria	19	10	117	4	0	5	8	2	2	0	1	8	-5
5 South Africa	—	—	—	—	—	—	—	—	—	—	—	—	—
6 Bangladesh	21	14	198	4	2	2	8	5	0.4	2	-1	8	5
7 Pakistan	26	20	386	3	0	12	0.6	10	0.3	0	12	0.6	8
8 Ethiopia	8	3	58	0.1	0	2	5	0	-1	0	-1	5	0
9 Philippines	20	3	21	11	0	0.7	2	6	-0.6	0	0.7	2	1
10 Kenya	26	20	391	3	0	8	3	11	2	0	6	3	10
11 DR Congo	25	19	284	1	0	11	8	5	0.02	0	5	8	1
12 Russian Federation	428	266	164	290	63	2	29	43	136	63	-5	29	43
13 Viet Nam	22	11	93	9	0	0	2	11	0.7	-2	-1	2	11
14 UR Tanzania ^c	8	2	37	3	0	4	0.2	1	3	0	-1	0.2	0.4
15 Uganda	7	2	42	0.3	0	2	0.3	5	0.1	-1	1	0.3	2
16 Brazil	34	21	152	24	1	2	5	2	10	1	2	5	2
17 Afghanistan	19	15	500	—	—	—	—	—	—	—	—	—	—
18 Thailand ^c	5	-1.3	-22	3	0	0	2	0	—	—	—	2	—
19 Mozambique	8	0.4	5	1	0	2	6	0	0.9	0	-0.8	6	-5
20 Zimbabwe	16	14	845	3	0	6	7	0.6	3	0	4	7	0.6
21 Myanmar	6	3	99	0.4	0	1	2	2	-0.02	0	1	2	-0.1
22 Cambodia	7	3	63	0.7	0	3	1	2	-0.6	-0.7	2	1	1
High-burden countries	990	545	93^d	496	104	87	144	141	225	76	36	144	43

— Indicates not available.

^a Figures assume budget 2002 equal to expenditure 2002 (Ethiopia), budget 2003 (Afghanistan, Bangladesh, Mozambique and Uganda) or expenditure 2003 (Russian Federation and Zimbabwe).

^b Total of changes in available funding and funding gap does not equal the total in column 3 because data are incomplete for Afghanistan and Thailand, and comparisons are with 2003 for DR Congo and Nigeria.

^c Data for Thailand and UR Tanzania are for 2005. Data for Thailand are for the central government only.

^d Median value.

increased funding (the exceptions are Cambodia, Ethiopia, Myanmar and the Philippines), most of the remaining increase in funding is thanks to the GFATM (US\$ 144 million in 2006 compared with zero in 2002, with the largest grants to China, Indonesia and the Russian Federation). In relative terms, the most impressive improvements in funding have occurred in Zimbabwe (2005–2006), Indonesia (2002–2006), Pakistan (particularly 2005–2006) and Kenya (notably 2005–2006).

Among the 21 HBCs that reported data, national governments will provide US\$ 600 million (61%) of the funding required by NTPs in 2006, US\$ 230 million (23%) will be funded by donor agencies, and for US\$ 19 million (2%) the source of funding is currently unknown. This leaves a reported funding gap of US\$ 141 million (14%). These figures conceal important variations, with many countries relying extensively on grants from the GFATM and other sources.

Despite this progress in securing additional funding, NTPs have reported a budgetary funding gap of US\$ 141 million for 2006 (Table 17). In absolute terms, the largest funding gaps are those reported by China, Kenya, Pakistan, and the Russian Federation (US\$ 97 million, or 69% of the total gap). Proportionally, the largest gaps are in Uganda

and Viet Nam (both with gaps exceeding 50% of the budget), followed by Cambodia, the Democratic Republic of the Congo, Kenya, Myanmar, Nigeria, Pakistan and the Philippines (with gaps that are 20–40% of the budget).

Further details, including charts showing trends in NTP budgets by funding source and line item for HBCs in each year 2002–2006, are provided in Annex 1.

Total costs of TB control and funding in high-burden countries

NTP budgets include only part of the resources needed for TB control. In particular, they do not include the costs associated with general health-service staff and infrastructure, which are used when TB patients are hospitalized or make outpatient clinic visits for DOT and monitoring. For the 22 HBCs combined, the total cost of TB control is projected to be almost US\$ 1.6 billion in 2006, compared with US\$ 876 million in 2002 (Figures 30, 31; Table 18). These increases in projected costs arise because of the large increases in NTP budgets (described above) and because of the higher costs of clinic visits and hospitalization that are associated with treating more patients. The largest costs are for the Russian Federation and South Africa, which together account for US\$ 810 million, or more than half of

TABLE 18
Total TB control costs and available funding, high-burden countries, 2006

	TOTAL COST (US\$ MILLIONS)	CHANGE FROM 2002 ^a (US\$ MILLIONS)	CHANGE FROM 2002 (%)	AVAILABLE FUNDING (US\$ MILLIONS)					CHANGE IN AVAILABLE FUNDING SINCE 2002 ^b (US\$ MILLIONS)				CHANGE IN FUNDING GAP SINCE 2002
				GOVERNMENT (EXCL. LOANS)	LOANS	GRANTS (EXCL. GFATM)	GFATM	FUNDING GAP	GOVERNMENT (EXCL. LOANS)	LOANS	GRANTS (EXCL. GFATM)	GFATM	
1 India	100	38	60	51	27	9	12	0	7	3	4	12	0
2 China	173	112	184	103	11	5	19	35	50	11	3	19	-8
3 Indonesia	62	41	198	30	0	8	25	0	20	0	5	25	-25
4 Nigeria	30	20	194	15	0	5	8	2	9	0	1	8	-5
5 South Africa	300	—	—	300	—	—	—	—	—	—	—	—	—
6 Bangladesh	28	17	159	11	2	2	8	5	4	2	-1	8	5
7 Pakistan	33	28	538	11	0	12	1	10	5	0	12	0.6	8
8 Ethiopia	14	7	96	7	0	2	5	0	3	0	-1	5	0
9 Philippines	30	7	30	21	0	1	2	6	1	0	0.7	2	1
10 Kenya	28	22	409	6	0	8	3	11	3	0	6	3	10
11 DR Congo	44	25	131	20	0	11	8	5	6	0	5	8	1
12 Russian Federation	510	265	108	372	63	2	29	43	128	63	-5	29	43
13 Viet Nam	30	11	55	17	0	0	2	11	-2	-2	-1	2	11
14 UR Tanzania ^c	15	3	24	10	0	4	0.2	1	3	0	-1	0.2	0.4
15 Uganda	8	6	207	1	0	2	0.3	5	0.3	-1	1	0.3	2
16 Brazil	62	21	49	52	1	2	5	2	10	1	2	5	2
17 Afghanistan	20	16	369	—	—	—	—	—	—	—	—	—	—
18 Thailand ^c	16	7	86	14	0	0	2	0	—	—	—	2	—
19 Mozambique	11	7	170	4	0	2	6	0	2	0	-0.6	6	-5
20 Zimbabwe	20	15	281	7	0	6	7	1	3	0	4	7	0.6
21 Myanmar	7	4	170	2	0	1	2	2	0.1	0	1.1	1.9	-0.1
22 Cambodia	9	4	83	3	0	3	1	2	-0.1	-0.7	2	1	1
High-burden countries	1551	675	159^d	1055	104	87	144	141	253	76	36	144	43

— Indicates not available.

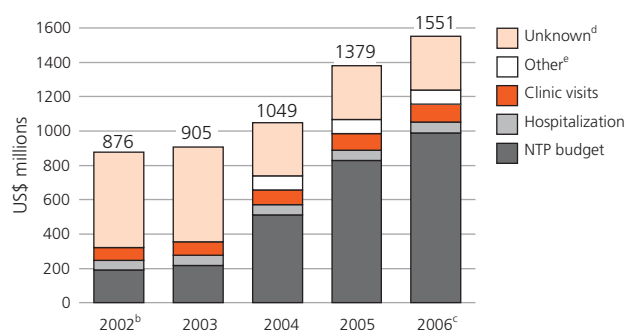
^a TB control costs for 2006 were estimated using budget data, whereas those for 2002 were estimated using expenditure data wherever possible. Estimates assume expenditure 2002 equal to available funding 2002 (Kenya and UR Tanzania), to expenditure 2003 (Afghanistan, Bangladesh, Mozambique, Nigeria, Russian Federation and Zimbabwe) or to available funding 2003 (Uganda).

^b Total of changes in available funding and funding gap is different from the total change in TB control costs in column 3 when expenditures are different from available funding, data are incomplete (Afghanistan and Thailand) or comparisons are with 2003 (DR Congo and Nigeria).

^c Data for Thailand and UR Tanzania are for 2005. Data for Thailand are for the central government only.

^d Median value.

FIGURE 30
Total TB control costs by line item, 22 high-burden countries, 2002–2006^a



^a Total TB control costs for 2002–2004 are based on expenditure data, whereas those for 2005–2006 are based on budget data.

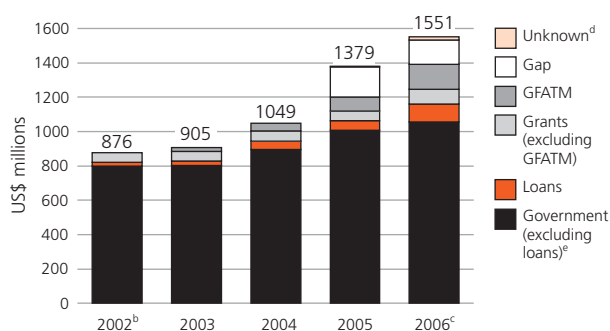
^b Estimates assume costs 2002 equal to costs 2003 for Afghanistan, Bangladesh, Mozambique, Nigeria, Russian Federation, Uganda and Zimbabwe.

^c Estimates assume costs 2006 equal to costs 2005 for Thailand and UR Tanzania.

^d “Unknown” applies to Russian Federation 2002–2003, South Africa 2002–2006 and Thailand 2002–2006, as breakdown by line item not available.

^e “Other” includes costs for hospitalization and fluorography in the Russian Federation not reflected in NTP budget or NTP expenditure data.

FIGURE 31
Total TB control costs by source of funding, 22 high-burden countries, 2002–2006^a



^a Total TB control costs for 2002–2004 are based on expenditure data, whereas those for 2005–2006 are based on budget data.

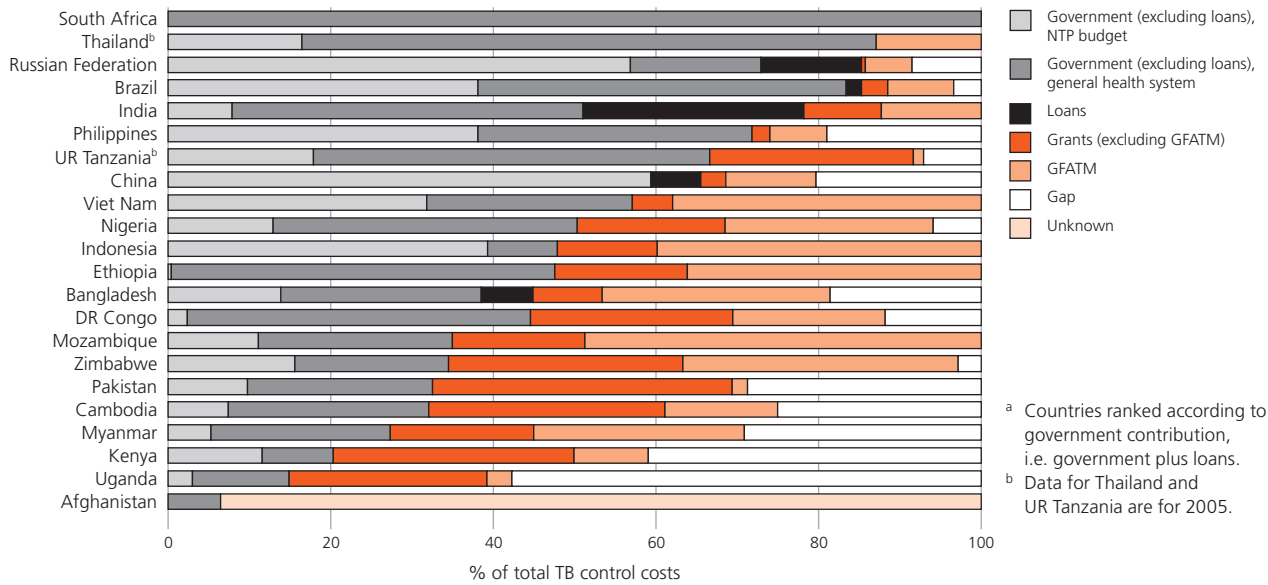
^b Estimates assume costs 2002 equal to costs 2003 for Afghanistan, Bangladesh, Mozambique, Nigeria, Russian Federation, Uganda and Zimbabwe.

^c Estimates assume costs 2006 equal to costs 2005 for Thailand and UR Tanzania.

^d “Unknown” applies to Afghanistan 2005–2006, as breakdown by source of funding not available.

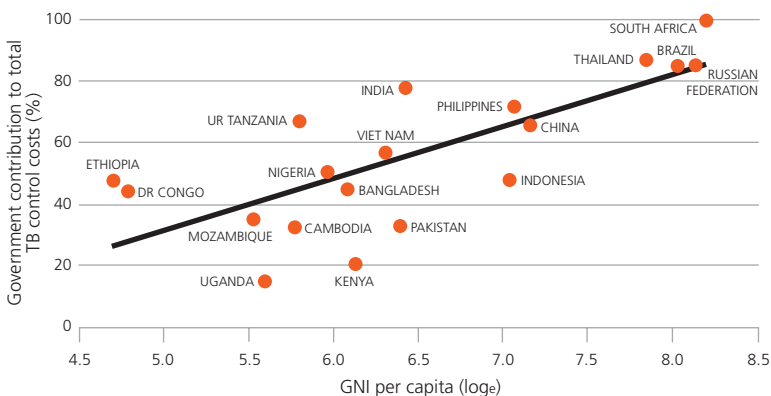
^e Estimates for South Africa 2002–2006 are based on costing studies and all costs are assumed to be funded by the government.

FIGURE 32
Sources of funding for total TB control costs, 22 high-burden countries, 2006^a



^a Countries ranked according to government contribution, i.e. government plus loans.
^b Data for Thailand and UR Tanzania are for 2005.

FIGURE 33
Government contribution (including loans) to total TB control costs by gross national income (GNI) per capita, 19 high-burden countries, 2006



^a Government contribution for Afghanistan not available but likely to be very low. Data on GNI per capita not available for Myanmar and Zimbabwe.

the total cost of US\$ 1.6 billion estimated for 2006. South Africa is a middle-income country, and the high costs are mainly explained by the higher prices for items such as hospitalization and outpatient visits, compared with those typical in low-income countries. The high costs in the Russian Federation reflect continued staffing and maintenance of an extensive network of TB hospitals and sanatoria, a large budget for second-line anti-TB drugs to treat many MDR-TB patients, and continued use of mass population screening by fluorography. China (US\$ 173 million), India (US\$ 100 million), Indonesia and Brazil (both US\$ 62 million) rank third to sixth. An additional 7 countries have total costs of US\$ 25–50 million in 2006, 2 have costs of US\$ 20 million; the rest have costs of US\$ 16 million or less.

The countries with the largest projected absolute increases in annual costs between 2002 and 2006 are the Russian Federation and China (US\$ 265 million and US\$ 112 million respectively). Increases of around US\$ 40 million are projected for India and Indonesia, and around US\$ 15–30 million for Afghanistan, Bangladesh, Brazil, the Democratic Republic of the Congo, Kenya, Nigeria, Pakistan and Zimbabwe. The changes for other HBCs are around or below US\$ 10 million. The biggest proportional increases are for Afghanistan, Kenya and Pakistan.

Funding for the general health-service staff and infrastructure used by TB patients during

TABLE 19
Total TB control costs and NTP budgets per patient, high-burden countries, 2006

	2006 (US\$)			CHANGES FROM 2002 (FACTOR ^a)		
	FIRST-LINE DRUGS BUDGET	NTP BUDGET	TOTAL COST	FIRST-LINE DRUGS BUDGET	NTP BUDGET	TOTAL COST
1 India	10	43	75	1.0	1.3	1.3
2 China	20	234	234	1.1	1.8	1.8
3 Indonesia	32	192	209	1.0	1.6	1.5
4 Nigeria	26	221	352	0.5	1.7	1.3
5 South Africa	—	—	980–1200	—	—	—
6 Bangladesh	16	106	141	0.7	1.3	1.1
7 Pakistan	32	178	230	0.5	3.9	2.3
8 Ethiopia	34	52	98	1.3	1.2	1.5
9 Philippines	40	145	219	0.9	1.2	1.1
10 Kenya	32	179	196	0.9	3.5	2.9
11 DR Congo	26	233	403	0.7	2.5	1.5
12 Russian Federation	145	1222	1456	2.0	2.9	2.3
13 Viet Nam	38	247	330	1.1	2.6	1.6
14 UR Tanzania ^b	21	123	240	0.5	1.5	1.2
15 Uganda	35	126	143	0.6	1.0	2.1
16 Brazil	62	401	732	1.4	2.4	1.4
17 Afghanistan	21	551	589	—	1.8	1.9
18 Thailand ^b	25	72	246	0.3	0.9	1.4
19 Mozambique	17	270	355	0.7	3.9	2.2
20 Zimbabwe	35	473	583	1.3	14.8	6.6
21 Myanmar	13	71	91	0.7	3.4	2.0
22 Cambodia	26	182	242	0.6	1.7	1.2
High-burden countries (median value)	26	182	240	0.8	1.8	1.5

— Indicates not available.

^a Calculated as 2006 value divided by 2002 value.

^b Data for Thailand and UR Tanzania are for 2005. Data for Thailand are for the central government only.

clinic visits and hospitalization is assumed to be provided by governments. This assumption, together with the implicit assumption that health systems have sufficient capacity to support the treatment of growing numbers of patients in 2006, means that the resources available for TB control are estimated to have increased from almost US\$ 900 million in 2002 to US\$ 1.4 billion in 2005 (Figure 31; Table 18). The contribution by HBC governments to the total cost of TB control in 2005 is 75% on average, which is larger than their contribution to NTP budgets. This high average figure conceals important variations among countries; many HBCs are dependent on grants to cover more than one third of the total costs of TB control, or to close large funding gaps (Figure 32). The share of the total costs provided by HBC governments is closely related to average income levels (Figure 33), although India stands out as a low-income country with a high government contribution (78%). For all HBCs, the estimated gap between the funding already available and the total cost of TB control is US\$ 141 million in 2005, i.e. the NTP budget gap reported above.

Further details, including charts that show trends in total TB control costs by line item for each year 2002–2006, are shown in Annex 1.

Budgets and costs per patient

There is much variation among countries in budgets and costs per patient (Table 19). The budget for first-line anti-TB drugs is lowest in India (US\$ 10) and highest in the

Russian Federation (US\$ 145). In most countries, the budget is in the range US\$ 20–35.

The budget per patient, including all line items, is lowest in India (US\$ 43), and is also relatively low in Ethiopia (US\$ 52) and Myanmar (US\$ 71). A total of 8 countries have budgets in the range US\$ 100–200 per patient, 5 in the range US\$ 200–300 and 3 in the range US\$ 400–600 (budgets for South Africa cannot be estimated; that for Thailand is misleading given only partial budget data). The Russian Federation is the only country with a budget above US\$ 1000, for reasons explained above. The total cost per patient treated in 2006 is lowest in India (US\$ 75), below US\$ 100 in Ethiopia and Myanmar, and below US\$ 150 in Bangladesh and Uganda. It is in the range US\$ 200–300 in 8 countries and around US\$ 300–400 in 4 countries. There are 5 countries with much higher costs: Afghanistan, Brazil, the Russian Federation, South Africa and Zimbabwe. Zimbabwe has developed a much more ambitious plan than in previous years, in the context of the GFATM's fifth call for proposals (round five). Afghanistan's relatively high costs reflect the need to rebuild the country's basic infrastructure, as well as a plan for 2006–2010 that incorporates all elements of the new Stop TB Strategy and follows the planning and costing framework used for the Global Plan. Budgets and costs are generally increasing, with a median increase of 80% per patient for budgets and of 50% for total costs.

Further details, including charts that show five per pa-

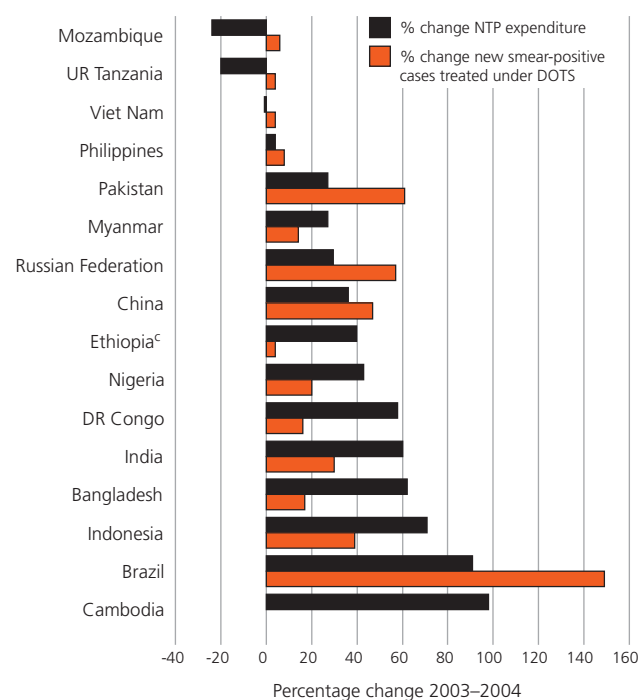
TABLE 20
Budget, available funding and expenditures (US\$ millions),
high-burden countries, 2004

	BUDGET	AVAILABLE FUNDING	EXPENDITURES	AVAILABLE FUNDING AS % OF NTP BUDGET	EXPENDITURES AS % OF AVAILABLE FUNDING
1 India	44	44	40	100	92
2 China	120	108	108	91	100
3 Indonesia	38	38	36	100	93
4 Nigeria	8	8	8	96	100
5 South Africa	—	—	—	—	—
6 Bangladesh	18	17	11	94	67
7 Pakistan	22	6	4	27	63
8 Ethiopia	7	7	7	99	100
9 Philippines	16	16	14	100	86
10 Kenya	13	10	5	75	52
11 DR Congo	12	10	9	84	87
12 Russian Federation	316	264	210	84	80
13 Viet Nam	13	13	11	98	85
14 UR Tanzania	9	7	3	76	45
15 Uganda	4	4	—	83	—
16 Brazil	20	26	26	130	100
17 Afghanistan	4	—	—	—	—
18 Thailand	4	—	—	—	—
19 Mozambique	7	3	2	44	50
20 Zimbabwe	5	3	—	58	—
21 Myanmar	6	2	2	34	80
22 Cambodia	7	5	4	81	81
Total	692	590	500	82^a	80^a

— Indicates not available.

^a Average values.

FIGURE 34
Change in NTP expenditure and change in new smear-positive patients treated under DOTS, 16 high-burden countries, ^{a,b} 2003–2004



^a Expenditure data not available for Afghanistan, Kenya, South Africa, Thailand, Uganda and Zimbabwe.

^b Countries ranked by percentage change in NTP expenditure.

^c Comparison for Ethiopia is with available funding for 2002.

tient indicators (costs, budgets, available funding expenditures and budget for first-line anti-TB drugs) for each year 2002–2006, are provided in Annex 1.

Expenditures in comparison with available funding and case detection

For countries that have received large increases in funding, there are two important challenges: to spend the extra money, and to translate extra spending into improved case detection and treatment success rates.

The ability to translate additional funding into spending can be assessed by comparing expenditures with available funding (Table 20). Complete sets of data on budgets, funds and expenditures for 2004 were available for 17 HBCs. The funding available to NTPs was generally less than their budgets in 2004, though India, Indonesia, Ethiopia and the Philippines had fully-funded budgets and Brazil was able to mobilize funds in excess of its budget. Expenditures were usually less than available funding, particularly in Kenya, Mozambique and the United Republic of Tanzania, where only around 50% or less of available funds were spent. The Tanzanian NTP has noted that a shortage of adequately qualified staff made it impossible to carry out all planned activities in 2004, while Kenya has suffered from delays in the procurement of vehicles and equipment paid for by a GFATM grant. Mozambique also experienced delays in disbursement of funds.

The ability to translate spending into improved case detection can be assessed by comparing changes in expenditures 2003–2004 with changes in the number of patients treated 2003–2004 (Figure 34; 2004 is the most recent year for which both case detection and expenditure data are available). All but one of the countries that increased spending between 2003 and 2004 also increased the number of new smear-positive cases that were detected and treated in DOTS programmes, though the relationship was variable. The substantial increase in expenditure in Cambodia was not matched by any increase in the number of smear-positive cases reported, even though the extra expenditure was for initiatives to improve case detection and cure (notably active case-finding and community-based care). The relationship between increased spending and the number of patients detected and treated in DOTS programmes

TABLE 21
Categorization of high-burden countries according to financial criteria, 2005–2006

CATEGORY	CRITERIA MET	2005	2006 ^a
I	Projected number of cases sufficient to meet 70% case detection target Treatment success rate achieved or close to being achieved for 2003 cohort Budget per patient treated stable or increasing Funding sufficient to reach targets Demonstrated ability to absorb additional funds required to achieve targets	India Indonesia Myanmar Philippines Viet Nam	Brazil India Indonesia Myanmar
IIa	As for I, except funding gap needs to be filled	Cambodia China	Cambodia China <u>Philippines</u> <u>Viet Nam</u>
IIb	As for I, but likely to meet only one of the targets	Brazil South Africa Thailand	South Africa Thailand
IIIa	Funding much improved and no or relatively small reported funding gaps, but projected cases not in line with case detection target, and/or unclear if treatment success target can be achieved	Bangladesh Ethiopia Mozambique	Bangladesh Ethiopia Mozambique Nigeria Russian Federation Zimbabwe
IIIb	Funding much improved but relatively large funding gaps remain and projected cases not in line with case detection target, and/or unclear if treatment success target can be achieved	Pakistan Russian Federation	DR Congo Kenya Pakistan
IV	Funding stable or worsening, and projected cases not in line with case detection target	Afghanistan DR Congo Kenya Nigeria Uganda UR Tanzania Zimbabwe	Afghanistan Uganda UR Tanzania

^a Countries shown in **bold** have moved up one or more categories. Underlined countries have moved down one or more categories.

was similar when expenditures were compared with the number of all new cases treated (data not shown), though in this instance there was a small improvement in Cambodia. Of the 13 countries where an increase in spending could be documented (of the 16 for which sufficient data were available), there were 8 countries where the proportional increase in spending was higher than the proportional yield of new cases detected and treated in DOTS programmes, possibly reflecting the fact that as case detection rises it becomes increasingly difficult to find cases. The five countries where the increase in cases exceeded the increase in spending included Brazil and the Russian Federation, which is not surprising given that most cases are already being detected and treated in the public sector in these countries. It should be easier to transform non-DOTS cases in the public sector into DOTS cases than to find cases previously not being reached by public health systems. The other countries were China and Pakistan, which were both still expanding DOTS to new geographical areas in 2004, and the Philippines (where case detection is already high and where changes in both spending and cases were small).

Budgets, funds and targets

Countries can be categorized according to whether projections of the number of patients to be treated are consistent with meeting the targets for 70% case detection, the likelihood of reaching the 85% treatment success target, the extent to which the budget for the projected number of patients is funded, how the budget per patient has changed through time and whether there is evidence that additional funding can be effectively absorbed (Table 21). In 2005, India, Indonesia, Myanmar, the Philippines and Viet Nam are in the best financial position to reach the targets, while Cambodia and China are well placed to do so if they can make up their funding shortfalls. For the remaining 14 HBCs, the planned programmes of treatment are less than required to meet the targets for case detection and/or it is not clear if they are sufficient to meet the target for treatment success, although 7 of these countries report no, or relatively small, shortfalls in funding. In 2006, the main changes are that Brazil is included in the group that is in the best financial position to meet targets, because of a large increase in the NTP budget and funding. The Philippines and Viet Nam move to the group that needs to make up funding shortfalls to meet the targets, and Kenya, Nigeria, Pakistan, the Russian Federation and Zimbabwe move to one of the two groups with much improved funding.

TABLE 22
Global Fund to Fight AIDS, Tuberculosis and Malaria financing for high-burden countries, as of end 2005

	ROUND	TOTAL BUDGET	GRANT AMOUNT	GRANT AMOUNT	TOTAL DISBURSEMENT	TOTAL DISBURSEMENT		DATE GRANT AGREEMENT SIGNATURE	PROGRAMME START DATE	DATE OF FIRST DISBURSEMENT	TIME BETWEEN BOARD APPROVAL AND SIGNATURE OF GRANT AGREEMENT ^d (MONTHS)	TIME BETWEEN SIGNATURE OF GRANT AGREEMENT AND FIRST DISBURSEMENT (MONTHS)
		(YEARS 1-5) ^a US\$ MILLIONS	PHASE 1 (YEARS 1-2) ^b US\$ MILLIONS	PHASE 2 (YEARS 3-5) US\$ MILLIONS	(AS OF 27 DEC 2005) US\$ MILLIONS	BY END 2005	2005 AS % OF GRANT AGREEMENT					
1 India	1 ^e	9	6	3	6	70	91	Jan. 03	Apr. 03	Jul. 03	9	6
	2	29	7	—	4	53	87	Feb. 06	Apr. 04	Mar. 04	13	1
	3 ^f	15	3	—	0.2	6	58	Oct. 04	Nov. 04	Dec. 04	12	2
	4	27	7	—	0.4	6	37	Feb. 05	Apr. 05	Mar. 05	7	1
2 China	1	48	25	23	32	66	55	Jan. 03	Apr. 03	Apr. 03	9	2
	4	56	28	—	10	34	24	Jun. 05	Jul. 05	Jul. 05	11	1
	5	53	18	—	—	—	—	—	—	—	3+	—
3 Indonesia	1	69	22	47	23	33	48	Jan. 03	Aug. 03	Mar. 03	9	2
	5	69	19	—	—	—	—	—	—	—	3+	—
4 Nigeria	5	68	26	—	—	—	—	—	—	—	3+	—
5 South Africa	1 ^f	20	2	—	2	100	100	Aug. 03	Dec. 03	Dec. 03	16	4
			18	—	18	100	100	Aug. 03	Aug. 03	Dec. 03	16	4
	1 ^f	72	27	—	20	75	99	Aug. 03	Jan. 04	Dec. 03	16	4
	2 ^f	25	8	—	1	16	8	Nov. 05	Nov. 05	Dec. 05	34	1
6 Bangladesh	3	42	11	—	9	81	70	Jul. 04	Aug. 04	Jul. 04	9	1
			5	—	4	73	66	Aug. 04	Sept. 04	Sept. 04	10	1
	5	46	10	—	—	—	—	—	—	—	3+	—
7 Pakistan	2	4	2	—	2	77	99	Aug. 03	Jan. 04	Dec. 03	7	4
	3	10	6	—	2	35	49	Oct. 04	Jan. 05	Nov. 04	12	1
8 Ethiopia	1	27	11	—	11	100	100	Mar. 03	Aug. 03	Aug. 03	11	5
9 Philippines	2	11	3	8	5	43	48	Jun. 03	Aug. 03	Jun. 03	5	1
	5	46	14	—	—	—	—	—	—	—	3+	—
10 Kenya	2	11	5	—	2	50	100	Jun. 03	Nov. 03	Aug. 03	5	2
	5	20	8	—	—	—	—	—	—	—	3+	—
11 DR Congo	2 ^e	8	6	1	7	90	80	Jun. 03	Aug. 03	Jul. 03	5	1
	5	36	15	—	—	—	—	—	—	—	3+	—
12 Russian Federation	4	88	49	—	5	10	4	Oct. 05	Dec. 05	Dec. 05	15	3
	Tomsk	3	11	6	—	4	62	54	Oct. 04	Dec. 04	Dec. 04	12
13 Viet Nam	1	10	3	—	2	89	79	Oct. 03	Jun. 04	Apr. 04	9	6
14 UR Tanzania	3 ^f	87	24	—	10	40	62	Sept. 04	Oct. 04	Nov. 04	11	2
	Zanzibar	3	2	1	—	1	70	62	Sept. 04	Oct. 04	Nov. 04	20
15 Uganda	2	6	5	—	5	98	89	Mar. 04	Mar. 04	Mar. 04	14	0.1
16 Brazil	5	27	12	—	—	—	—	—	—	—	3+	—
17 Afghanistan	4 ^e	3	2	—	1	27	16	Jun. 05	Sept. 05	Aug. 05	12	1
18 Thailand	1	13	7	—	5	68	100	May. 03	Oct. 03	Jul. 03	13	2
19 Mozambique	2	15	9	—	1	14	49	Apr. 04	Jan. 05	Dec. 04	15	9
20 Zimbabwe	5	12	9	—	—	—	—	—	—	—	3+	—
21 Myanmar ^g	2	17	3	—	3	100	49	Aug. 04	Jan. 05	Sept. 04	19	1
22 Cambodia	2	6	3	—	2	96	99	Oct. 03	Jan. 04	Dec. 03	9	2
	5	10	3	—	—	—	—	—	—	—	3+	—
Total		1 129	447	82	196	67^h	64^h				12^h	2^h

— Indicates not applicable.

^a Budgets are for five years, unless otherwise stated.

^b Phase 1 amounts for round 5 grants are estimated as the budget for years 1 and 2 included in proposals.

^c Shows the percentage of the grant period that has elapsed since the programme start date.

^d Board approval dates: 22 April 2002 for round 1, 13 January 2003 for round 2, 15 October 2003 for round 3, 28 June 2004 for round 4 and 30 September 2005 for round 5.

^e Budget is for three years.

^f TB/HIV grant.

^g Grant has been terminated.

^h Median values.

GFATM contribution to TB control

High-burden countries

The GFATM is the single most important source of grant funding for HBCs, and 8 countries (Bangladesh, Democratic Republic of the Congo, Ethiopia, Indonesia, Mozambique, Myanmar, Nigeria and Zimbabwe) are relying on the GFATM to fund more than 25% of their NTP budgets. After five rounds of proposals, the total value of approved proposals (which are almost always for five years) is US\$ 1.1 billion (Table 22). The amounts in the Phase 1 grant agreements (i.e. the grants that cover the first two years of the proposal) total US\$ 447 million.

By the end of 2005, US\$ 196 million had been disbursed. For each country, we can compare the actual and expected rates of disbursement, where the expected rate assumes that disbursements should be spread evenly over the two years following the programme start date (Table 22). Disbursements are generally similar or higher than the expected rate, though disbursement was especially slow in India, Kenya, and Mozambique, and to a lesser extent in Indonesia, Thailand and the United Republic of Tanzania. The main delay in the flow of funds to countries is the time taken to sign the grant agreement after proposal approval; the median time is one year. Once grant agreements are signed, disbursements are usually made within 2 months.

Other countries

The GFATM has approved proposals from 71 countries beyond the 22 HBCs. These proposals have a total value of US\$ 576 million. The amounts included in the two-year grant agreements total US\$ 291 million, of which US\$ 154 million had been disbursed by the end of 2005. A summary table with the same indicators as those shown for the HBCs is available upon request. The regional distribution of GFATM grants for HBCs and other countries is shown in Figure 35.

NTP budgets by WHO region, HBCs and other countries

NTP budgets and sources of funding by WHO region in 2006 are shown for both HBCs and other countries in Figure 36, based on the 73 countries that submitted data of sufficient quality. These countries accounted for almost all of the regional burden of TB in the South-East Asia and Western Pacific regions, for 87% of the regional burden in the Eastern Mediterranean Region, 70% of the regional burden in Africa,¹ 63% of the burden in the region of the Americas, and 54% of the regional burden in the European Region. Collectively, these 73 countries accounted for 85% of the global burden of TB in 2004. Overall, NTP budgets per TB case (estimated annual incidence) were lower for HBCs than for other countries in the African, Eastern Medi-

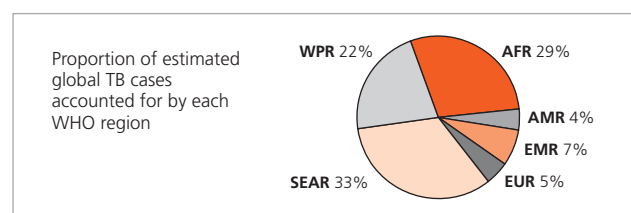
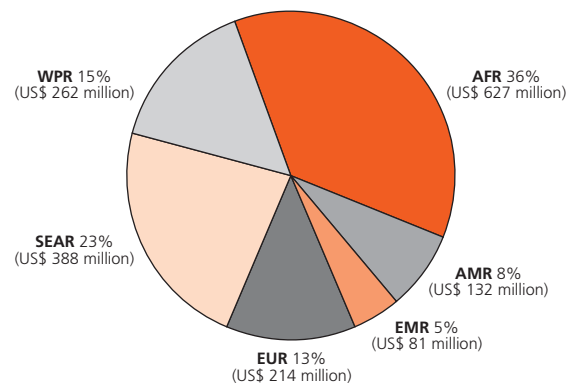
terranean and Western Pacific Regions. In the European, South-East Asia and Western Pacific regions, the budgetary funding gap, expressed as a proportion of the overall budget, was higher in HBCs than in other countries. The NTP budgets reported for 2006 total US\$ 1.3 billion, with a funding gap of US\$ 180 million.

Costs: country reports compared with the Global Plan

The financial data submitted to WHO allow total TB control costs to be estimated for 73 of the 172 countries that are included in the Global Plan in 2006. These 73 countries account for 89% of all new cases arising each year, while the 172 countries included in the Global Plan account for 98% of cases. In 2006, costs based on country reports are similar to those set out in the Global Plan, with the exception of the African Region (Figure 37). The main reason for the difference in the African Region is that the Global Plan includes much higher costs for collaborative TB/HIV activities, as well as higher costs for ACSM. These two categories

FIGURE 35
GFATM funding for TB control by WHO region, as of end 2005^a

Total TB and TB/HIV = US\$ 1.7 billion
Total TB/HIV = US\$ 245 million

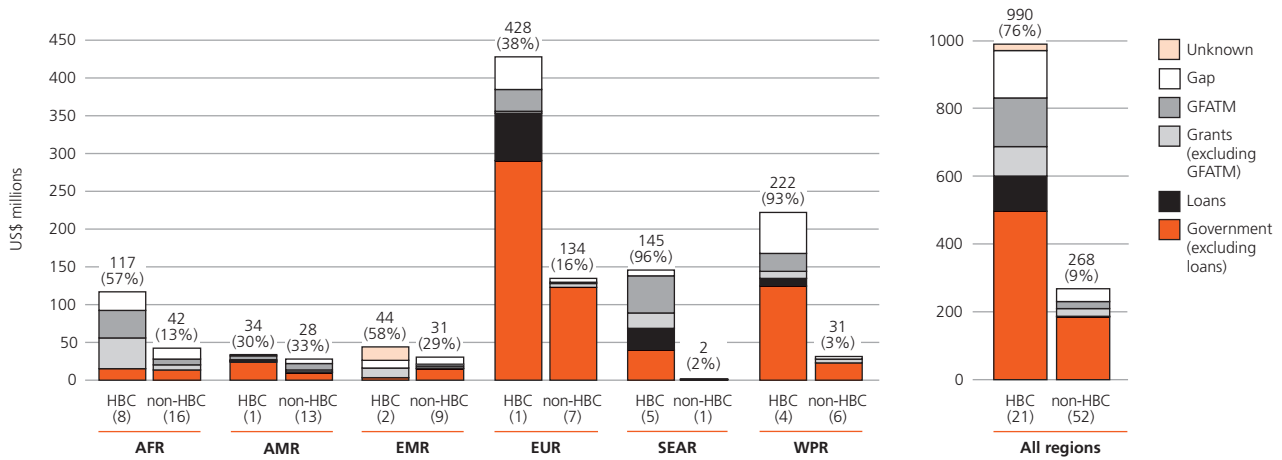


^a Refers to the total budgets approved in rounds 1–5.

¹ If data for South Africa were available, the figure would be 83%.

FIGURE 36

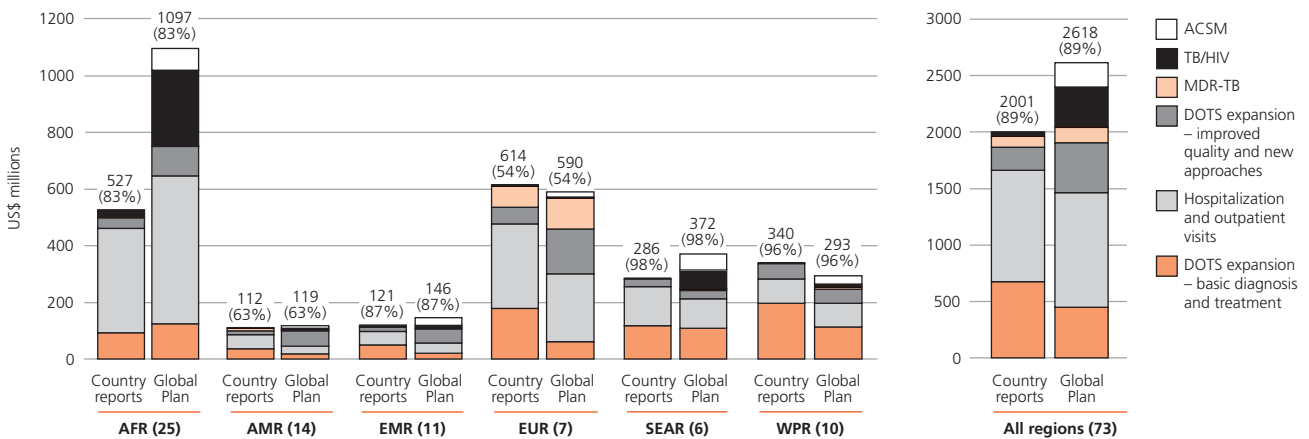
Regional distribution of NTP budgets by source of funding, 21 high-burden countries^a and 52 non high-burden countries, 2006. Numbers in parentheses above bars show the percentage of all estimated TB cases in the region accounted for by the countries included in the bar. Numbers in parentheses in the x-axis show the number of countries contributing to each bar.



^a Data not available for South Africa.

FIGURE 37

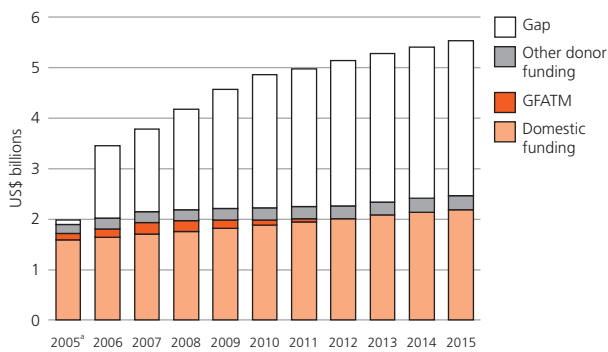
Total TB control costs in 2006 in 22 high-burden countries and 51 other countries^a by region: country reports compared with *The Global Plan to Stop TB, 2006–2015*.^b Numbers in parentheses above the bars show the percentage of all estimated TB cases in the region accounted for by the countries included in the bar. Numbers in parentheses in the x-axis show the number of country reports included.



^a The Netherlands is excluded since it was not included in *The Global Plan to Stop TB, 2006–2015*.

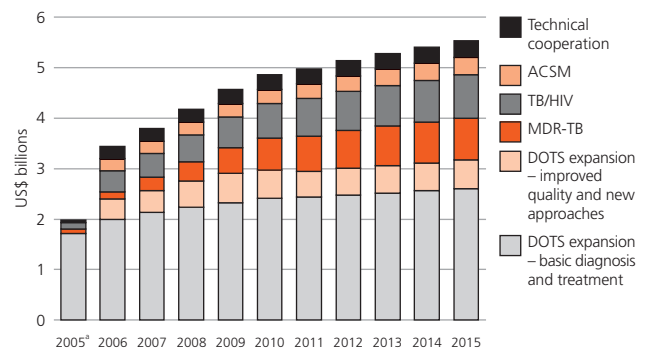
^b For comparison, "Global Plan" bars show costs adjusted for the TB burden accounted for by the countries that provided reports. See Methods for further details.

FIGURE 38
Funding and funding gaps for *The Global Plan to Stop TB, 2006–2015*, excluding research and development



^a Costs for 2005 are based on *The Global Plan to Stop TB, 2001–2005*.

FIGURE 39
Funding needs for *The Global Plan to Stop TB, 2006–2015*, excluding research and development



^a Costs for 2005 are based on *The Global Plan to Stop TB, 2001–2005*.

of investment also explain the difference between country reports and the Global Plan in the South-East Asia Region, though the absolute differences are much smaller. As in the Global Plan, data reported by countries show that by far the highest costs are in the African and European regions, followed by the Western Pacific and South-East Asia regions, with relatively small costs in the Region of the Americas and the Eastern Mediterranean Region.

The funding projections in the Global Plan are based on adding existing GFATM commitments for 2006–2011 to an estimate of likely domestic funding and funding from donors other than the GFATM, with the assumption that domestic and non-GFATM donor financing will be sus-

tained at existing levels. Any increase in the funding required from 2005 onwards that is not covered by the GFATM is then a potential funding gap. As Figures 38 and 39 show, the Global Plan proposes much greater investment in collaborative TB/HIV activities, programmes to address the problem of MDR-TB, ACSM and technical cooperation compared with the first Global Plan (2001–2005), and this extra investment explains almost all of the funding gap. Since TB/HIV and ACSM are part of the possible shortfall in funding in the Global Plan, it is not surprising that country reports that indicate relatively low investment in these interventions for 2006 also report relatively small funding gaps.

Conclusions

Monitoring progress in TB control

Case detection

The Millennium Development Goals, together with the Stop TB Strategy launched in 2006, have broadened the scope and aims of TB control. In 2004, however, the year in which the data for this report were collected, NTPs were focused on achieving the targets of 70% case detection and 85% treatment success under DOTS. From the data presented in this and preceding reports, we estimate that the detection rate of new smear-positive cases by DOTS programmes has continued to accelerate since 2000, reaching 53% globally by the end of 2004. Only six HBCs (Democratic Republic of the Congo, Myanmar, the Philippines, South Africa, Thailand and Viet Nam) had reached the detection target, and the estimate for at least one of these countries (Democratic Republic of the Congo) is uncertain. No WHO region had reached 70% detection by the end of 2004. If the observed rate of acceleration continues, case detection will exceed 60% by 2005, but will fall short of the 70% target.

The acceleration in case-finding since 2000 has been achieved both by improving detection within established DOTS areas and by expanding geographical coverage. Up to 2001, there appeared to be a ceiling on case detection (smear-positive and all forms of TB) at 40–50%: the series of case notifications showed that, although the detection rate by DOTS programmes had increased substantially between 1995 and 2001, the number of patients reported from all sources was more or less stationary. That was because DOTS programmes were recruiting and reporting TB cases that would have been reported anyway. The new data for 2004, when put together with those for 2002 and 2003, show that this ceiling has been breached.¹ This has happened predominantly in the South-East Asia and Western Pacific regions, where DOTS programmes are recruiting TB patients from new sources, including clinics and hospitals in both the public and private sectors.²

The discussion of case detection in this and previous reports has focused on smear-positive cases, largely because the target for DOTS implementation is defined in these terms. Several WHO reports have, however, emphasized that, in the Region of the Americas and in the European Region, many TB cases are reported through the public health system but from outside DOTS programmes. This implies that target rates of case detection could be achieved relatively easily in these two regions by implementing the procedures required under DOTS, including the more frequent use of smear microscopy in the European Region. In other parts of the world, especially the Eastern Mediterranean Region, case detection must be improved by finding

more patients in total, for example by increasing the number and diversity of clinics and hospitals that report TB cases.

Anticipating the development of new and more sensitive diagnostic tools, and pursuing the above comparison of detection rates among regions, we have compared various approaches to estimating case detection. A comparison of 25 European countries in 2004 shows that the proportion of culture-positive cases detected was typically lower than the proportion of smear-positive cases detected. We conclude that culture is seldom used as the principal or sole method of diagnosis in European countries, but rather as a supplementary or complementary method of diagnosis.³

On the other hand, the proportion of all TB cases detected in the European Region (diagnosed by all methods – smear, culture, radiography, clinical examination) was mostly higher than the proportion of smear-positive cases detected. There are two possible explanations: either the reported numbers of TB cases of all forms (numerator of the detection rate) are disproportionately high, or the estimated incidence rates of all forms of TB (denominator) are disproportionately low. The first explanation includes the possibility that smear-negative TB is over-diagnosed; the second implies that smear-negative cases – pulmonary or extrapulmonary – are underestimated. The observation that detection rates for all forms of TB exceeded 100% in several countries does not distinguish between these two alternatives.

Whatever the explanation for the pattern in the European Region, it is different from the pattern in the Region of the Americas, where smear-positive case detection rates were almost always higher than the detection rates for all forms of TB. Understanding the variation among case detection statistics is likely to be important in evaluating TB epidemiology and control in the Region of the Americas and in the European Region, and perhaps elsewhere in the world.

Outcomes of treatment

Although the cohort of patients treated under DOTS has grown from 240 000 in 1994 to 1.7 million in 2003, treatment success has edged closer to the 85% target, falling just short of it in 2003 (82%). The global average has been

¹ The apparent ceiling is discussed in: Dye C et al. What is the limit to case detection under the DOTS strategy for tuberculosis control? *Tuberculosis (Edinb)*, 2003, 83:35–43.

² More information about collaborations between public and private practitioners and institutions in TB control can be found at: www.who.int/tb/dots/ppm/en/index.html.

³ For further data, see Tables 10 and 13 of: EuroTB. *Surveillance of tuberculosis in Europe*. Paris, Institut de Veille Sanitaire, 2003 (www.eurotb.org).

held below the target mainly by the African and European regions, where high proportions of patients fail treatment or die, or are lost from DOTS cohorts. HIV/AIDS and MDR-TB are major obstacles to TB control in Africa and eastern Europe, respectively, but incomplete cohort data from these regions show that programme management also continues to be weak. Eight HBCs had met the 85% target for treatment success based on the 2003 cohort. All of them are in the South-East Asia or Western Pacific regions, with the exception of Afghanistan where the case detection rate by the DOTS programme is relatively low.

Among HBCs, only the Philippines and Viet Nam had met the targets for both case detection and treatment success by the end of 2004. Given the delay in assembling data from around the world, the final assessment of whether these targets were reached globally by 2005, and in which countries and regions, cannot be made until the end of 2006.¹ However, it is possible that the targets were reached in 2005 in the Region of the Americas and in the South-East Asia and Western Pacific regions. The HBCs that are most likely to have succeeded are Cambodia, China, India, Indonesia and Myanmar, besides the Philippines and Viet Nam. However, the 2005 reports from each of the regions and countries that appear to have met the targets will require careful verification.

The progress made in global TB control by the end of 2005 depends greatly on what has been achieved in eight countries that were inhabited by 61% of the patients who were undetected in 2004. For this reason, Bangladesh, Ethiopia, Nigeria, Pakistan and the Russian Federation will be under close scrutiny, in addition to China, India and Indonesia.

Whatever the results for 2005, it is clear that NTPs must continue, from 2006 onwards, to improve case-finding and treatment success within the framework of the new Stop TB Strategy. The targets of 70% case detection and 85% treatment success are milestones, not end-points. They should be regarded as minimum requirements for all countries, all regions and globally.

Epidemiological trends and the impact of TB control

Where DOTS has been intensively implemented in the past five years, we expect to find evidence that incidence is beginning to decline. That evidence may be obscured by the continuing efforts made by NTPs to improve case-finding. However, some countries, or parts of countries, have apparently had high and stable case detection and treatment success rates for at least five years, and yet there are no indications that national case notification rates are falling. Viet Nam is a conspicuous example, and case reports in this country are now being examined for signs that incidence is falling in at least some age groups or in some parts of the country. In other countries, notably India and the Philippines, case notification rates have fallen for some periods

during the past 10 years, but it is not certain that these trends reflect a real decline in incidence (rather than failing surveillance or improved diagnosis, for example) and, if so, whether the decline is the direct result of TB control. To help quantify the impact of DOTS and other factors that influence TB epidemiology, all countries should carry out detailed analyses of trends in case notifications – disaggregated by age, sex, place and other patient attributes – thereby making full use of the wealth of routine surveillance data that are available.

Based on data aggregated at national level, the TB incidence rate was, by 2004, falling or stable in seven out of the nine epidemiologically different regions of the world defined in Figure 5. Incidence rates in eastern Europe (mostly countries of the former Soviet Union) and Africa (countries with low and high HIV rates) increased during the 1990s, but appear to have peaked in Europe around year 2000, and have since fallen. While case notifications are in decline in Europe as a whole, they continue to increase in some eastern European countries, or in parts of these countries. There is no way of predicting when incidence will peak and at what level in African countries, but the rates of increase slowed markedly during the 1990s. Because the epidemic is growing more slowly in the African and European regions, it is also growing more slowly globally. The worldwide incidence of all forms of TB reached 140 per 100 000 population in 2004 (8.9 million new cases, including those who are HIV-positive), and was growing at about 0.6% annually.

Besides the trends in case notifications, changes in TB epidemiology can be measured through sequential population-based prevalence surveys of infection and disease. Such surveys are logistically demanding and costly, though surveys have recently been carried out in Cambodia,² China,³ India⁴ and Indonesia,⁵ and more are planned or under way in Eritrea, Myanmar, Somalia, the United Republic of Tanzania and Viet Nam, among other countries. While these surveys have provided, or are likely to provide, important additional information about the impact of TB control, routine surveillance will continue to be the principal source of information for all countries.

Since few national, population-based surveys of TB prevalence and deaths have been done, and since TB death

¹ The 2007 report in this series will give case detection rates achieved by the end of 2005, and treatment success rates for patients who are enrolled during 2004 and who complete treatment during 2005. These data will form the basis of WHO's declaration to the 2007 World Health Assembly, stating the number of countries and regions that met the 2005 targets.

² National Center for Tuberculosis and Leprosy Control, Ministry of Health, Royal Government of Cambodia. *National TB prevalence survey, 2002, Cambodia. Final report, August 2005.*

³ China Tuberculosis Control Collaboration. The impact of tuberculosis control in China. *Lancet*, 2004, 364:417–422.

⁴ Chadha VK et al. Annual risk of tuberculous infection in four defined zones of India: a comparative picture. *International Journal of Tuberculosis and Lung Disease*, 2005, 9:569–575.

⁵ Soemantri S et al. Reduction in the prevalence of pulmonary tuberculosis in Indonesia, 1980–2004 [in preparation].

registrations are far from complete, we have made indirect estimates of progress towards the targets of halving the 1990 prevalence and death rates (Table 1). Prevalence and death rates, like incidence rates, have been rising in Africa, and more steeply in African countries with the highest rates of HIV infection. They have been falling in five out of the six WHO regions (i.e. excluding Africa), and in six of the nine subregions of the world shown in Figure 5 (i.e. excluding two regions of Africa and eastern Europe). The net effect globally, in our assessment, is that prevalence and death rates have fallen between 1990 and 2004.

The epidemiological forecast for 2005 and beyond is set out in the Global Plan. Even if the targets of 70% case detection and 85% treatment success are narrowly missed in 2005, the recruitment of well over 20 million patients by DOTS programmes in the past 10 years gives enormous momentum to the new plan. The \$56 billion plan demands that 50 million patients be treated between 2006 and 2015, reaching case detection rates that will be greater than 75% worldwide by 2010, and over 80% by 2015. These improvements in the number of patients treated, when implemented with other components of the Stop TB Strategy, should reverse the rise in TB incidence by 2015, and halve prevalence and death rates globally (if not in Africa and eastern Europe). The plan must be fully implemented from 2006 onwards, and the targets for epidemiological impact achieved by 2015, if there is to be any chance of eliminating TB by 2050.

DOTS implementation and planning

DOTS expansion and the Stop TB Strategy

By 2005, DOTS expansion was complete, or close to completion, in most HBCs. At this juncture in TB control, NTPs must reinforce the core elements of DOTS to ensure that essential procedures are carried out to the highest standards, while planning to take on the wider range of activities that are part of the Stop TB Strategy. Many countries have already started to work on the components of the new strategy, and are developing five-year strategic plans for 2006–2010 based on its key components (Table 2).

Laboratory diagnostic services

The performance of laboratory diagnostic services urgently needs to be improved in most HBCs. National standards for laboratory procedures still do not exist in many countries. Laboratory training and supervision are essential, as are schemes to enhance staff motivation. As DOTS expands under the Stop TB Strategy and greater efforts are made, for example to manage TB linked to HIV/AIDS and drug-resistant TB, universal access to quality-assured sputum smear microscopy must remain a priority.

As NTPs attempt to incorporate components of the Stop TB Strategy into their programmes, laboratories must be equipped and staffed to identify patients with smear-nega-

tive and drug-resistant TB. Developing the capacity to culture *M. tuberculosis* and to carry out DST will be a major challenge for many national programmes. Investments to improve laboratory infrastructure, and to ensure biosafety, will be needed.

Human resource development

Staff development, in general, is a critical component of any DOTS programme. The challenge of maintaining a competent and sufficient workforce is compounded by high staff turnover, and by the need to diversify training activities to cover new elements of the Stop TB Strategy, including the management of TB linked to HIV/AIDS, MDR-TB and PPM-DOTS.

Several NTPs are preparing staff development plans in order to improve their capacity. However, the majority of the plans prepared in 2005 deal only with training. Although training is essential, a comprehensive approach is needed to the development of human resources, embracing all aspects of staff development. Neglected topics include continuing education, the assessment of staff numbers and the balance of tasks to be undertaken, the geographical distribution of staff, performance evaluation, salaries and incentives. The HR plan for TB control should be considered as part of the overall HR plan for the health system in any country.

Collaborative TB/HIV activities

Progress has been made in developing collaborative TB/HIV activities, but much remains to be done. There have been very substantial increases in the number of HIV-positive people that are screened for TB, treated for TB if they have active disease and started on IPT if they have only latent infections. There have been equally substantial increases in the number of TB patients that are tested for HIV and that are found to be HIV-positive. However, the number of patients who are dually infected and who receive appropriate treatment for both diseases is still a small fraction of the number in need. The progress made in Malawi and Brazil demonstrates that ART can be provided to many more patients in both low- and middle-income countries, with high and low HIV prevalence.

Recording and reporting remains weak, and many of the countries that have collaborative TB/HIV activities are unable to report fully on the recommended indicators. However, new WHO forms for recording and reporting at district level have recently been published (posted at www.who.int/tb). These forms, which include indicators for collaborative TB/HIV activities, should help to improve the reporting of TB/HIV activities and treatment outcomes for dually-infected patients. It is hoped that all countries will collect these data from 2006 onwards.

While many opportunities to provide appropriate prevention, treatment and care for people who are dually infected with TB and HIV may have been missed, there has

also been substantial progress. Countries with the highest estimated burden of HIV-related TB will need continued financial and technical support. Both TB and HIV control programmes have much to gain if this support can be provided.

Management of drug resistance

The effective management of drug resistance begins with a good system for surveillance and monitoring. While the Global DRS Project (and its associated reports) has been the principal source of information on prevalence and trends in drug resistance, the project has relied on special surveys carried out among TB patients presenting at clinics. Outside these survey areas, many countries routinely assess TB patients for drug resistance, and the numbers of such patients is large compared with the number identified in surveys. These NTP databases are a potentially useful source of information about MDR-TB prevalence in the patient population, as well as about management procedures and treatment outcomes. However, it is unlikely that many countries have comprehensive data on all patients: the TB patients that come to clinics are not a representative subset of all TB patients and, within clinics, the patients selected for DST are more likely to be chosen on clinical rather than epidemiological grounds.

In this first attempt to compile the routinely-collected MDR-TB data, a surprisingly large number of countries reported to WHO (146). For more than 100 of these countries, we were able to compare MDR-TB prevalence rates among new TB patients calculated from the two main sources of data: from routine surveillance and from the Global DRS Project. The results of the comparison support the view that the Global DRS Project provides more reliable epidemiological measures than can be obtained from routine data. Comparing countries, MDR-TB prevalence rates were more variable in the routinely-collected data, and the absolute prevalence rates calculated from the two sources did not agree closely. They were also poorly correlated in general, though there was a clear association between measures for European countries.

The lack of agreement between the two sets of MDR-TB prevalence measures raises more questions about the routinely-collected information than about the data from the Global DRS Project, though both are subject to uncertainty. If the routinely-collected data are to be used for assessing MDR-TB burden and trends, they must be unbiased, and DST must follow recommended laboratory procedures. In European countries, DST is offered to a large proportion of TB patients, thus reducing the risk of selection bias. This could explain the relatively strong association between measures of MDR-TB prevalence for countries in the European Region.

As routine surveillance improves, the Global DRS Project is continuing to collect more reliable data on both new and previously-treated MDR-TB cases, to better assess epide-

miological trends, the link between TB/HIV coinfection and drug resistance, treatment outcomes and susceptibility to selected second-line drugs.

The response to the call for information about MDR-TB patients, together with the observation that all but two HBCs plan to introduce appropriate MDR-TB management within two years, shows that many NTPs are beginning seriously to address the problem of drug resistance. The Global Plan, the new Stop TB Strategy, the 2005 World Health Assembly resolution on sustainable financing for TB control and the new International Standards of TB Care have all encouraged countries to expand their monitoring, diagnosis and treatment programmes for drug-resistant TB.

However, the treatment of drug-resistant TB is still inadequate in many countries. In some, laboratory diagnosis is of poor quality; others lack national policies on MDR-TB management; first- and second-line drugs of uncertain quality are widely available; and large numbers of MDR-TB patients are subject, outside NTPs, to inappropriate diagnostic and treatment procedures. The high proportions of re-treatment cases reported by some NTPs also indicate that drug-resistant TB could be common in some populations where no surveys have yet been done.

There are several ways in which NTPs can improve the management of MDR-TB patients, following the successes of the DOTS-Plus pilot projects. By the end of 2005, a series of DOTS-Plus projects had been successfully completed, showing that the management of MDR-TB is feasible and cost-effective in resource-limited settings. From now on, the management of MDR-TB will be gradually integrated in the routine activities of NTPs. As a result of additional funding for MDR-TB control at country-level, mainly from the GFATM, there has been a rapid increase in the number of countries implementing the procedures recommended for the management of MDR-TB. New guidelines for both DRS and the management of drug-resistant TB will be published in 2006.¹ These are expected to facilitate the integration of the management of MDR-TB into routine TB control programmes.

The GFATM selected the GLC as the preferred mechanism for second-line drug procurement in 2002. Between 2000 and 2005, the GLC approved treatment for almost 13 000 MDR-TB patients, and more than 17 000 MDR-TB patients were diagnosed in 2004 alone. Many more NTPs can and should seek GLC support to obtain quality-assured, low-priced, second-line drugs and technical assistance.

A strategy to expand quality-assured culture and DST services, so as to facilitate DRS and MDR-TB case detection and management, will be developed by WHO, in collaboration with the Supranational Tuberculosis Reference Laboratory Network, and with the Subgroup on Laboratory

¹ *Guidelines for the programmatic management of drug-resistant tuberculosis*. Geneva, World Health Organization, 2006 (WHO/HTM/TB/2006.361).

Capacity Strengthening of the DOTS Expansion Working Group.

WHO and its partners will focus on assisting countries in planning, piloting and scaling-up procedures for the management of MDR-TB, following the new guidelines and in line with the Global Plan. Several HBCs, including China, India, the Philippines and the Russian Federation, have plans and resources to improve MDR-TB management. Staff training and recruitment in these countries will be essential. Training modules based on the new guidelines will be developed, and WHO will conduct regional courses for programme managers and international consultants during 2006. WHO is also working to establish a long-term competitive market for quality-assured drugs by leading a project to prequalify second-line drugs worldwide. The manufacturers of second-line drugs will be strongly encouraged to apply to the prequalification system.

TB, poverty and health systems

A growing number of NTPs, and their financial and technical partners, are considering TB control in the context of poverty. Many TB patients suffer because DOTS programmes are not easily accessible, but the problem is usually greater for poorer people. The decentralization of basic health services, including DOTS, is beginning to alleviate the problem in some countries. In addition, the identification of vulnerable populations, and the specific barriers they face, should make it possible to provide better access to diagnostic and treatment services.

NTPs face a number of challenges associated with weak health systems, including insecure funding, ambiguous regulatory procedures, insufficient staff, weak management capacity, and inadequate information and referral links between poorly coordinated public and private providers. Recognizing these challenges, some NTPs have become more actively engaged in national initiatives to improve health systems, and have attempted to harmonize NTP planning with general health systems planning. To guide such initiatives, the new Stop TB Strategy identifies three areas of action summarized in Table 2.

PPM-DOTS is central to engaging all health-care providers in TB control. As a component of the new Stop TB Strategy, and playing a prominent role in the Global Plan, PPM-DOTS projects are now being tested and evaluated widely in the HBCs. These projects have already had a positive impact on case detection (e.g. in China, India and the Philippines), they have led to improvements in treatment success, and they have made high-quality treatment free-of-charge available to more patients. PPM-DOTS projects will, however, stretch the resources of NTPs, particularly in providing supervision and in maintaining programme quality.

While the majority of HBCs are carrying out community-based TB care in some form, this approach is often not reflected in local health policies. There are different methods

of building and sustaining motivation in communities, and the term “community participation” means different things to different people. Nonetheless, the approach has been shown to improve access to TB care in rural districts in some countries, and has provided significant gains in terms of equity, access, affordability, cost-effectiveness (for both the patient and the health services) and acceptability.¹ Community-based care offers greater scope for involving civil society in TB control, by providing support to patients receiving TB treatment or ART. Community participation can, in principle, contribute to the implementation of collaborative TB/HIV activities. WHO is reviewing the success of community-based TB care globally, and is promoting better methods for integrating community initiatives into the work of NTPs.

Advocacy, communication and social mobilization

As a new component of the Stop TB Strategy, ACSM is now being integrated into some NTP strategic plans, and budgets have been established for some ACSM activities (see below). In many HBCs, ACSM is being introduced in the effort to accelerate progress towards the global targets. However, NTPs need to make greater use of epidemiological and demographic data to identify which ACSM strategies work; poor planning and evaluation will result in ineffective communication and wasted resources. Long-term initiatives for ACSM, as for other activities, are threatened by uncertain financing for NTP budgets.

Financing TB control

There has been a big increase in NTP budgets and a big improvement in the funding available for TB control globally in the past five years. NTP budgets for the 22 HBCs have reached US\$ 990 million in 2006, more than double their level in 2002. When the costs associated with use of general health systems staff and infrastructure are added to NTP budgets, the total estimated cost of TB control in the 22 HBCs is projected to be US\$ 1.6 billion in 2006, compared with around US\$ 900 million in 2002. When costs for a further 52 countries that reported data are added, the total cost of TB control in the 74 countries that account for 89% of the global burden of TB is estimated to be US\$ 2.0 billion in 2006.²

Funding for the NTP budgets of the 22 HBCs has risen to US\$ 830 million in 2006, almost US\$ 500 million more than was available in 2002, but still leaving a gap of US\$ 141 million. Almost all of the extra funding for TB control since 2002 has come from the governments of China and the Russian Federation, and the GFATM. The

¹ *Community contribution to TB care: practice and policy*. Geneva, World Health Organization, 2003 (WHO/CDS/TB/2003.312).

² Total TB control costs are NTP budgets plus the costs of hospitalization and outpatient clinic visits of TB patients that are usually not included in NTP budgets.

GFATM is now the single largest source of donor financing, contributing US\$ 144 million in 2006 compared with a total of US\$ 87 million from all other donor sources. The increase in funding has been accompanied by greater spending. The impact of this spending appears to be variable but, in all countries where spending has risen, the number of cases detected and treated in DOTS programmes has grown as well.

While budgets and funding have increased in almost all HBCs, important variation among countries remains. Our analyses show that in 2005, the year for which the WHA targets have been set, the 22 HBCs fall into four categories. In the first group are five countries (India, Indonesia, Myanmar, the Philippines and Viet Nam) that have budgets consistent with reaching the 2005 targets. These countries are likely to have sufficient funding to support their budgets, and have demonstrated that they have the capacity to spend the necessary funds. According to the surveillance data, the Philippines and Viet Nam had met the targets by 2004, and India, Indonesia and Myanmar are good candidates for doing so by 2005.

The surveillance data suggest that Cambodia and China could also meet the targets by 2005, but these countries fall into the second group on financial grounds because they both have shortfalls in funding. Brazil, South Africa and Thailand appear to have sufficient funding, largely from domestic rather than donor sources, but these countries are unlikely to reach both targets by 2005. Although DOTS coverage is rapidly expanding in Brazil, it may not be possible to diagnose 70% of smear-positive cases under DOTS in 2005. South Africa and Thailand reported treatment success rates well below 85% in 2003.

In the third group are five countries that have considerably improved funding, but whose plans are not sufficient to reach the targets for case detection. These are Bangladesh, Ethiopia, Mozambique, Pakistan and the Russian Federation. The latter two also reported a large funding gap for 2005 (despite the big increase in funding in the Russian Federation).

The seven countries in the final group are all in the African Region, with the exception of Afghanistan. In 2005, these countries had neither the plans nor the budgets required to reach the targets for case detection and treatment success. They reported limited or no improvements in funding in 2005, and large funding gaps.

Between 2005 and 2006, the prospects improved for six countries and deteriorated for three others. Brazil moves to the top group in 2006, following a further large increase in funding and the likelihood that DOTS coverage will improve as a result. The Democratic Republic of the Congo, Kenya, Nigeria, the Russian Federation and Zimbabwe also have substantially more funds but, among these, only the Democratic Republic of the Congo appears to have a chance of meeting the targets in 2006.

Of particular concern are three countries that are likely

to have met the targets in 2005, but whose funding may be lower in 2006. In the Philippines, the existing grants for PPM-DOTS end in 2005 and need to be renegotiated, or new sources of funding must be identified. Viet Nam is the only HBC where the existing funding commitments for 2006 are less than in 2002. Failure to maintain financial support for the NTP in Viet Nam is likely to undermine the substantial achievements of this model DOTS programme. Myanmar could be in a similar situation in 2007. If the decision to terminate the country's GFATM grant agreement is not reversed, funding for the NTP will deteriorate substantially unless other donors can compensate for the shortfall. Still in the worst position in 2006 are Afghanistan, Uganda and the United Republic of Tanzania. These are the only three HBCs for which funding has not significantly improved since 2002, and yet enormous efforts are needed to meet the targets. Of these, the NTP in the United Republic of Tanzania illustrates how a shortage of adequately trained and qualified staff creates difficulties in spending even those funds that are available.

The funding gap of US\$ 141 million identified by all NTPs in the 22 HBCs for 2006 is higher than reported in previous years, reaching US\$ 180 million when 52 additional countries that reported data are included (combined with the 22 HBCs, these countries account for 89% of the global burden of TB). Nonetheless, this is far less than the US\$ 1.4 billion funding gap for 2006 (excluding research and development) shown in the Global Plan. There are two reasons for this large difference. The first and most important is that the Global Plan proposes much greater investment in collaborative TB/HIV activities, particularly in Africa, as well as in ACSM. When added to the necessary investment in the management of MDR-TB, these items explain almost all of the funding gap in the plan. Since TB/HIV control and ACSM account for a big part of the shortfall in funding for the plan, it is not surprising that countries planning small investments in these areas also report relatively small funding gaps in 2006 (investment in the management of MDR-TB is similar in country reports and in the Global Plan). The second reason is that the plan includes a budget for technical cooperation, whereas country budgets typically do not (since they are expected to be part of the budgets of technical agencies). The plan's projected funding gap for technical cooperation in 2006 is US\$ 183 million.

Regarding the management of TB linked to HIV, most of the cost in the Global Plan is for ART to be given to HIV-positive TB patients, and the number of patients to be treated increases annually so as to achieve universal access to treatment by 2010 (the target as defined and set by the G8 and UNAIDS). If NTPs plan to provide ART to fewer TB patients than required to achieve universal access by 2010 – as appears to be the case from reported budgets – then funding gaps will be smaller than those shown in the plan. Furthermore, if all of the budget and funding for ART, including treatment for TB patients, is included in HIV/AIDS

programme budgets (rather than in NTP budgets), then NTP budgets and funding gaps will be much smaller for collaborative TB/HIV activities as a whole. Kenya is an example of a country where ART for TB patients is included within the HIV/AIDS programme budget.

Comparing regional financial estimates in the Global Plan with the financial data reported by NTPs highlights four priorities for further work. The first is to ensure that country and regional plans are consistent, and to assess how the resources required to fully implement these plans can be mobilized in and for each country. The large funding gap shown in the plan for 2006 becomes larger over the period to 2015. To fill the gap would require a 10-fold increase in donor funding, but only a doubling of national government funding. It is therefore unlikely that the funding gap will be filled by donor agencies, and that domestic financing from national governments will be crucial to achieving success in TB control. The data from HBCs show a clear relationship between a country's national income (measured as GNI per capita) and the share of funding for TB control that is provided by governments. However, it is possible that all countries can increase their funding of TB control, particularly those that provide less funding than other countries with the same income level, such as Indonesia, Kenya, Pakistan and Uganda. Funding needs and gaps are highest in the African Region, where TB was declared a regional emergency in 2005; financial assessments of how the required resources can be mobilized are therefore a high priority for countries in Africa.

Second, as part of the process of aligning country plans with regional plans, country budgets from 2006 need to be based on the new Stop TB Strategy. One way to do this would be to use the planning and budgeting framework developed for the Global Plan at country level. This has already been done in Afghanistan for the period 2006–2010. Progress has also been made using this framework in other Eastern Mediterranean countries, following two regional planning workshops in 2005. This preparatory work probably contributed to the evident improvements in the completeness and quality of financial data reported by countries in this region in 2005.

A third area of work is needed to establish how NTPs can help to strengthen health systems as a whole, and what investment in health systems is required to support

expanded efforts in TB control as well as the scaling up of control efforts for other priority diseases such as HIV/AIDS and malaria. The health systems debate is taking place around the following themes: health information systems, the health workforce, financing, supply systems, local management capacity and interactions with the private sector.¹ The Global Plan describes how these themes are considered in the cost estimates. However, improving the accuracy of the cost estimates in the plan requires a clear definition of the actions that are needed to strengthen health systems, what they will cost in each country and a good understanding of their effectiveness.

The fourth priority is to improve the quality of financial data for South Africa and countries in the European Region. The cost of TB control in South Africa cannot be estimated through routine reporting systems because budgets and expenditures related to TB control are integrated into general health facility budgets, and the responsibility for allocating funds is fully devolved to the provinces. While costing studies can be used to provide relevant data, those for TB control in South Africa are outdated. In the European Region, the same issues apply for many countries. However, it should be possible to collect more data for countries of the former Soviet Union, which account for most of the burden of TB in the European Region, and which have systems of TB control similar to those in the Russian Federation.

In summary, there have been major improvements in the financing of TB control since 2002. These improvements have put several HBCs on course to reach the WHA targets by the end of 2006. They include Brazil, Cambodia, China, India, Indonesia, Myanmar, the Philippines and Viet Nam, though funding in the last three countries in this list is currently uncertain or fragile. The Russian Federation illustrates the scale of the problem facing eastern Europe, where costs are high and yet diagnostic procedures and treatment outcomes remain poor. The African Region still faces huge challenges in planning and budgeting, and in raising and spending funds to meet the demands presented by the new Stop TB Strategy and the Global Plan. Unless there is a rapid and vigorous response to the African TB emergency, there is unlikely to be a significant reduction, by 2015, in the burden of TB carried by the people of Africa.

¹ World Health Organization. *The Montreux challenge: making health systems work* [draft discussion paper presented at Glion sur Montreux, Switzerland, 4–6 April 2005].

ANNEX 1

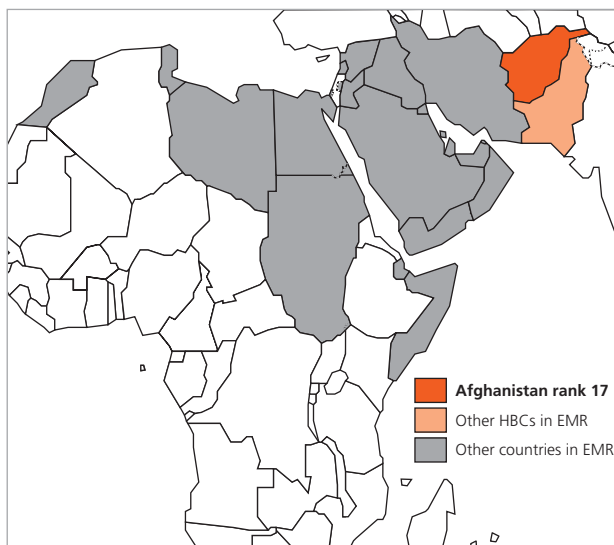
Profiles of high-burden countries

Afghanistan

The NTP in Afghanistan has been treating more TB patients each year since 1997, with high treatment success rates since 1999. This has been achieved despite poor infrastructure and continued insecurity in some areas. The strategic plan for TB control (2006–2010) aims to reach 70% case detection by 2010. To realize this goal, the NTP will need to mobilize funds and to continue to play a strong coordinating role to ensure that the quality of DOTS remains high. A TB prevalence survey planned for 2006 will give a better assessment of the TB burden in Afghanistan.

KEY INDICATORS

Population (thousands) ^a	28 574
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	333
Trend in incidence rate (%/yr) ^c	0.0
Incidence (ss+/100 000 pop/yr)	150
Prevalence (all cases/100 000 pop) ^c	661
Mortality (deaths/100 000 pop/yr) ^c	92
Prevalence of HIV in adult TB patients (15–49yrs, %)	0.0
New TB cases multidrug-resistant (%) ^d	1.8
Previously treated TB cases multidrug-resistant (%) ^d	25
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	64
Notification rate (new ss+/100 000 pop/yr)	29
Case detection rate (all cases, %)	19
Case detection rate (new ss+, %)	19
DOTS notification rate (new and relapse/100 000 pop/yr)	64
DOTS notification rate (new ss+/100 000 pop/yr)	29
DOTS case detection rate (new and relapse, %)	19
DOTS case detection rate (new ss+, %)	19
DOTS treatment success (2003 cohort, %)	86
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	—
Government contribution to total cost TB control (including loans, %)	—
Government health spending used for TB control (%)	—
NTP budget funded (%)	—

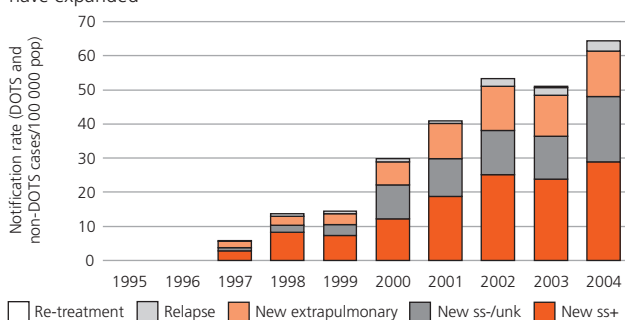


WHO Eastern Mediterranean Region (EMR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

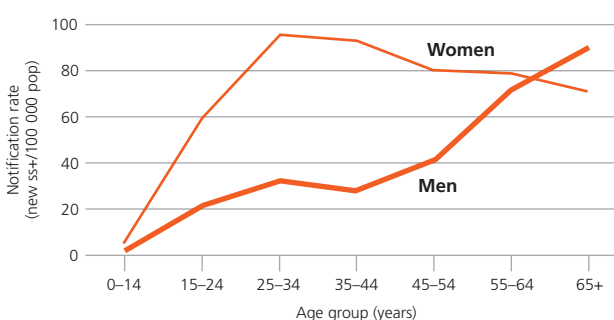
Case notifications

Notifications have increased dramatically since 1997 as DOTS services have expanded



Case notifications by age and sex,^e 2004

NTP treats more female than male TB patients, the reverse of the pattern seen in most countries



^a *World population prospects – the 2004 revision*. New York, United Nations Population Division, 2005.
^b Incidence, prevalence and mortality estimates include patients with HIV. TB burden originally estimated for 1997 assuming an annual risk of TB infection of 3%, based on 1982 national tuberculin survey and the other available data. In absence of data on changes in incidence, the estimated incidence rate is kept constant.
^c 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 826/100 000 pop and mortality 108/100 000 pop/yr.
^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].
^e Age and sex breakdown provided for a subset of new smear-positive cases notified in 2004.
 See Methods for further details.
 pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year; — not available.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Drafted 5-year national strategic plan for TB control (2006–2010) with associated budget, and prepared a one-year operational plan with all stakeholders to achieve 100% DOTS coverage by the end of 2006
- Established national TB board consisting of United Nations organizations, donors, government sector and technical agencies to support TB control policy and planning
- Assessed TB laboratories nationwide and updated laboratory manual for sputum smear microscopy

Challenges

- Ensuring high-quality DOTS services through implementation of basic package of health services (BPHS) by more than 40 national and international NGOs
- Overcoming strong reliance on external aid for NTP operations
- Identifying a reliable source for anti-TB drugs before emergency GDF grant expires
- Reducing workforce turnover, raising salaries and improving technical skills of existing staff
- Establishing a functional laboratory network with NRL

Planned activities

- Expand DOTS to 100% population coverage and integrate TB control activities within all tiers of BPHS
- Accelerate DOTS expansion through adoption of new approaches such as PPM-DOTS and community-based DOTS
- Establish laboratory network with EQA in 2 pilot regions, Herat and Mazar-i-Sharif
- Recruit and hire more than 80 national technical staff at central and provincial health units in line with the new NTP organigram

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Secured funding for collaborative TB/HIV activities through successful GFATM round 2 proposal
- Staff from NTP and NAP trained, in the Islamic Republic of Iran, on collaborative TB/HIV activities
- Worked closely with World Food Programme and WHO to provide food assistance to TB patients and health-care personnel

Challenges

- Improving coordination between the NTP, and NAP and developing government policy on collaborative TB/HIV activities
- Conducting DRS in context of weak laboratory services and insufficient funding
- Establishing a routine information system on chronic TB patients within NTP services
- Providing access to services for scattered populations, and taking into account social, cultural and religious sensitivities

Planned activities

- Develop national guidelines and working group for collaborative TB/HIV activities
- Explore possibility of conducting DRS using laboratory outside Afghanistan
- Continue to work closely with World Food Programme and WHO to provide food assistance to TB patients and health-care personnel involved in TB control

Contributing to health system strengthening

Achievements

- Implemented BPHS throughout the country, to respond to the health needs of the Afghan population, particularly in rural, underserved and vulnerable areas

Challenges

- Improving network of primary health-care facilities, which currently leaves large parts of the country underserved, especially during winter
- Coordinating activities between different donors contracted to provide services: 14 provinces to USAID, 11 to World Bank, 9 to the European Union, and 2 to the Asian Development Bank

Planned activities

- Full integration and implementation of TB care into BPHS with the aim of improving health system performance
- Build the functional capacity of the health sector, organize disease control programmes and standardize delivery of services within primary health-care framework

Engaging all care providers

Achievements

- Collaborated with all major NGO clinics and hospitals for DOTS implementation

Challenges

- Establishing clear strategy to involve all health-care providers in TB control, especially the for-profit private sector extensively used by TB patients

Planned activities

- Prepare plan with support of partners for better involvement of private general practitioners in TB control services

Empowering people with TB, and communities

Achievements

- Provided community TB health education by community health workers in voluntary health posts

Challenges

- Integrating community-based DOTS run by NGOs into NTP
- Planning and implementing ACSM activities in areas where access is made difficult by poor security or by geographical barriers

Planned activities

- Train 10% of community health workers under BPHS on DOTS by the end of 2006 to improve community awareness and support treatment of TB patients
- Develop ACSM plan in 2006–2007 with support of stakeholders and international donors, and with technical support from WHO

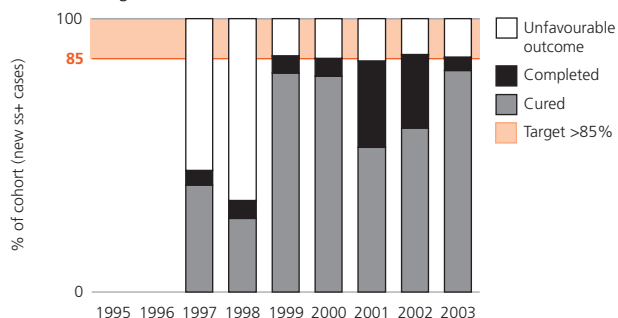
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	—	—	12	11	14	15	12	38	53	68
DOTS notification rate (new and relapse/100 000 pop)	—	—	5.9	14	14	30	41	53	51	64
DOTS notification rate (new ss+/100 000 pop)	—	—	2.8	8.2	7.3	12	19	25	24	29
DOTS case detection rate (new and relapse, %)	—	—	1.8	4.1	4.3	9.0	12	16	15	19
DOTS case detection rate (new ss+, %)	—	—	1.9	5.4	4.8	8.1	13	17	16	19
DOTS case detection rate (new ss+)/coverage (%)	—	—	16	49	36	54	104	44	30	28
DOTS treatment success (new ss+, %)	—	—	45	33	87	86	84	87	86	—
DOTS re-treatment success (ss+, %)	—	—	—	78	84	78	—	—	—	—

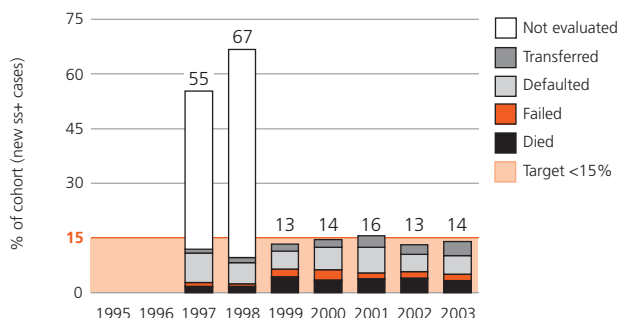
Treatment success, DOTS

Treatment success above or close to 85% target since 1999; proportion confirmed high in 2003 cohort



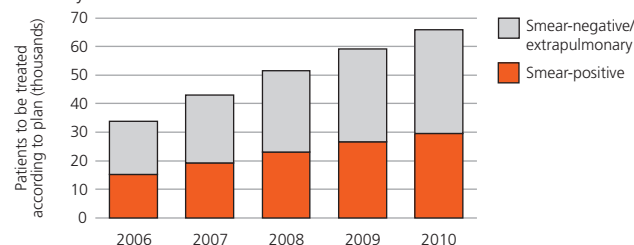
Unfavourable treatment outcomes, DOTS

Since 1999, outcomes recorded for all patients registered



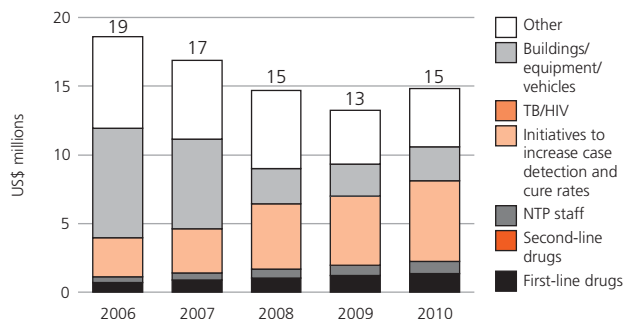
BUDGET AND FINANCE

During 2005, the NTP developed a national strategic plan for TB control for 2006–2010 with an annual budget of US\$ 15–19 million, based on the new Stop TB Strategy and following the methodology of the Global Plan. Much of the budget is for capital investments to establish basic infrastructure including laboratory services. The budget also allows for investment in HR development, improvements in disease surveillance and the introduction of PPM-DOTS, PAL and community-based care. Major resource mobilization efforts are now required, as most of the budget is currently unfunded.



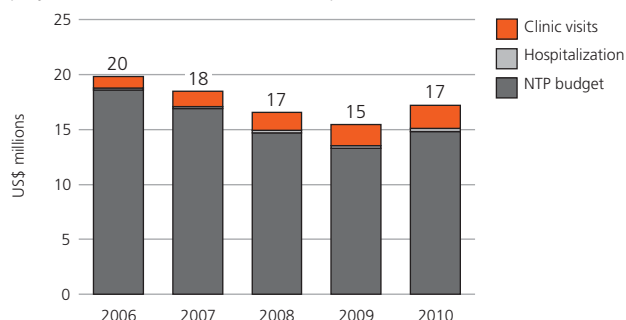
NTP budget by line item

Large budget for capital investments in 2006–2007 as much of the basic infrastructure needs to be established



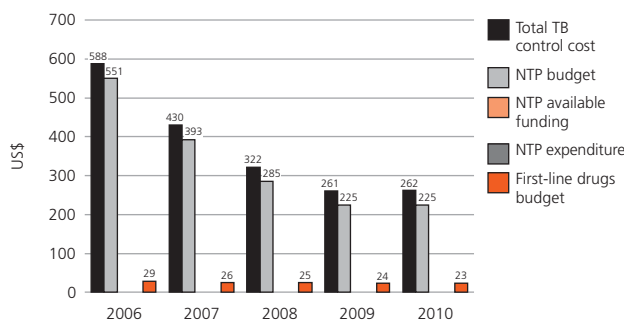
Total TB control costs by line item

NTP budget includes almost all of the costs of TB control, but costs of use of general health system staff and infrastructure increase in line with projected increases in the number of patients to be treated



Per patient costs, budgets and expenditure

High per-patient costs at beginning of plan period due to large capital investments in 2006–2007



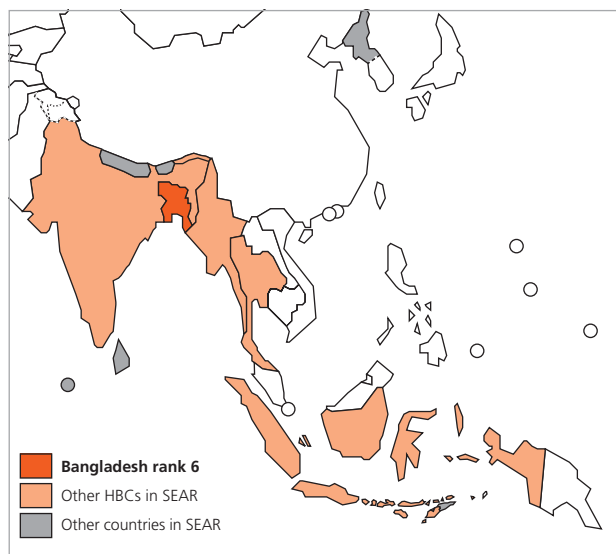
pop indicates population; ss+, smear-positive; yr, year; — not available.

Bangladesh

Although Bangladesh adopted the DOTS strategy in the early 1990s, the estimated case detection rate in 2004 was still well below the 70% target. A doubling of the budget and funds for TB control between 2003 and 2004 has not yet been matched by a similar increase in expenditure, because of delays in disbursement and the postponement of various programme activities. Estimates of TB burden assume that the incidence is falling slowly in Bangladesh, but further surveillance and survey data are urgently needed to test that assumption.

KEY INDICATORS

Population (thousands) ^a	139 215
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	229
Trend in incidence rate (%/yr) ^c	-1.0
Incidence (ss+/100 000 pop/yr)	103
Prevalence (all cases/100 000 pop) ^c	435
Mortality (deaths/100 000 pop/yr) ^c	51
Prevalence of HIV in adult TB patients (15–49yrs, %)	0.1
New TB cases multidrug-resistant (%) ^d	1.6
Previously treated TB cases multidrug-resistant (%) ^d	12
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	71
Notification rate (new ss+/100 000 pop/yr)	45
Case detection rate (all cases, %)	31
Case detection rate (new ss+, %)	44
DOTS notification rate (new and relapse/100 000 pop/yr)	71
DOTS notification rate (new ss+/100 000 pop/yr)	45
DOTS case detection rate (new and relapse, %)	31
DOTS case detection rate (new ss+, %)	44
DOTS treatment success (2003 cohort, %)	85
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	27
Government contribution to total cost TB control (including loans, %)	45
Government health spending used for TB control (%)	6.7
NTP budget funded (%)	75

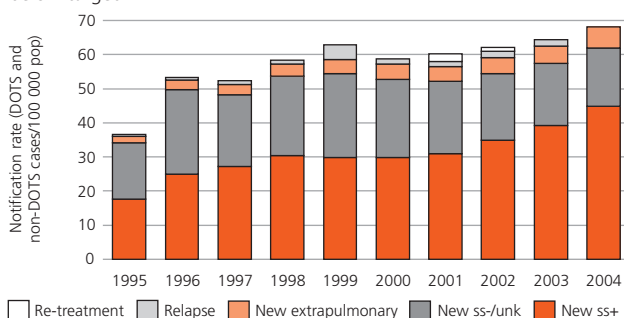


WHO South-East Asia Region (SEAR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

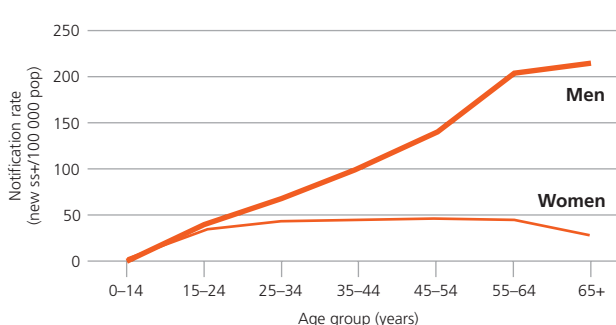
Case notifications

Notifications increasing gradually, but more rapidly for new smear-positive cases (64% of notifications in 2004); case detection rate still well below target



Case notifications by age and sex, 2004

Age-sex distribution of notified cases typical of countries in SEAR



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.
^b Incidence, prevalence and mortality estimates include patients with HIV. Incidence estimated on basis of 40-year old tuberculin survey and local prevalence surveys, and assumed to be declining at 1% per year.
^c 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 640/100 000 pop and mortality 78/100 000 pop/yr.
^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].
^e Age and sex breakdown provided for all notified new smear-positive cases in 2004.
 See Methods for further details.
 pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Continued DOTS expansion in big cities
- Expanded smear microscopy EQA
- Trained health-care staff, laboratory technicians and staff of NGOs at national, district and field levels
- Received approval for GFATM round 5 proposal for TB control activities

Challenges

- Strengthening laboratory network and improving EQA and supervision
- Increasing number and skills of staff

Planned activities

- Implement HR development strategy, field-test TB management and training needs framework, and incorporate results into TB information system
- Establish NRL for culture, DST and training, and expand EQA to cover all laboratories in the country

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Established collaboration with NGOs working on HIV/AIDS to ensure that people with HIV who are found to have TB are referred to the NTP
- Collaborated with key NGOs working for poverty and HIV/AIDS reduction including BRAC and the Network Secretariat for Action on TB and Poverty

Challenges

- Establishing effective coordination between NTP and NAP and developing national guidelines for collaborative TB/HIV activities
- Building infrastructure and technical capacity for culture and DST
- Overcoming access barriers such as costs and distance, and improving awareness of TB services

Planned activities

- Strengthen collaborative TB/HIV activities and develop national guidelines
- Train HIV/AIDS NGOs in management and supervision of treatment of PLWHA with TB
- Develop protocol for DRS and set up pilot initiatives for management of MDR-TB cases
- Further decentralize peripheral laboratories and establish sputum collection outreach centres

Contributing to health system strengthening

Achievements

- Moved successfully from Health and Population Sector Programme to Health Nutrition and Population Sector Programme (HNPS) and policy of one-stop care, with TB control remaining a priority
- Implemented revised policy to decentralize laboratories with population coverage greater than 250 000 with administrative support from Upazilla Health and Family Planning Officers

Challenges

- Obtaining laboratory staff for additional laboratories
- Overcoming procurement and HR development barriers of HNPS
- Coordinating large number of NGOs involved in delivery of health services

Planned activities

- Strengthen collaboration with HNPS for procurement of anti-TB drugs and HR development

Engaging all care providers

Achievements

- Formally involved several large NGOs and a large number of private village doctors in delivering TB services under NTP
- Initiated urban TB control initiatives in Dhaka and other urban areas, with focus on involvement of NGOs, medical colleges and private practitioners
- Increased effectiveness of quarterly review meetings between NTP and NGO staff through preparation of action plans and close follow-up
- Introduced DOTS services in prisons, academic institutions, chest disease clinics, hospitals and some workplaces

Challenges

- Expanding DOTS services to military services and other public providers
- Expanding involvement of private practitioners in both rural and urban areas
- Ensuring sufficient coordination and quality control of non-NTP providers involved in TB control

Planned activities

- Finalize PPM-DOTS guidelines

Empowering people with TB, and communities

Achievements

- Achieved high community involvement; health assistants, assistant health inspectors, community health workers, "shashto shebikas" (female community health volunteers), village doctors, village leaders and cured TB patients all provide DOT
- Disseminated information on DOTS through electronic media, and through interpersonal and group communication

Challenges

- Establishing dialogue with different stakeholders, including policy-makers, politicians, corporate and private sectors, to increase support and political commitment for TB control

Planned activities

- Involve local elites, social and religious leaders, schoolteachers, local media and parliamentarians in TB control
- Introduce comprehensive ACSM activities to increase demand for services for TB diagnosis and treatment

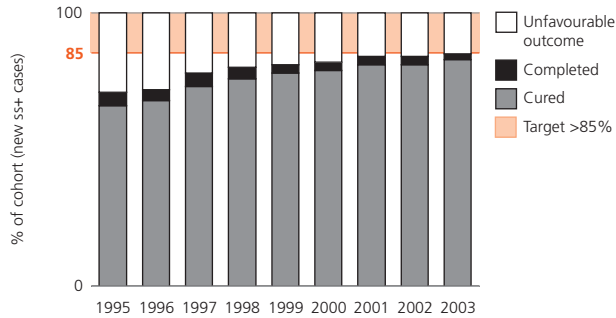
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	41	65	80	90	90	92	95	95	99	99
DOTS notification rate (new and relapse/100 000 pop)	12	26	33	43	56	46	48	54	65	71
DOTS notification rate (new ss+/100 000 pop)	7.9	16	21	27	27	28	29	34	39	45
DOTS case detection rate (new and relapse, %)	4.7	11	14	18	23	19	21	23	28	31
DOTS case detection rate (new ss+, %)	7.0	15	19	24	25	26	28	32	38	44
DOTS case detection rate (new ss+)/coverage (%)	17	23	24	27	28	28	29	34	38	44
DOTS treatment success (new ss+, %)	71	72	78	80	81	83	84	84	85	—
DOTS re-treatment success (ss+, %)	75	57	58	74	72	76	—	69	73	—

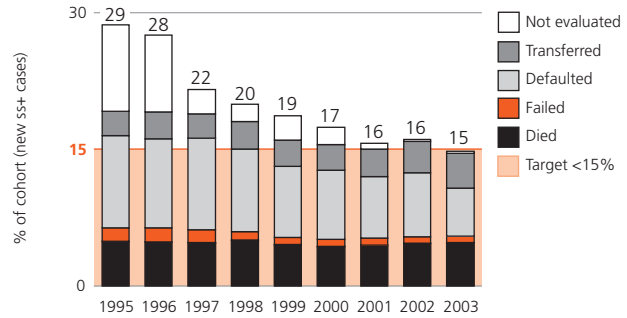
Treatment success, DOTS

Steady improvement in treatment outcomes; target reached in 2004; cure confirmed in an increasing proportion of cases



Unfavourable treatment outcomes, DOTS

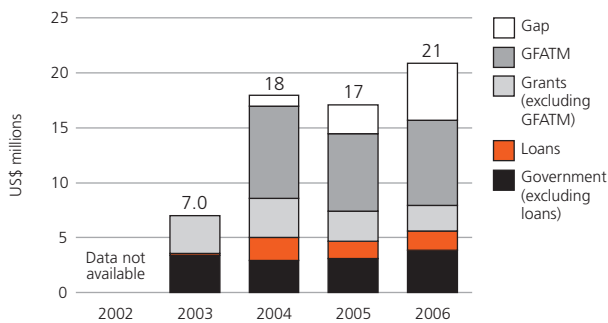
Outcomes recorded for all registered patients; declining proportion of patients defaulting since 1997



BUDGET AND FINANCE

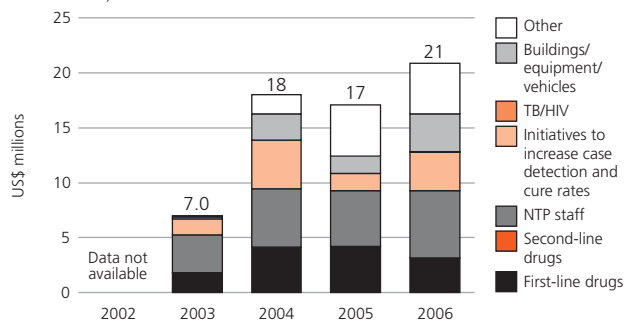
NTP budget by source of funding

Growing budget and funding, but funding gaps remain – mainly for one-year buffer stock of drugs, PPM-DOTS and additional staff



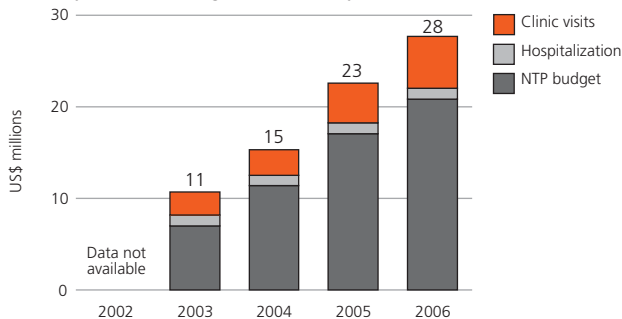
NTP budget by line item

Increased budget after 2003 allows for new equipment/vehicles at district level and initiatives to increase case detection and cure (mainly PPM-DOTS)



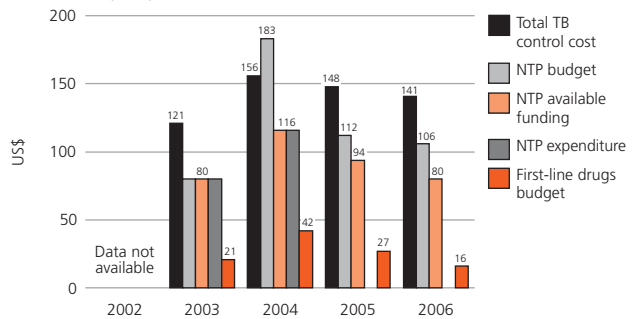
Total TB control costs by line item^a

NTP budget accounts for vast majority of TB control costs as a result of relatively limited use of general health system infrastructure



Per patient costs, budgets and expenditure^b

Expenditures lower than budgets because of disbursement delays and (unrelated) postponement of some activities



^a Total TB control costs for 2003–2004 are based on expenditure, whereas those for 2005–2006 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.

^b NTP available funding for 2004 is based on the amount of funding received, using retrospective data; available funding for 2003 and 2005–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.

pop indicates population; ss+, smear-positive; yr, year; — not available.

Brazil

Brazil's budget for TB control more than doubled between 2002 and 2006, and the additional expenditure has been accompanied by a big increase in case-finding under DOTS. However, the case detection rate of smear-positive cases was still well below the 70% target in 2004, and the impact of the improving DOTS programme on TB burden has not yet been evaluated.

KEY INDICATORS

Population (thousands) ^a	183 913
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	60
Trend in incidence rate (%/yr) ^c	-3.3
Incidence (ss+/100 000 pop/yr)	26
Prevalence (all cases/100 000 pop) ^c	77
Mortality (deaths/100 000 pop/yr) ^c	7.8
Prevalence of HIV in adult TB patients (15–49 yrs, %)	17
New TB cases multidrug-resistant (%) ^d	0.9
Previously treated TB cases multidrug-resistant (%) ^d	5.4
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	47
Notification rate (new ss+/100 000 pop/yr)	23
Case detection rate (all cases, %)	79
Case detection rate (new ss+, %)	89
DOTS notification rate (new and relapse/100 000 pop/yr)	24
DOTS notification rate (new ss+/100 000 pop/yr)	12
DOTS case detection rate (new and relapse, %)	40
DOTS case detection rate (new ss+, %)	47
DOTS treatment success (2003 cohort, %)	83
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	73
Government contribution to total cost TB control (including loans, %)	85
Government health spending used for TB control (%)	0.4
NTP budget funded (%)	94

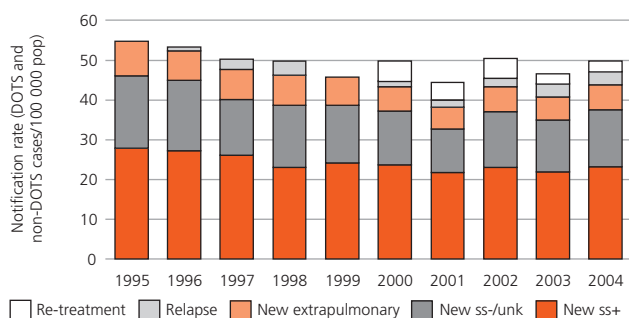


WHO Region of the Americas (AMR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

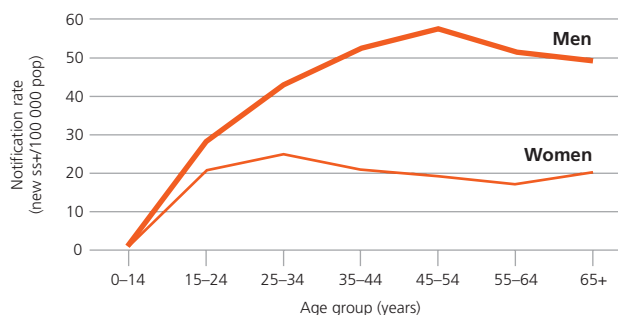
Case notifications

Halt in 20-year decline in notification rate could indicate a similar pattern in incidence or improved case detection



Case notifications by age and sex, 2004

Notification rates highest for women 25–34yrs, and for men 45–54yrs; this contrasts with most countries in AMR, where TB notifications are highest in people over 65



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.

^b Incidence, prevalence and mortality estimates include patients with HIV. Incidence based on assumption of 80% ss+ case detection rate in 1997 (DOTS and non-DOTS). Incidence (new and relapse) assumed to be declining at same rate as average notifications from those countries in region judged to be detecting an unchanging proportion of cases.

^c 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 148/100 000 pop and mortality 13/100 000 pop/yr.

^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].

^e Age and sex breakdown provided for all notified new smear-positive cases in 2004.

See Methods for further details.

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Approved and adopted national TB action plan 2004–2007 at 3 government levels (federal, state and municipal)
- Implemented DOTS expansion workplan in 315 priority municipalities (accounting for approximately 70% of TB burden)
- Received approval for GFATM round 5 proposal for TB control activities.

Challenges

- Increasing monitoring and evaluation capacity
- Strengthening human and financial resources for public health laboratories (LACENs)
- Implementing laboratory information system (SILTB) in all LACENs

Planned activities

- Increase decentralization of the NTP to all health units of the “Programa de Atenção Básica” (Basic Health-care Programme) and implement DOTS in all priority municipalities
- Implement SILTB in LACENs and expand coverage of quality control to all priority municipalities

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Improved coordination between NTP and NAP, created deliberative coinfection committee and discussed national action plan
- Increased HIV testing in TB patients, leading to increased detection of HIV infection, and provided DOTS services to HIV-infected people found to have TB
- Continued DRS in 4 states
- Prioritized “favelas” (shanty towns) for TB control

Challenges

- Improving recording of HIV infection in patients with TB
- Increasing patient adherence to second-line anti-TB drug treatment regimens
- Strengthening TB services for high-risk groups and deprived populations
- Incorporating DOTS into World Bank poverty reduction strategy paper (PRSP)

Planned activities

- Implement culture in all regional reference LACENs
- Implement TB control in high-risk groups (prisoners, indigenous people and the homeless) following the national plan

Contributing to health system strengthening

Achievements

- Developed MoH “Pólos” (permanent teams for HR development, including DOTS training)
- Strengthened health information system (SINAN) as routine surveillance for monitoring TB incidence and mortality
- Expanded coverage of the “Programa Saúde da Família” (Family Health Programme)

Challenges

- Training staff and implementing SINAN in all priority municipalities
- Training of Family Health Programme staff on DOTS strategy

Planned activities

- Improve laboratory network and HR development in all priority municipalities

Engaging all care providers

Achievements

- Trained other public providers (general hospitals, medical college hospitals, prisons and military services) on case-finding and DOTS

Challenges

- Expanding the role of the private sector in TB diagnosis and treatment, including DOT

Planned activities

- Perform a situational analysis of PPM-DOTS services in major metropolitan areas

Empowering people with TB, and communities

Achievements

- Launched national advocacy plan to disseminate information about TB and DOTS
- Worked with the Brazilian TB Control Partnership Forum, involving over 50 civil society organizations in TB control
- Involved state and municipal authorities, TB and TB/HIV patients, religious associations, indigenous populations, the homeless and NGOs in TB control

Challenges

- Sensitizing state and municipal NTP managers on the importance of ACSM and community participation
- Obtaining technical support to develop specific ACSM action plans adapted to local needs
- Identifying financial resources to implement ACSM plan

Planned activities

- Hold a national media TB campaign on TB to increase community awareness of TB control and prevention
- Develop a community participation strategy in the 10 big metropolitan areas and 315 priority municipalities

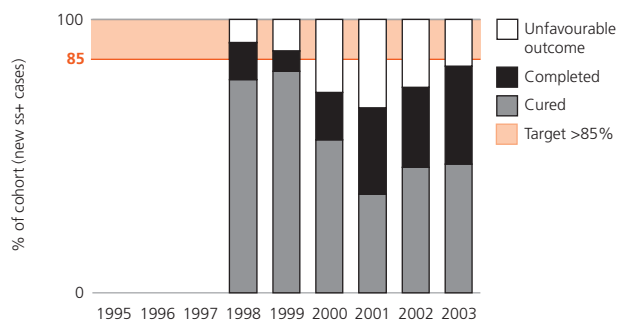
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	—	0.0	0.0	3.0	7.0	7.0	32	25	34	52
DOTS notification rate (new & relapse / 100 000 pop)	—	—	—	2.4	2.4	3.1	4.0	4.9	9.1	24
DOTS notification rate (new ss+ / 100 000 pop)	—	—	—	1.3	1.2	2.3	2.3	2.7	5.0	12
DOTS case detection rate (new & relapse, %)	—	—	—	3.4	3.4	4.5	6.1	7.7	15	40
DOTS case detection rate (new ss+, %)	—	—	—	4.1	4.0	7.6	8.0	9.6	18	47
DOTS case detection rate (new ss+ / coverage (%))	—	—	—	137	57	108	25	39	55	90
DOTS treatment success (new ss+, %)	—	—	—	91	89	73	67	75	83	—
DOTS retreatment success (ss+, %)	—	—	—	—	—	43	47	60	64	—

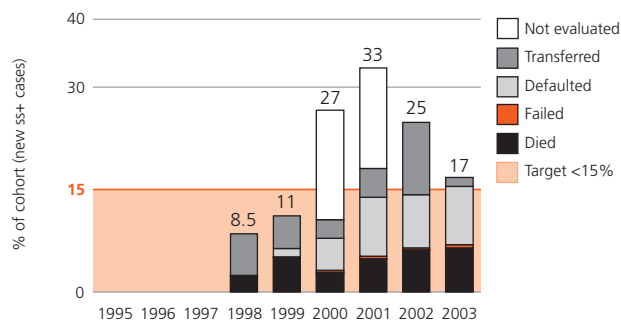
Treatment success, DOTS

Close to target for 2003 cohort of over 9000 new ss+ cases, cure confirmed in about half of successfully treated cases, outcomes recorded for all patients



Unfavourable treatment outcomes, DOTS

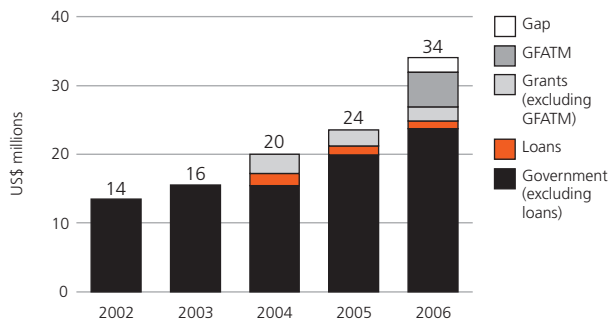
Improved follow-up of transfers (compared with 2002 cohort), default main barrier to success, high death rate may be linked to HIV



BUDGET AND FINANCE

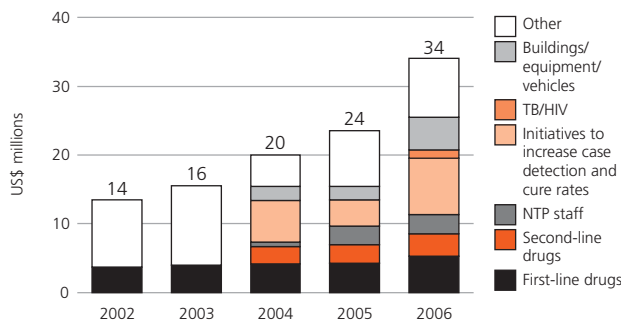
NTP budget by source of funding

Increased funding from government and GFATM, but growing budget gap generates a funding gap in 2006



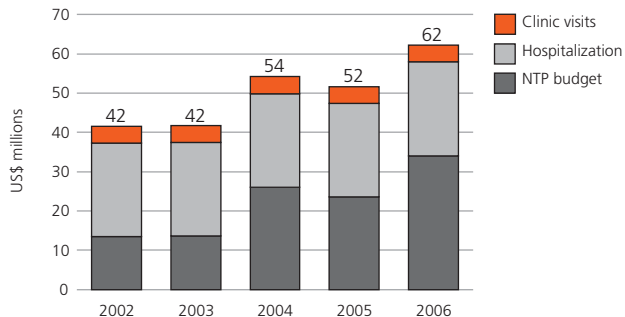
NTP budget by line item

Increased budget for initiatives to increase case detection and cure rates and for TB/HIV and MDR-TB



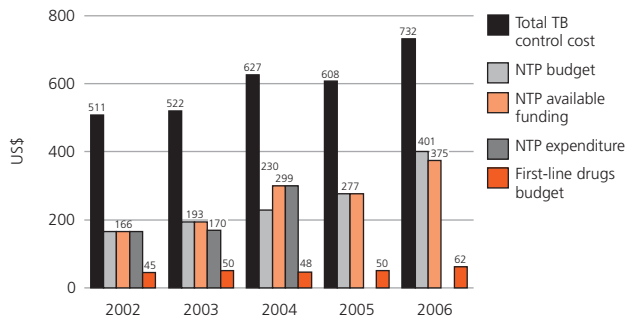
Total TB control costs by line item^a

Use of general health system staff and infrastructure makes up a large share of costs



Per patient costs, budgets and expenditure^b

High cost per patient treated (compared with other HBCs) in this middle-income country



^a Total TB control costs for 2002–2004 are based on expenditure, whereas those for 2005–2006 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.

^b NTP available funding for 2004 is based on the amount of funding actually received, using retrospective data; available funding for 2002–2003 and 2005–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.

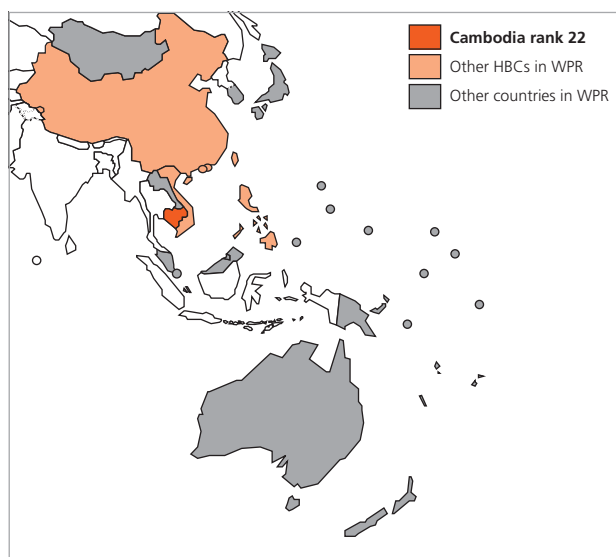
pop indicates population; ss+, smear-positive; yr, year; — not available or not applicable.

Cambodia

Expansion of DOTS to local health-care centres in Cambodia has improved access to high-quality TB care, as reflected by the increasing numbers of TB patients notified and treated each year, with consistently high treatment success. The NTP plans to strengthen laboratory services to meet the growing needs of the programme. Providing better care for TB patients with HIV will require improved coordination with the national AIDS control programme, and additional funding in 2006.

KEY INDICATORS

Population (thousands) ^a	13 798
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	510
Trend in incidence rate (%/yr) ^c	-1.0
Incidence (ss+/100 000 pop/yr)	226
Prevalence (all cases/100 000 pop) ^c	709
Mortality (deaths/100 000 pop/yr) ^c	94
Prevalence of HIV in adult TB patients (15–49yrs, %)	13
New TB cases multidrug-resistant (%) ^d	0.0
Previously treated TB cases multidrug-resistant (%) ^d	3.1
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	223
Notification rate (new ss+/100 000 pop/yr)	138
Case detection rate (all cases, %)	44
Case detection rate (new ss+, %)	61
DOTS notification rate (new and relapse/100 000 pop/yr)	223
DOTS notification rate (new ss+/100 000 pop/yr)	138
DOTS case detection rate (new and relapse, %)	44
DOTS case detection rate (new ss+, %)	61
DOTS treatment success (2003 cohort, %)	93
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	10
Government contribution to total cost TB control (including loans, %)	32
Government health spending used for TB control (%)	12
NTP budget funded (%)	67

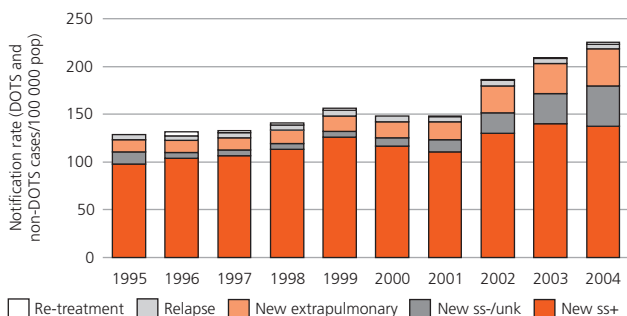


WHO Western Pacific Region (WPR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

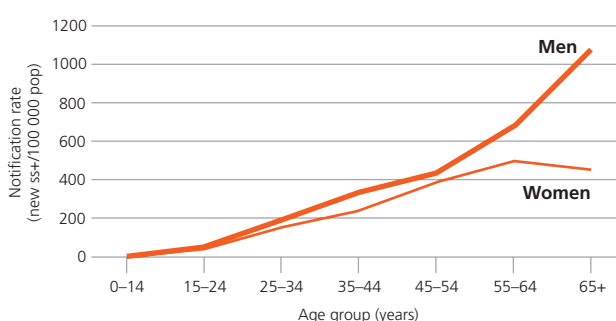
Case notifications

Case detection within DOTS areas increasing, particularly for cases other than new smear-positive



Case notifications by age and sex,^e 2004

More male than female TB patients but difference less marked than in most countries; average ages in men and women similar



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.
^b Incidence, prevalence and mortality estimates include patients with HIV. Estimate of TB burden recently reassessed following national prevalence survey in 2002. Incidence assumed to be declining at 1% per yr as in other countries in WPR.
^c 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 947/100 000 pop and mortality 115/100 000 pop/yr.
^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].
^e Age and sex breakdown provided for all notified new smear-positive cases in 2004.

See Methods for further details,

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Completed expansion of DOTS to 850 health centres and 39 health posts
- Trained all TB health-care workers in 6-month short course treatment regimen
- Improved awareness among general public of availability of services for TB diagnosis and treatment free-of-charge
- Improved mobilization of resources from stakeholders and implementation partners through the interagency coordination committee for TB control

Challenges

- Maintaining high-quality DOTS services in all health-care facilities
- Ensuring sufficient well-trained, motivated laboratory staff
- Overcoming decreased size of health-care workforce caused by imbalance between recruitment and attrition in the past 6 years
- Securing adequate funding for all aspects of DOTS, including laboratories and collaborative TB/HIV activities

Planned activities

- Strengthen technical capacity and improve quality of existing DOTS facilities including laboratories
- Carry out HR development plan to increase size and quality of workforce
- Strengthen supervision and monitoring through the introduction of "facilitative supervision"
- Develop a training curriculum for TB supervisors in collaboration with partners (TBCTA)

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Established national TB/HIV coordination committee and collaborative TB/HIV framework
- Implemented TB/HIV joint action plan in pilot sites and began to scale up
- Conducted the second nationwide survey of HIV seroprevalence among TB patients in January 2005
- Endorsement by the MoH of the Joint Statement by the Directors of NTP and NAP to expedite collaborative TB-HIV collaborative
- Continued collaboration with the World Food Programme to provide food to TB patients
- Established links with UN agencies such as the International Organization for Migration

Challenges

- Further improving coordination between NTP and NAP
- Increasing human and financial resources in the NTP for collaborative TB/HIV activities
- Improving capacity for culture and DST
- Improving NTP technical capacity for MDR-TB management
- Addressing problem of cost of transport to health-care facilities; a barrier for poor patients in remote areas

Planned activities

- Expand collaborative TB/HIV activities and plan round 3 of HIV seroprevalence survey for 2007
- Introduce standardized monitoring and examination forms for TB/HIV
- Introduce DST in selected provinces and plan 2nd national DRS for 2006
- Seek solutions to problems of transport costs for patients
- Conduct operational research on TB and poverty and pilot pro-poor DOTS strategies in collaboration with NGOs

Contributing to health system strengthening

Achievements

- Integrated all TB laboratories into general health-care system
- Fully incorporated TB drug management into general drug management system with collaboration between the central medical store, drug department and NTP
- Conducted clinical training on TB and DOTS for general staff in hospitals

Challenges

- Developing HR through improvements in recruitment, distribution and motivation, and capacity building
- Improving resource coordination including public and private sector and external and national resources

Planned activities

- Train staff through local and international courses

Engaging all care providers

Achievements

- Piloted PPM-DOTS
- Established links with other government facilities, including the National Paediatric Hospital and those under the military, police and prisons
- Received approval of limited grant for PPM-DOTS from GFATM round 5

Challenges

- Expanding the role of the private sector in TB diagnosis and treatment; many TB patients first seek care in private sector

Planned activities

- Expand PPM-DOTS activities in collaboration with partners in selected areas
- Conduct active case-finding in high-prevalence groups (including prisoners)

Empowering people with TB, and communities

Achievements

- Scaled up community-based DOTS projects to 243 sites in collaboration with NGOs
- Developed guidelines for implementation of community-based DOTS
- Increased activities aimed at raising awareness of TB in the community, including use of audio-visual material for ethnic minorities
- Provided training to over 11 000 village health support group members on TB, case-finding, DOT and defaulter tracing
- Prioritized ACSM activities in the NTP strategic plan

Challenges

- Lack of separate ACSM plan or strategy
- Insufficient technical capacity to develop IEC materials
- Inadequate financial resources for expansion of ACSM activities

Planned activities

- Expand community-based DOTS projects
- Conduct a survey to study factors causing delay in accessing services for TB diagnosis and treatment
- Develop a strategy and plan for ACSM

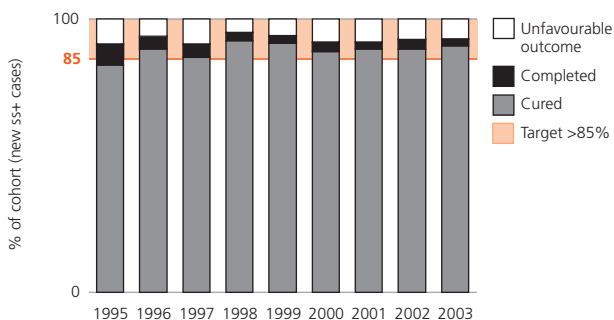
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	60	80	88	100	100	99	100	100	100	100
DOTS notification rate (new & relapse / 100 000 pop)	128	102	131	139	154	148	147	185	209	223
DOTS notification rate (new ss+ / 100 000 pop)	98	83	106	114	126	116	110	130	140	138
DOTS case detection rate (new & relapse, %)	23	18	24	26	29	28	28	36	40	44
DOTS case detection rate (new ss+, %)	40	34	44	48	53	50	48	57	61	61
DOTS case detection rate (new ss+) / coverage (%)	66	42	50	48	53	50	48	57	61	61
DOTS treatment success (new ss+, %)	91	94	91	95	93	91	92	92	93	—
DOTS retreatment success (ss+, %)	92	94	—	95	95	89	93	88	89	—

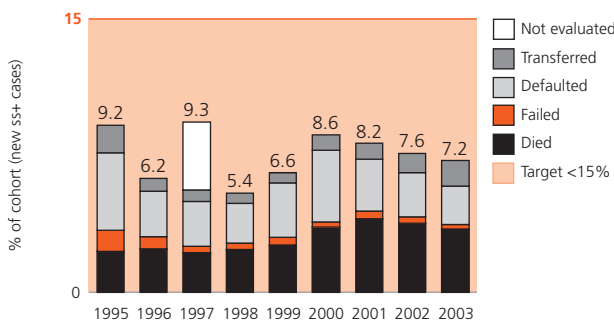
Treatment success, DOTS

Treatment success consistently high, even as cohort size increased to over 19 000 in 2003



Unfavourable treatment outcomes, DOTS

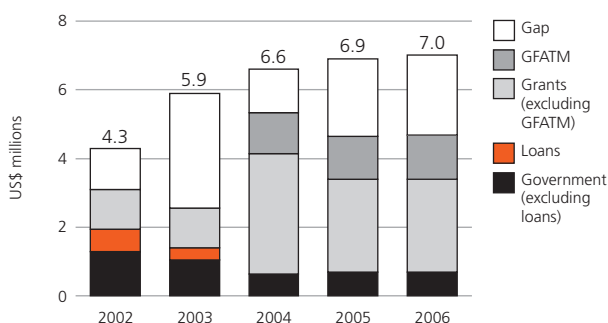
Outcomes provided for all registered cases, proportion of patients defaulting decreasing since year 2000



BUDGET AND FINANCE

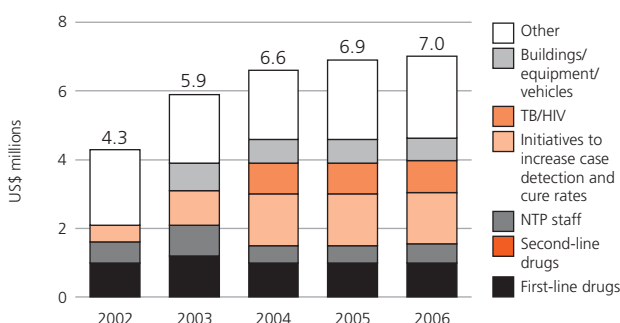
NTP budget by source of funding

Growing budget; funding gaps remain, including for TB/HIV



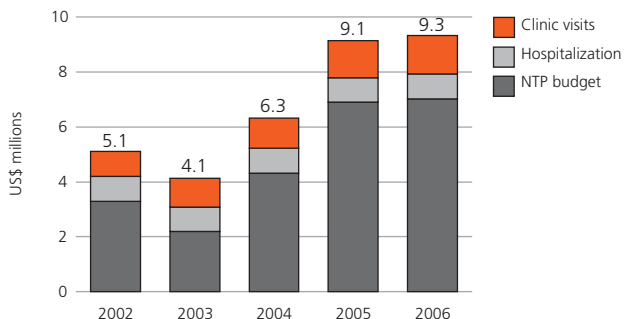
NTP budget by line item

Increased budget for initiatives to improve case detection and cure rates as well as for TB/HIV



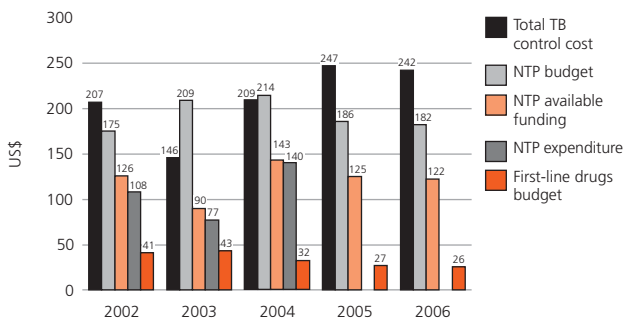
Total TB control costs by line item^a

NTP budget accounts for biggest share of total TB control costs



Per patient costs, budgets and expenditure^b

Big increase in expenditures in 2004 compared to 2002–2003 despite continued fall in cost of first-line drugs



^a Total TB control costs for 2002–2004 are based on expenditure, whereas those for 2005–2006 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.

^b NTP available funding for 2004 is based on the amount of funding actually received, using retrospective data; available funding for 2002–2003 and 2005–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.

pop indicates population; ss+, smear-positive; yr, year; — not available.

China

Substantial additional expenditure on TB control during 2004 was matched by a big increase in the number of patients treated, and China may have reached the target of 70% case detection in 2005. Surveys have shown that TB prevalence is falling, but the potential for TB control will be realized only with a fully-staffed NTP, with full access to treatment for patients everywhere, and with the effective management of HIV coinfection and drug resistance.

KEY INDICATORS

Population (thousands) ^a	1 307 989
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	101
Trend in incidence rate (%/yr) ^c	-1.0
Incidence (ss+/100 000 pop/yr)	46
Prevalence (all cases/100 000 pop) ^c	221
Mortality (deaths/100 000 pop/yr) ^c	17
Prevalence of HIV in adult TB patients (15–49yrs, %)	0.9
New TB cases multidrug-resistant (%) ^d	5.3
Previously treated TB cases multidrug-resistant (%) ^d	27
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	60
Notification rate (new ss+/100 000 pop/yr)	29
Case detection rate (all cases, %)	60
Case detection rate (new ss+, %)	65
DOTS notification rate (new and relapse/100 000 pop/yr)	58
DOTS notification rate (new ss+/100 000 pop/yr)	29
DOTS case detection rate (new and relapse, %)	58
DOTS case detection rate (new ss+, %)	63
DOTS treatment success (2003 cohort, %)	94
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	66
Government contribution to total cost TB control (including loans, %)	66
Government health spending used for TB control (%)	0.6
NTP budget funded (%)	80

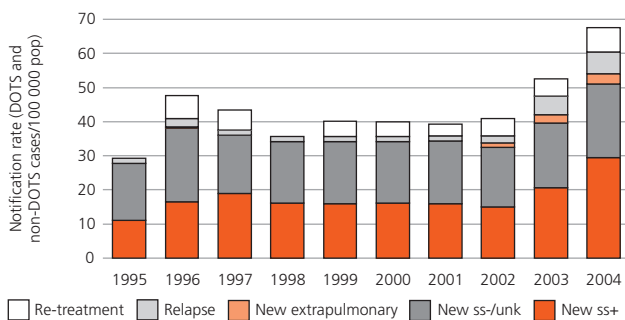


WHO Western Pacific Region (WPR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

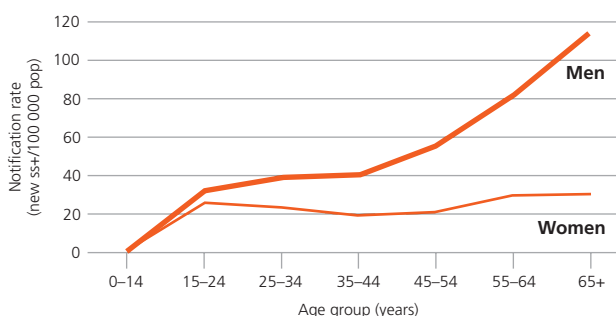
Case notifications

Rapid increase in notifications since 2001 as DOTS expands and detection within DOTS areas increases; new methods of data collection require new methods of data validation



Case notifications by age and sex,^e 2004

Notification rate highest in elderly men



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.
^b Incidence, prevalence and mortality estimates include patients with HIV. Smear-positive incidence estimated on basis of annual risk of TB infection (ARTI) measured in 2000, and assumed to be declining at same rate as ARTI (1% per year).
^c 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 327/100 000 pop and mortality 25/100 000 pop/yr.
^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].
^e Age and sex breakdown provided for all new smear-positive cases notified in 2004.
 See Methods for further details.
 pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Continued to promote political commitment at provincial level to achieve global TB control targets by end of 2005
- Intensified and prioritized management and supervision in 12 of 31 provinces
- Further increased government funding for TB control
- Extended national Internet-based TB reporting system in 2005 to include individual patient data
- Started process of setting up sputum microscopy sites in one third of township hospitals
- Conducted survey to assess the HR for health situation
- Waived treatment fees for smear-negative patients

Challenges

- Sustaining political commitment and further increasing government funding to ensure that needs of the NTP are met
- Increasing the NTP workforce, reducing high staff turnover and strengthening DOTS training
- Improving laboratory capacity
- Improving drug management and procurement systems to ensure continuous drug supply in all counties
- Developing a high-quality workforce for TB control in an under-funded and under-staffed public health system
- Improving quality of TB surveillance system and use of TB data

Planned activities

- Develop NTP 5-year implementation plan, 2006–2010
- Conduct a mid-term review of the progress and constraints in the implementation of the 2000–2010 national TB control plan
- Develop HR development plan for TB

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Established national TB/HIV working group to develop national TB/HIV framework
- Translated WHO guidelines for collaborative TB/HIV activities and policy documents into Chinese
- Developed national policy on screening for TB in people with HIV
- Conducted workshop on MDR-TB to develop strategies for implementation of management of MDR-TB
- Received approval for GFATM round 5 proposal for TB control, including collaborative TB/HIV activities, MDR-TB and TB in migrants

Challenges

- Incorporating collaborative TB/HIV activities into the activities of the NAP and NTP, and ensuring funding for those activities
- Developing a comprehensive strategy for, ensuring adequate funding for and improving technical capacity of NTP staff for MDR-TB diagnosis and treatment
- Targeting TB control activities to reach poor people and high-risk groups, especially rural-to-urban migrants

Planned activities

- Develop and pilot a framework for collaborative TB/HIV activities, diagnosis and treatment of MDR-TB, and control of TB in migrants
- Integrate TB/HIV, MDR-TB, and migrant TB control activities into the NTP 5-year implementation plan, 2006–2010
- Implement GFATM TB project for MDR-TB, TB/HIV and migrant TB control
- Develop and implement specific policies to improve access for the poor including strengthening capacity for TB control in general health system, reducing health fees, and developing patient-friendly options for DOT

Contributing to health system strengthening

Achievements

- Strengthened regulation and reporting system for communicable diseases
- Strengthened collaboration between department for infectious disease control and department of hospital administration

Challenges

- Ensuring TB management according to guidelines across the health system, in context of some adverse fee-for-service arrangements generating inappropriate and/or unnecessary tests and treatment
- Ensuring access to high-quality services in a health-care system financed predominantly by private out-of-pocket spending
- Advocating for equitable health insurance schemes in the general health system

Planned activities

- Improve laboratory infrastructure at all levels of the health-care system

Engaging all care providers

Achievements

- Rapidly scaled up involvement of hospitals and strengthened collaboration between general hospitals and TB dispensaries in case-finding, Internet-based reporting and management of TB patients

Challenges

- Improving the current system of TB reporting from hospitals and the tracing by the NTP of reported cases
- Increasing essential collaboration between the NTP and specialized hospitals that treat a large number of TB patients (e.g. TB hospitals, infectious disease and respiratory care hospitals)

Planned activities

- Continue to strengthen collaboration between hospitals and dispensaries
- Engage specialized hospitals to report and collaborate with NTP

Empowering people with TB, and communities

Achievements

- Increased funding for health promotion and drafted health promotion handbook for TB control
- Performed social assessment in 5 provinces to provide evidence for equitable health promotion

Challenges

- Developing ACSM messages to reach specific vulnerable populations
- Ensuring that health promotion activities are evidence-based
- Improving skills in health promotion at national, provincial, prefectural and county-level institutions

Planned activities

- Improve implementation of new national health promotion strategy
- Perform baseline KAP (knowledge, attitudes and practices) study for TB

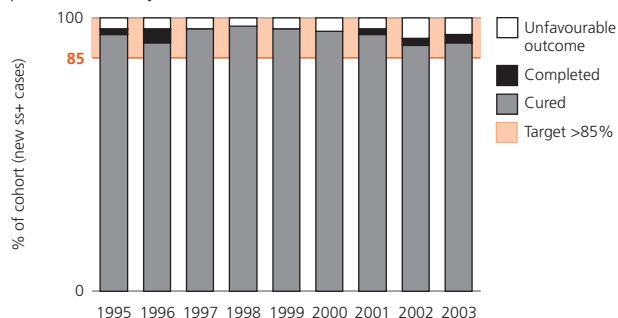
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	49	60	64	64	64	68	68	78	91	96
DOTS notification rate (new and relapse/100 000 pop)	13	21	24	27	27	27	27	30	43	58
DOTS notification rate (new ss+/100 000 pop)	7.4	14	16	15	14	15	14	14	20	29
DOTS case detection rate (new and relapse, %)	12	19	22	25	25	25	26	29	42	58
DOTS case detection rate (new ss+, %)	15	28	32	32	29	31	31	30	43	63
DOTS case detection rate (new ss+)/coverage (%)	30	47	50	50	46	45	45	39	47	66
DOTS treatment success (new ss+, %)	96	96	96	97	96	95	96	93	94	—
DOTS re-treatment success (ss+, %)	92	94	—	95	95	89	93	88	89	—

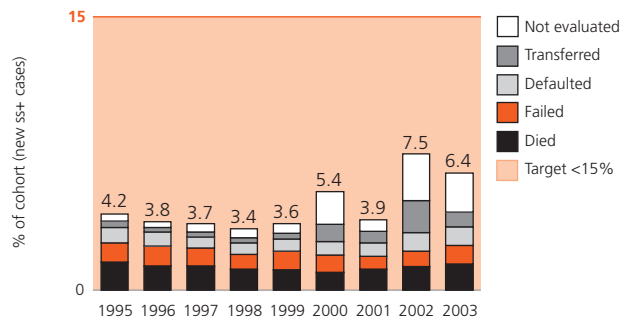
Treatment success, DOTS

High reported treatment success; no distinction between cure and completion in some years



Unfavourable treatment outcomes, DOTS

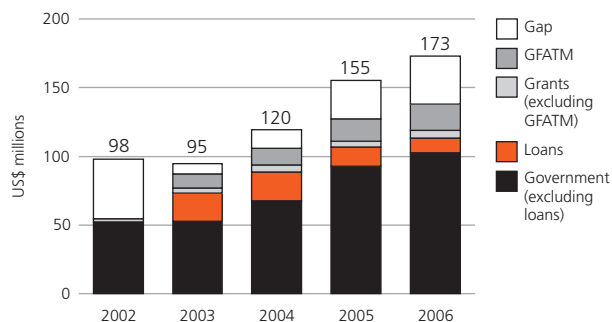
Proportion of cases not evaluated higher since 2000



BUDGET AND FINANCE

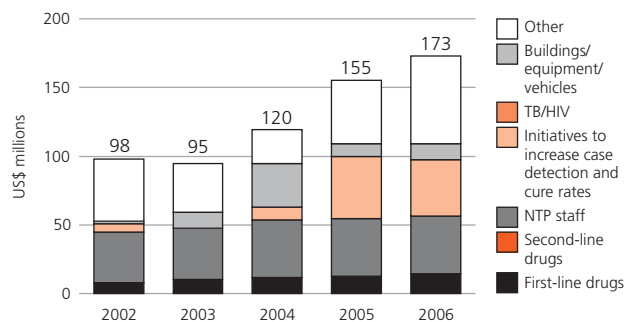
NTP budget by source of funding

Growing budget but funding gaps remain



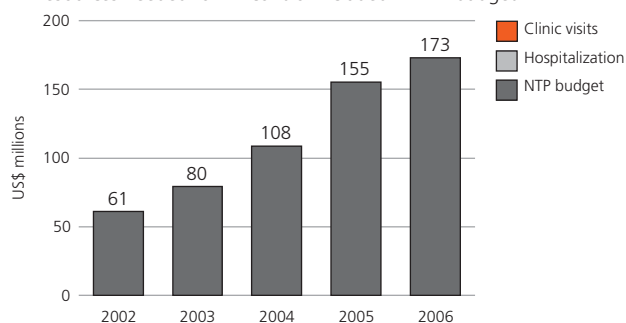
NTP budget by line item

Big increase in budget for initiatives to improve case detection and cure rates since 2004



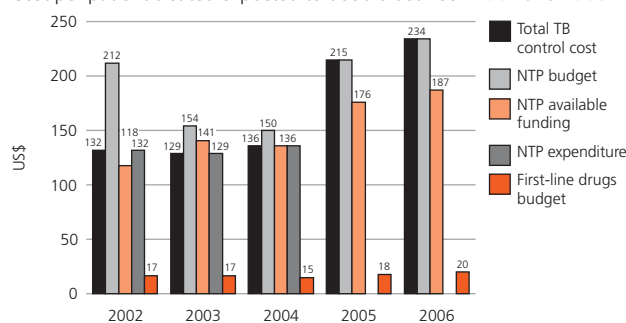
Total TB control costs by line item^a

All resources needed for TB control included in NTP budget



Per patient costs, budgets and expenditure^{b,c}

Cost per patient treated expected to double between 2002 and 2006



^a Total TB control costs for 2002–2004 are based on expenditure, whereas those for 2005–2006 are based on budgets.

^b Estimates of expenditure are based on received funding.

^c NTP available funding for 2004 is based on the amount of funding received, using retrospective data; available funding for 2002–2003 and 2005–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.

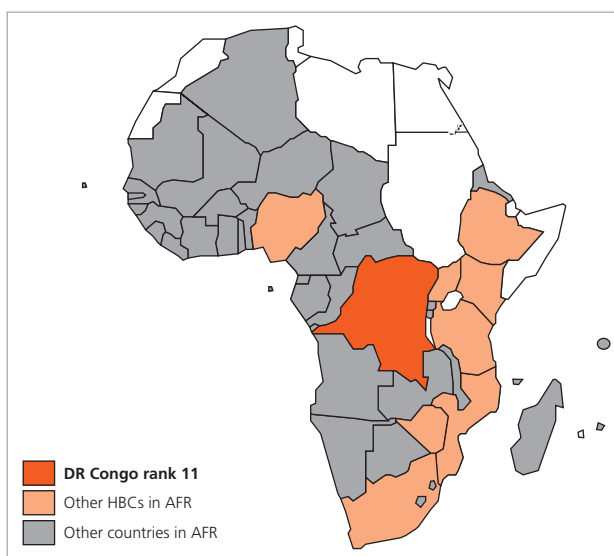
pop indicates population; ss+, smear-positive; yr, year; — not available.

Democratic Republic of the Congo

Case detection had apparently reached the 70% target in 2004, but this assessment is based on uncertain estimates of TB incidence. Improvements in treatment success (83% in 2003) are more persuasively documented. The NTP budget doubled between 2005 and 2006 with funding from the GFATM and other donors, which will make it possible to develop infrastructure, increase staff levels and improve drug supplies. Epidemiological assessments indicate that the prevalence of HIV has been steady for the past 10 years, but there is a need to monitor HIV in TB patients and to ensure that HIV-positive patients receive ART.

KEY INDICATORS

Population (thousands) ^a	55 853
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	366
Trend in incidence rate (%/yr) ^c	2.6
Incidence (ss+/100 000 pop/yr)	159
Prevalence (all cases/100 000 pop) ^c	551
Mortality (deaths/100 000 pop/yr) ^c	79
Prevalence of HIV in adult TB patients (15–49yrs, %)	21
New TB cases multidrug-resistant (%) ^d	1.7
Previously treated TB cases multidrug-resistant (%) ^d	7.6
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	167
Notification rate (new ss+/100 000 pop/yr)	111
Case detection rate (all cases, %)	46
Case detection rate (new ss+, %)	70
DOTS notification rate (new and relapse/100 000 pop/yr)	167
DOTS notification rate (new ss+/100 000 pop/yr)	111
DOTS case detection rate (new and relapse, %)	46
DOTS case detection rate (new ss+, %)	70
DOTS treatment success (2003 cohort, %)	83
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	4.1
Government contribution to total cost TB control (including loans, %)	45
Government health spending used for TB control (%)	—
NTP budget funded (%)	80



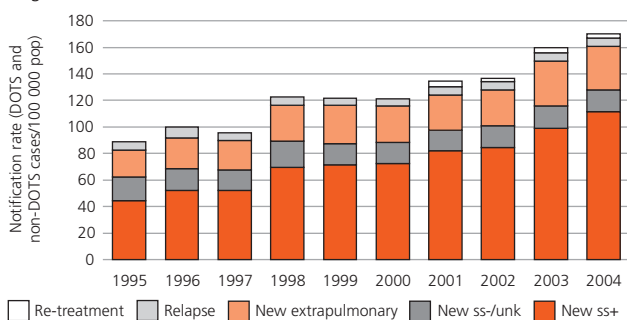
WHO African Region (AFR)

Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

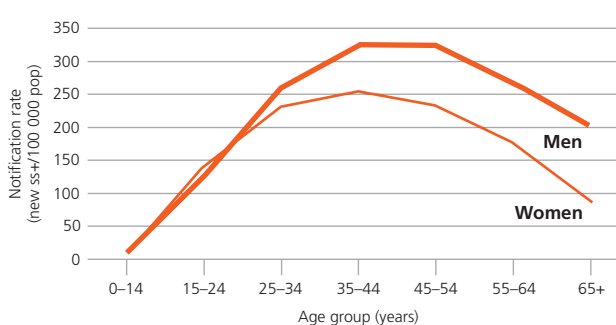
Case notifications

Notification rates increasing since 1994 as DOTS expands; DOTS case detection of smear-positive cases close to target; detection of smear-negative cases low



Case notifications by age and sex, 2004

Age-sex distribution of notified cases typical of countries in AFR



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.

^b Incidence, prevalence and mortality estimates include patients with HIV. Incidence estimate originally based on assumption of 45% ss+ case detection rate in 1997 (DOTS and non-DOTS). Trend in incidence estimated from 3-year moving average of notifications from those countries in region judged to be detecting an unchanging proportion of cases.

^c 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 226/100 000 pop and mortality 32/100 000 pop/yr.

^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].

^e Age and sex breakdown provided for all notified new smear-positive cases in 2004.

See Methods for further details,

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year, — not available.

IMPLEMENTING THE STOP TB STRATEGY¹**Pursuing high-quality DOTS expansion and enhancement****Achievements**

- Participated in external monitoring mission with international partners in September 2004
- Conducted national annual TB and leprosy programme review in February 2005
- Developed the 2006–2010 strategic plan based on the national review recommendations
- Provided microscopes and laboratory consumables to 600 centres
- Revised drug management module and trained staff
- Expanded national partnership of TB agencies and organizations
- Received approval of GFATM round 5 proposal for TB control activities

Challenges

- Ensuring uninterrupted supply of anti-TB drugs and laboratory reagents, and adequate storage and distribution in areas which are difficult to reach or insecure
- Ensuring regular supervision at all levels
- Strengthening technical capacity in intermediate-level laboratories
- Establishing facilities for culture and DST outside Kinshasa

Planned activities

- Finalize HR development plan with external technical assistance
- Expand laboratory network
- Develop 554 new diagnostic centres, 6 new provincial reference laboratories and 3 culture centres

Addressing TB/HIV, MDR-TB and other challenges**Achievements**

- Developed technical norms for collaborative TB/HIV activities and a 3-year national plan
- Established HIV testing for TB patients in 3 provinces (Bas-Congo, Kinshasa and South Katanga)
- Trained health promoters in TB control and education to reach deprived communities

Challenges

- Establishing official collaboration mechanisms between NTP and NAP
- Obtaining resources to support HIV testing for TB patients, ART and treatment of opportunistic infections
- Increasing technical skills for collaborative TB/HIV activities
- Improving recording and reporting information system to capture information on TB/HIV activities
- Abolishing consultation fees, particularly in poor communities
- Improving access to services for remote communities

Planned activities

- Conduct a national joint TB/HIV workshop for provincial programme coordinators
- Conduct DRS in Bas-Congo and Kinshasa
- Apply to the GLC to obtain second-line anti-TB drugs

Contributing to health system strengthening**Achievements**

- Integrated TB control activities into the minimum health-care package at all operational levels

Challenges

- Improving health system infrastructure
- Addressing unequal staff distribution and low salaries

Engaging all care providers**Achievements**

- Trained staff from public services in Kinshasa

Challenges

- Motivating the private sector to be involved in TB control activities that are free of charge
- Overcoming staff shortages in all parts of the public sector

Planned activities

- Establish a PPM-DOTS task force
- Train staff from public and private sectors on DOTS

Empowering people with TB, and communities**Achievements**

- Piloted community participation using community volunteers as community educators, DOT supporters and to trace defaulters and contacts
- Developed a 5-year action plan for social mobilization

Challenges

- Dispelling stigma associated with TB
- Integrating NGOs in ACSM activities
- Obtaining sufficient resources to support ACSM activities

Planned activities

- Develop guidelines for community participation in TB control
- Scale up community participation using existing HIV/AIDS community organizations
- Develop a social mobilization strategy, including the development of health messages adapted to the local context
- Mobilize resources to ensure sustainability of ACSM activities

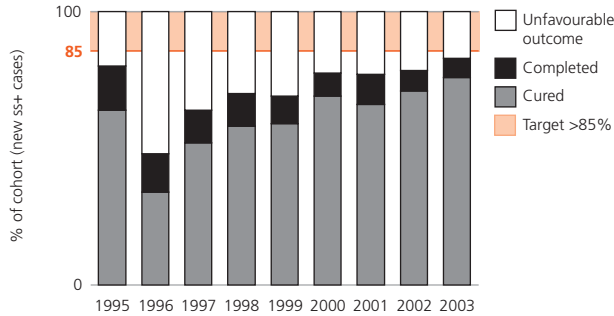
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	47	51	60	60	62	70	70	70	75	75
DOTS notification rate (new and relapse/100 000 pop)	85	100	96	123	122	121	130	134	156	167
DOTS notification rate (new ss+/100 000 pop)	42	52	52	70	71	72	82	84	99	111
DOTS case detection rate (new and relapse, %)	36	40	35	43	40	38	39	39	44	46
DOTS case detection rate (new ss+, %)	42	48	45	56	54	52	57	56	64	70
DOTS case detection rate (new ss+)/coverage (%)	89	94	74	93	88	75	81	80	85	93
DOTS treatment success (new ss+, %)	80	48	64	70	69	78	77	78	83	—
DOTS re-treatment success (ss+, %)	72	33	46	31	67	—	—	67	72	—

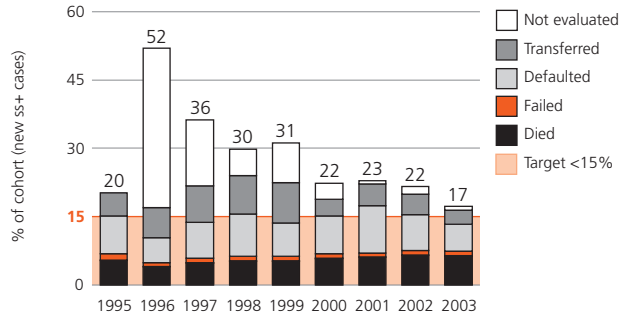
Treatment success, DOTS

Significant improvement in treatment success since 1996; close to 85% target for 2003 cohort



Unfavourable treatment outcomes, DOTS

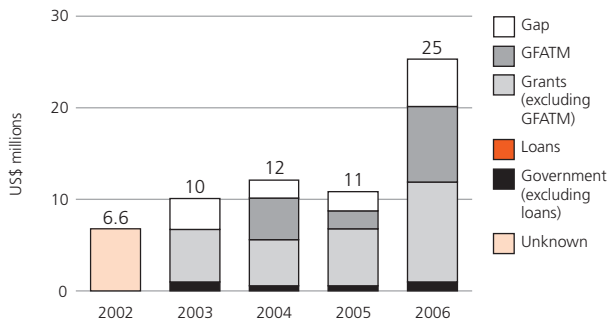
Treatment outcome monitoring is improving; outcomes were recorded for 99% of patients in the 2003 cohort



BUDGET AND FINANCE

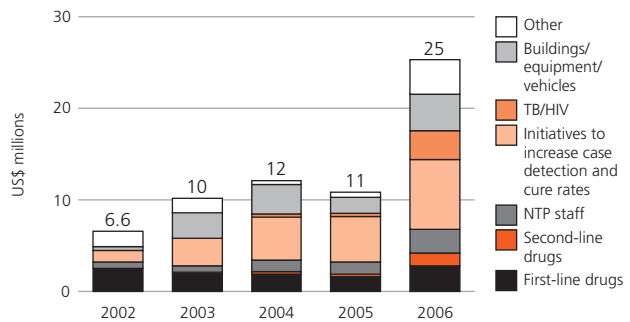
NTP budget by source of funding

Big increase in NTP budget in 2006, with funding more than twice that of previous years following successful applications to GFATM (round 5) and other donors



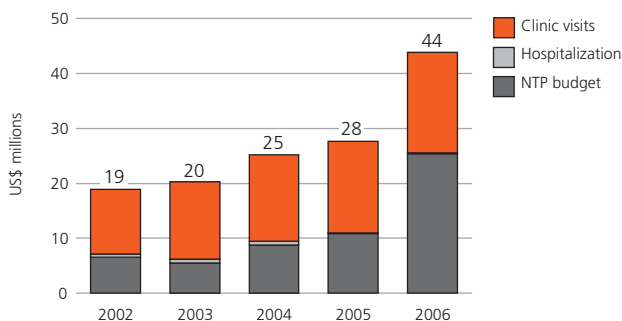
NTP budget by line item

Increased budget allows for implementation of new activities such as TB/HIV, MDR-TB and social mobilization, renovation of health centres and drug stores, and more NTP staff at peripheral level



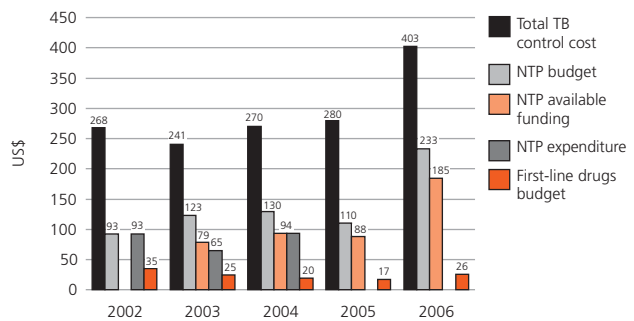
Total TB control costs by line item^a

Use of general health system staff and infrastructure accounts for large share of total TB control costs, though this will fall in 2006 if the NTP budget is fully funded and spent



Per patient costs, budgets and expenditure^b

Increasing total cost per patient treated; NTP expenditure equal to received funding in 2004



^a Total TB control costs for 2002–2004 are based on expenditure, whereas those for 2005–2006 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.

^b NTP available funding for 2004 is based on the amount of funding received, using retrospective data; available funding for 2003 and 2005–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.

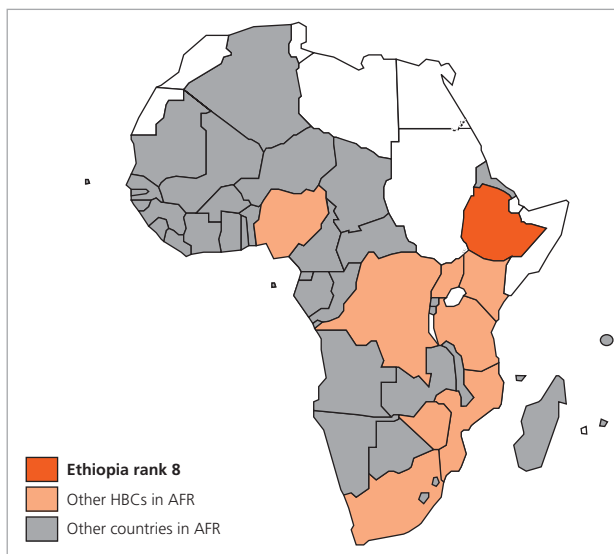
pop indicates population; ss+, smear-positive; yr, year; — not available.

Ethiopia

The number of TB patients treated each year in Ethiopia continues to increase as the NTP addresses the challenge of improving access to DOTS. New and existing health-care workers have been trained, community-based TB care and collaborative TB/HIV activities are being pilot tested and there are plans to strengthen the laboratory system. The cost of TB control per patient is the lowest among African HBCs, and most of the funding for TB control comes from the GFATM.

KEY INDICATORS

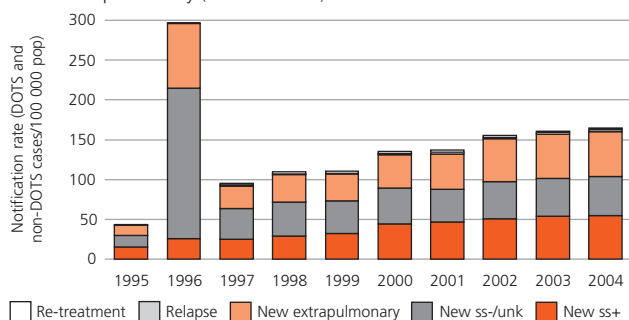
Population (thousands) ^a	75 600
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	353
Trend in incidence rate (%/yr) ^c	2.6
Incidence (ss+/100 000 pop/yr)	154
Prevalence (all cases/100 000 pop) ^c	533
Mortality (deaths/100 000 pop/yr) ^c	79
Prevalence of HIV in adult TB patients (15–49yrs, %)	21
New TB cases multidrug-resistant (%) ^d	1.4
Previously treated TB cases multidrug-resistant (%) ^d	7.1
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	163
Notification rate (new ss+/100 000 pop/yr)	55
Case detection rate (all cases, %)	46
Case detection rate (new ss+, %)	36
DOTS notification rate (new and relapse/100 000 pop/yr)	163
DOTS notification rate (new ss+/100 000 pop/yr)	55
DOTS case detection rate (new and relapse, %)	46
DOTS case detection rate (new ss+, %)	36
DOTS treatment success (2003 cohort, %)	70
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	0.8
Government contribution to total cost TB control (including loans, %)	48
Government health spending used for TB control (%)	9.5
NTP budget funded (%)	100



SURVEILLANCE AND EPIDEMIOLOGY

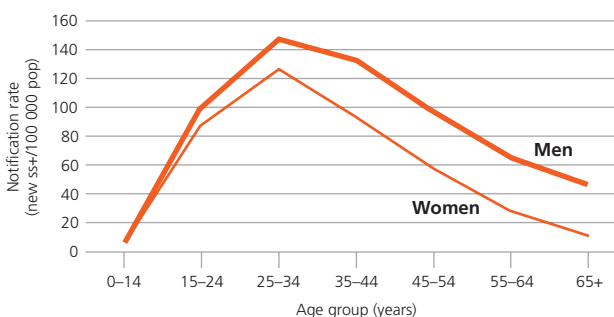
Case notifications

Notification rates for all case types increasing; low proportion of pulmonary cases confirmed by smear (53% in 2004); high proportion of new cases extrapulmonary (35% in 2004)



Case notifications by age and sex, 2004

Age-sex distribution of notified cases typical of AFR – more cases notified in men than in women; rates highest in adults aged 25–34 yrs



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.

^b Incidence, prevalence and mortality estimates include patients infected with HIV. Incidence based on assumption of 50% ss+ case detection rate in 1997 (DOTS and non-DOTS). Trend in incidence estimated from 3-year moving average of notifications from those countries in region judged to be detecting an unchanging proportion of cases.

^c 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 256/100 000 pop and mortality 32/100 000 pop/yr.

^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].

^e Age and sex breakdown provided for all notified new smear-positive cases in 2004.

See Methods for more details.

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Developed TB training modules and course outlines for DOTS training at all levels
- Trained 80 regional trainers for TB and leprosy HR development in 9 regions and 2 city administrations
- Developed regional plans for HR development and started implementation of standardized regional training programmes

Challenges

- Strengthening laboratory capacity, including HR, infrastructure and culture facilities
- Expanding laboratory network

Planned activities

- Implement EQA for smear microscopy; task force already established

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Incorporated collaborative TB/HIV activities in the national programme manual and developed guidelines and training modules
- Officially launched collaborative TB/HIV initiative, and established collaborative TB/HIV activities in 9 pilot sites
- Trained medical coordinators, general health-care workers, matrons and hospital staff on collaborative TB/HIV activities in 17 hospitals in 9 pilot sites
- Integrated efforts with NGOs and other programmes to reach the poor

Challenges

- Improving HR capacity for monitoring and evaluation of collaborative TB/HIV activities
- Adapting recording and reporting system in NAP to collect indicators for collaborative TB/HIV activities
- Establishing adequate infrastructure, trained personnel and funding for MDR-TB diagnosis and treatment
- Overcoming economic, social and cultural barriers that prevent access to services for TB diagnosis and treatment
- Reaching remote and isolated communities, and women

Planned activities

- Incorporate collaborative TB/HIV activities in community-based DOTS guidelines and community-based TB care training modules
- Finalize first DRS and analyse data

Contributing to health system strengthening

Achievements

- Organized national workshop presenting HR development plan, materials and pre-service curricula to incorporate TB and leprosy control activities into a wide range of health training institutions
- Began training new health-care cadre: health extension workers (HEWs)

Challenges

- Avoiding disruptions in reporting and planning during continuing decentralization from zonal health departments to districts
- Developing mechanisms for training, retaining and motivating frontline health-care workers

Planned activities

- Continue training and provide supportive supervision to HEWs in TB and TB/HIV and involve them in community-based TB care

Engaging all care providers

Achievements

- Established technical committee (including MoH and representatives from national and international training institutions) to review TB, TB/HIV and leprosy curricula
- Conducted DOTS workshop for private practitioners
- Involved representatives of private practice in development of national TB control policy

Challenges

- Interacting with unregulated private providers, mainly in urban areas

Planned activities

- Form PPM-DOTS working group, recruit PPM-DOTS focal person via IntraHealth NGO, and develop a PPM-DOTS manual and guidelines
- Involve private practitioners in phased implementation of collaborative TB/HIV activities

Empowering people with TB, and communities

Achievements

- Implemented pilot community-based TB care project in 10 districts using community DOT providers (CDPs), who are also involved in health education, case-finding, tracing defaulters and reporting deaths

Challenges

- Building ACSM capacity at central level of the NTP
- Educating and training large numbers of recently trained HEWs in ACSM
- Monitoring and evaluating community-based activities

Planned activities

- Evaluate CDP pilot projects, scale up to other areas
- Develop an ACSM national action plan and implement and monitor ACSM activities

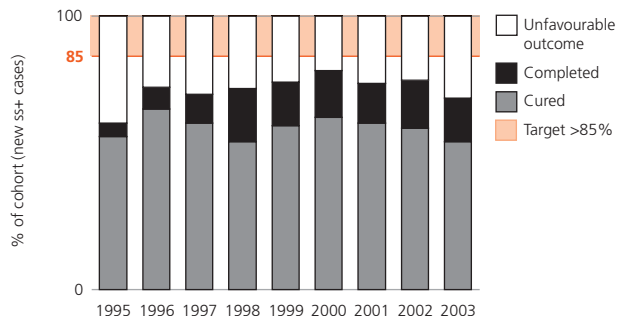
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	39	39	48	64	63	85	70	95	95	70
DOTS notification rate (new and relapse/100 000 pop)	43	68	93	107	108	133	134	153	159	163
DOTS notification rate (new ss+/100 000 pop)	15	21	25	29	32	45	47	51	54	55
DOTS case detection rate (new and relapse, %)	19	28	36	39	37	43	42	46	46	46
DOTS case detection rate (new ss+, %)	15	20	22	24	25	33	34	35	36	36
DOTS case detection rate (new ss+)/coverage (%)	39	52	46	37	40	39	48	37	38	51
DOTS treatment success (new ss+, %)	61	73	72	74	76	80	76	76	70	—
DOTS re-treatment success (ss+, %)	79	71	69	60	74	71	64	60	60	—

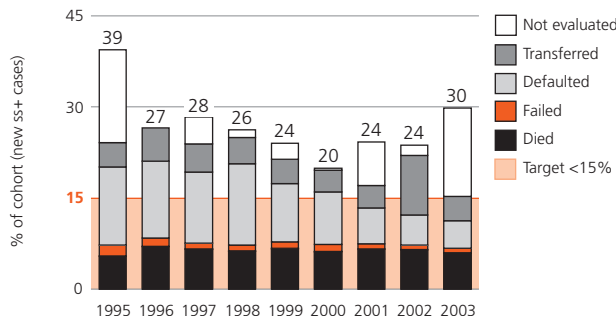
Treatment success, DOTS

Treatment success well below 85% target, about average for AFR but not improving



Unfavourable treatment outcomes, DOTS

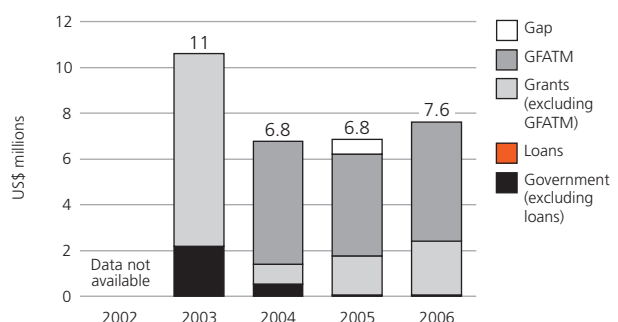
Default rate falling since 1998 but need to evaluate properly outcomes for all patients, including those who transfer



BUDGET AND FINANCE

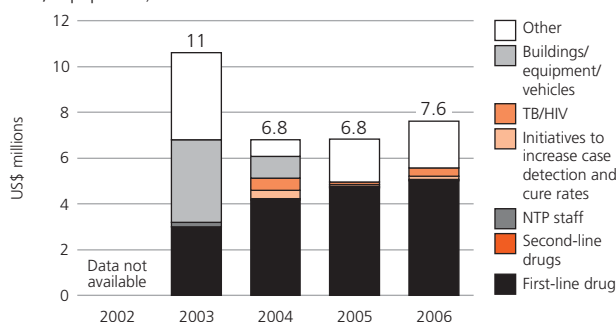
NTP budget by source of funding

NTP funding highly dependent on donor financing, particularly the GFATM since 2004



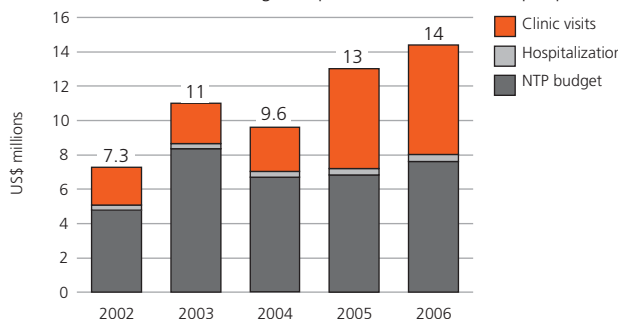
NTP budget by line item

Most of budget since 2004 is for first-line drugs; remainder mostly for routine programme activities, following large capital investments (vehicles, equipment) in 2003



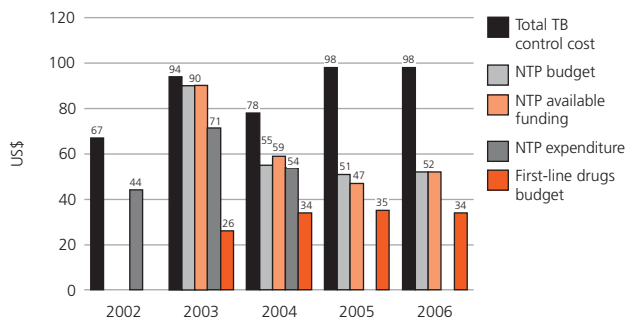
Total TB control costs by line item^a

Increased cost for clinic visits from 2005 caused by increase in estimated number of visits for smear-negative patients (from 10 to 62 per patient)



Per patient costs, budgets and expenditure^b

Cost per patient treated below US\$ 100, lowest for any HBC in AFR



^a Total TB control costs for 2002–2004 are based on expenditure, whereas those for 2005–2006 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.

^b NTP available funding for 2004 is based on the amount of funding received, using retrospective data; available funding for 2003 and 2005–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.

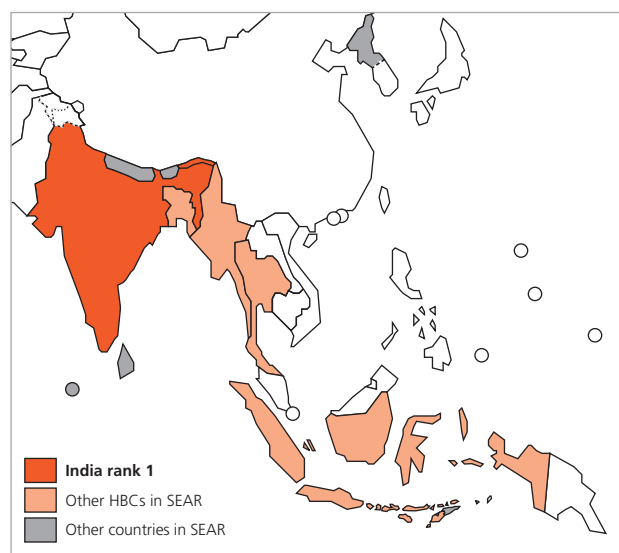
pop indicates population; ss+, smear-positive; yr, year; — not available.

India

India has more new TB cases annually than any other country. Following the sharp growth in spending on TB control and the rapid implementation of DOTS, India reached 57% case detection countrywide in 2004, and 70% within DOTS areas. However, there is not yet sufficient evidence from surveillance and survey data to demonstrate that the TB epidemic is nationally in decline. India's challenge is to sustain and improve the quality of DOTS, to expand services to manage MDR-TB and TB linked to HIV, to involve all care providers, and to demonstrate that DOTS is having an impact.

KEY INDICATORS

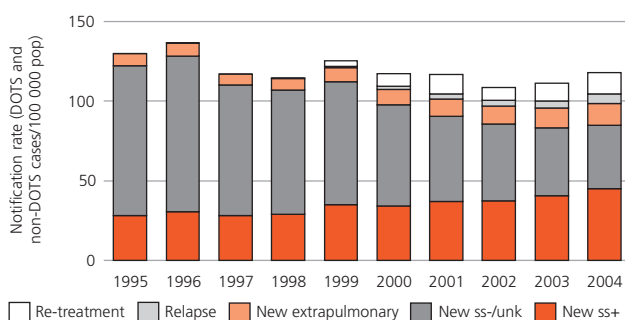
Population (thousands) ^a	1 087 124
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	168
Trend in incidence rate (%/yr) ^c	0.0
Incidence (ss+/100 000 pop/yr)	75
Prevalence (all cases/100 000 pop) ^c	312
Mortality (deaths/100 000 pop/yr) ^c	30
Prevalence of HIV in adult TB patients (15–49yrs, %)	5.2
New TB cases multidrug-resistant (%) ^d	2.4
Previously treated TB cases multidrug-resistant (%) ^d	15
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	105
Notification rate (new ss+/100 000 pop/yr)	45
Case detection rate (all cases, %)	62
Case detection rate (new ss+, %)	60
DOTS notification rate (new and relapse/100 000 pop/yr)	97
DOTS notification rate (new ss+/100 000 pop/yr)	43
DOTS case detection rate (new and relapse, %)	58
DOTS case detection rate (new ss+, %)	57
DOTS treatment success (2003 cohort, %)	86
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	62
Government contribution to total cost TB control (including loans, %)	78
Government health spending used for TB control (%)	1.5
NTP budget funded (%)	100



SURVEILLANCE AND EPIDEMIOLOGY

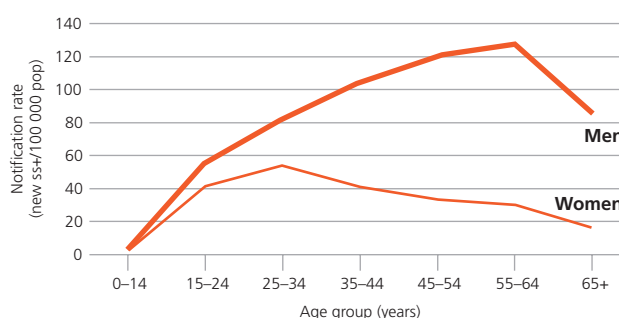
Case notifications

Total notification rate falling as a result either of improved diagnosis (fewer false-positives) or of declining incidence rate, smear-positive cases increasing as DOTS expands, DOTS case detection rate 57% nationally, over 70% within DOTS areas



Case notifications by age and sex, e 2004

Age-sex distribution of cases typical of SEAR



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.

^b Incidence, prevalence and mortality estimates include patients with HIV. Estimate of smear-positive incidence based on three-year national tuberculin survey completed during 2003 (Annual risk of tuberculous infection in different zones of India. Government of India, 2004). Incidence rate assumed to be constant since 1990. Estimates of smear-positive prevalence from Gopi PG et al. Estimation of burden of tuberculosis in India for the year 2000. *Indian Journal of Medical Research*, 2005, 122:243–248. WHO estimate of total prevalence of TB (458/100 000 pop in year 2000) is lower than that derived directly from survey (846/100 000 pop). Estimated prevalence and death rates falling despite constant incidence rate estimate; increasing proportion of incident cases presumed treated.

^c 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 570/100 000 pop and mortality 42/100 000 pop/yr.

^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [accepted for publication in *Journal of Infectious Diseases*].

^e Age and sex breakdown provided for a subset of new smear-positive cases notified in 2004.

See Methods for further details.

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Developed 5-year implementation plan (2005–2010) for the Revised National TB Control Programme (RNTCP, hereafter NTP)
- Increased DOTS coverage to 616 districts out of 632 by end of 2005, covering 1080 million people
- Established NTP laboratory committee to support policy-making, monitoring and supervision, and implemented EQA protocol in 6 major states
- Established implementation schedule and budget for HR development plan (2005–2010)
- Developed a comprehensive anti-TB drug quality assurance system

Challenges

- Sustaining and improving high-quality DOTS services in a population of over one billion people
- Improving access to DOTS services in remote areas
- Ensuring adequate numbers of trained microbiologists and laboratory technicians in all states, and increasing capacity of NRLs and intermediate reference laboratories for monitoring, evaluation, DRS and research
- Furnishing intermediate reference laboratories for culture and DST

Planned activities

- Strengthen the capacity of intermediate reference laboratories to perform culture and DST

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Appointed TB/HIV coordinators in 4 major states
- Produced joint NAP/NTP training material on collaborative TB/HIV activities
- Established national MDR-TB committee and developed 5-year plan for nationwide network of treatment centres for MDR-TB
- Initiated DRS in 4 major states
- Commissioned studies on access to and use of NTP services by scheduled castes and tribes, women and people with HIV

Challenges

- Improving coordination between NAP and NTP for reporting and treatment delivery
- Decentralizing VCT services of the NAP so that they are close to DOTS facilities
- Increasing availability of quality-assured culture and DST for diagnosis and follow-up of MDR-TB patients
- Improving awareness of TB and access (physical, social and economic) to TB services in poor communities

Planned activities

- Continue to train NAP and NTP staff on HIV and TB in 14 states with high or intermediate HIV prevalence
- NAP to expand network of VCT and ART centres to reduce the distances between NAP and NTP services
- Establish MDR-TB treatment centres and enrol 100 MDR-TB patients in Gujarat and Maharashtra
- Increase use of community volunteers to provide DOT to marginalized populations such as the homeless and the very poor, and use enablers to improve diagnosis and follow-up

Contributing to health system strengthening

Achievements

- Established collaboration with ministries other than MoH to ensure TB control implementation according to NTP guidelines by key health-care providers

Challenges

- Improving access and maintaining quality of services during changes caused by the introduction of the National Rural Health Mission and integration of state/district TB societies into single state/district health societies
- Ensuring adequate HR capacity and availability at all levels of the health system
- Ensuring high-quality TB management in context of weak regulation of private health-care provision and drug sales in the private sector

Planned activities

- Continue to train all levels of health-care workers, both in the public and private sectors, and community workers and volunteers

Engaging all care providers

Achievements

- Increased involvement of NGOs (total >1500), private practitioners (>9000), medical colleges (>200), corporate sector services (>100) and involvement of other ministries, prisons and armed forces health facilities
- Implemented and monitored intensified PPM-DOTS project in 14 large cities
- Developed guidelines and finalized manual for training private practitioners; piloted treatment referral mechanism in medical colleges in 10 districts

Challenges

- Involving individual formal and informal care providers in DOTS implementation and ensuring adequate training and supervision
- Building and sustaining NTP capacity to coordinate and manage the involvement of wide range of public and private providers

Planned activities

- Scale up mechanisms for referral for treatment and transfer from large health-care institutions
- Increase involvement of professional organizations such as Indian Medical Association

Empowering people with TB, and communities

Achievements

- Involved traditional healers, community members and cured patients as DOT providers nationwide
- Implemented activities according to NTP ACSM plan to raise community awareness, sensitize all care providers and mobilize political leaders

Challenges

- Overcoming stigma of TB and discrimination against TB patients
- Promoting awareness of TB and of DOTS in traditional healers, particularly in remote areas

Planned activities

- Mobilize community-based self-help groups and NGOs to assess needs, promote early diagnosis and provide patient support
- Use community youth groups for transportation of sputum samples in inaccessible areas
- Continue use of media and develop needs-based local strategies to reach all communities

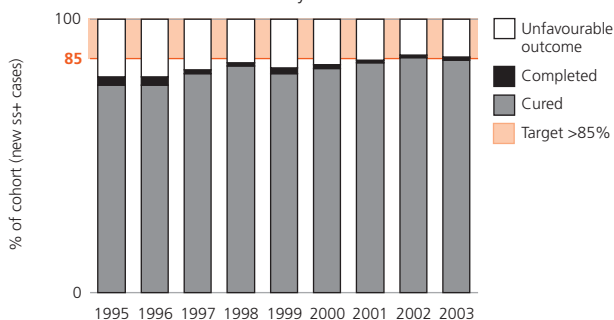
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	1.5	2.0	2.3	9.0	14	30	45	52	67	84
DOTS notification rate (new & relapse / 100 000 pop)	0.5	1.6	1.9	3.0	12	21	39	52	75	97
DOTS notification rate (new ss+ / 100 000 pop)	0.2	0.7	0.8	1.3	5.3	9.3	18	23	34	43
DOTS case detection rate (new & relapse, %)	0.3	0.9	1.1	1.8	7.1	12	23	31	45	58
DOTS case detection rate (new ss+, %)	0.3	0.9	1.1	1.7	7.0	12	24	31	45	57
Case detection rate within DOTS areas ^a	19	44	46	19	52	41	53	60	69	72
DOTS treatment success (new ss+, %)	79	79	82	84	82	84	85	87	86	—
DOTS retreatment success (ss+, %)	70	67	65	72	69	71	69	72	70	—

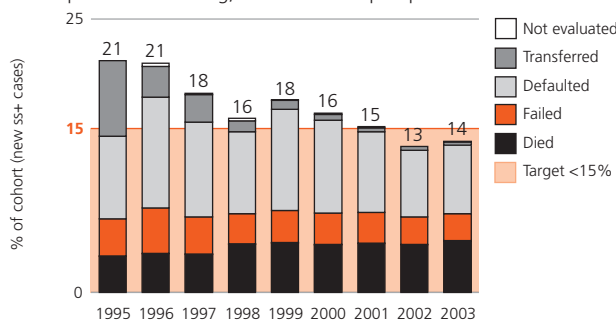
Treatment success, DOTS

Above 85% for third consecutive year



Unfavourable treatment outcomes, DOTS

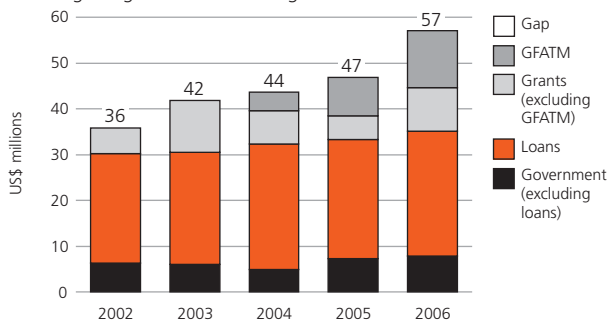
Fewer patients defaulting, better follow-up of patients who transfer



BUDGET AND FINANCE

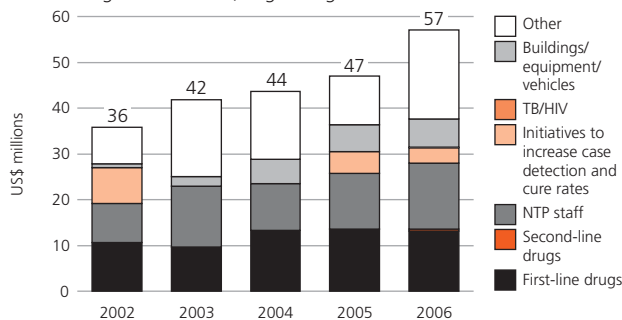
NTP budget by source of funding

Growing budget with full funding



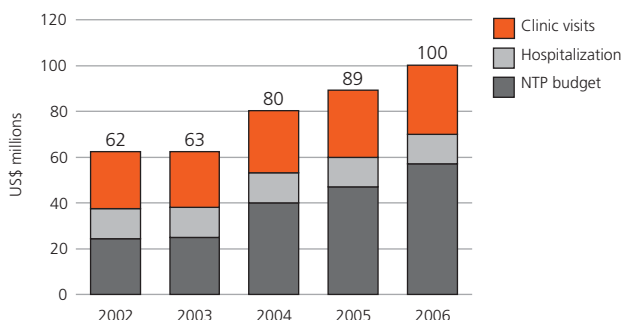
NTP budget by line item

Stable budget breakdown; large budget for staff



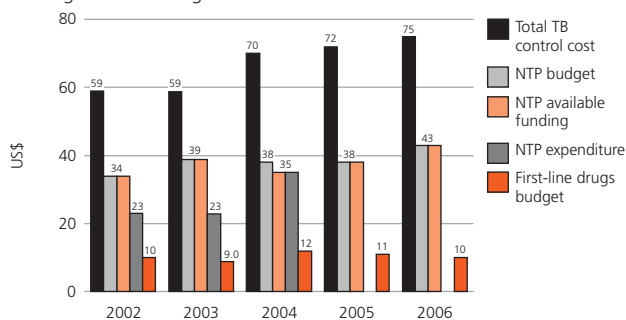
Total TB control costs by line item^b

Use of general health system staff and infrastructure makes up large share of costs



Per patient costs, budgets and expenditure^c

Low cost per patient treated compared with other HBCs; expenditures moving closer to budgets



^a The Indian NTP has estimated subnational incidence rates, and can therefore calculate a more precise estimate of the case detection rate within DOTS areas than the ratio of DOTS case detection rate to DOTS coverage (the measure used in this report for all other countries).

^b Total TB control costs for 2002–2004 are based on expenditure, whereas those for 2005–2006 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.

^c NTP available funding for 2004 is based on the amount of funding actually received, using retrospective data; available funding for 2002–2003 and 2005–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.

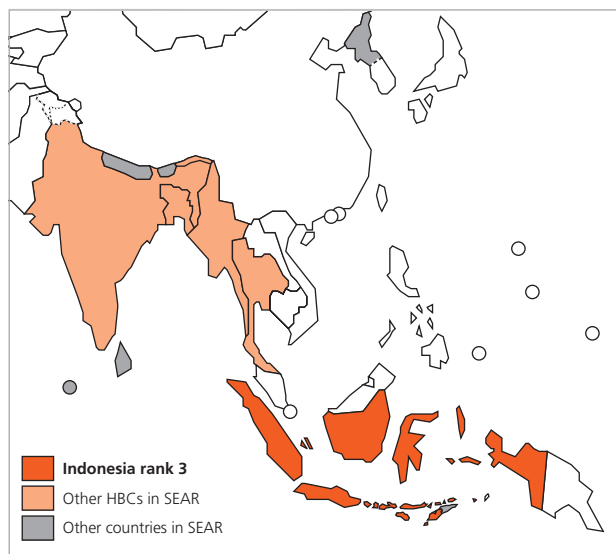
pop indicates population; ss+, smear-positive; yr, year; — not available.

Indonesia

Indonesia's growing budget, with full funding, is helping to diagnose and treat more patients under DOTS. Treatment success has exceeded 85% in the last four annual cohorts, though the estimated case detection rate had not reached the 70% target by 2004. A national prevalence survey carried out during 2004 indicates that the burden of TB has fallen substantially over the past two decades. Even so, Indonesia still ranks third among the 22 high-burden countries.

KEY INDICATORS

Population (thousands) ^a	220 077
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	245
Trend in incidence rate (%/yr) ^c	-2.4
Incidence (ss+/100 000 pop/yr)	110
Prevalence (all cases/100 000 pop) ^c	275
Mortality (deaths/100 000 pop/yr) ^c	46
Prevalence of HIV in adult TB patients (15–49yrs, %)	0.9
New TB cases multidrug-resistant (%) ^d	1.5
Previously treated TB cases multidrug-resistant (%) ^d	12
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	96
Notification rate (new ss+/100 000 pop/yr)	59
Case detection rate (all cases, %)	39
Case detection rate (new ss+, %)	53
DOTS notification rate (new and relapse/100 000 pop/yr)	96
DOTS notification rate (new ss+/100 000 pop/yr)	59
DOTS case detection rate (new and relapse, %)	39
DOTS case detection rate (new ss+, %)	53
DOTS treatment success (2003 cohort, %)	87
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	43
Government contribution to total cost TB control (including loans, %)	48
Government health spending used for TB control (%)	3.1
NTP budget funded (%)	100

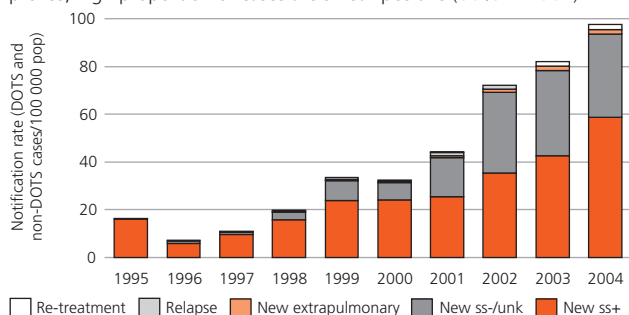


WHO South-East Asia Region (SEAR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

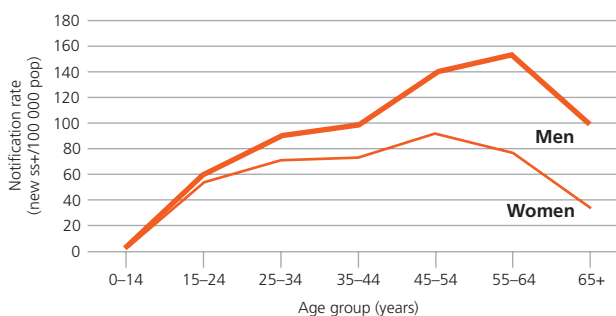
Case notifications

Notifications rapidly increasing as case detection within DOTS areas improves, high proportion of cases are smear-positive (60% in 2004)



Case notifications by age and sex,^e 2004

Age-sex distribution of notifications typical of SEAR



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.

^b Incidence, prevalence and mortality estimates include patients with HIV. Estimates of incidence and prevalence, and trend in incidence, revised in 2004 following national TB prevalence survey.

^c 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 443/100 000 pop and mortality 93/100 000 pop/yr.

^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].

^e Age and sex breakdown provided for all notified new smear-positive cases in 2004.

See Methods for further details.

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Strengthened provincial DOTS teams through staff deployment and training
- Appointed training coordinators in 30 of 33 provinces and accelerated training of health centre and hospital staff
- Extended use of FDCs to 12 provinces with no drug stock-outs
- Conducted TB prevalence survey in collaboration with the National Institute for Health Research and Development

Challenges

- Increasing government financial contribution particularly at provincial and district levels
- Encouraging political commitment for TB control following decentralization
- Increasing the number of NTP staff and improving workforce retention
- Improving coordination between referral laboratories and NTP
- Setting up an information system for cost-effective drug management
- Received approval for GFATM round 5 proposal for TB control activities

Planned activities

- Establish official national reference laboratory for TB
- Strengthen laboratory network through standardized training, supervision and implementation of EQA
- Involve midwives, nurses and other staff at peripheral-level health posts

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Carried out situation analysis on collaborative TB/HIV activities in 4 high-burden HIV provinces
- Piloted district-level collaborative TB/HIV activities at two sites in Jakarta
- Initiated preparatory steps for DRS including finalization of protocol, purchasing of equipment and training at supranational laboratory
- Strengthened paediatric TB working group and developed new diagnostic flowcharts for childhood TB

Challenges

- Overcoming stigma associated with TB and HIV
- Increasing the number of VCT sites
- Strengthening and expanding collaborative TB/HIV activities at central and peripheral levels
- Collecting drug resistance data for new and re-treatment cases

Planned activities

- Finalize national TB/HIV strategy and commence HIV surveillance in TB patients in areas with high HIV prevalence
- Develop national guidelines for culture and DST
- Implement first national DRS
- Expand collaboration with NGOs to reach vulnerable populations

Contributing to health system strengthening

Achievements

- Rebuilt health system infrastructure in tsunami-affected areas while maintaining DOTS services

Challenges

- Improving access to health services in remote geographical areas and by vulnerable groups
- Strengthening health-system infrastructure throughout the country

Planned activities

- Strengthen peripheral-level health system to address geographical and economic barriers to TB diagnosis and treatment
- Strengthen drug management skills in the country through widespread training

Engaging all care providers

Achievements

- Developed national guidelines for hospital-DOTS collaboration
- Expanded DOTS to public lung clinics (100%), public and private hospitals (20%), military hospitals (28%) and parts of military and prison health services
- Piloted involvement of private practitioners in 2 provinces where TB control is supported by FIDELIS
- Appointed PPM-DOTS focal point within NTP

Challenges

- Maintaining high-quality DOTS services in all private and public provider settings
- Improving recording and reporting in lung clinics and hospitals and establishing effective links with the NTP, including mechanisms for referral and transfer

Planned activities

- Further expand involvement of public and private hospitals
- Optimize links between hospitals and primary health-care network to improve referral and transfer routines and maintain high standards of TB care
- Scale up involvement of private practitioners based on experiences from pilot projects

Empowering people with TB, and communities

Achievements

- Expanded TB partnership through national Stop TB Partners' Forum
- Engaged communities through "nininik mamahs" (local community groups), "bidan desa" (midwives) and NGOs
- Conducted operational research to inform local ACSM strategies

Challenges

- Improving knowledge and awareness in the community of TB and of availability of services for TB diagnosis and treatment free-of-charge

Planned activities

- Revitalize provincial and district GERDUNAS chapters through training
- Implement local advocacy campaigns in selected areas

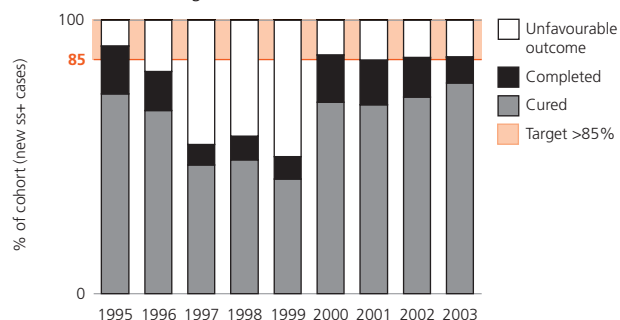
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	6.0	14	28	80	90	98	98	98	98	98
DOTS notification rate (new & relapse / 100 000 pop)	1.9	7.3	11	20	33	32	44	72	80	96
DOTS notification rate (new ss+ / 100 000 pop)	1.8	5.9	9.7	16	24	24	25	36	43	59
DOTS case detection rate (new & relapse, %)	0.6	2.5	3.8	7.0	12	12	17	28	32	39
DOTS case detection rate (new ss+, %)	1.3	4.4	7.4	12	19	20	22	31	38	53
DOTS case detection rate (new ss+) / coverage (%)	22	32	26	16	21	20	22	31	39	54
DOTS treatment success (new ss+, %)	91	81	54	58	50	87	86	86	87	—
DOTS retreatment success (ss+, %)	32	—	—	73	70	72	83	78	78	—

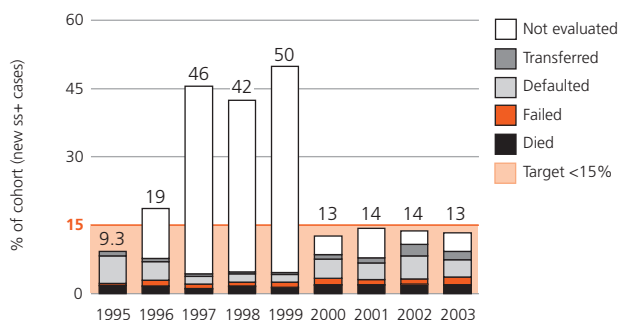
Treatment success, DOTS

Above 85% for 4th consecutive year, proportion of cases with confirmation of cure increasing



Unfavourable treatment outcomes, DOTS

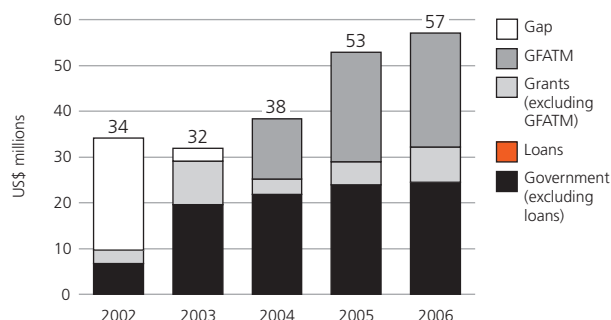
Since 2000, treatment outcomes reported for over 90% of cases



BUDGET AND FINANCE

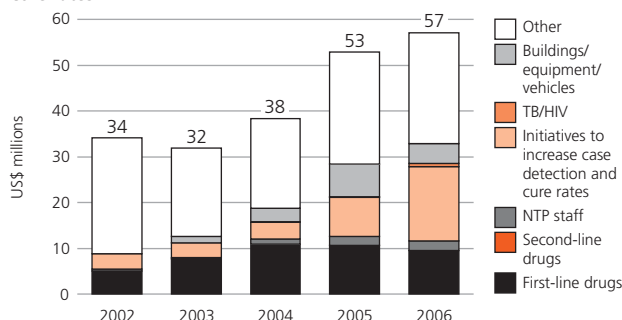
NTP budget by source of funding

Growing budget with full funding for years 2004–2006



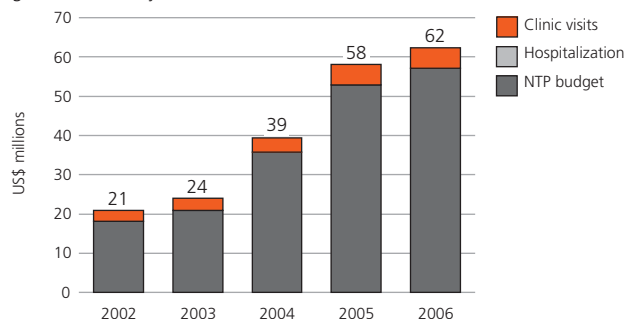
NTP budget by line item

Major increase in budget for initiatives to improve case detection and cure rates



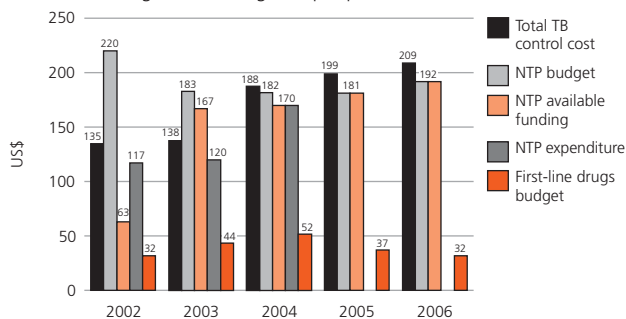
Total TB control costs by line item^a

NTP budget accounts for most of TB control costs due to limited use of general health system infrastructure



Per patient costs, budgets and expenditure^b

Expenditures moving closer to budgets; wider range of programme activities leading to increasing cost per patient treated



^a Total TB control costs for 2002–2004 are based on expenditure, whereas those for 2005–2006 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.

^b NTP available funding for 2004 is based on the amount of funding actually received, using retrospective data; available funding for 2002–2003 and 2005–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.

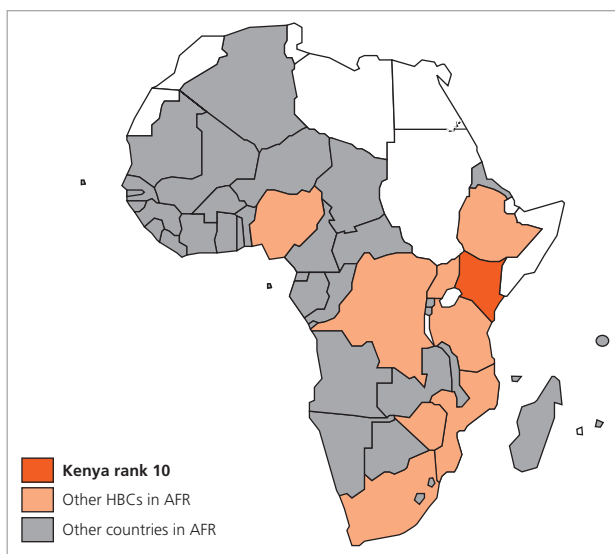
pop indicates population; ss+, smear-positive; yr, year; — not available.

Kenya

Kenya continues to treat more TB patients each year. Widespread HIV coinfection may explain part of the growing case-load, but it is also possible that the NTP is detecting a higher proportion of cases. With increased funding for planned activities – including mechanisms to improve treatment outcomes, TB/HIV management, community-based care, PPM-DOTS and MDR-TB – a greater proportion of TB patients should benefit from an improved DOTS service.

KEY INDICATORS

Population (thousands) ^a	33 467
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	619
Trend in incidence rate (%/yr) ^c	7.8
Incidence (ss+/100 000 pop/yr)	266
Prevalence (all cases/100 000 pop) ^c	888
Mortality (deaths/100 000 pop/yr) ^c	133
Prevalence of HIV in adult TB patients (15–49yrs, %)	29
New TB cases multidrug-resistant (%) ^d	0.0
Previously treated TB cases multidrug-resistant (%) ^d	0.0
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	301
Notification rate (new ss+/100 000 pop/yr)	123
Case detection rate (all cases, %)	49
Case detection rate (new ss+, %)	46
DOTS notification rate (new and relapse/100 000 pop/yr)	301
DOTS notification rate (new ss+/100 000 pop/yr)	123
DOTS case detection rate (new and relapse, %)	49
DOTS case detection rate (new ss+, %)	46
DOTS treatment success (2003 cohort, %)	80
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	13
Government contribution to total cost TB control (including loans, %)	20
Government health spending used for TB control (%)	11
NTP budget funded (%)	55



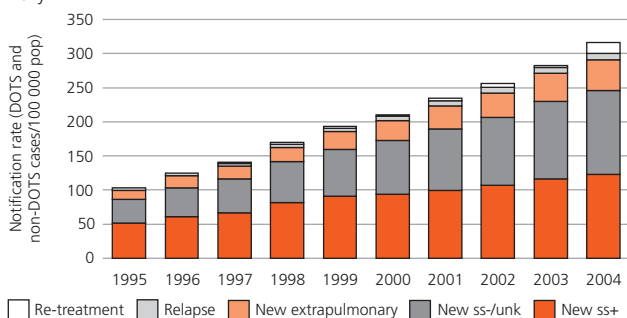
WHO African Region (AFR)

Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

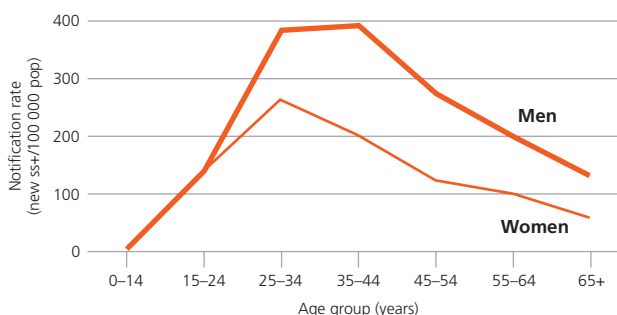
Case notifications

Notification rate tripled since 1995; proportion of pulmonary cases that are smear-positive falling; increasing proportion of cases extrapulmonary



Case notifications by age and sex,^e 2004

Age-sex distribution of notified cases typical of countries in AFR



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.

^b Incidence, prevalence and mortality estimates include patients with HIV. Incidence originally based on assumption of 55% ss+ case detection rate in 1997 (DOTS and non-DOTS). Trend in incidence estimated from 3-year moving average of notification rate (new and relapse).

^c 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 167/100 000 pop and mortality 22/100 000 pop/yr.

^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].

^e Age and sex breakdown provided for a subset of new smear-positive cases notified in 2004.

See Methods for further details.

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Developed standardized protocol for programme supervision
- Began EQA for smear microscopy
- Mapped distribution of public sector health workforce with support from DFID and undertook HR assessment to determine priority areas for improving programme performance

Challenges

- Increasing financial resources to implement EQA and carry out culture and DST
- Reducing workload for laboratory focal personnel at all levels to increase time for supervision

Planned activities

- Secure funding to implement EQA for smear microscopy and to include private sector laboratories in the laboratory network and in EQA
- Equip 1 additional public sector laboratory for culture and DST
- Develop anti-TB drug management system based on consumption data

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Began phased implementation of collaborative TB/HIV activities with inclusion of HIV data in TB surveillance data countrywide
- Developed TB/HIV guide for standardized training of health-care workers
- Obtained funding to continue routine surveillance for drug-resistant TB

Challenges

- Improving HR capacity for collaborative TB/HIV activities
- Reducing stock-outs of HIV tests, antiretroviral drugs and co-trimoxazole
- Improving infrastructure for diagnostic counselling and testing for HIV (DCT)
- Overcoming stigma of TB/HIV, especially among health-care workers
- Improving capacity for all aspects of diagnosis and treatment of MDR-TB
- Improving access to TB diagnostic services for people living in marginal areas

Planned activities

- Continue countrywide implementation of collaborative TB/HIV activities so that by the end of 2006 at least 80% of notified TB cases receive DCT and at least 80% of HIV-infected TB patients receive co-trimoxazole preventive therapy
- Adapt selected dispensaries for TB diagnosis to improve access for the poor

Contributing to health system strengthening

Achievements

- Abolished user fees at primary health-care facilities including health centres and dispensaries
- Brought all public sector laboratories under the jurisdiction of the National Public Health Services of the MoH

Challenges

- Overcoming shortage of all cadres of health-care workers, especially nurses and laboratory personnel
- Maintaining high quality of smear microscopy services following abolition of user fees
- Improving pre- and in-service training
- Distributing health-care personnel according to needs, particularly in areas which are hard to reach

Planned activities

- Hire HR development officer using ISAC funds to assist in the formulation of HR development strategy, including HR database, workload assessment and appraisal system

Engaging all care providers

Achievements

- Established collaboration with all public providers
- Scaled up PPM-DOTS in major urban areas with focus on the for-profit sector
- Appointed a part-time PPM-DOTS focal point
- Incorporated information about contribution of various health-care providers to case-finding into routine recording and reporting system

Challenges

- Expanding the role of the private sector (and including the informal private sector) in TB diagnosis and treatment

Planned activities

- Scale up PPM-DOTS activities

Empowering people with TB, and communities

Achievements

- Initiated community-based DOTS; community volunteers identify and refer TB suspects, provide DOT and trace defaulters
- Started implementing communication plan for behavioural change and formed national ACSM working group to develop national ACSM strategy

Challenges

- Changing treatment-seeking behaviours among people with TB to reduce delays to diagnosis
- Improving ACSM skills within the NTP
- Securing financial and human resources to ensure sustainability of community-based TB care

Planned activities

- Develop and implement national ACSM strategy to influence treatment-seeking behaviour and to improve TB case-finding and defaulter-tracing
- Implement community-based TB care in 30 of 80 TB districts and gather information on impact on case notification, volunteer selection and retention, training requirements and incentives and other forms of support before rolling out to additional districts

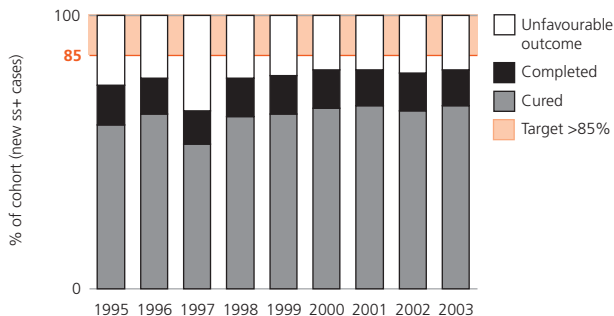
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	15	100	100	100	100	100	100	100	100	100
DOTS notification rate (new and relapse/100 000 pop)	103	125	139	167	191	188	231	250	280	301
DOTS notification rate (new ss+/100 000 pop)	51	61	66	82	91	85	100	107	117	123
DOTS case detection rate (new and relapse, %)	48	49	47	49	49	43	48	48	49	49
DOTS case detection rate (new ss+, %)	56	57	53	57	55	46	49	48	47	46
DOTS case detection rate (new ss+)/coverage (%)	370	57	53	57	55	46	49	48	47	46
DOTS treatment success (new ss+, %)	75	77	65	77	78	80	80	79	80	—
DOTS re-treatment success (ss+, %)	72	59	55	64	73	76	77	77	75	—

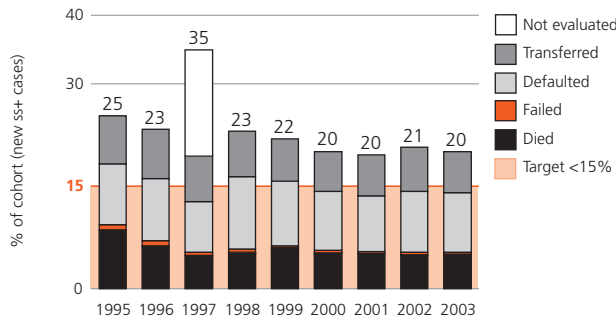
Treatment success, DOTS

Treatment success high compared with other countries in AFR, but below target



Unfavourable treatment outcomes, DOTS

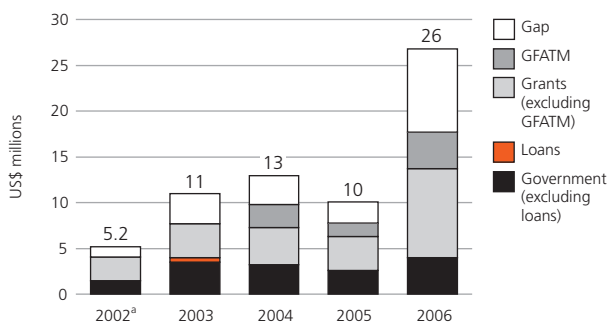
Outcomes recorded for all patients since 1998; default (9%) most common unfavourable outcome



BUDGET AND FINANCE

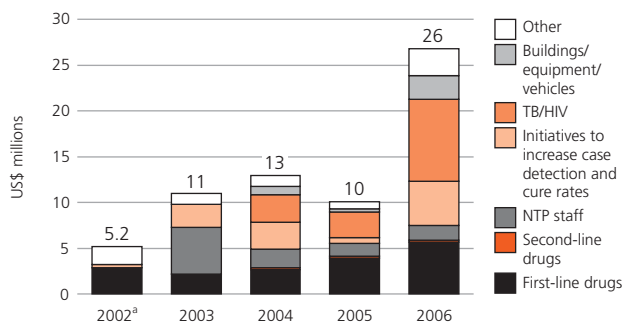
NTP budget by source of funding

Big increase in budget and funding (mostly from donors) in 2006; large funding gap remains



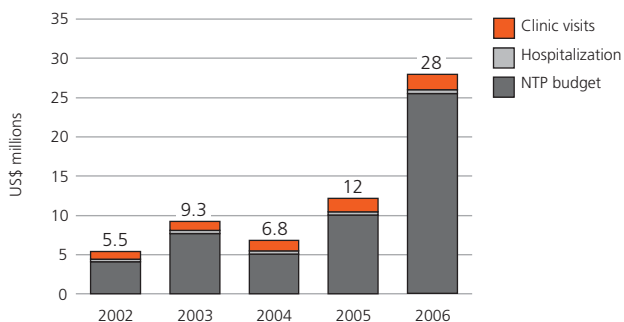
NTP budget by line item

Increased budget allows for much more investment in TB/HIV, community-based care, PPM-DOTS and ACSM, as well as for purchase of vehicles to improve supervision, an isolation facility (for patients with MDR) and a one-year buffer stock of first-line drugs



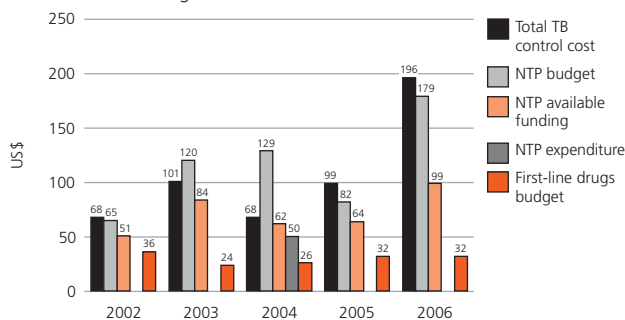
Total TB control costs by line item^b

Most TB control costs accounted for by NTP budget as a result of limited hospitalization and use of community-based care



Per patient costs, budgets and expenditure^c

Expenditure low compared with received funding in 2004 because of procurement delays for vehicles, microscopes and drugs being purchased with GFATM funding



^a Does not include budget for buildings/equipment/vehicles and dedicated NTP staff.

^b Total TB control costs for 2002–2003 are based on available funding, whereas those for 2004 are based on expenditure, and those for 2005–2006 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.

^c NTP available funding for 2004 is based on the amount of funding received, using retrospective data; available funding for 2002–2003 and 2005–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.

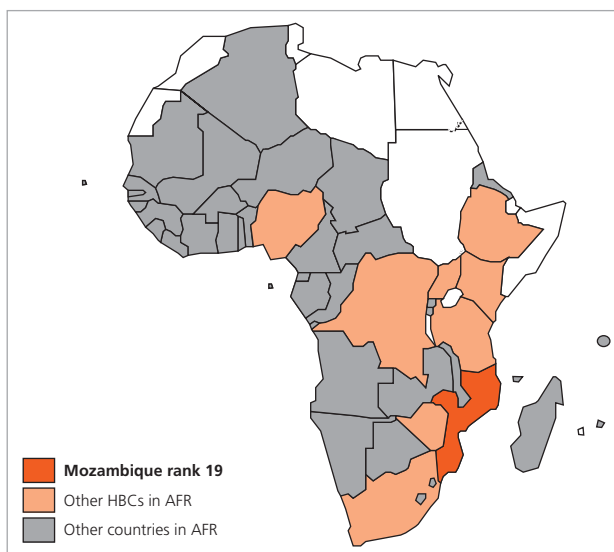
pop indicates population; ss+, smear-positive; yr, year; — not available.

Mozambique

Case detection and treatment success rates remain low in Mozambique, though estimates of the former are uncertain. Adult TB patients have high rates of HIV infection, but the management of TB/HIV has improved slowly. Full funding for the 2006 budget, including a larger component for collaborative TB/HIV activities, should strengthen DOTS and broaden its scope. Plans to expand the laboratory network and improve the quality of laboratory services, to begin PPM and community-based DOTS, and to introduce a 6-month treatment regimen with 4-drug FDCs throughout the country, should help to improve diagnosis and treatment.

KEY INDICATORS

Population (thousands) ^a	19 424
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	460
Trend in incidence rate (%/yr) ^c	2.6
Incidence (ss+/100 000 pop/yr)	191
Prevalence (all cases/100 000 pop) ^c	635
Mortality (deaths/100 000 pop/yr) ^c	129
Prevalence of HIV in adult TB patients (15–49yrs, %)	48
New TB cases multidrug-resistant (%) ^d	3.5
Previously treated TB cases multidrug-resistant (%) ^d	3.3
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	160
Notification rate (new ss+/100 000 pop/yr)	88
Case detection rate (all cases, %)	35
Case detection rate (new ss+, %)	46
DOTS notification rate (new and relapse/100 000 pop/yr)	160
DOTS notification rate (new ss+/100 000 pop/yr)	88
DOTS case detection rate (new and relapse, %)	35
DOTS case detection rate (new ss+, %)	46
DOTS treatment success (2003 cohort, %)	76
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	15
Government contribution to total cost TB control (including loans, %)	35
Government health spending used for TB control (%)	7.7
NTP budget funded (%)	100

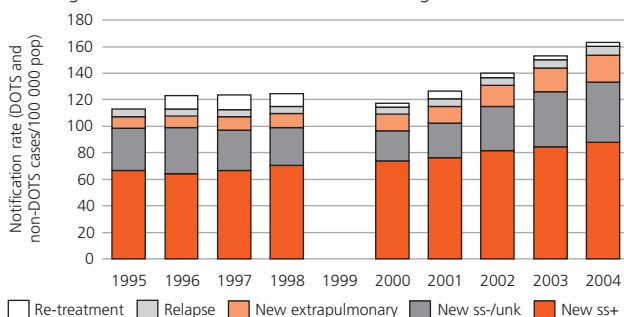


WHO African Region (AFR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

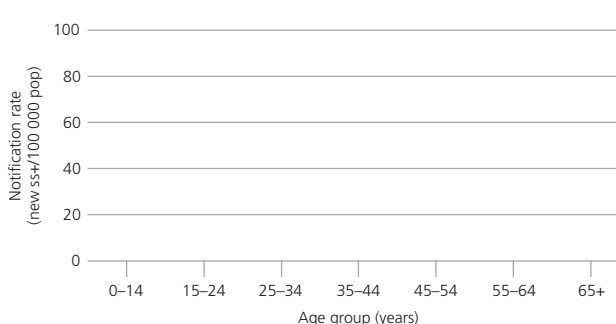
Case notifications

Notification rates increasing since 2000, probably as a result of both increasing incidence linked with HIV and increasing case detection



Case notifications by age and sex, 2004

No age and sex data provided



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.

^b Incidence, prevalence and mortality estimates include patients with HIV. Incidence estimates originally based on assumption of 70% ss+ case detection rate in 1997 (DOTS and non-DOTS). Trend in incidence estimated from 3-year moving average of notifications from those countries in region judged to be detecting an unchanging proportion of cases.

^c 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 275/100 000 pop and mortality 37/100 000 pop/yr.

^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].

See Methods for further details.

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Developed operational plan to implement TB control activities funded by the GFATM
- Replaced 8-month treatment regimen with 6-month treatment regimen and introduced 4-drug FDCs in April 2005
- Trained provincial managers in EQA for smear microscopy

Challenges

- Increasing the number of staff, particularly in laboratories, and improving skills of existing health-care staff
- Linking TB services with the national department of laboratories
- Improving drug management through quarterly reporting by health facilities and control of drug stocks at central, provincial and district levels
- Implementing laboratory quality control system at district level
- Strengthening NTP management

Planned activities

- Expand DOTS and introduce 4-drug FDCs to all provinces and communities
- Develop a national database for TB and leprosy staff
- Increase the number of provincial laboratories implementing EQA for smear microscopy and purchase new microscopes through GFATM funding

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Finalized draft national proposal for collaborative TB/HIV activities
- National TB/HIV coordinator started work
- Developed and field-tested TB/HIV training material for health-facility staff
- Revised TB reporting and recording forms to include VCT, HIV status, CPT and ART

Challenges

- Integrating VCT, ART and home-based care into TB control plan
- Setting up MDR-TB treatment programme and applying to GLC for second-line anti-TB drugs
- Improving access to health facilities for poor communities
- Maintaining commitment to implement collaborative TB/HIV activities and improving the coordination between NTP and NAP
- Establishing more peripheral-level microscopy centres

Planned activities

- Finalize and print the TB/HIV training manual for health facilities and conduct training
- Review guide for doctors and manual for paramedical staff to include new components of TB control

Contributing to health system strengthening

Achievements

- Nominated 11 provincial laboratory technicians to manage EQA for TB, malaria and HIV/AIDS laboratory services
- Opened new laboratories for TB, malaria and HIV/AIDS

Challenges

- Improving the health infrastructure
- Increasing number and skills of health-care staff

Planned activities

- Improve regular supervision
- Involve training institutions with MoH to improve skills of health-care staff

Engaging all care providers

Achievements

- Developed guidelines for PPM-DOTS activities

Challenges

- Strengthening collaboration between NTP and the private sector
- Strengthening collaboration with faith-based organizations involved in TB and leprosy control activities

Planned activities

- Train staff in the private sector and in faith-based organizations involved in TB and leprosy control
- Develop plan for routine supervision of public and private sector health facilities implementing DOTS services
- Improve recording and reporting in the private sector

Empowering people with TB, and communities

Achievements

- Involved community leaders in selection of volunteers to facilitate TB treatment in communities by providing DOT and coordinating with health facilities

Challenges

- Training volunteers in early case detection and in treatment follow-up
- Developing national ACSM plan and initiating ACSM activities
- Improving awareness of TB and of availability of treatment

Planned activities

- Strengthen IEC after recent review

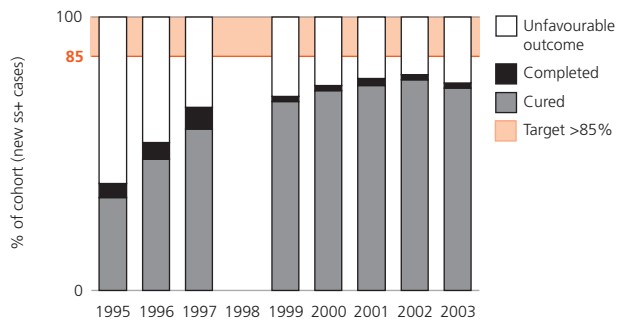
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	97	100	84	95	—	100	100	100	100	100
DOTS notification rate (new and relapse/100 000 pop)	113	113	113	115	—	114	121	137	150	160
DOTS notification rate (new ss+/100 000 pop)	67	64	66	71	—	74	76	82	85	88
DOTS case detection rate (new and relapse, %)	39	36	33	32	—	29	29	31	33	35
DOTS case detection rate (new ss+, %)	54	49	47	47	—	45	44	45	45	46
DOTS case detection rate (new ss+)/coverage (%)	55	49	56	49	—	45	44	45	45	46
DOTS treatment success (new ss+, %)	39	54	67	—	71	75	77	78	76	—
DOTS re-treatment success (ss+, %)	—	70	64	—	71	71	71	67	68	—

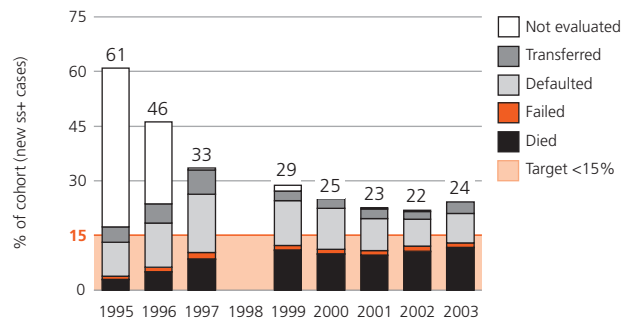
Treatment success, DOTS

Treatment success much improved since 1995 but still below target



Unfavourable treatment outcomes, DOTS

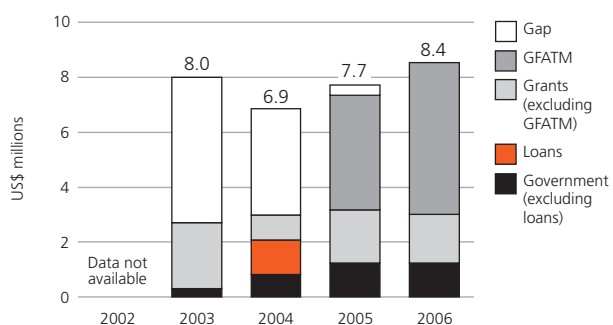
Very high death rates (12% for 2003 cohort); default rate high but falling slowly (8% in 2003)



BUDGET AND FINANCE

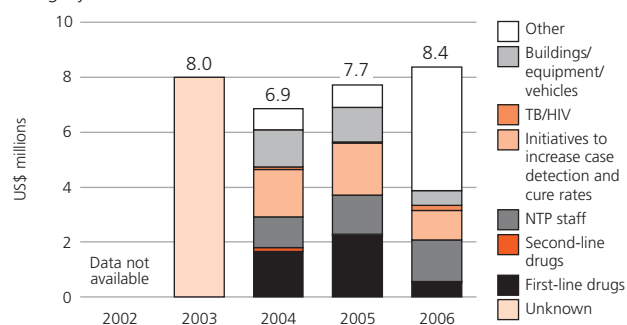
NTP budget by source of funding

Major improvement in funding for 2005–2006 as a result of funding from GFATM



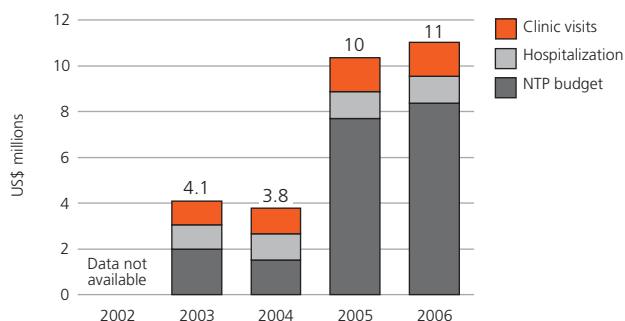
NTP budget by line item

Large "other" category mostly items funded by GFATM; with further analysis, many of these items could probably be allocated to a different category



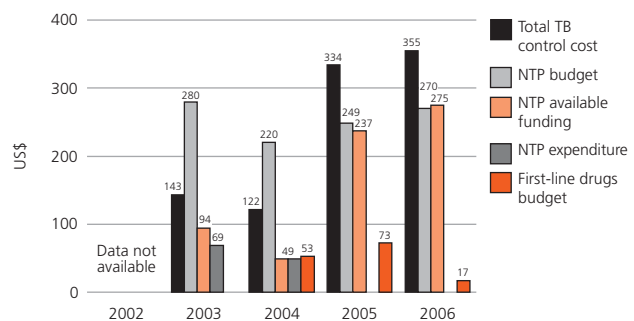
Total TB control costs by line item^a

Use of general health-system staff and infrastructure accounts for most of total TB control costs in 2003–2004, but this will change if NTP budgets are fully funded and spent in 2005–2006



Per patient costs, budgets and expenditure^b

Increasing total cost per patient, but expenditures low in 2004 as a result of delays in disbursement of funds



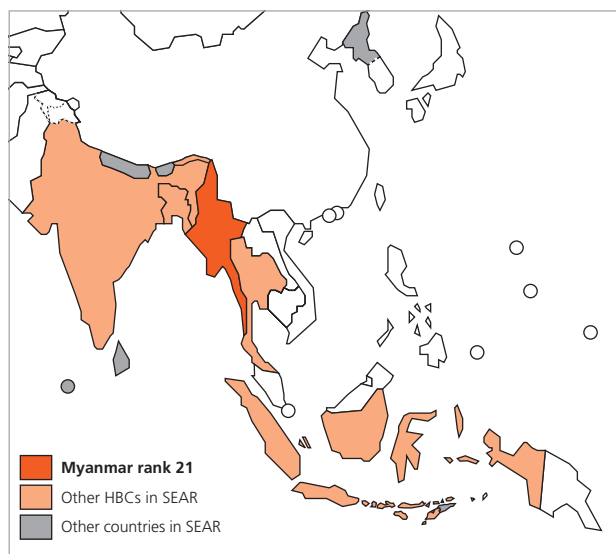
^a Total TB control costs for 2003–2004 are based on expenditure, whereas those for 2005–2006 are based on budgets. Estimates of the costs of clinic visits and hospitalization are WHO estimates based on data provided by the NTP and from other sources. See Methods for further details.
^b NTP available funding for 2004 is based on the amount of funding received, using retrospective data; available funding for 2003 and 2005–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.
 pop indicates population; ss+, smear-positive; yr, year; — not available.

Myanmar

Myanmar substantially increased the budget for TB control after 2002, but difficulties with resource mobilization meant that large funding gaps persisted in 2003 and 2004. Nevertheless, the number of patients treated under DOTS has grown each year since 2000, and Myanmar may have exceeded the target for case detection in 2004. Treatment success for the 2003 cohort was below 85%, mainly because a high proportion of patients defaulted from treatment.

KEY INDICATORS

Population (thousands) ^a	50 004
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	171
Trend in incidence rate (%/yr) ^c	0.0
Incidence (ss+/100 000 pop/yr)	76
Prevalence (all cases/100 000 pop) ^c	180
Mortality (deaths/100 000 pop/yr) ^c	21
Prevalence of HIV in adult TB patients (15–49yrs, %)	7.1
New TB cases multidrug-resistant (%) ^d	4.4
Previously treated TB cases multidrug-resistant (%) ^d	16
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	193
Notification rate (new ss+/100 000 pop/yr)	63
Case detection rate (all cases, %)	113
Case detection rate (new ss+, %)	83
DOTS notification rate (new and relapse/100 000 pop/yr)	193
DOTS notification rate (new ss+/100 000 pop/yr)	63
DOTS case detection rate (new and relapse, %)	113
DOTS case detection rate (new ss+, %)	83
DOTS treatment success (2003 cohort, %)	81
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	6.8
Government contribution to total cost TB control (including loans, %)	27
Government health spending used for TB control (%)	0.4
NTP budget funded (%)	63

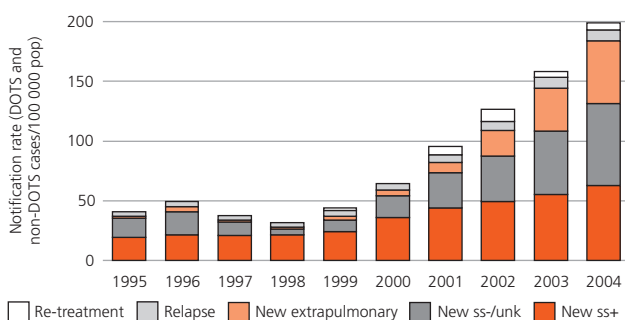


WHO South-East Asia Region (SEAR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

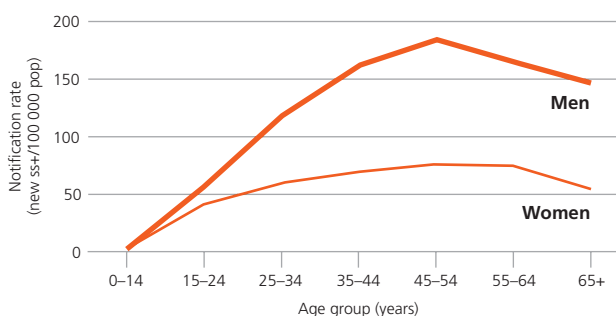
Case notifications

Dramatic increase in notifications as DOTS expands and case detection within DOTS areas increases; total notifications in 2004 higher than estimated incidence; proportion of cases confirmed by smear only 32% in 2004



Case notifications by age and sex,^e 2004

Distribution of cases by age and sex is typical of SEAR



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.
^b Incidence, prevalence and mortality estimates include patients with HIV. Estimates of burden based on prevalence surveys carried out up to 1994. Incidence assumed to be constant, but estimated prevalence and mortality declining as increasing proportion of cases are treated.
^c 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 419/100 000 pop and mortality 50/100 000 pop/yr.
^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].
^e Age and sex breakdown provided for all notified new smear-positive cases in 2004.
 See Methods for further details.
 pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Developed and received approval for 5-year strategic plan (2006–2010) for TB control
- Trained trainers on management of TB at district level
- Secured anti-TB drugs up to 2008 through second GDF grant
- Involved community volunteers as DOT providers at primary health-care level

Challenges

- Coping with the termination of GFATM round 2 funding for TB control
- Ensuring sufficient laboratory HR and regular funding for laboratory supplies and equipment
- Securing funds for TB control training at all levels
- Improving availability of vehicles and staff for DOTS supervision, including laboratories

Planned activities

- Urgently mobilize resources to sustain critical NTP activities after termination of GFATM funding
- Further decentralize DOTS in townships with poor performance
- HR development, including large-scale training on management of TB at district and health-facility levels
- Strengthen supervision, monitoring and evaluation including quality control of laboratory services
- Carry out national TB prevalence survey
- Update the national guidelines for EQA for smear microscopy
- Increase access to diagnostic services through pilot projects on establishment of sputum collection points and new sputum smear microscopy centres

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Initiated collaborative TB/HIV activities at township level
- Upgraded the subnational TB laboratory in Mandalay for culture and DST
- Integrated HIV care (including ART) for TB patients with HIV/AIDS in 5 townships in Mandalay
- Improved partnership with Myanmar Medical Association and NGOs working with disadvantaged communities

Challenges

- Increasing interaction between NTP and NAP and developing national TB/HIV policy and strategy
- Ensuring sustainable funding for DRS
- Establishing sufficient facilities and technical capacity for management of patients with MDR-TB
- Overcoming barriers to access to services for TB diagnosis and treatment such as geographical barriers, transport costs and lack of awareness of TB services

Planned activities

- Begin sentinel surveillance for HIV prevalence among TB patients
- Develop national TB/HIV policy strategy
- Establish protocol and start preparations for second national DRS

Contributing to health system strengthening

Achievements

- Posted additional staff at central, state and district levels to assist the integration of TB control into primary health care

Challenges

- Obtaining funds for increased monitoring, support and motivation of basic health staff

Planned activities

- Strengthen drug management and logistics through increased technical assistance and funding

Engaging all care providers

Achievements

- Started to scale up involvement of private general practitioners based on available guidelines and experiences from pilot projects
- Increased partnership among national and international partners through WHO-led technical working group, and established technical sub-working group on PPM-DOTS
- Involved NGOs including the Myanmar Maternal and Child Welfare Association, Myanmar Red Cross Society and Myanmar Health Assistant Association in case-finding and management
- Advocated DOTS to paramedical professionals of medical universities and schools

Challenges

- Strengthening training, coordination, supervision and monitoring for PPM-DOTS at township level
- Scaling up PPM-DOTS initiatives with large hospitals and private sector (including traditional healers) in TB diagnosis, reporting and treatment while maintaining the high quality of TB control
- Obtaining sufficient funding and strengthening capacity at the Myanmar Medical Association for accelerated scale-up of PPM-DOTS

Planned activities

- Revise national PPM-DOTS guidelines
- Continue to monitor, evaluate and scale up PPM-DOTS activities

Empowering people with TB, and communities

Achievements

- Held World TB Day celebrations in 97% of townships
- Hired focal point in central NTP using GFATM funds to prepare a national plan for ACSM for TB control

Challenges

- Overcoming lack of financial resources, collecting information on knowledge, attitudes and practices of target groups, and building technical capacity in central office of NTP for ASCM

Planned activities

- Organize World TB Day ceremonies/activities at different levels and use mass media for advocacy messages
- Develop a national plan for ACSM for TB control

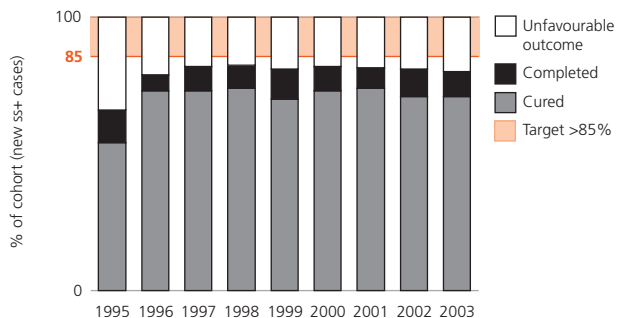
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	—	59	60	60	64	77	84	88	95	95
DOTS notification rate (new and relapse/100 000 pop)	—	44	35	32	42	65	86	117	153	193
DOTS notification rate (new ss+/100 000 pop)	—	19	20	22	24	36	43	49	55	63
DOTS case detection rate (new and relapse, %)	—	26	21	19	24	38	50	68	90	113
DOTS case detection rate (new ss+, %)	—	25	26	28	32	47	56	65	73	83
DOTS case detection rate (new ss+)/coverage (%)	—	43	43	47	50	62	67	73	77	87
DOTS treatment success (new ss+, %)	66	79	82	82	81	82	81	81	81	—
DOTS re-treatment success (ss+, %)	64	78	74	76	71	74	74	75	70	—

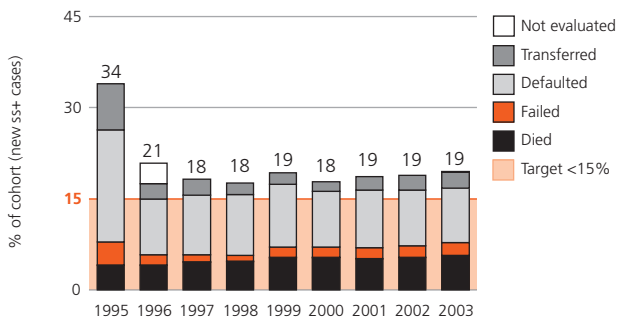
Treatment success, DOTS

Close to target, but no improvement reported since 1996



Unfavourable treatment outcomes, DOTS

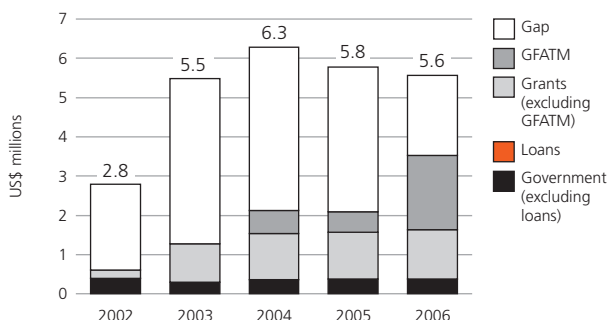
Default is a major barrier to treatment success



BUDGET AND FINANCE

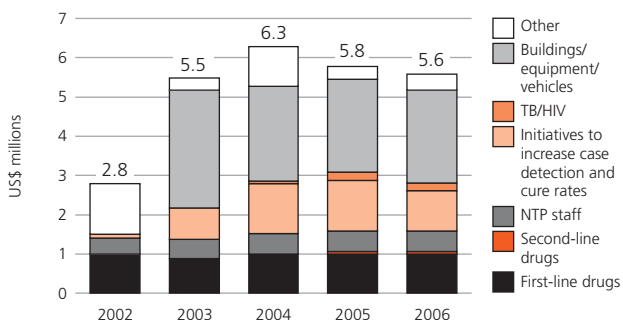
NTP budget by source of funding

Large increase in budget from 2003; funding gaps remain and will increase further in 2007 as a result of termination of GFATM grant



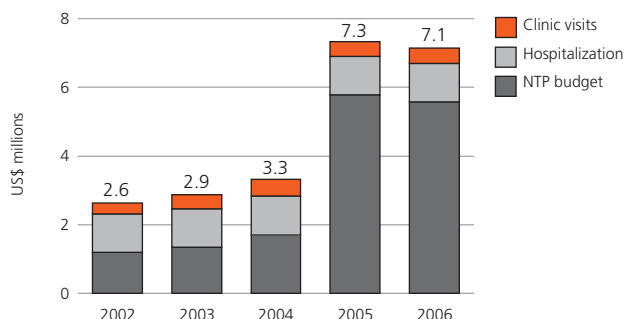
NTP budget by line item

Most of the increased budget from 2003 is for new equipment and vehicles to improve the quality of existing services and for initiatives to increase case detection and cure rates



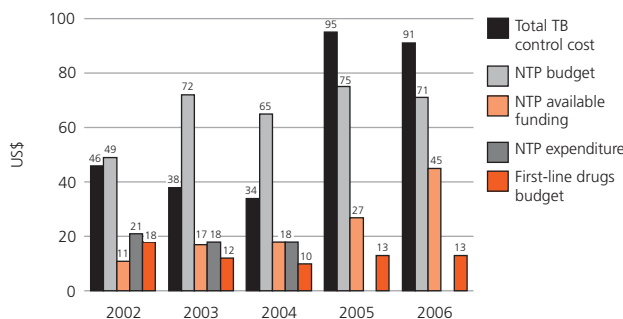
Total TB control costs by line item^a

Total TB control costs would increase substantially if NTP budgets were fully funded in 2005–2006, but this is unlikely following termination of GFATM grant



Per patient costs, budgets and expenditure^b

Expenditures much less than budgets as a result of persistent funding gaps; cost per patient treated is low compared with other HBCs



^a Total TB control costs for 2002–2004 are based on expenditure, whereas those for 2005–2006 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.

^b NTP available funding for 2004 is based on the amount of funding received, using retrospective data; available funding for 2002–2003 and 2005–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.

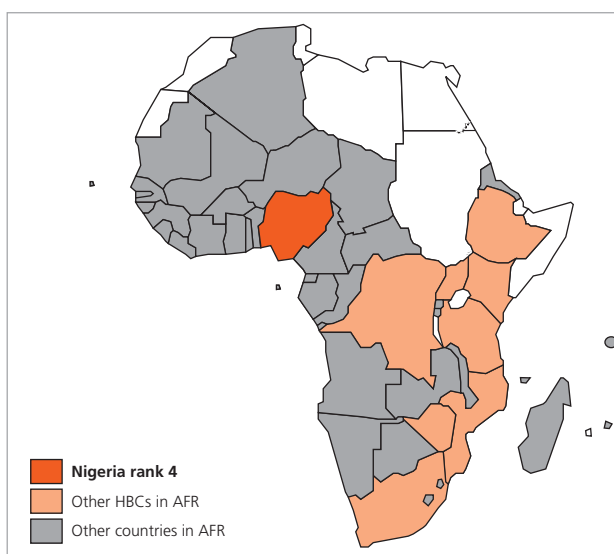
pop indicates population; ss+, smear-positive; yr, year; — not available.

Nigeria

The burden of TB in Nigeria is not precisely known, but the steady rise in notifications since 1995, and the relatively high case rates among young adults, probably reflect a real increase in incidence associated with HIV, and strong continuing transmission. DOTS was available, in principle, to only 65% of the Nigerian population at the end of 2004. Both the case detection (21%) and treatment success rates (59%) were among the lowest for any HBC. The much-needed expansion of DOTS should continue in 2006 with a larger budget, now supported by substantial funding from the GFATM.

KEY INDICATORS

Population (thousands) ^a	128 709
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	290
Trend in incidence rate (%/yr) ^c	2.6
Incidence (ss+/100 000 pop/yr)	125
Prevalence (all cases/100 000 pop) ^c	531
Mortality (deaths/100 000 pop/yr) ^c	82
Prevalence of HIV in adult TB patients (15–49yrs, %)	27
New TB cases multidrug-resistant (%) ^d	1.7
Previously treated TB cases multidrug-resistant (%) ^d	7.6
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	44
Notification rate (new ss+/100 000 pop/yr)	26
Case detection rate (all cases, %)	15
Case detection rate (new ss+, %)	21
DOTS notification rate (new and relapse/100 000 pop/yr)	44
DOTS notification rate (new ss+/100 000 pop/yr)	26
DOTS case detection rate (new and relapse, %)	15
DOTS case detection rate (new ss+, %)	21
DOTS treatment success (2003 cohort, %)	59
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	21
Government contribution to total cost TB control (including loans, %)	50
Government health spending used for TB control (%)	5.0
NTP budget funded (%)	90

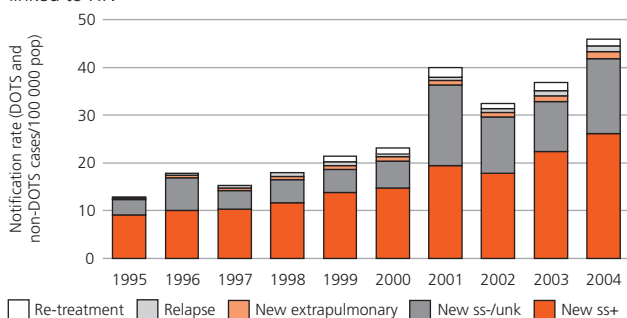


WHO African Region (AFR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

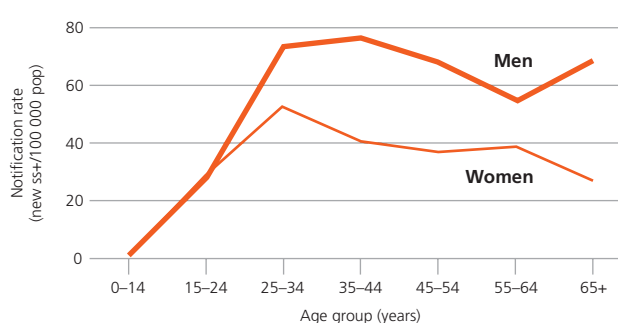
Case notifications

Increasing notification rate since 1995; unclear whether as a result of increasing case detection as DOTS expands or of increasing incidence linked to HIV



Case notifications by age and sex,^e 2004

Unlike for most countries in AFR, notification rate in oldest age classes nearly as high as in younger adults



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.

^b Incidence, prevalence and mortality estimates include patients with HIV. Incidence estimate originally based on assumption of 10% ss+ case detection rate in 1997 (DOTS and non-DOTS). Trend in incidence estimated from 3-year moving average of notification from those countries in region judged to be detecting an unchanging proportion of cases.

^c 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 231/100 000 pop and mortality 28/100 000 pop/yr.

^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].

^e Age and sex breakdown provided for all notified new smear-positive cases in 2004.

See Methods for further details.

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Expanded DOTS services to 51 additional local government areas (LGAs) in 17 states in the North East, North West and North Central zones
- Prepared national strategic plan for TB control for 2006–2010
- Received approval for GFATM round 5 proposal for TB control
- Assessed laboratories in Abuja and Lagos for new GDF diagnostic kits
- Recruited 3 additional NPOs in the South East, North Central and South South zones

Challenges

- Decentralizing the procurement of microscopes, laboratory reagents and other consumables
- Strengthening supervision at all levels to improve sputum smear microscopy
- Establishing a functional laboratory network at the intermediate level, 2 national and 6 state reference laboratories, and a nationwide EQA system
- Increasing capacity of central-level NTP in planning, monitoring and supervision, and improving communication with individual state programmes
- Improving defaulter and contact tracing

Planned activities

- Expand DOTS services to 200 LGAs and provide DOTS services in 5000 health-care facilities
- Regularly produce NTP bulletin for country, national and international partners and donors
- Generate HR development strategy

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Developed national TB/HIV training modules and other materials for NTP and NAP
- Conducted regular meetings of the NTP and NAP throughout the year and held a joint TB/HIV international mission in March 2005
- Organized training workshop on collaborative TB/HIV activities for staff in DOTS services and VCT and ART centres

Challenges

- Implementing collaborative TB/HIV activities in the context of different structures of the NTP and NAP
- Funding DRS and improving laboratory capacity for DST
- Improving access to TB services by expanding diagnostic coverage and reducing transport costs

Planned activities

- Improve funding for collaborative TB/HIV activities using GFATM funds
- Establish official TB/HIV coordinating body, implementation task force and focal points in NTP and NAP
- Implement collaborative TB/HIV activities in health-care facilities from 6 selected states

Strengthening health systems

Achievements

- Introduced health systems reforms, including fair awarding of contracts and procurement

Challenges

- Increasing health system coverage of the population
- Deploying more health-care staff to the northern and central parts of the country and increasing staff salaries to improve motivation and retention

Engaging all care providers

Achievements

- Secured funding for pilot PPM-DOTS activities from WHO and FIDELIS for 60 health-care facilities and 30 microscopy centres in 6 states
- Carried out pilot PPM-DOTS projects in 2 states where TB control is supported by GLRA; Anambra and Abia states

Challenges

- Involving private health-care providers in the NTP strategic plan for DOTS expansion

Planned activities

- Implement PPM-DOTS pilot projects throughout the country in a phased manner

Empowering people with TB, and communities

Achievements

- Used community-built health facilities for primary health care and DOTS services
- Held advocacy and sensitization workshop on TB and TB/HIV for policy-makers and chief medical directors

Challenges

- Developing national ACSM plan
- Overcoming stigma associated with TB and TB/HIV
- Improving awareness among health-care providers, communities and patients of TB and of the association between TB and HIV

Planned activities

- Establish community-based DOTS in at least 2 communities in each of the 6 zones in the country

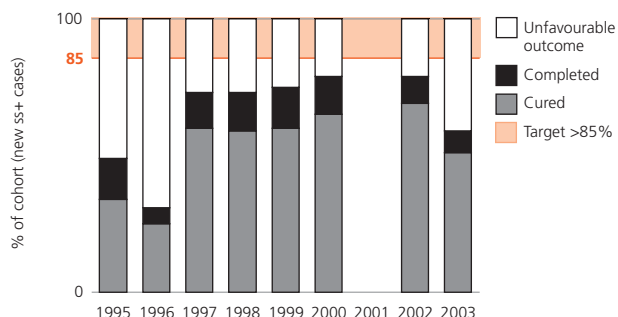
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	47	30	40	45	45	47	55	55	60	65
DOTS notification rate (new and relapse/100 000 pop)	13	18	15	18	20	22	25	24	35	44
DOTS notification rate (new ss+/100 000 pop)	9.1	10	10	12	14	15	16	16	22	26
DOTS case detection rate (new and relapse, %)	7.0	9.0	7.1	7.9	8.5	8.7	9.3	8.7	12	15
DOTS case detection rate (new ss+, %)	11	12	11	12	13	14	14	13	18	21
DOTS case detection rate (new ss+)/coverage (%)	24	39	28	27	30	29	25	24	31	32
DOTS treatment success (new ss+, %)	49	32	73	73	75	79	—	79	59	—
DOTS re-treatment success (ss+, %)	—	71	—	—	74	71	71	73	—	—

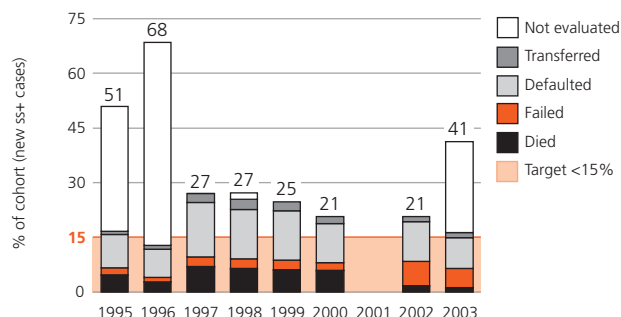
Treatment success, DOTS

Treatment outcomes improving from 1997 to 2002; for 2003 cohort 78% of evaluated cases were successfully treated but only 75% of registered cases were evaluated



Unfavourable treatment outcomes, DOTS

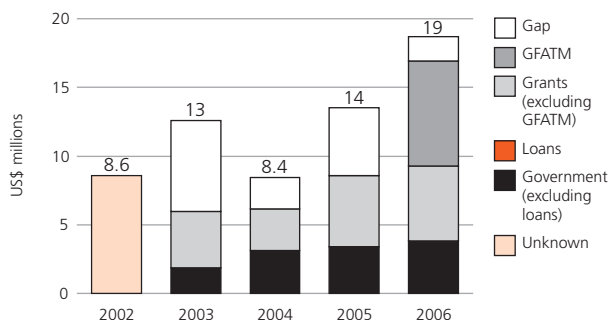
Default rate decreasing since 1997; one quarter of cases not evaluated in 2003 cohort



BUDGET AND FINANCE

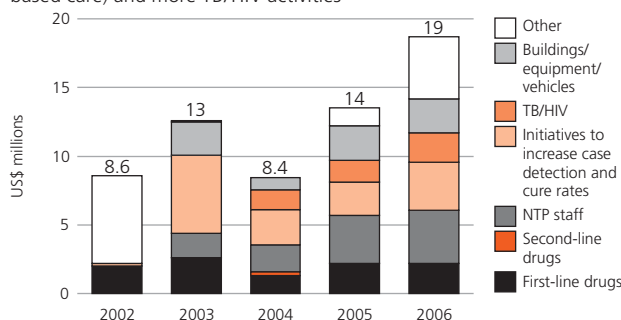
NTP budget by source of funding

Big increase in NTP budget in 2006; budget almost fully funded in 2006 following successful GFATM round 5 application



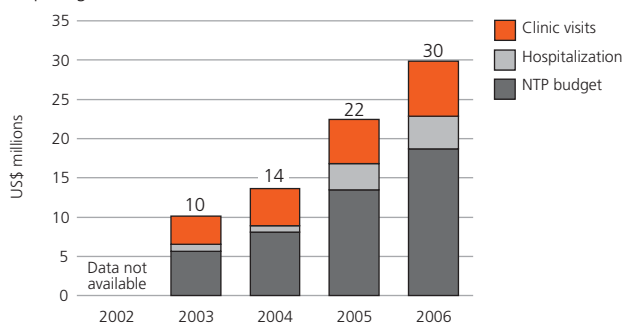
NTP budget by line item

Increased budget allows for larger number of technical staff, initiatives to increase case detection and cure rates (mainly PPM-DOTS and community-based care) and more TB/HIV activities



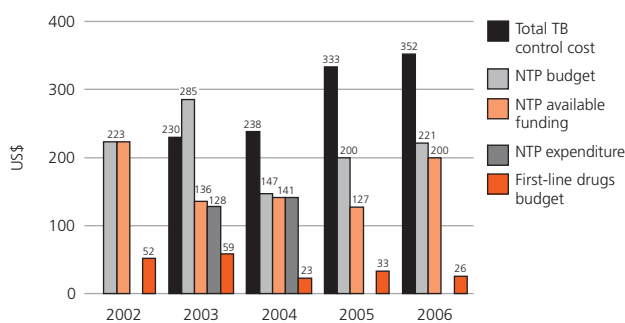
Total TB control costs by line item^a

Increase in hospitalization costs is related to HIV epidemic, with more HIV-positive TB patients – especially those that are smear-negative – requiring admission



Per patient costs, budgets and expenditure^b

Increasing total cost per patient treated; NTP expenditure almost equal to budget in 2004



^a Total TB control costs for 2003–2004 are based on expenditure, whereas those for 2005–2006 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.

^b NTP available funding for 2004 is based on the amount of funding actually received, using retrospective data; available funding for 2003 and 2005–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.

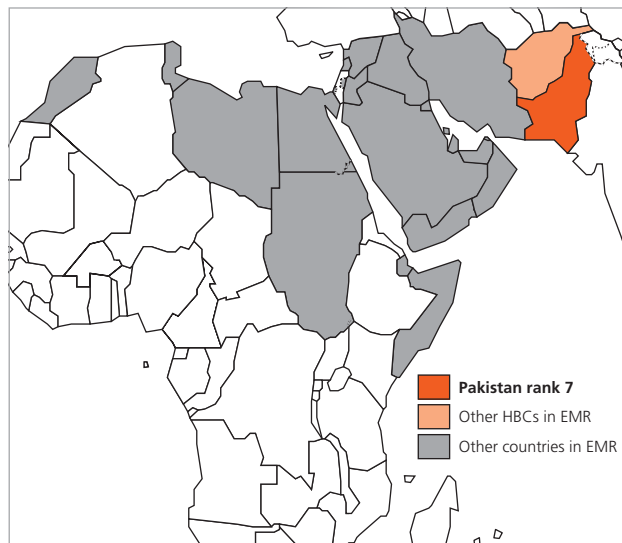
pop indicates population; ss+, smear-positive; yr, year; — not available.

Pakistan

The steep rise in the number of TB cases reported each year since 2000 represents improved case registration under DOTS. Despite rapid progress over the past 5 years, the case detection rate for Pakistan was estimated to be only 27% in 2004. Case-finding should continue to improve if government and donors can fund the annual NTP budget, which was greatly enlarged to around US\$ 20 million or more for the years 2004–2006. As the DOTS programme expands, the quality of treatment must improve too; treatment success was just 75% in the 2003 cohort, with a high proportion of patients lost to follow-up.

KEY INDICATORS

Population (thousands) ^a	154 794
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	181
Trend in incidence rate (%/yr) ^c	0.0
Incidence (ss+/100 000 pop/yr)	81
Prevalence (all cases/100 000 pop) ^c	329
Mortality (deaths/100 000 pop/yr) ^c	40
Prevalence of HIV in adult TB patients (15–49 yrs, %)	0.6
New TB cases multidrug-resistant (%) ^d	2.0
Previously treated TB cases multidrug-resistant (%) ^d	26
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	66
Notification rate (new ss+/100 000 pop/yr)	22
Case detection rate (all cases, %)	36
Case detection rate (new ss+, %)	27
DOTS notification rate (new and relapse/100 000 pop/yr)	66
DOTS notification rate (new ss+/100 000 pop/yr)	22
DOTS case detection rate (new and relapse, %)	36
DOTS case detection rate (new ss+, %)	27
DOTS treatment success (2003 cohort, %)	75
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	13
Government contribution to total cost TB control (including loans, %)	32
Government health spending used for TB control (%)	4.9
NTP budget funded (%)	63

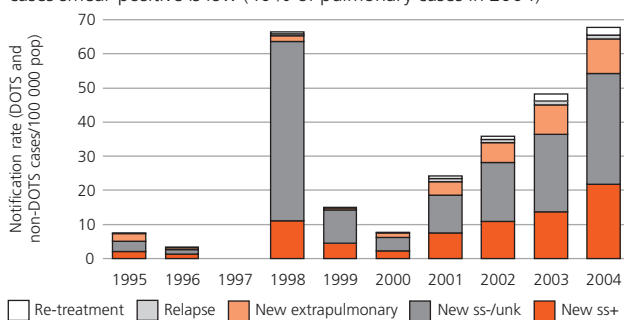


WHO Eastern Mediterranean Region (EMR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

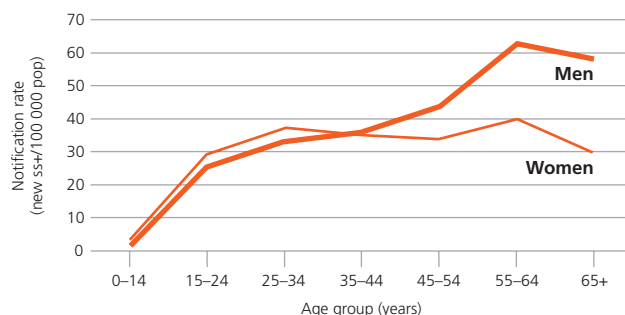
Case notifications

Notifications increasing since 2000 as DOTS expands; case detection within DOTS areas about 30% for all years in that period; proportion of cases smear-positive is low (40% of pulmonary cases in 2004)



Case notifications by age and sex, 2004

Age-sex distribution of notified cases typical of countries in EMR



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.

^b Incidence, prevalence and mortality estimates include patients with HIV. Estimates of TB burden based on 1987–1988 prevalence survey and on notifications in DOTS areas in 1996. Incidence assumed to be constant, in absence of data.

^c 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 430/100 000 pop and mortality 49/100 000 pop/yr.

^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].

^e Age and sex breakdown provided for a subset of new smear-positive cases notified in 2004.

See Methods for further details.

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Reached 100% DOTS coverage in public sector in May 2005
- Developed 5-year strategic plan for 2006–2010
- Obtained approval for 5-year budget allocation for 2006–2010 from the federal government of one billion rupees (equivalent to US\$ 16.7 million)
- Produced laboratory manual and reviewed national guidelines
- Strengthened surveillance capacity through development of computerized district management system at provincial level and through training on monitoring, supervision and surveillance
- Filled all NTP and provincial TB programme posts and identified district TB coordinators for all districts
- Established mechanisms to ensure coordination among various technical and financial partners

Challenges

- Increasing supervision capacity at district level
- Improving HR capacity and developing incentive schemes to motivate health-care workers involved in TB control
- Establishing a fully functional TB laboratory network in each province, including reference laboratories
- Strengthening peripheral-level laboratories and improving supervisory capacity of intermediate-level laboratories
- Improving the quality of TB diagnosis by increasing bacteriological confirmation for TB cases
- Establishing national policy on culture and DST
- Continuing TB control activities in the earthquake-affected areas at the same level as before the earthquake

Planned activities

- Engage district leaders and authorities to improve political commitment for TB control in more than 20 districts through ISAC
- Further strengthen monitoring and supervision activities
- Strengthen intermediate-level laboratories
- Implement pilot EQA project

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Started development of guidelines for diagnosis and management of paediatric TB cases and guidelines for diagnosis and management of complicated adult cases

Challenges

- Establishing formal TB/HIV coordinating body and national strategy for collaborative TB/HIV activities in cooperation with NAP
- Setting up surveillance system to monitor HIV prevalence in TB patients
- Determining the extent of anti-TB drug resistance
- Establishing a routine information system on chronic TB patients within NTP services
- Joint supervision and implementation of TB, HIV and malaria programmes in districts

Planned activities

- Expand diagnostic services within the public network for poor and remote populations

Contributing to health system strengthening

Achievements

- Continued health system devolution process and increased ownership and participation in health planning and delivery at district and primary health-care levels

Challenges

- Building managerial and supervision capacity at district and peripheral levels
- Strengthening district health teams
- Ensuring that health and TB control remain a priority for district political leaders during the decentralization process
- Developing national legislation specifically addressing drug procurement, and acquiring drug management technical expertise and capacity

Planned activities

- Integrate DOTS services into efforts to rehabilitate health services in earthquake-affected regions
- Contribute to improve and expand the primary health-care network
- Develop public–public and private–public mix initiatives
- Conduct operational research on the effect of DOTS implementation on health system development

Engaging all care providers

Achievements

- Piloted franchising of DOTS through private practitioners using “Greenstar”, with support from GFATM funding
- Started urban TB control initiatives in Karachi and other major urban areas, particularly targeting the private sector

Challenges

- Improving the role of the private sector and tertiary care hospitals in TB diagnosis and treatment under DOTS services
- Involving communities and non-health sectors such as the ministries of defence, interior, labour, water and power in TB control
- Developing PPM-DOTS policy guidelines

Planned activities

- Document current PPM-DOTS activities to inform plans for further scale-up
- Obtain approval for PPM-DOTS component of the current government budget developed by the NTP (in the final stage)

Empowering people with TB, and communities

Achievements

- Developed an ACSM national strategy for DOTS
- Involved community members and lady health workers (LHWs) in providing TB treatment at home and referring TB suspects for diagnosis
- Conducted a GFATM-funded rapid assessment of the current communication infrastructure of the NTP

Challenges

- Increasing coverage of LHW programme and improving support and incentives for LHWs
- Improving skills of existing communication staff
- Improving coordination of and securing funds for ACSM activities
- Increasing community ownership, awareness and knowledge about TB control and DOTS services

Planned activities

- Continue to develop and expand Stop TB Pakistan national partnership
- Expand community involvement projects under the FIDELIS round 5 grant

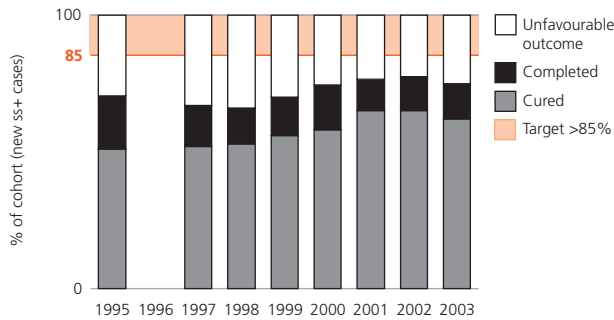
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	2.0	8.0	—	8.0	8.0	9.0	24	45	63	79
DOTS notification rate (new and relapse/100 000 pop)	2.8	3.3	—	7.0	3.3	7.7	12	32	46	66
DOTS notification rate (new ss+/100 000 pop)	0.8	1.4	—	3.0	1.6	2.3	4.3	10	14	22
DOTS case detection rate (new and relapse, %)	1.5	1.8	—	3.9	1.8	4.3	6.6	18	25	36
DOTS case detection rate (new ss+, %)	1.0	1.8	—	3.7	2.0	2.8	5.3	13	17	27
DOTS case detection rate (new ss+)/coverage (%)	51	22	—	47	25	31	22	28	27	34
DOTS treatment success (new ss+, %)	70	—	67	66	70	74	77	77	75	—
DOTS re-treatment success (ss+, %)	70	—	57	92	75	54	—	76	65	—

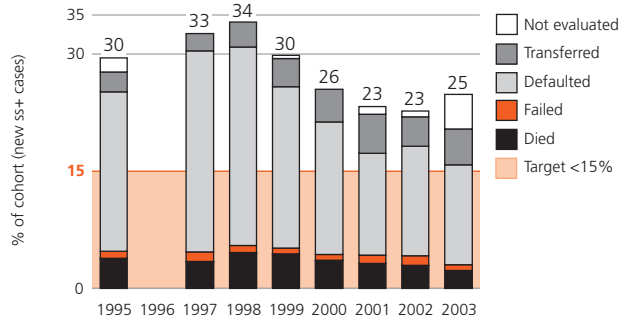
Treatment success, DOTS

Treatment success in recent years higher than in 1990s, but still far from 85% target



Unfavourable treatment outcomes, DOTS

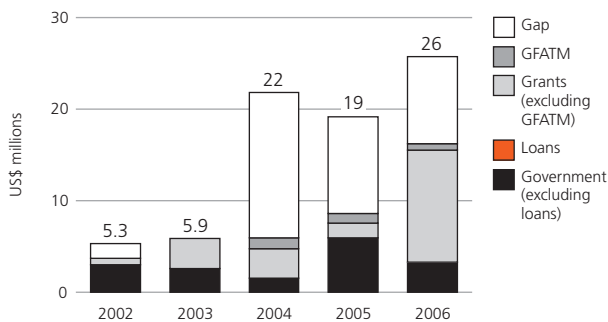
Default rate in 2003 cohort half that of 1997 cohort, but still among highest in a HBC



BUDGET AND FINANCE

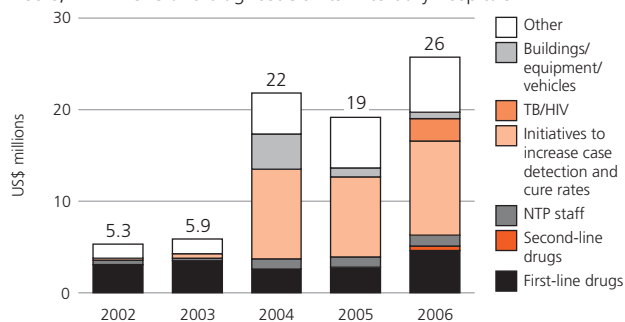
NTP budget by source of funding

Big improvement in funding in 2006 though funding gap remains; funds expected from provincial-level budgets will help to fill this gap



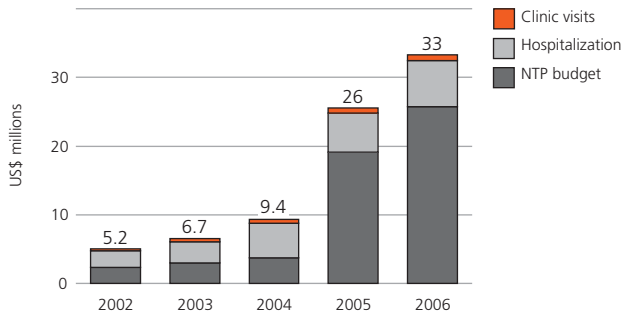
NTP budget by line item

Large budget for initiatives to increase case detection and cure rates since 2004, mainly training of lady health workers and lady health supervisors, PPM-DOTS and diagnostic units in tertiary hospitals



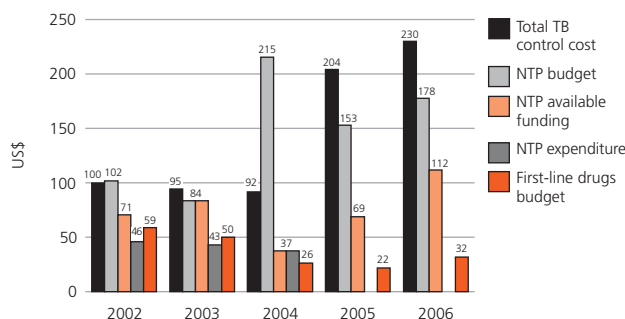
Total TB control costs by line item^a

Use of general health system staff and infrastructure accounts for largest share of total TB control costs in 2002–2004, but this will change if NTP budgets are fully funded in 2005–2006



Per patient costs, budgets and expenditure^b

Funding in 2004 less than expected because of delays in approving the project costs of the NTP



^a Total TB control costs for 2002–2004 are based on expenditure, whereas those for 2005–2006 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.

^b NTP available funding for 2004 is based on the amount of funding received, using retrospective data; available funding for 2002–2003 and 2005–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.

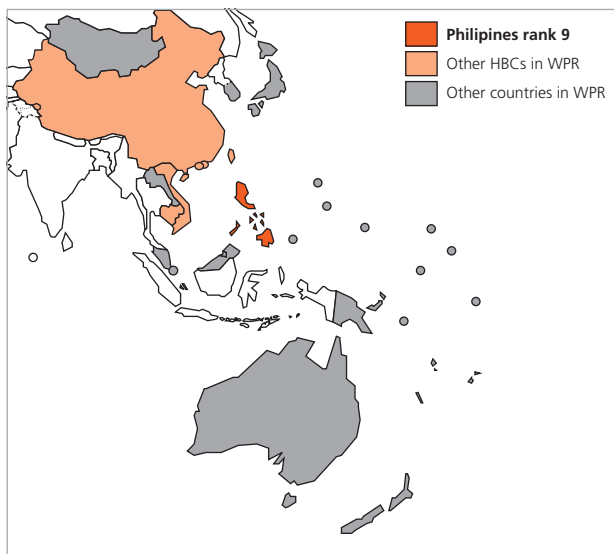
pop indicates population; ss+, smear-positive; yr, year; — not available.

Philippines

Having achieved consistently high rates of treatment success for 5 years, and steadily improved case detection, the Philippines met the WHO targets for DOTS implementation by the end of 2004. The notification rate of all TB cases fell in 6 out of the 10 years between 1995 and 2004, but it is not known whether this represents a real fall in incidence. The budgets for TB control in 2005 and 2006 are larger than in previous years, but these have not (yet) been fully funded.

KEY INDICATORS

Population (thousands) ^a	81 617
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	293
Trend in incidence rate (%/yr) ^c	-1.0
Incidence (ss+/100 000 pop/yr)	132
Prevalence (all cases/100 000 pop) ^c	463
Mortality (deaths/100 000 pop/yr) ^c	48
Prevalence of HIV in adult TB patients (15–49 yrs, %)	0.1
New TB cases multidrug-resistant (%) ^d	1.5
Previously treated TB cases multidrug-resistant (%) ^d	12
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	160
Notification rate (new ss+/100 000 pop/yr)	96
Case detection rate (all cases, %)	55
Case detection rate (new ss+, %)	73
DOTS notification rate (new and relapse/100 000 pop/yr)	160
DOTS notification rate (new ss+/100 000 pop/yr)	96
DOTS case detection rate (new and relapse, %)	55
DOTS case detection rate (new ss+, %)	73
DOTS treatment success (2003 cohort, %)	88
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	58
Government contribution to total cost TB control (including loans, %)	72
Government health spending used for TB control (%)	3.4
NTP budget funded (%)	71

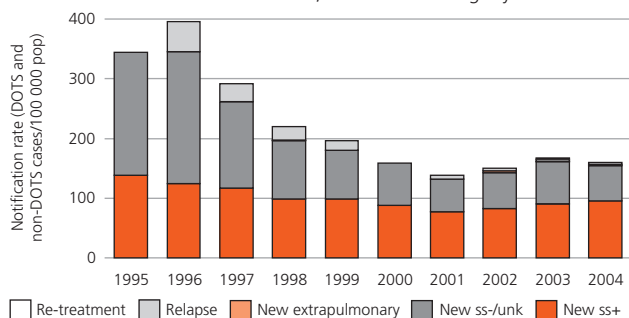


WHO Western Pacific Region (WPR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

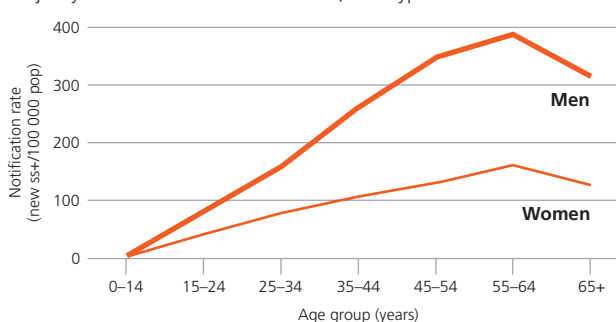
Case notifications

Notifications fell from 1995 to 2001, but have risen slightly since



Case notifications by age and sex,^e 2004

Majority of notified cases in older men, as is typical of WPR



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.

^b Incidence, prevalence and mortality estimates include patients with HIV. Estimates of TB burden based on 1997 prevalence survey. Incidence assumed to be declining at 1% per yr as in other countries in WPR.

^c 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 893/100 000 pop and mortality 79/100 000 pop/yr.

^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].

^e Age and sex breakdown provided for a subset of new smear-positive cases notified in 2004.

See Methods for further details.

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Revised NTP manual and training modules to include TB diagnosis, FDCs and PPM DOTS
- Piloted and issued national guidelines on TB in children, in consensus with national paediatric society and various child welfare NGOs
- Piloted EQA for smear microscopy in one province in each of the 17 regions supported by JICA
- Provided smear microscopy services at rural health-care centres and at local government unit (LGU) hospitals

Challenges

- Increasing NTP staff numbers and capacity at central level
- Establishing HR development strategy to improve DOTS quality and capacity in NTP and public and private sectors
- Improving laboratory management at central and regional levels
- Securing sufficient financial and human resources for laboratory services, and training for implementation of EQA
- Developing adequate drug management system for both first- and second-line anti-TB drugs

Planned activities

- Expand EQA to 2 additional provinces per region

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Management of MDR-TB and collaborative TB/HIV activities included in successful GFATM round 5 proposal
- Finished first DRS and analysed results

Challenges

- Increasing technical expertise and number of staff for collaborative TB/HIV activities
- Overcoming geographical, economic and sociocultural barriers to access to services for TB diagnosis and treatment

Planned activities

- Implement routine offer of HIV testing for TB patients, and estimate prevalence of HIV in TB patients
- Strengthen culture capacity at the NRL and Luzon, Mindanao and Visayas reference laboratories to respond to needs of management of MDR-TB
- Expand management of MDR-TB to areas outside Manila

Contributing to health system strengthening

Achievements

- Held first forum of the Philippine Partnership to Fight TB, Malaria and AIDS with multisectoral stakeholders, civil society and various governmental agencies
- Involved municipal laboratories and trained municipal health-care staff in TB control services

Challenges

- Coping with staff-reduction policies linked to health sector reform (from 25 central-level NTP staff to 2 in year 2000, increased to 9 in year 2005)

Engaging all care providers

Achievements

- Agreed with DoH and LGU hospitals on the provision of DOTS services according to revised NTP guidelines and trained hospital staff in DOTS
- Implemented DOTS in Correctional Institution for Women after training health personnel and establishing a referral system with NTP
- Scaled up PPM-DOTS with support from GFATM through the Philippine Coalition Against TB (PhilCAT) and the Philippine Tuberculosis Initiatives for the Private Sector (PhilTIPS)
- 131 public and 41 private facilities certified by the National Coordinating Committee for PPM-DOTS; 41% also accredited by the Philippine Health Insurance Corporation

Challenges

- Incorporating PPM-DOTS into the NTP human resource development plan
- Development by the NTP of technical capacity of staff in health and other sectors (LGU hospitals, prisons), and harmonizing training activities of all DOTS stakeholders to improve the understanding of DOTS policies and guidelines

Planned activities

- Train DoH and LGU hospital staff on hospital-based DOTS
- Expand PPM DOTS to additional sites with funding from GFATM rounds 2 and 5

Empowering people with TB and communities

Achievements

- Organized community volunteers, retired government workers and cured patients in community task forces for case detection, DOT support and to inform the community about DOTS services
- Developed ACSM plan, "TB Network", based on 1997 national prevalence and 2003 national demographic and health surveys in collaboration with LGUs, PhilCAT and Philippine Health Insurance Corporation
- Launched the "Manuel L. Quezon DOTS Achievers Award" during World TB Day to honour one outstanding DOTS facility, one treatment partner and one cured TB patient in the public and private sectors in each region

Challenges

- Continuing advocacy meetings with LGU and private sector to improve involvement and motivation in TB control
- Increasing community awareness of TB and of availability of DOTS services
- Identifying priority groups and studying their behaviour and attitudes towards TB

Planned activities

- Advocate TB support with DoH staff
- Create additional community task forces especially in urban poor areas

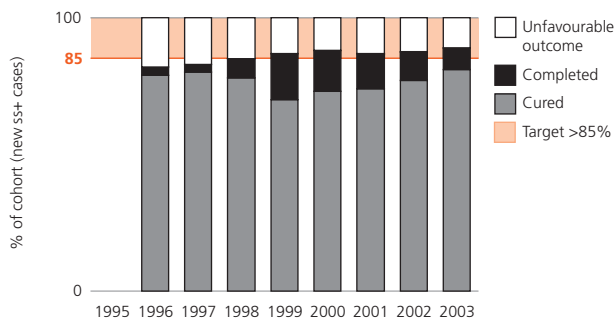
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	4.3	2.0	15	17	43	90	95	98	100	100
DOTS notification rate (new & relapse / 100 000 pop)	1.4	2.5	10	25	43	118	139	150	166	160
DOTS notification rate (new ss+ / 100 000 pop)	0.6	0.7	4.5	14	28	66	77	83	91	96
DOTS case detection rate (new & relapse, %)	0.4	0.8	3.3	8.1	14	39	46	50	56	55
DOTS case detection rate (new ss+, %)	0.4	0.5	3.2	10	20	48	57	61	68	73
DOTS case detection rate (new ss+) / coverage (%)	10	23	21	60	46	54	60	63	68	73
DOTS treatment success (new ss+, %)	—	82	83	84	87	88	88	88	88	—
DOTS retreatment success (ss+, %)	—	66	26	83	—	—	—	—	76	—

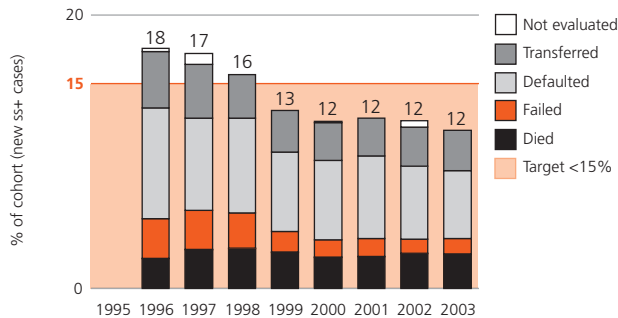
Treatment success, DOTS

Above 85% for 5th consecutive year; proportion of cases with confirmation of cure increasing



Unfavourable treatment outcomes, DOTS

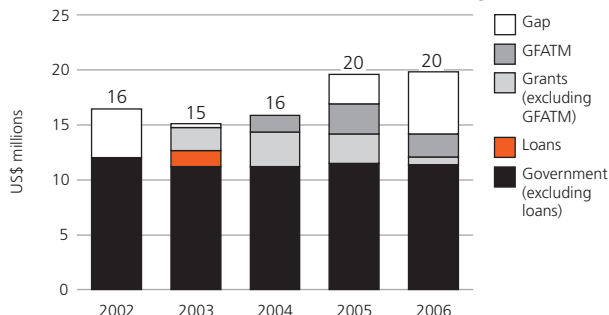
Proportion of cases defaulting has decreased since 1996



BUDGET AND FINANCE

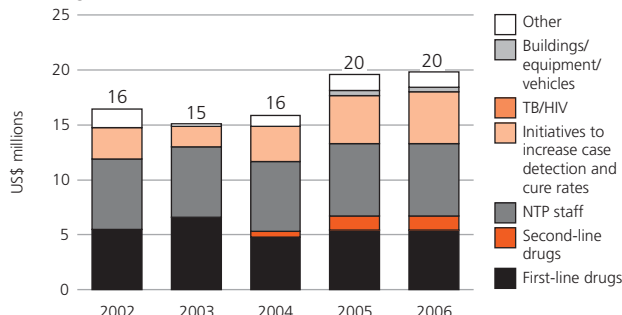
NTP budget by source of funding

Funding gaps in 2006 for MDR-TB and PPM-DOTS; gap for MDR-TB will be reduced if GFATM round 5 funds are received during 2006



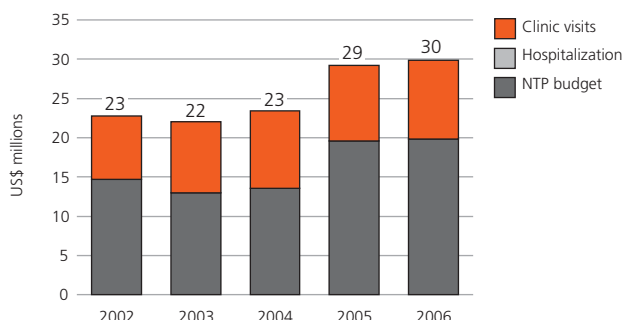
NTP budget by line item

Relatively stable budget breakdown but increased budget for second-line drugs since 2004



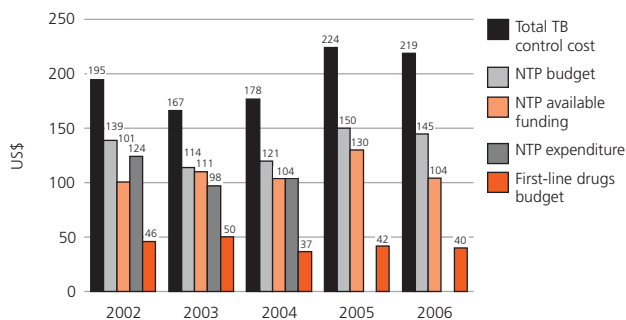
Total TB control costs by line item^a

Large share of total costs accounted for by use of general health system staff and infrastructure



Per patient costs, budgets and expenditure^b

Relatively stable cost per patient treated



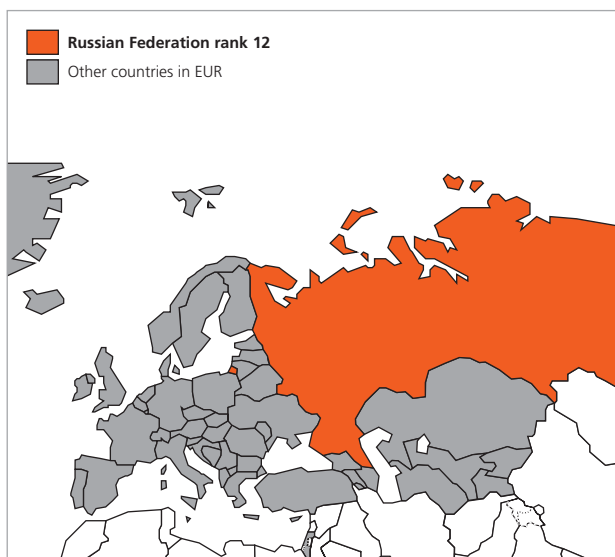
^a Total TB control costs for 2002–2004 are based on expenditure, whereas those for 2005–2006 are based on budgets. Estimates of the costs of clinic visits and hospitalization are WHO estimates based on data provided by the NTP and from other sources. See Methods for further details.
^b NTP available funding for 2004 is based on the amount of funding actually received, using retrospective data; available funding for 2002–2003 and 2005–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.
 pop indicates population; ss+, smear-positive; yr, year; — not available.

Russian Federation

Case notifications in the Russian Federation suggest that TB incidence doubled during the 1990s, but it appears to have been falling again since 2000. The introduction of DOTS may have contributed to a decline in the case-load, but the impact of the WHO strategy is likely to be small because smear-positive case detection and cure rates are persistently low. The Russian Federation probably records and reports most TB patients in the country, but must urgently implement measures that lead to improvements in diagnosis and treatment.

KEY INDICATORS

Population (thousands) ^a	143 899
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	115
Trend in incidence rate (%/yr) ^c	-2.5
Incidence (ss+/100 000 pop/yr)	51
Prevalence (all cases/100 000 pop) ^c	160
Mortality (deaths/100 000 pop/yr) ^c	21
Prevalence of HIV in adult TB patients (15–49yrs, %)	6.8
New TB cases multidrug-resistant (%) ^d	10
Previously treated TB cases multidrug-resistant (%) ^d	48
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	84
Notification rate (new ss+/100 000 pop/yr)	21
Case detection rate (all cases, %)	73
Case detection rate (new ss+, %)	42
DOTS notification rate (new and relapse/100 000 pop/yr)	24
DOTS notification rate (new ss+/100 000 pop/yr)	6.9
DOTS case detection rate (new and relapse, %)	21
DOTS case detection rate (new ss+, %)	13
DOTS treatment success (2003 cohort, %)	61
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	83
Government contribution to total cost TB control (including loans, %)	85
Government health spending used for TB control (%)	4.2
NTP budget funded (%)	90



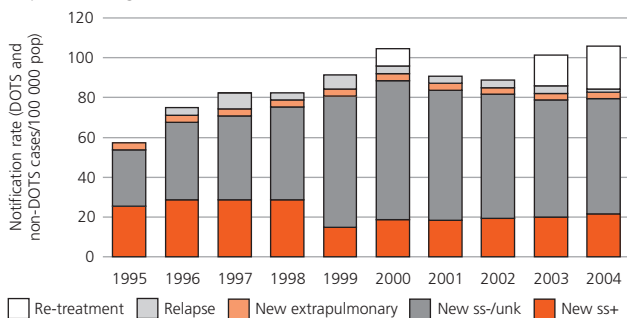
WHO European Region (EUR)

Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

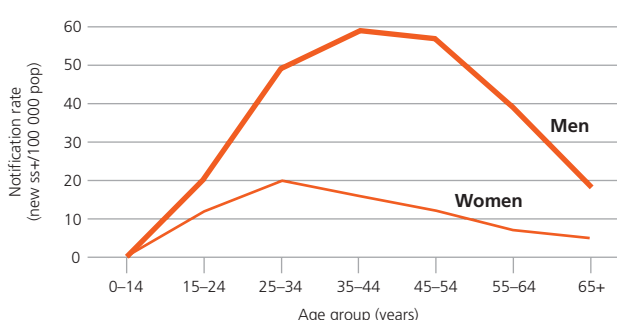
Case notifications

Notifications rose steadily from 1990 to 2000 but are now falling, perhaps reflecting a true decline in incidence



Case notifications by age and sex,^e 2004

Most TB patients are adult men, as is typical of countries in the former Soviet Union



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.

^b Incidence, prevalence and mortality estimates include patients with HIV. Incidence estimates based on the assumption that 60% of cases (new and relapse) were detected in 1997 (DOTS and non-DOTS). Moving average of notification rate (new and relapse, DOTS and non-DOTS combined) used as trend in incidence.

^c 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 82/100 000 pop and mortality 10/100 000 pop/yr.

^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].

^e Age and sex breakdown provided for all notified new smear-positive cases in 2004.

See Methods for further details.

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Started implementation of DOTS strategy in all regions

Challenges

- Strengthening laboratory services and complying with bio-safety standards in more than 500 laboratories performing culture
- Establishment of NRL

Planned activities

- Continue DOTS expansion through implementation of the World Bank loan and GFATM grant projects
- Strengthen the federal system for TB laboratory QA
- Establish HR development plan, including staff distribution, salaries and incentives to improve motivation within the context of the World Bank loan and GFATM grant

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Developed coordinating mechanisms for collaborative TB/HIV activities
- Trained regional staff on TB/HIV control framework and established federal TB/HIV coordinating commission
- Included data on HIV prevalence in TB patients in standard TB reporting forms since 2005
- Implemented double-blinded proficiency DST in selected laboratories

Challenges

- Strengthening surveillance of HIV among TB patients
- Updating technical guidelines and legal framework for collaborative TB/HIV activities, and ensuring supply of antiretroviral drugs
- Developing nationwide monitoring and evaluation system for collaborative TB/HIV activities
- Integrating TB care for HIV-infected patients, currently a separate system from care of HIV-negative patients
- Working for national acceptance of internationally approved MDR-TB treatment regimens
- Ensuring standardized, quality-assured system for routine DRS
- Improving registration and procurement mechanisms for anti-TB second-line drugs
- Establishing patient incentives and ensuring social support

Planned activities

- Implement DRS
- Develop infrastructure for TB/HIV control, and establish monitoring and evaluation system for collaborative TB/HIV activities
- Update and pilot test existing guidelines for collaborative TB/HIV activities
- Further develop and strengthen the system for HIV surveillance in TB patients
- Improve national framework for implementation of MDR-TB control, and establish 13 centres of excellence for MDR-TB in the prison and civilian sectors
- Increase the number of regions with GLC-approved projects for the management of MDR-TB, and the number of MDR-TB patients treated
- Address poverty and equity issues by expanding access to TB services for vulnerable groups through the GFATM grant

Contributing to health system strengthening

Challenges

- Strengthening capacity for outpatients and laboratory services countrywide
- Introducing drug management information system

Planned activities

- Begin laboratory infrastructure expansion to more than 100 laboratories and 800 microscopy centres in civilian and prison sectors
- Strengthening infrastructure and capacity for monitoring, supervision and case management
- Strengthening infection control policy and practices

Engaging all care providers

Achievements

- Increased involvement of public and medical college hospitals, prison, military and health social insurance services

Challenges

- Training an increasing number of private practitioners in DOTS, including patient referral, recording and reporting
- Establishing a formal link between private practitioners and the NTP
- Improving interagency coordination

Planned activities

- Offer timely diagnosis and treatment of TB in the prison population through the GFATM grant

Empowering people with TB, and communities

Achievements

- Implemented effective World TB Day activities to raise awareness of decision-makers, media and general public about TB
- Organized TB workshop for journalists and held a national journalists' competition for excellence in TB reporting
- Held Moscow workshop on ACSM for TB control programmes

Challenges

- Involving communities in TB control
- Ensuring the involvement of the HIV community in TB and TB/HIV advocacy and communication

Planned activities

- Develop an ACSM strategic plan involving ministries, NGOs, patients' associations, international organizations and donors

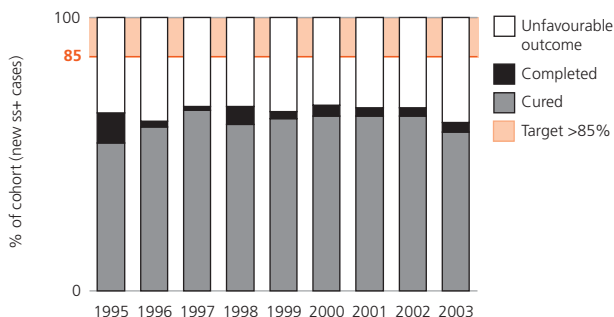
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	—	2.3	2.3	5.0	5.0	12	16	25	25	45
DOTS notification rate (new and relapse/100 000 pop)	—	0.6	1.2	1.2	2.6	7.8	10	12	15	24
DOTS notification rate (new ss+/100 000 pop)	—	0.2	0.4	0.5	0.9	2.5	2.8	3.6	4.4	6.9
DOTS case detection rate (new and relapse, %)	—	0.7	1.1	1.1	2.2	6.1	7.9	10	12	21
DOTS case detection rate (new ss+, %)	—	0.4	0.9	0.9	1.6	4.4	5.0	6.6	8.3	13
DOTS case detection rate (new ss+)/coverage (%)	—	19	41	18	32	37	31	26	33	30
DOTS treatment success (new ss+, %)	65	62	67	68	65	68	67	67	61	—
DOTS re-treatment success (ss+, %)	58	64	—	49	45	49	48	46	45	—

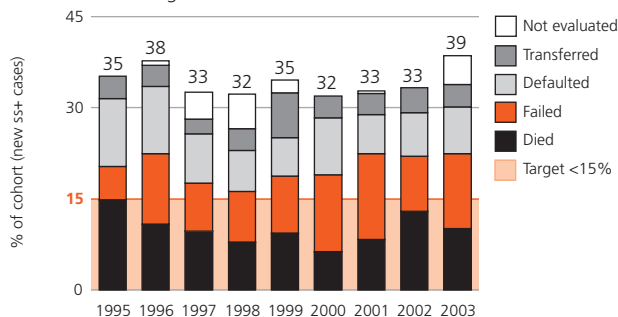
Treatment success, DOTS

Treatment success consistently low



Unfavourable treatment outcomes, DOTS

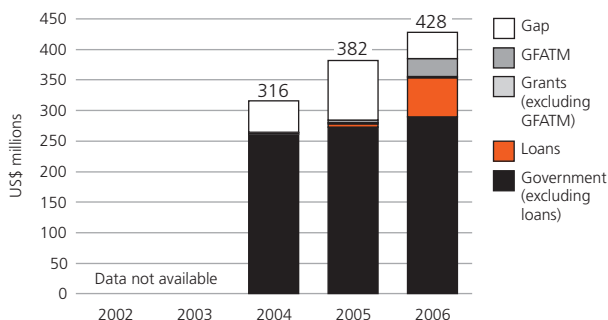
High failure rate principally a consequence of drug resistance; default and death rates also high



BUDGET AND FINANCE^a

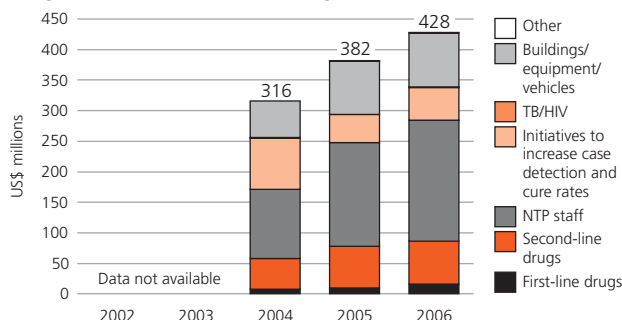
NTP budget by source of funding

Largest budget among HBCs; funding has increased by more than US\$100 million between 2005 and 2006



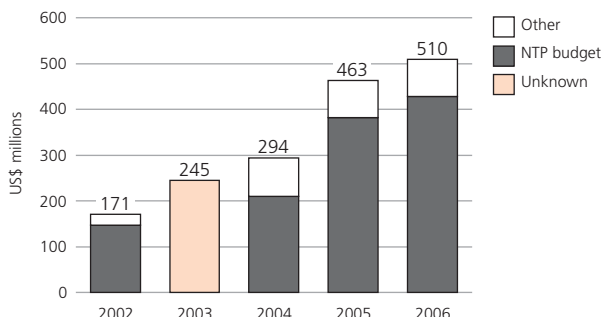
NTP budget by line item

Relatively stable budget breakdown as total budget increases; large budget for staff and second-line drugs



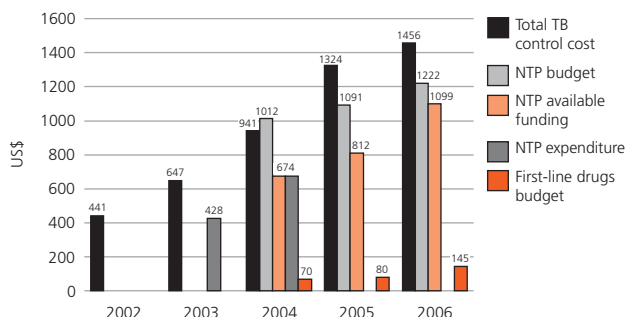
Total TB control costs by line item^b

Total TB control costs higher than in any other HBC, mainly as a result of greater reliance on hospitalization as well as more use of second-line drugs



Per patient costs, budgets and expenditure^{c,d}

Highest cost per patient treated among HBCs



^a Financial data were compiled by WHO (Moscow Office) in collaboration with the Ministry of Health and Social Development and the Federal Agency for Health and Social Development.

^b Total TB control costs for 2002–2004 are based on expenditure, whereas those for 2005–2006 are based on budgets. “Other” includes costs for hospitalization and fluorography not reflected in the budget estimates submitted to WHO.

^c NTP available funding for 2004 is based on the amount of funding actually received, using retrospective data; available funding for 2005–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported gap.

^d Per patient figures are calculated based on prevalent cases except for first-line drugs where incident cases were used.

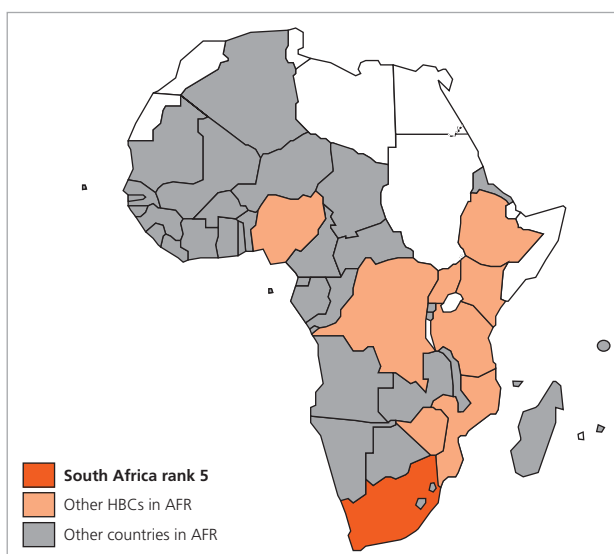
pop indicates population; ss+, smear-positive; yr, year; — not available.

South Africa

Responsibility for health in South Africa is devolved to provinces among which the quality of TB control varies greatly; the NTP removed DOTS status from one province in 2004. TB incidence was re-evaluated during 2005; the case detection rate was revised downwards but appears still to have exceeded the 70% target. Treatment success remains low compared with other African countries with a high prevalence of HIV and with considerably fewer resources. South Africa has more people with HIV than any other country, but few HIV-positive TB patients are being offered ART. Introduction of the Electronic TB Register is improving the quality of surveillance data. South Africa has not been able to provide financial data, and rectifying this situation should be a priority in 2006.

KEY INDICATORS

Population (thousands) ^a	47 208
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	718
Trend in incidence rate (%/yr) ^c	8.5
Incidence (ss+/100 000 pop/yr)	293
Prevalence (all cases/100 000 pop) ^c	670
Mortality (deaths/100 000 pop/yr) ^c	135
Prevalence of HIV in adult TB patients (15–49yrs, %)	60
New TB cases multidrug-resistant (%) ^d	1.8
Previously treated TB cases multidrug-resistant (%) ^d	6.7
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	560
Notification rate (new ss+/100 000 pop/yr)	250
Case detection rate (all cases, %)	78
Case detection rate (new ss+, %)	85
DOTS notification rate (new and relapse/100 000 pop/yr)	544
DOTS notification rate (new ss+/100 000 pop/yr)	242
DOTS case detection rate (new and relapse, %)	76
DOTS case detection rate (new ss+, %)	83
DOTS treatment success (2003 cohort, %)	67
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	—
Government contribution to total cost TB control (including loans, %)	—
Government health spending used for TB control (%)	—
NTP budget funded (%)	—

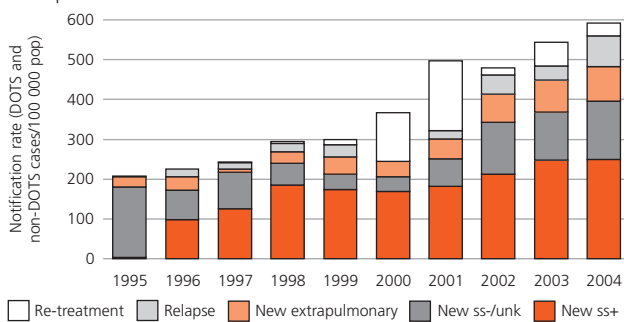


WHO African Region (AFR)
 Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

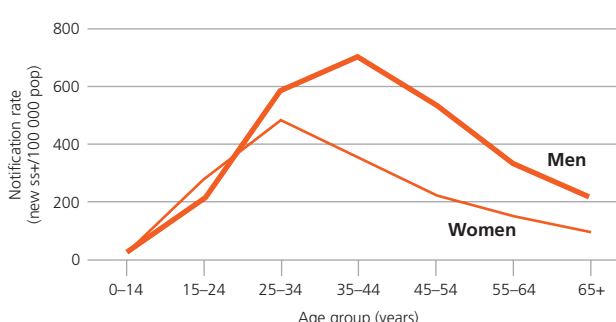
Case notifications

Notifications have risen steeply but somewhat erratically since 1995; increase is likely to be a result of increasing incidence of TB linked to the HIV epidemic



Case notifications by age and sex, 2004

Age-sex distribution of notified cases typical of countries in AFR



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.

^b Incidence, prevalence and mortality estimates include patients with HIV. Estimates of TB burden revised in 2005 following analysis of vital registration data for year 2001. Trend in incidence estimated from 3-year moving average of notification rate (new and relapse, non-DOTS and DOTS combined, years 1999–2001 interpolated).

^c 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 735/100 000 pop and mortality 89/100 000 pop/yr.

^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].

^e Age and sex breakdown provided for all notified new smear-positive cases in 2004.

See Methods for further details.

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year; — not available.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Implemented uniform recording and reporting system using the Electronic TB Register countrywide
- Began implementation of HR development plan
- Performed quarterly supervision of regional and provincial laboratories
- Increased use of rapid culture techniques throughout country

Challenges

- Overcoming high NTP staff turnover and difficulties in recruiting and retaining qualified laboratory staff
- Ensuring adequate TB laboratory services given that National Health Laboratory Services (NHLS) is a public health entity not controlled directly by DoH
- Establishing NRL and EQA for smear microscopy
- Reducing turnaround time for microscopy results

Planned activities

- Collaborate with the NHLS and Management Sciences for Health (MSH) in developing EQA system

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Increased the number of subdistricts implementing collaborative TB/HIV activities
- Appointed provincial TB/HIV coordinators and established TB/HIV committees
- Trained health-care staff in collaborative TB/HIV activities and piloted data collection tools to assess HIV prevalence in TB patients
- Conducted a situation analysis on MDR-TB

Challenges

- Better defining the roles and responsibilities of NTP and NAP staff
- Encouraging uptake of HIV testing among general public and TB patients
- Ensuring that HIV-positive TB patients are offered ART
- Reducing distances patients must travel to obtain health care

Planned activities

- Strengthen services for and train health-care staff in management of MDR-TB

Contributing to health system strengthening

Achievements

- Implemented a drug management system for all drugs including anti-TB drugs

Challenges

- Recruiting and retaining adequately qualified health-care staff
- Increasing laboratory services coverage and capacity
- Collecting and analysing up-to-date financial data from all provinces

Engaging all care providers

Achievements

- Established good working relations with private sector (mainly mines), correctional services, universities and NGOs
- Organized workshops for the private sector on DOTS strategy

Challenges

- Expanding the role of the private sector and NGOs in TB diagnosis and treatment

Planned activities

- Engage the private sector, correctional services and NGOs in TB control

Empowering people with TB, and communities

Achievements

- Began implementation of provincial ACSM plans
- Implemented community-based TB care activities such as DOT provision by community health workers and in the workplace
- Included DOTS volunteers and community care providers in an integrated system of community caregivers

Challenges

- Overcoming low awareness of TB and stigma in the community

Planned activities

- Strengthen partnership with NGOs for ACSM activities

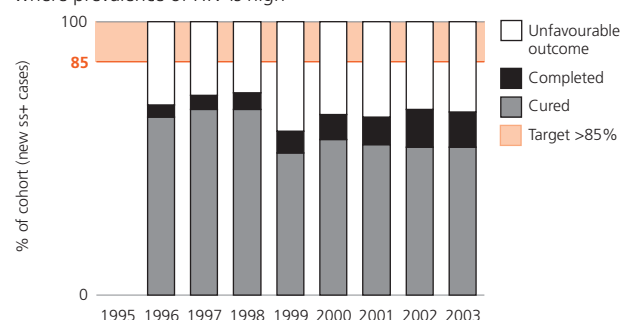
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	—	0.0	13	22	66	77	77	98	100	93
DOTS notification rate (new and relapse/100 000 pop)	—	—	15	50	201	193	262	457	484	544
DOTS notification rate (new ss+/100 000 pop)	—	—	10	37	121	137	155	210	248	242
DOTS case detection rate (new and relapse, %)	—	—	3.8	12	43	37	47	76	73	76
DOTS case detection rate (new ss+, %)	—	—	6.0	21	63	65	68	86	92	83
DOTS case detection rate (new ss+)/coverage (%)	—	—	46	95	95	84	88	87	93	89
DOTS treatment success (new ss+, %)	—	69	73	74	60	66	65	68	67	—
DOTS re-treatment success (ss+, %)	—	67	68	71	47	52	53	53	52	—

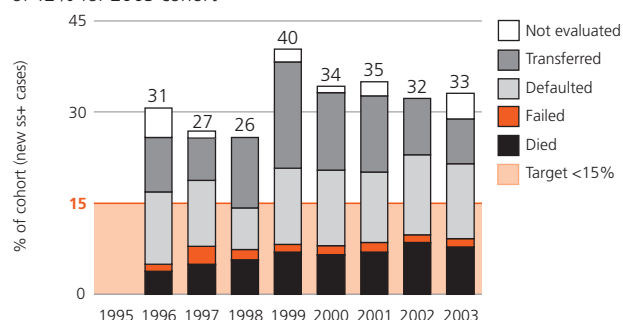
Treatment success, DOTS

Treatment success low, even compared with other African countries where prevalence of HIV is high



Unfavourable treatment outcomes, DOTS

Follow-up of transfers better in last 2 cohorts but still poor; default rate of 12% for 2003 cohort



BUDGET AND FINANCE

South Africa notifies more TB cases than any other country in Africa, and as a middle-income country the costs of diagnosing and treating cases are relatively high. This means that the total costs of TB control in South Africa are larger than in any other African country. However, an up-to-date and precise estimate of these costs is not available. Since WHO began financial monitoring of TB control in 2002, it has not proved possible to complete the financial section of the annual WHO data collection form for South Africa. There are two main difficulties. The first is that budgeting for TB control is done at the provincial level. As a result, national reporting depends on compiling information from all the provinces. The second problem is that data cannot be compiled from routine information systems because almost all funding for TB control is part of more general health service budgets, without line items for TB specifically.

Without any annual reporting of financial data, it is only possible to make rough estimates of the cost of TB control, using detailed costing studies. Two published studies exist, one from rural KwaZulu-Natal in 1996 and the second from Cape Town in 1997. When costs are converted to 2006 prices, they suggest a cost per patient treated of around US\$ 800 for outpatient care when DOT is provided at health facilities, US\$ 500–800 for outpatient care when both clinic and community-based DOT are available, and US\$ 2200 when the first two months of treatment are provided in hospital. In each case, all costs were financed from government budgets. The extent to which outpatient or inpatient care is relied upon in the country as a whole is unknown, though hospitalization is probably more common in rural areas. If it is assumed that about 10% of patients are hospitalized for 2 months and that the remainder are treated as outpatients, the total cost of TB control can be estimated as about US\$ 250 million per year; if 25% of patients are hospitalized the cost would increase to approximately US\$ 300 million.

The best way to produce up-to-date and more precise estimates of the cost and financing of TB control in South Africa would be to conduct costing studies in each province, as recommended following an external review of the TB programme in October 2005.

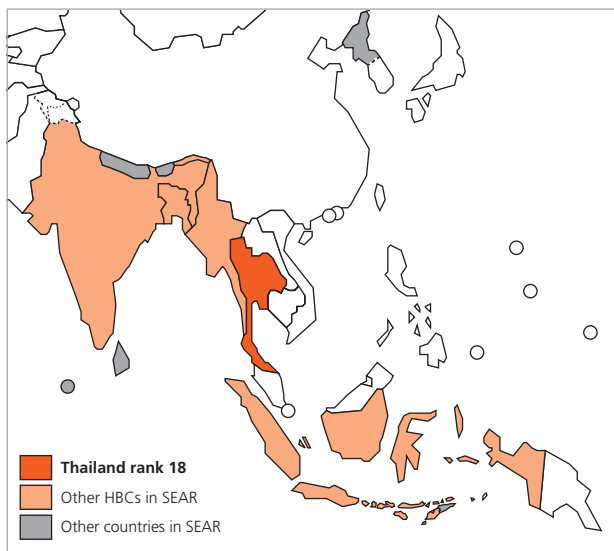
pop indicates population; ss+, smear-positive; yr, year; — not available or not applicable.

Thailand

The reported distribution of TB cases by age suggests that TB transmission in Thailand has fallen in recent decades, but there is no other evidence to confirm this. Relatively high rates (for Asia) of HIV infection among TB patients underline the question of whether TB incidence is now falling. It is not known how much money is spent on TB control in Thailand because, following decentralization, the information on budgets and expenditures is incomplete.

KEY INDICATORS

Population (thousands) ^a	63 694
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	142
Trend in incidence rate (%/yr) ^c	0.0
Incidence (ss+/100 000 pop/yr)	63
Prevalence (all cases/100 000 pop) ^c	208
Mortality (deaths/100 000 pop/yr) ^c	19
Prevalence of HIV in adult TB patients (15–49yrs, %)	8.5
New TB cases multidrug-resistant (%) ^d	0.9
Previously treated TB cases multidrug-resistant (%) ^d	20
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	87
Notification rate (new ss+/100 000 pop/yr)	45
Case detection rate (all cases, %)	61
Case detection rate (new ss+, %)	71
DOTS notification rate (new and relapse/100 000 pop/yr)	87
DOTS notification rate (new ss+/100 000 pop/yr)	45
DOTS case detection rate (new and relapse, %)	61
DOTS case detection rate (new ss+, %)	71
DOTS treatment success (2003 cohort, %)	73
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	—
Government contribution to total cost TB control (including loans, %)	—
Government health spending used for TB control (%)	—
NTP budget funded (%)	—

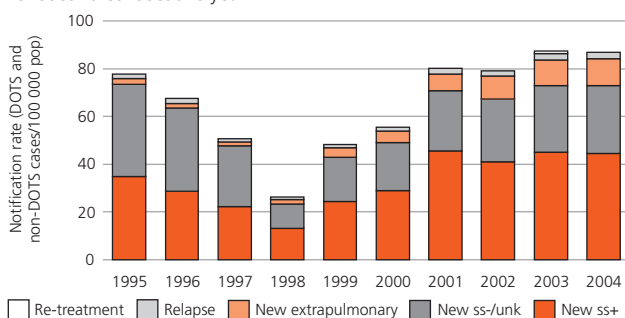


WHO South-East Asia Region (SEAR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

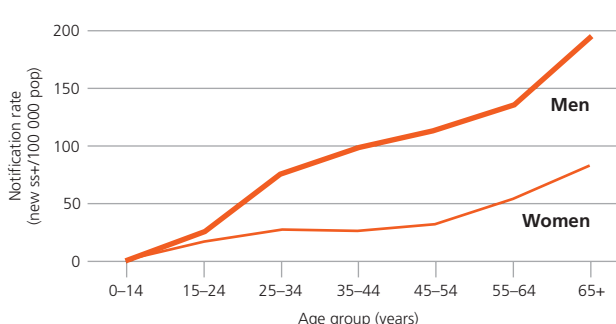
Case notifications

Notifications rose steeply in late 1990s; case detection above 70% target for second consecutive year



Case notifications by age and sex, 2004

Most TB patients are men; TB is more common in older people



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.
^b Incidence, prevalence and mortality estimates include patients infected with HIV. Estimates of burden based on prevalence survey in 1991–1992. Incidence assumed to be constant, but estimated prevalence and mortality declining as increasing proportion of cases are treated.
^c 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 360/100 000 pop and mortality 27/100 000 pop/yr.
^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].
^e Age and sex breakdown provided for all notified new smear-positive cases in 2004.

See Methods for more details.

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year, — not available.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Implemented DOTS in all MoPH health facilities and in all 138 prisons
- Developed comprehensive HR development plan
- Introduced TB education in nursing schools

Challenges

- Increasing laboratory capacity for EQA and improving supervision, monitoring and evaluation
- Strengthening intermediate laboratories for sputum culture
- Improving the quality of DOTS in Bangkok
- Including TB/DOTS in all medical training curricula

Planned activities

- Strengthen DOTS through improved supervision, monitoring and evaluation
- Finalize and implement HR development information system

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Established national TB/HIV coordinating board
- Developed guidelines for collaborative TB/HIV activities and for diagnosis and treatment of MDR-TB
- Trained health-care workers in collaborative TB/HIV activities
- Conducted third DRS
- Strengthened supervision, monitoring and evaluation in TB control in mobile and cross-border populations and urban poor areas

Challenges

- Establishing mechanism for collaboration between NAP and NTP
- Developing TB/HIV curricula and training materials
- Strengthening regional TB laboratories

Planned activities

- Expand collaborative TB/HIV activities to cover whole country, at all administrative levels
- Develop further collaboration with NGOs working with migrants, mobile and cross-border populations and the poor
- Pilot test practical guidelines for MDR-TB diagnosis and treatment
- Upgrade regional TB laboratories to reference laboratories

Contributing to health system strengthening

Achievements

- Developed collaboration between NTP and general hospitals and prison health services, and trained TB staff

Challenges

- Ensuring sufficient human resources during integration of tasks and rotation of staff as health system is restructured
- Providing services to illegal migrants and mobile and cross-border populations ineligible for universal health coverage
- Coping with decentralization of budget allocation system
- Improving computer-based recording and reporting system

Planned activities

- Scale up collaboration with general public hospitals, prisons and military services
- Develop a list of standard indicators for TB management in all MoPH health facilities

Engaging all care providers

Achievements

- Strengthened supervision, monitoring and evaluation of DOTS services in prisons

Challenges

- Involving private practitioners and corporate health services in TB diagnosis and treatment

Planned activities

- Collaborate with academic institutions to introduce TB curricula to nursing, medical and public health schools

Empowering people with TB, and communities

Achievements

- Secured funding for community involvement in TB control from government and GFATM
- Appointed village health volunteers (VHVs) as community treatment observers in pilot areas

Challenges

- Developing a national ACSM plan
- Building technical capacity for ACSM at all levels

Planned activities

- Scale up involvement of VHVs

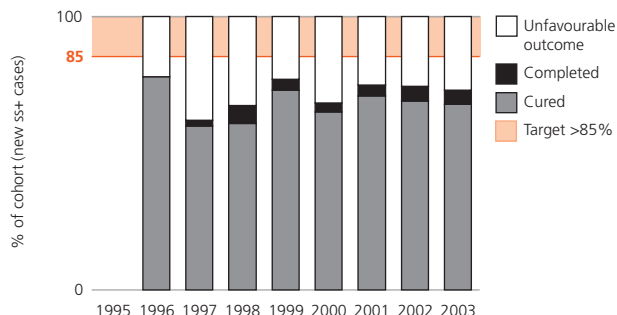
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	—	1.1	4.0	32	59	70	82	100	100	100
DOTS notification rate (new and relapse/100 000 pop)	—	0.4	5.9	26	48	56	80	79	86	87
DOTS notification rate (new ss+/100 000 pop)	—	0.2	3.1	13	25	29	46	41	45	45
DOTS case detection rate (new and relapse, %)	—	0.3	4.1	18	34	39	56	56	61	61
DOTS case detection rate (new ss+, %)	—	0.3	5.0	21	39	46	73	65	71	71
DOTS case detection rate (new ss+)/coverage (%)	—	29	125	66	66	65	88	65	71	71
DOTS treatment success (new ss+, %)	—	78	62	68	77	69	75	74	73	—
DOTS re-treatment success (ss+, %)	—	57	55	55	68	—	49	62	62	—

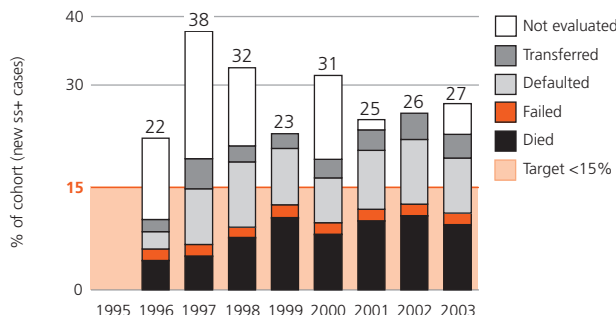
Treatment success, DOTS

Poor treatment outcomes showing no signs of improving



Unfavourable treatment outcomes, DOTS

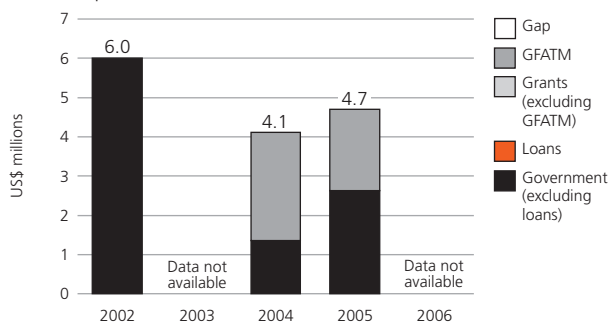
Treatment outcomes not always recorded for all patients; death and default most common unfavourable outcomes



BUDGET AND FINANCE

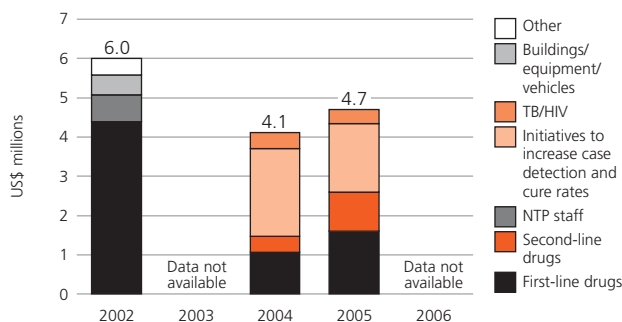
NTP budget by source of funding

Data for 2004–2005 are for the TB cluster in Bangkok only and therefore underestimate the total budget for TB control in Thailand (see below for further explanation)



NTP budget by line item

Data for 2004–2005 are for the TB cluster in Bangkok only and include funds for both MDR-TB and TB/HIV



In 2002, the NTP budget was managed at central level and covered all inputs specific to TB control for the entire country. This changed in 2003, when a new health insurance system was introduced. As part of this system, budgets for clinical care (including TB diagnosis and treatment) are allocated to provincial and district hospitals on the basis of fixed per capita rates. It is not known how much of these budgets is being used for TB control, and therefore the total budget for TB control in Thailand cannot be estimated. The full cost of TB control, including costs associated with use of general health facilities, cannot be calculated accurately because the most recent study was undertaken 10 years ago; an up-to-date assessment is needed.

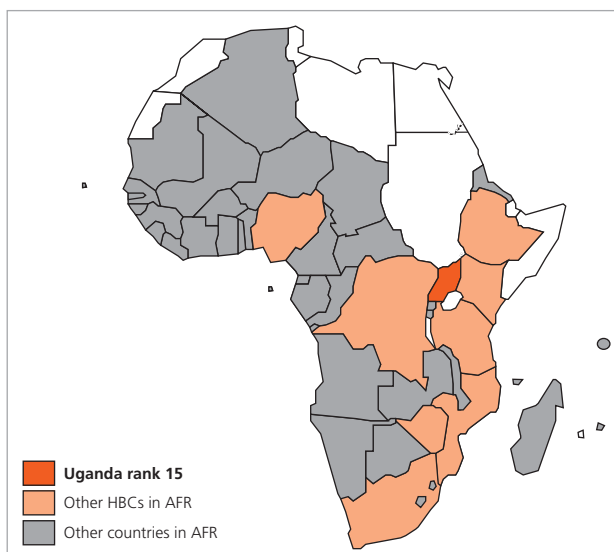
pop indicates population; ss+, smear-positive; yr, year; — not available.

Uganda

Uganda's surveillance reports suggest that TB incidence is increasing and that the case detection rate is declining. Other interpretations of the data are possible, but it is unlikely that the case detection rate is close to the 70% target. Treatment success is persistently low; default rates are high, and only one third of patients in the 2003 cohort were known to be cured. The prevalence of HIV in the Ugandan population has fallen significantly over the past 10 years, but the trend in HIV infection among TB patients is unknown. Funding for TB control has fallen since 2004; pledges for 2006 cover only 35% of the NTP budget.

KEY INDICATORS

Population (thousands) ^a	27 821
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	402
Trend in incidence rate (%/yr) ^c	2.2
Incidence (ss+/100 000 pop/yr)	175
Prevalence (all cases/100 000 pop) ^c	646
Mortality (deaths/100 000 pop/yr) ^c	92
Prevalence of HIV in adult TB patients (15–49yrs, %)	19
New TB cases multidrug-resistant (%) ^d	0.5
Previously treated TB cases multidrug-resistant (%) ^d	4.4
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	157
Notification rate (new ss+/100 000 pop/yr)	75
Case detection rate (all cases, %)	39
Case detection rate (new ss+, %)	43
DOTS notification rate (new and relapse/100 000 pop/yr)	157
DOTS notification rate (new ss+/100 000 pop/yr)	75
DOTS case detection rate (new and relapse, %)	39
DOTS case detection rate (new ss+, %)	43
DOTS treatment success (2003 cohort, %)	68
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	3.4
Government contribution to total cost TB control (including loans, %)	15
Government health spending used for TB control (%)	6.7
NTP budget funded (%)	35



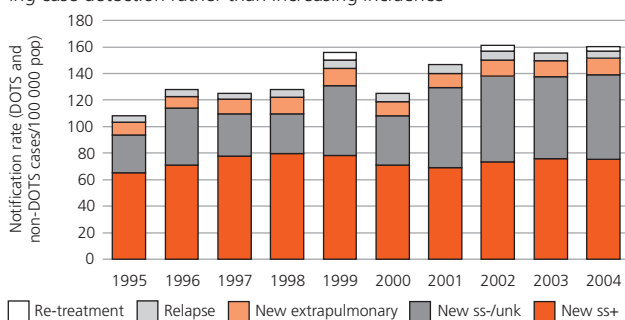
WHO African Region (AFR)

Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

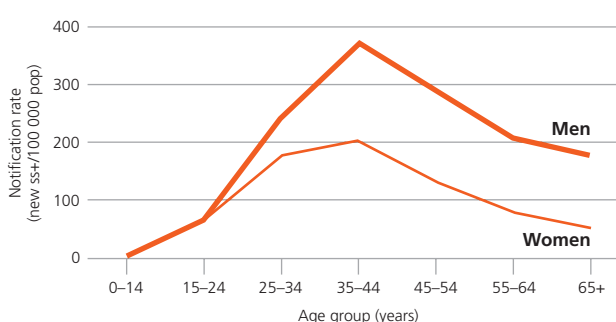
Case notifications

Notification rate of new smear-positive cases fairly steady over past 10 years; increasing notification of smear-negative cases may reflect improving case detection rather than increasing incidence



Case notifications by age and sex, 2004

Age-sex distribution of notified cases typical of countries in AFR



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.

^b Incidence, prevalence and mortality estimates include patients with HIV. Incidence estimate originally based on assumption of 65% ss+ case detection rate in 1997. Trend in incidence estimated from 3-year moving average of notification rate (new and relapse).

^c 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 284/100 000 pop and mortality 57/100 000 pop/yr.

^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].

^e Age and sex breakdown provided for a subset of new smear-positive cases notified in 2004.

See Methods for further details.

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Established TB as one of the priority diseases in the second Health Sector Strategic Plan (2006–2010)
- Launched Uganda Stop TB Partnership in December 2004 and established current membership of 27 technical and financial partners
- Recruited additional staff through ISAC funding including 3 assistant NPOs for TB, 1 NPO for TB/HIV and 1 medical officer
- Pilot tested EQA for microscopy in 13 districts and engaged regional laboratory coordinators to launch and expand EQA
- Deployed microbiologist to manage and reactivate NRL

Challenges

- Securing continuous supply of high-quality FDC anti-TB drugs and paediatric formulations
- Obtaining funds to continue EQA countrywide once expansion is complete
- Overcoming shortage of qualified laboratory personnel at peripheral and intermediate level
- Improving coordination and management of laboratory network

Planned activities

- Expand EQA for microscopy to cover all 56 districts
- Strengthen laboratories by carrying out laboratory situation analysis and replacing defective and monocular microscopes

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Drafted national policy for collaborative TB/HIV activities based on WHO recommendations
- Set up national coordination committee and work groups for collaborative TB/HIV activities
- Strengthened TB control in prisons, the army and indigenous populations using GFATM funding

Challenges

- Developing implementation guidelines for collaborative TB/HIV activities following the national policy
- Increasing the number of accredited VCT centres and ensuring that they are all functioning
- Developing clear logistics management system for HIV test-kits and antiretroviral drugs
- Obtaining funds to conduct first DRS
- Improving access to TB information and available services and reducing transport costs and distance to facilities for poor and indigenous populations

Planned activities

- Begin to collect data on collaborative TB/HIV activities
- Finalize comprehensive TB/HIV communication strategy
- Conduct DRS
- Introduce measures such as sputum transport to improve availability of diagnosis

Contributing to health system strengthening

Achievements

- Introduced computerized drug management and logistics information system countrywide in February 2005
- Involved NTP in training and deployment of health sub-district TB focal people

Challenges

- Maintaining political commitment for TB control in districts during the decentralization process
- Coping with reduction in number of district TB and leprosy supervisor posts during continuing health system reform
- Improving health-care infrastructure including facilities for VCT
- Increasing the number and skills of health workers in general health-care facilities
- Introducing PAL initiative

Planned activities

- Prepare a 5-year strategic plan for TB control in line with the Health Sector Strategic Plan (2006–2010)

Engaging all care providers

Achievements

- Established PPM-DOTS projects in 10 districts
- Involved NGOs, private practitioners and corporate providers as members of the recently formed Uganda Stop TB Partnership

Challenges

- Expanding the role of the private sector in TB diagnosis and treatment

Planned activities

- Involve all private practitioners in referral, diagnosis and treatment of TB patients according to the NTP strategy

Empowering people with TB, and communities

Achievements

- Expanded community-based DOTS to all districts as of April 2005
- Involved communities in the selection and management of community volunteers as treatment supporters
- Developed a comprehensive ACSM strategy for TB

Challenges

- Ensuring the high quality of community-based DOTS services in all districts
- Securing funds to carry out IEC activities included in ACSM plan

Planned activities

- Strengthen monitoring and supervision of community-based DOTS
- Implement a strong IEC campaign and ensure that communities are involved
- Involve urban and indigenous population camps in IEC and referral of suspects for diagnosis
- Adopt programme impact assessment approach in all health units

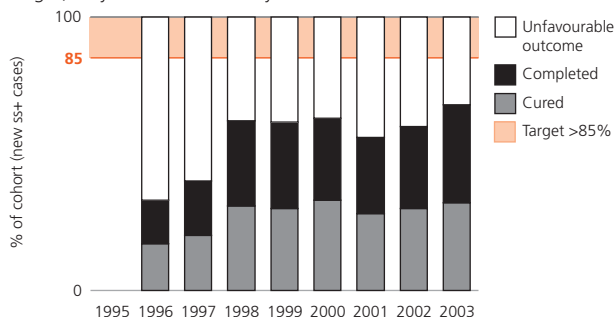
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	—	0.0	100	100	100	100	100	100	100	100
DOTS notification rate (new and relapse/100 000 pop)	—	—	125	128	150	125	147	157	156	157
DOTS notification rate (new ss+/100 000 pop)	—	—	78	80	78	71	69	74	76	75
DOTS case detection rate (new and relapse, %)	—	—	39	39	46	37	41	41	40	39
DOTS case detection rate (new ss+, %)	—	—	57	57	56	49	44	44	44	43
DOTS case detection rate (new ss+)/coverage (%)	—	—	57	57	56	49	44	44	44	43
DOTS treatment success (new ss+, %)	—	33	40	62	61	63	56	60	68	—
DOTS re-treatment success (ss+, %)	—	32	58	60	48	64	63	55	60	—

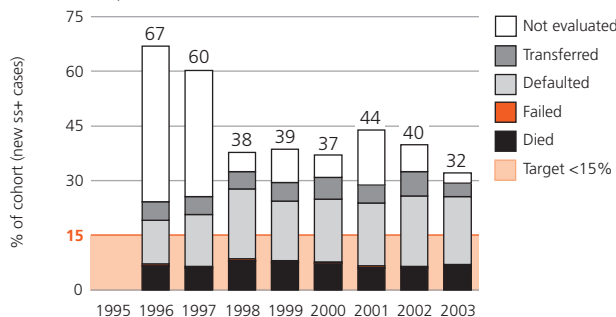
Treatment success, DOTS

Treatment success has improved slightly since 1995 but is still well below target; only half of successfully treated cases confirmed



Unfavourable treatment outcomes, DOTS

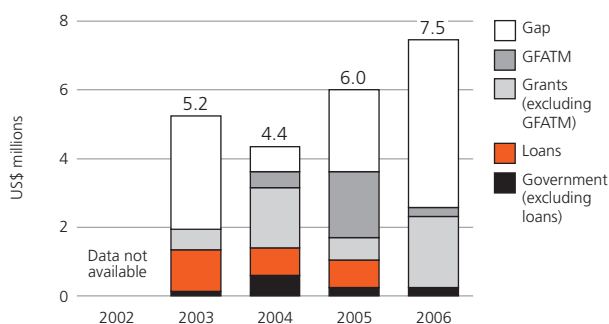
Outcomes recorded for 97% patients; very high default rate (19% for 2003 cohort)



BUDGET AND FINANCE

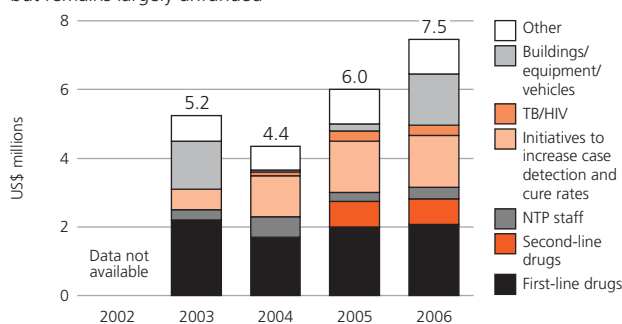
NTP budget by source of funding

Budget has increased in 2005 and 2006 but lack of financing remains a major problem



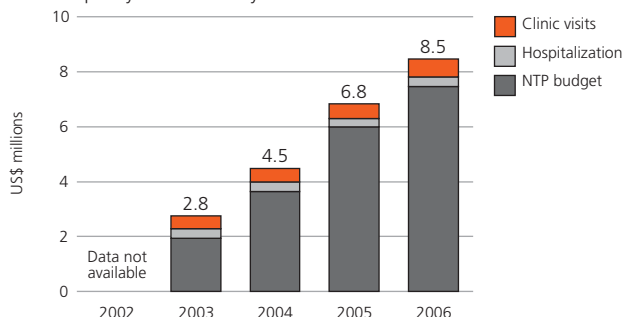
NTP budget by line item

Budget for second-line drugs, initiatives to increase case detection and cure rates and investment in buildings/equipment/vehicles has increased but remains largely unfunded



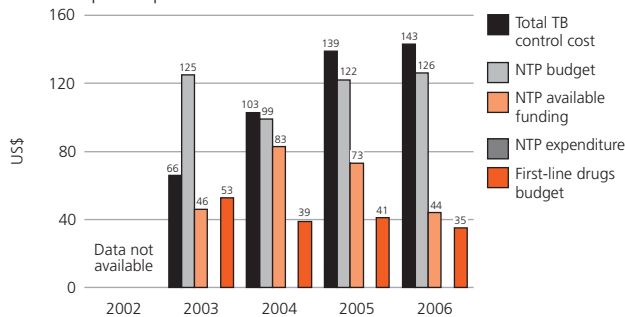
Total TB control costs by line item^a

Limited use of general health system staff and infrastructure reflects national policy of community-based care



Per patient costs, budgets and expenditure

Cost per patient treated is low compared with other HBCs; NTP is not able to report expenditure data



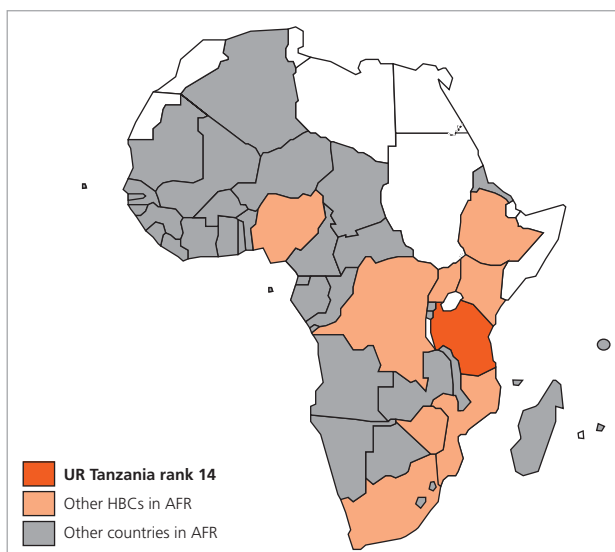
^a Total TB control costs for 2002–2004 are based on available funding, whereas those for 2005–2006 are based on budgets. Estimates of the costs of clinic visits and hospitalization are WHO estimates based on data provided by the NTP and from other sources. See Methods for further details. pop indicates population; ss+, smear-positive; yr, year; — not available or not applicable.

United Republic of Tanzania

The HIV epidemic appears to have stabilized in the United Republic of Tanzania, and so have TB case notifications. Treatment success has slowly increased towards the 85% target through improved case-holding and evaluation, but the death rate was still 10% in the 2003 cohort. The estimated case detection rate was less than 50% in 2004, but the accuracy of this figure needs to be re-examined. A higher programme budget in 2004 did not lead to any improvement in case-finding, partly because a shortage of qualified staff meant that the NTP was unable to spend all available funds.

KEY INDICATORS

Population (thousands) ^a	37 627
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	347
Trend in incidence rate (%/yr) ^c	-1.5
Incidence (ss+/100 000 pop/yr)	147
Prevalence (all cases/100 000 pop) ^c	479
Mortality (deaths/100 000 pop/yr) ^c	78
Prevalence of HIV in adult TB patients (15–49yrs, %)	36
New TB cases multidrug-resistant (%) ^d	1.3
Previously treated TB cases multidrug-resistant (%) ^d	6.7
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	166
Notification rate (new ss+/100 000 pop/yr)	69
Case detection rate (all cases, %)	48
Case detection rate (new ss+, %)	47
DOTS notification rate (new and relapse/100 000 pop/yr)	166
DOTS notification rate (new ss+/100 000 pop/yr)	69
DOTS case detection rate (new and relapse, %)	48
DOTS case detection rate (new ss+, %)	47
DOTS treatment success (2003 cohort, %)	81
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	35
Government contribution to total cost TB control (including loans, %)	67
Government health spending used for TB control (%)	5.6
NTP budget funded (%)	86

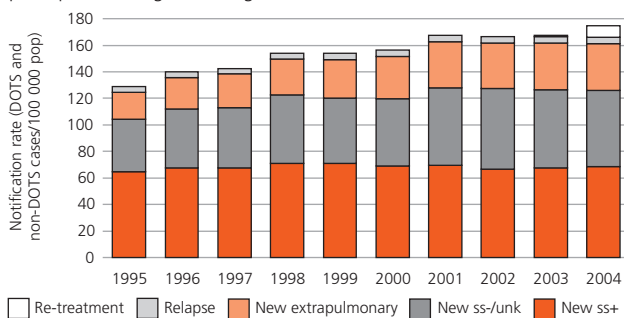


WHO African Region (AFR)
 Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

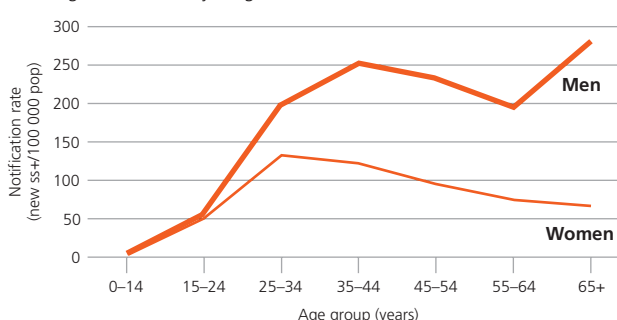
Case notifications

Notification rate increased during 1990s but has now levelled off, perhaps reflecting a levelling off in incidence



Case notifications by age and sex,^e 2004

Unlike for most countries in AFR, notification rate for men is as high in older age classes as in younger adults



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.

^b Incidence, prevalence and mortality estimates include patients with HIV. Incidence estimate originally based on assumption of 55% ss+ case detection rate in 1997 (DOTS and non-DOTS). Trend in incidence estimated from 3-year moving average of notification rate (new and relapse, DOTS and non-DOTS).

^c 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 270/100 000 pop and mortality 37/100 000 pop/yr.

^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].

^e Age and sex breakdown provided for all notified new smear-positive cases in 2004.

See Methods for further details.

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Ensured that TB control is part of national essential health package implemented by districts
- Trained 2400 doctors, clinical officers and nurses in clinical management of TB
- Collaborated with GDF in preparation for introduction of 4-drug FDCs
- Developed proposal for TB prevalence survey
- Filled all TB/leprosy coordinator posts at regional and district levels

Challenges

- Accessing funds from established bilateral partners including the Dutch government, Swiss Agency for Development Cooperation and Development Cooperation Ireland
- Training majority of service providers for TB control planning and management in order to respond to health system decentralization
- Increasing the number of TB laboratory technicians
- Ensuring timely transport of sputum specimens from peripheral to central or zonal laboratories for culture and DST

Planned activities

- Implement TB prevalence survey
- Roll out revised electronic TB register to all districts
- Decentralize sputum smear microscopy centres
- Update inventory of laboratory equipment
- Introduce new technology for detection of mycobacteria to one selected laboratory

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Developed joint TB/HIV training manual
- Trained 40 service providers and 22 TB coordinators from 3 regions in HIV testing and ART
- Began TB/HIV pilot projects in 3 districts
- Built MDR-TB ward and consulted with GLC on MDR-TB management
- Finalized protocol for DRS to start early 2006

Challenges

- Developing a national TB/HIV policy, including diagnostic HIV testing for TB patients
- Establishing a national TB/HIV coordinating body
- Securing additional funds to implement DRS
- Handling increasing numbers of MDR-TB cases
- Decentralizing DOTS services to reduce travel distance for patients, reducing transport costs for ambulatory patients and providing food for in-patients

Planned activities

- Introduce collaborative TB/HIV activities in additional districts
- Collaborate with NAP and other partners to develop policy statement on diagnostic HIV testing and provision of ART in TB clinics
- Develop joint training on TB and HIV for primary health-care staff

Contributing to health system strengthening

Achievements

- Decentralized health-care services under health sector reform
- Renovated 12 health-care facilities in 3 districts to provide joint TB/HIV services

Challenges

- Responding to increasing need to train health providers on planning and management
- Improving HR capacity of health-care facilities and laboratories in rural areas
- Retaining and motivating health-care workers despite low salaries and lack of incentives

Planned activities

- Introduce incentives for service providers

Engaging all care providers

Achievements

- Distributed drugs from NTP to all major private hospitals for treatment free-of-charge under the DOTS strategy
- Conducted training for non-NTP health-care providers in conjunction with the public sector

Challenges

- Increasing the number of TB patients treated, especially among private practitioners
- Incorporating TB and TB/HIV control in medical, allied medical and nursing school curricula

Planned activities

- Decentralize TB control and open new diagnostic and treatment centres nationwide, especially in big cities and prisons
- Continue scale up of involvement of private hospitals and practitioners in TB control

Empowering people with TB, and communities

Achievements

- Enlisted community volunteers for treatment support and contact tracing in 2 districts
- Conducted study on TB and gender

Challenges

- Raising awareness of availability of TB diagnosis and treatment
- Involving members of the community as treatment supporters
- Improving technical skills of NTP staff for TB advocacy

Planned activities

- Expand community-based TB care activities to 4 additional districts
- Introduce patient-centred approach in 4 districts
- Introduce community-based DOT in overcrowded urban settings and districts that are difficult to reach
- Develop communication strategy based on a KAP (knowledge, attitudes and practices) study

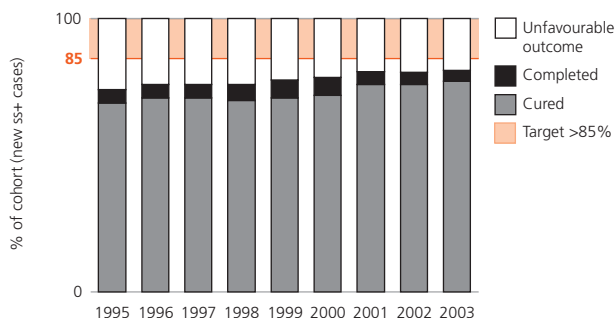
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	98	100	100	100	100	100	100	100	100	100
DOTS notification rate (new and relapse/100 000 pop)	129	140	143	154	154	157	168	167	167	166
DOTS notification rate (new ss+/100 000 pop)	65	68	68	71	71	69	70	67	67	69
DOTS case detection rate (new and relapse, %)	47	48	46	48	47	46	48	47	47	48
DOTS case detection rate (new ss+, %)	56	55	52	53	51	48	47	44	45	47
DOTS case detection rate (new ss+)/coverage (%)	57	55	52	53	51	48	47	44	45	47
DOTS treatment success (new ss+, %)	73	76	77	76	78	78	81	80	81	—
DOTS re-treatment success (ss+, %)	76	75	75	73	74	73	76	77	75	—

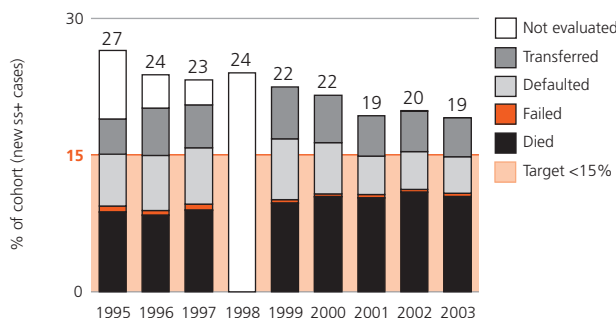
Treatment success, DOTS

Treatment success improving but still below 85% target



Unfavourable treatment outcomes, DOTS

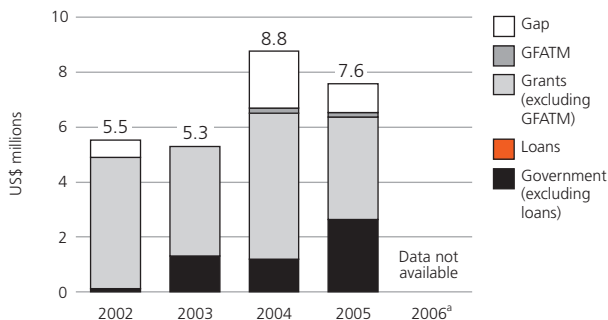
Default rate falling since 1999; high death rate may be linked to HIV; follow-up of all patients who transfer would take treatment success close to target



BUDGET AND FINANCE

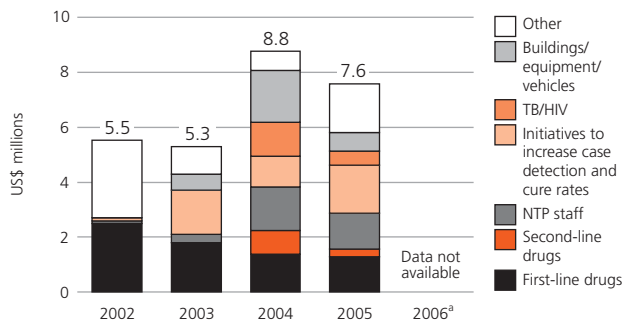
NTP budget by source of funding

NTP funding dependent on donor financing; reduced budget for 2005 reflects revisions to national plan for TB control



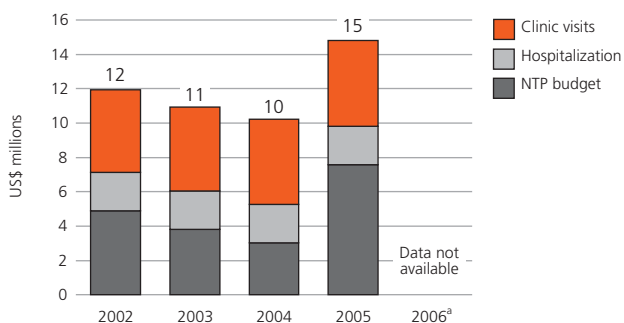
NTP budget by line item

Increased budget for initiatives to increase case detection and cure rates, notably for defaulter-tracing and intensified case-finding



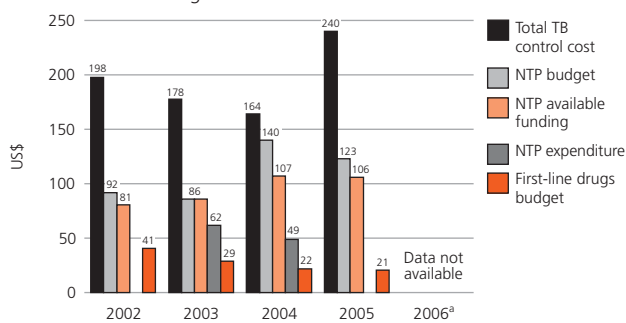
Total TB control costs by line item^p

Use of general health system staff and infrastructure, especially for DOT visits, accounts for large share of total TB control costs



Per patient costs, budgets and expenditure^c

Shortage of adequately qualified staff made it impossible to carry out all planned activities in 2003 and 2004 – thus expenditures much lower than available funding



^a Budget data for 2006 are not yet available since the fiscal year starts in July.

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

^c NTP available funding for 2004 is based on the amount of funding actually received, using retrospective data; available funding for 2002–2003 and 2005 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.

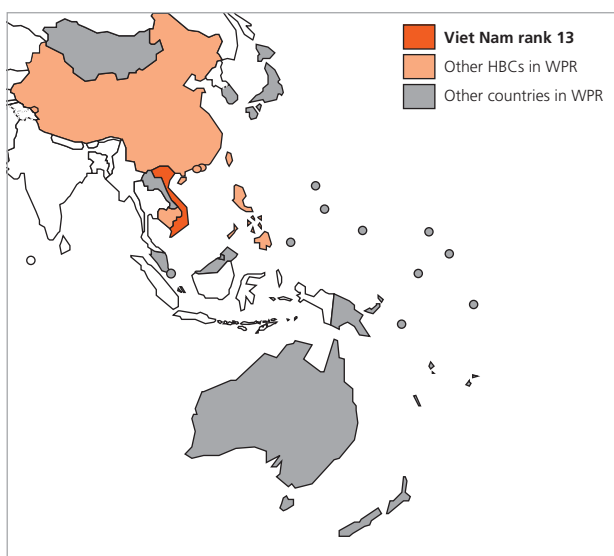
pop indicates population; ss+, smear-positive; yr, year; — not available.

Viet Nam

Viet Nam has exceeded the targets for case detection and treatment success for nearly a decade, yet there are no signs of a decline in the overall annual TB incidence rate. More detailed, but preliminary, epidemiological studies suggest that incidence rates have been falling among older adults (especially women) but rising among younger adults (especially men). A prevalence survey, to be carried out in 2006, will help to assess the scale of the TB problem in Viet Nam and to evaluate the impact of control. Viet Nam has been a model for DOTS implementation in Asia; without more funding in 2006, the high quality of this programme is under threat.

KEY INDICATORS

Population (thousands) ^a	83 123
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	176
Trend in incidence rate (%/yr) ^c	-1.0
Incidence (ss+/100 000 pop/yr)	79
Prevalence (all cases/100 000 pop) ^c	232
Mortality (deaths/100 000 pop/yr) ^c	22
Prevalence of HIV in adult TB patients (15–49yrs, %)	3.0
New TB cases multidrug-resistant (%) ^d	2.3
Previously treated TB cases multidrug-resistant (%) ^d	13
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	118
Notification rate (new ss+/100 000 pop/yr)	70
Case detection rate (all cases, %)	67
Case detection rate (new ss+, %)	89
DOTS notification rate (new and relapse/100 000 pop/yr)	118
DOTS notification rate (new ss+/100 000 pop/yr)	70
DOTS case detection rate (new and relapse, %)	67
DOTS case detection rate (new ss+, %)	89
DOTS treatment success (2003 cohort, %)	92
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	43
Government contribution to total cost TB control (including loans, %)	57
Government health spending used for TB control (%)	5.6
NTP budget funded (%)	49

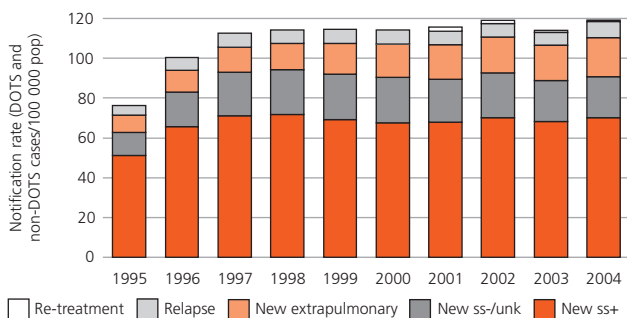


WHO Western Pacific Region (WPR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

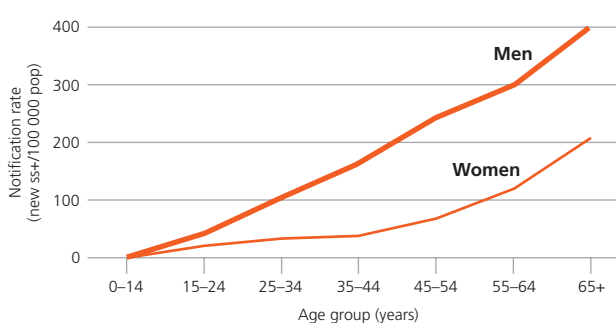
Case notifications

Notification rate for all case types almost constant for last 8 years; case detection rate of new smear-positive cases over 70% target for same period



Case notifications by age and sex, 2004

Age-sex distribution of notification typical of WPR; higher notification rates in men



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.

^b Incidence, prevalence and mortality estimates include patients with HIV. Incidence estimate based on assumption of ARI of 1.7% in 1997, and assumed to be declining at 1% per year in other countries in WPR.

^c 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 499/100 000 pop and mortality 43/100 000 pop/yr.

^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].

^e Age and sex breakdown provided for all notified new smear-positive cases in 2004.

See Methods for further details.

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Drafted 5-year NTP action plan for 2006–2010
- Trained TB staff at all levels through domestic and overseas training courses

Challenges

- Securing sufficient funding for TB control activities beyond 2005
- Dealing with increasing workload for intermediate-level and central-level laboratory supervisors, and overcoming shortage of laboratory staff at peripheral level
- Improving quality of laboratory services at district/provincial level by improving quality of supplies, equipment and training, and by developing microscopy network in mountainous and remote areas
- Improving drug supply management, supervision and analysis
- Providing DOTS services to minority ethnic groups in mountainous areas

Planned activities

- Carry out national TB prevalence survey
- Train district-level laboratory staff (including laboratory technicians) and improve EQA for smear microscopy

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Integrated TB/HIV monitoring into routine NTP activities
- Started third national DRS
- Developed 5-year plan for pilot testing and scaling up projects for the management of MDR-TB
- Developed TB network in mountainous and remote areas, and implemented projects to reach populations at high risk of TB

Challenges

- Organizing national TB/HIV coordinating committee
- Strengthening government support for collaborative TB/HIV activities
- Securing sufficient resources and technical capacity for MDR-TB treatment
- Developing guidelines for provincial health-care staff involved in reaching populations at high risk of TB

Planned activities

- Establish national TB/HIV coordinating committee
- Seek donor support for management of MDR-TB

Contributing to health system strengthening

Challenges

- Training and redistributing health-care workers to improve access to health care for communities in mountainous and remote areas

Planned activities

- Deploy full-time medical doctors to all commune health-care facilities by 2010

Engaging all care providers

Achievements

- Employed a full-time focal point for PPM-DOTS within the NTP
- Involved most public hospitals, medical college hospitals, prisons and military services in TB control
- Involved a number of private practitioners

Challenges

- Expanding the role of the private sector in TB diagnosis and treatment

Empowering people with TB, and communities

Achievements

- Organized health education workshops for TB patients, social and local government leaders and the general public at commune level on TB and case-finding
- Carried out a KAP (knowledge, attitudes and practices) survey in central and northern provinces

Challenges

- Improving awareness of TB among political leaders at central and commune levels

Planned activities

- Train commune/village health-care workers in health education, ACSM and TB control

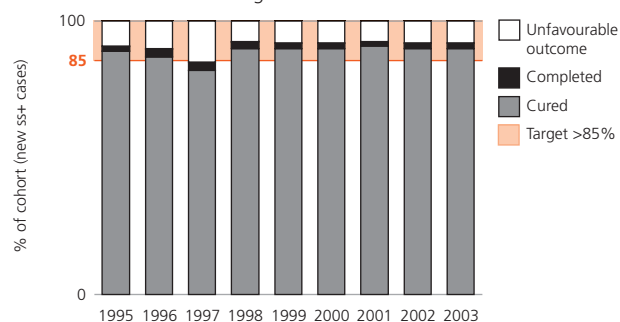
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	50	95	93	96	98.5	99.8	99.8	99.9	100	100
DOTS notification rate (new and relapse/100 000 pop)	38	68	103	111	114	114	114	118	113	118
DOTS notification rate (new ss+/100 000 pop)	26	51	66	69	69	68	68	70	68	70
DOTS case detection rate (new and relapse, %)	20	36	55	59	62	62	63	65	63	67
DOTS case detection rate (new ss+, %)	30	59	78	83	83	82	83	87	85	89
DOTS case detection rate (new ss+)/coverage (%)	59	62	84	86	84	82	84	87	85	89
DOTS treatment success (new ss+, %)	91	90	85	93	92	92	93	92	92	—
DOTS re-treatment success (ss+, %)	81	84	80	84	87	79	85	85	85	—

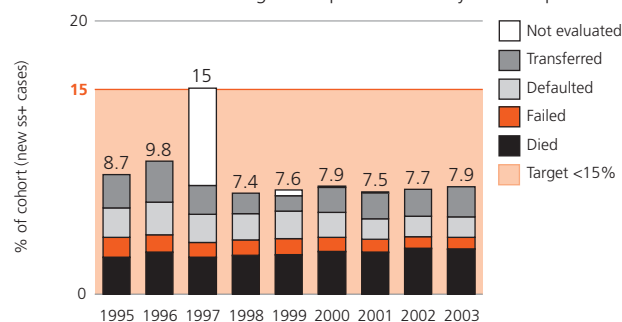
Treatment success, DOTS

Treatment success above target since 1995



Unfavourable treatment outcomes, DOTS

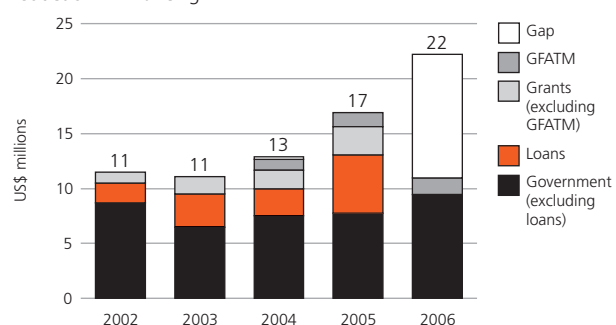
Outcomes recorded for all registered patients for all years except 1997



BUDGET AND FINANCE

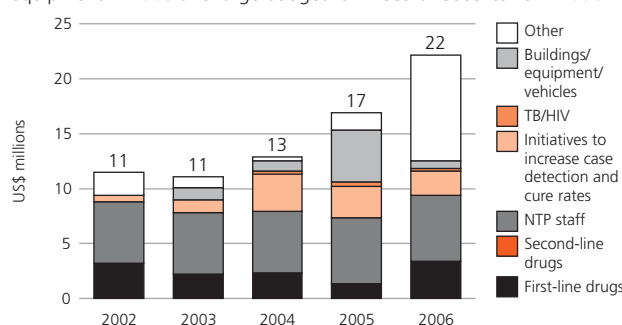
NTP budget by source of funding

Large funding gap reported in 2006 caused by increase in budget and reduction in financing



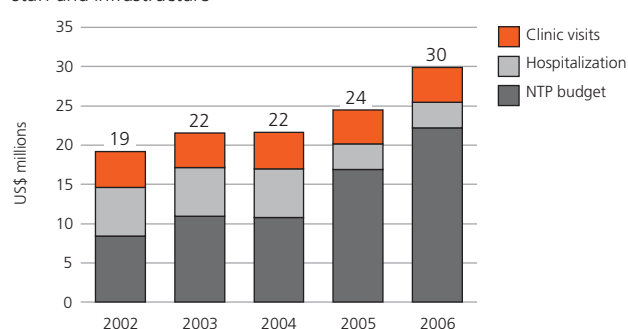
NTP budget by line item

Fairly stable budget breakdown except for increased investment in X-ray equipment in 2005 and large budget for miscellaneous items in 2006



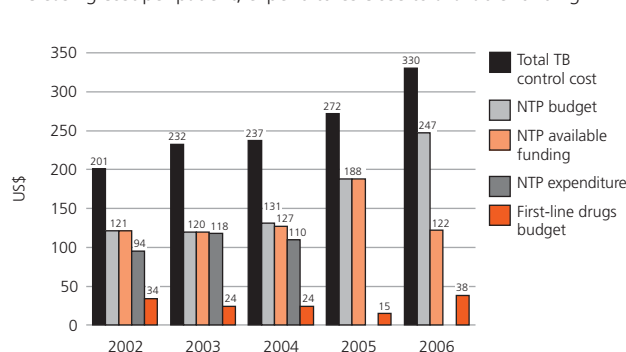
Total TB control costs by line item^a

Large share of total costs accounted for by use of general health system staff and infrastructure



Per patient costs, budgets and expenditure^b

Increasing cost per patient; expenditures close to available funding



^a Total TB control costs for 2002–2004 are based on expenditure, whereas those for 2005–2006 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.

^b NTP available funding for 2004 is based on the amount of funding actually received, using retrospective data; available funding for 2002–2003 and 2005–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap.

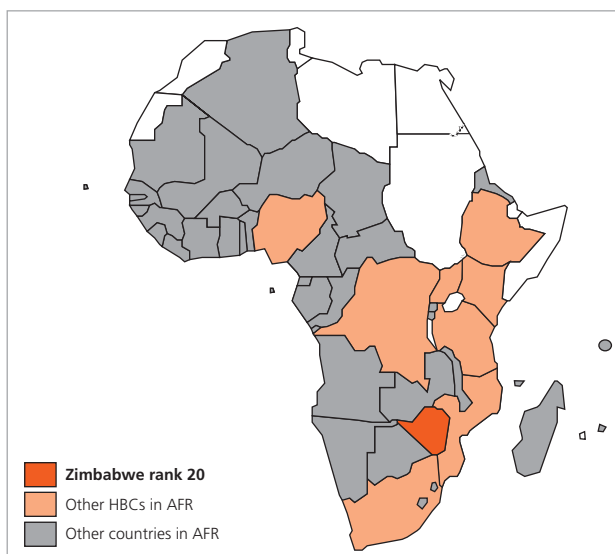
pop indicates population; ss+, smear-positive; yr, year; — not available.

Zimbabwe

The TB epidemic in Zimbabwe has grown dramatically with the spread of HIV. However, HIV prevalence in adults has apparently dropped since 2000 or earlier, which may explain why TB case notifications did not increase significantly between 1999 and 2004. It is not certain that the case detection rate is as low as estimated for 2004 (42%), but large budgetary increases could lead to the detection of many more patients during 2005 and 2006. Improvement of treatment success above the 66% reported for 2003 should be a priority for the NTP, especially if more patients are diagnosed and treated over the next biennium.

KEY INDICATORS

Population (thousands) ^a	12 936
TB burden (2004 estimates)^b	
Incidence (all cases/100 000 pop/yr)	674
Trend in incidence rate (%/yr) ^c	-0.7
Incidence (ss+/100 000 pop/yr)	271
Prevalence (all cases/100 000 pop) ^c	673
Mortality (deaths/100 000 pop/yr) ^c	151
Prevalence of HIV in adult TB patients (15–49yrs, %)	68
New TB cases multidrug-resistant (%) ^d	1.9
Previously treated TB cases multidrug-resistant (%) ^d	8.3
Surveillance and DOTS implementation (2004)	
Notification rate (new and relapse/100 000 pop/yr)	434
Notification rate (new ss+/100 000 pop/yr)	113
Case detection rate (all cases, %)	64
Case detection rate (new ss+, %)	42
DOTS notification rate (new and relapse/100 000 pop/yr)	434
DOTS notification rate (new ss+/100 000 pop/yr)	113
DOTS case detection rate (new and relapse, %)	64
DOTS case detection rate (new ss+, %)	42
DOTS treatment success (2003 cohort, %)	66
Budget and finance (2006)	
Government contribution to NTP budget (including loans, %)	19
Government contribution to total cost TB control (including loans, %)	34
Government health spending used for TB control (%)	2.5
NTP budget funded (%)	96



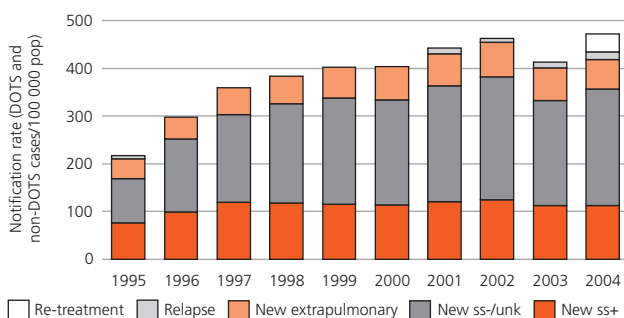
WHO African Region (AFR)

Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

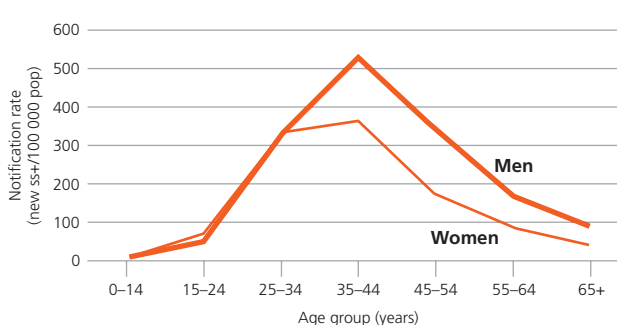
Case notifications

Notification rate increased dramatically during 1990s but has now levelled off, perhaps reflecting a levelling off in incidence



Case notifications by age and sex,^e 2004

Notified TB cases concentrated in people aged 25–54, as is typical of high-HIV Africa



^a World population prospects – the 2004 revision. New York, United Nations Population Division, 2005.

^b Incidence, prevalence and mortality estimates include patients with HIV. Incidence estimate originally based on assumption of 60% ss+ case detection rate in 1997 (DOTS and non-DOTS). Trend in incidence estimated from 3-year moving average of notification rate (new and relapse, DOTS and non-DOTS).

^c 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 248/100 000 pop and mortality 46/100 000 pop/yr.

^d MDR-TB figures shown in regular type are survey data from the database of the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance. Figures in italics are estimates from the following source: Zignol M et al. Global incidence of multidrug-resistant tuberculosis [submitted for publication].

^e Age and sex breakdown provided for all new smear-positive cases notified in 2004.

See Methods for further details.

pop indicates population; ss+, smear-positive; ss-, smear-negative pulmonary; unk, pulmonary – smear not done or result unknown; yr, year.

IMPLEMENTING THE STOP TB STRATEGY¹

Pursuing high-quality DOTS expansion and enhancement

Achievements

- Received approval for GFATM round 5 proposal for TB control activities
- Trained trainers in DOTS at provincial level for cascade training
- Developed training manual for microscopists

Challenges

- Strengthening HR capacity in NTP central office
- Increasing HR capacity at NRL and district laboratories
- Expanding coverage of EQA for microscopy and implementing laboratory supervision plan
- Improving drug management and overcoming difficulties in registering FDC drugs

Planned activities

- Develop strategic plan for 2006–2010, including HR development strategy
- Implement national plan for laboratory supervision
- Strengthen EQA by hiring a microbiologist and medical laboratory scientists and by collaborating with supranational laboratory
- Train district laboratory microscopists

Addressing TB/HIV, MDR-TB and other challenges

Achievements

- Introduced referral of TB suspects from VCT centres to TB diagnostic centres
- Advanced production and distribution of national guidelines on HIV testing and counselling for TB patients
- Trained health-care workers (provincial, members of uniformed forces, private sector) on collaborative TB/HIV activities
- Revised NTP manual to include collaborative TB/HIV activities

Challenges

- Lack of a national TB/HIV coordinating body and focal person
- Providing adequate VCT services at peripheral level
- Improving technical capacity at the NRL for DST
- Overcoming geographical barriers to access to health services, chronic transport shortages and staffing problems in peripheral-level health-care facilities

Planned activities

- Train microscopists in peripheral-level health-care facilities

Contributing to health system strengthening

Achievements

- Appointed health service commission as employer of all health-care workers to improve service conditions, staff retention and morale
- Provided incentives and accommodation subsidies to health-care staff working at peripheral-level health-care facilities

Challenges

- Reducing the number of vacant posts for doctors and nurses, and improving staff distribution and retention

Planned activities

- Ensure that TB coordinator posts are part of the regular health care budget at national, provincial and district levels of health care
- Ensure that TB posts being funded by the GFATM at national level are included in the health services board

Engaging all care providers

Achievements

- Worked with big agricultural estates, mines and industries to diagnose and treat TB according to NTP guidelines
- Trained prison staff and involved all prisons in provision of DOTS services
- Collaborative TB/HIV activities, including isoniazid preventive therapy, implemented by Hippo Valley Estate health-care providers

Challenges

- Improving recording and reporting systems in public and private sectors
- Expanding role of public and private providers in TB services beyond diagnosis

Planned activities

- Train all health-care providers using the revised NTP manual in order to strengthen all aspects of TB control

Empowering people with TB, and communities

Achievements

- Initiated community TB care pilot project in Centenary District of Mashonaland Central Province
- Trained community volunteers on case-finding, referral and TB care

Challenges

- Increasing funding for community TB care, and for transport for supervision and sputum collection
- Lack of HR to train community members in DOT
- Improving awareness of TB among donors and NGOs traditionally focused on HIV/AIDS

Planned activities

- Expand community TB care to 2 additional districts in 2006
- Include ACSM activities in 2006–2010 strategic plan

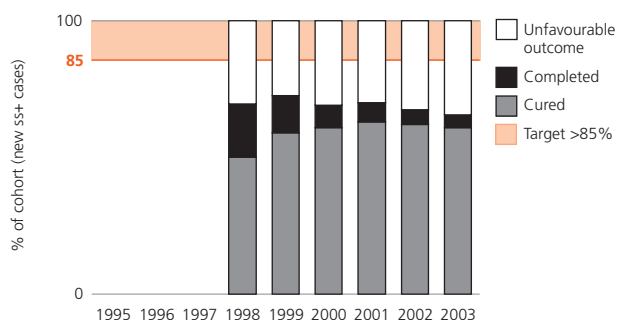
¹ Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

MONITORING DOTS

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
DOTS coverage (%)	—	0.0	0.0	100	12	100	100	100	100	100
DOTS notification rate (new and relapse/100 000 pop)	—	—	—	383	402	404	443	463	413	434
DOTS notification rate (new ss+/100 000 pop)	—	—	—	117	116	114	121	125	113	113
DOTS case detection rate (new and relapse, %)	—	—	—	65	65	62	65	68	61	64
DOTS case detection rate (new ss+, %)	—	—	—	49	47	44	44	45	41	42
DOTS case detection rate (new ss+)/coverage (%)	—	—	—	49	403	44	44	45	41	42
DOTS treatment success (new ss+, %)	—	—	—	70	73	69	71	67	66	—
DOTS re-treatment success (ss+, %)	—	—	—	—	66	65	61	63	62	—

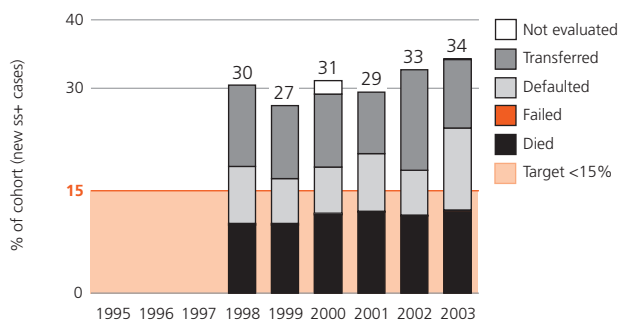
Treatment success, DOTS

Treatment success well below target, and below average for AFR (72% for 2003 cohort)



Unfavourable treatment outcomes, DOTS

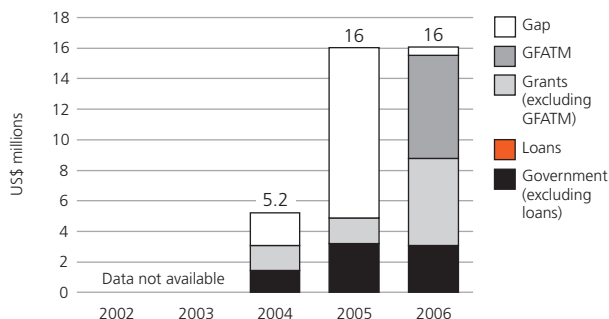
Among 2003 cohort, 12% of patients are known to have died; fate of patients who default or transfer is not known – many may also have died



BUDGET AND FINANCE

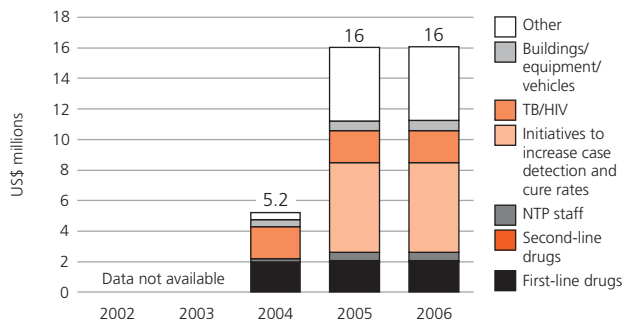
NTP budget by source of funding

Large budget increase for 2005 and 2006; almost fully funded in 2006 following successful GFATM round 5 application and increased funding from other donors



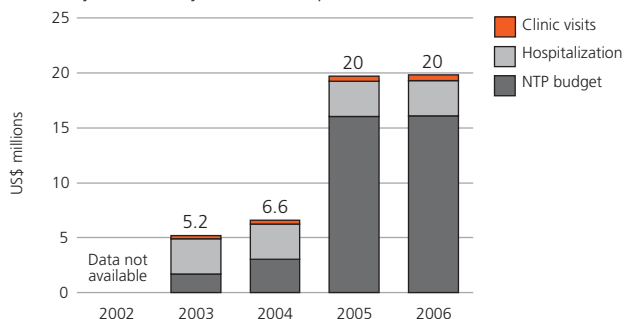
NTP budget by line item

Most of budget increase in 2005–2006 is for strengthening of existing programme activities and for initiatives to increase case detection and cure rates; budget for dedicated NTP staff remains relatively small



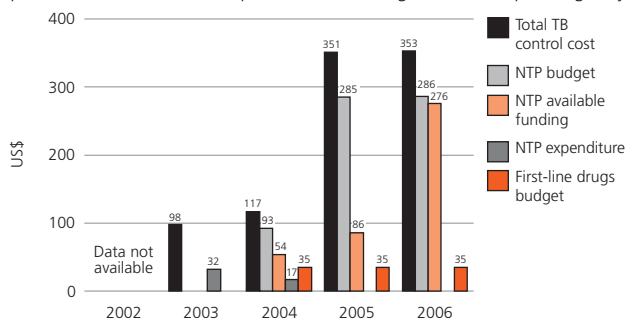
Total TB control costs by line item^a

NTP budget will account for most of total costs in 2005–2006 if budgets in these years are fully funded and spent



Per patient costs, budgets and expenditure^b

Big increase in the cost per patient treated as a result of major increase in planned activities; 2004 expenditure reflects government spending only



^a Total TB control costs for 2003 are based on expenditure, whereas those for 2004 are based on available funding and those for 2005–2006 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.

^b NTP available funding for 2004–2006 is based on prospectively reported budget data, and estimated as the total budget minus any reported funding gap. pop indicates population; ss+, smear-positive; yr, year; — not available or not applicable.

ANNEX 2

Regional and country data

Explanatory notes

Summary by WHO region

Africa

The Americas

Eastern Mediterranean

Europe

South-East Asia

Western Pacific

Explanatory notes

Regional summaries and country data grouped by WHO region are presented in the following 12 tables. The WHO Global TB Database, which includes detailed data for previous years, is available at www.who.int/tb/country/global_tb_database.

All rates are per 100 000 population (total population of country or region, with the exception of notifications by age and sex, where the estimated population for each age and sex category is used).

Table A2.1

Estimated burden of TB, 1990 and 2004

Estimates of incidence, prevalence and mortality for 1990 (baseline year for MDG) and 2004 (the latest year covered by this report). See Methods for details of calculations. All estimates include TB in people with HIV.

Table A2.2

Whole country case notifications and case detection rates, 2004

Case notifications by history (new or re-treatment), by site (pulmonary or extrapulmonary) and by smear status (smear-positive, negative or unknown). Proportions of case types and estimated case detection rate for whole country (DOTS and non-DOTS combined).

- *Population, source:* *World population prospects – the 2004 revision*. New York, United Nations Population Division, 2005.
- *Country total:* the total number of TB cases according to the country's own reporting convention (in many countries this matches the WHO total – new and relapse – other countries include re-treatment cases and/or cases with unknown treatment history).
- *WHO total:* new and relapse cases (for the WHO European region only, cases with treatment history unknown also included).
- *Other new:* new cases for which the site of disease is not recorded.
- *Other re-treat.:* re-treatment cases for which the outcome of previous treatment is not known.
- *Other:* cases for which neither treatment history nor site of disease is recorded.
- *New pulm. lab. confirmed:* new pulmonary cases in which diagnosis has been confirmed by smear and/or culture examination.
- *Detection rate, all cases:* notified (new and relapse) cases divided by estimated incident cases (expressed as percentage).

- *Detection rate, new ss+:* notified new smear-positive cases divided by estimated incident smear-positive cases (expressed as percentage).
- *SS+ (% of pulm.):* the percentage of all new pulmonary cases that are smear-positive.
- *SS+ (% of new+relapse):* the percentage of new and relapse case that are new smear-positive.
- *Extrapulm. (% of new+relapse):* the percentage of all new and relapse cases that are extrapulmonary.
- *Re-treat. (% of new+re-treat.):* notified re-treatment cases as a percentage of all notified cases.

Table A2.3

DOTS coverage, case notifications and case detection rates, 2004

As for Table A2.2, but for DOTS notifications.

- *DOTS coverage:* the percentage of the national population living in areas where health services have adopted DOTS.

Table A2.4

Public–Public and Public–Private Mix (PPM), collaborative TB/HIV activities and management of MDR-TB, 2003–2004

Public–Public and Public–Private Mix (PPM)

- *Guidelines for other practitioners:*
 - in the regional summary tables, and in the final row of the country data tables, numbers represent the proportion of countries in the region that have guidelines for management of TB for practitioners working outside public health clinics.
 - in the country data tables, “Yes” or “No” indicates whether guidelines for management of TB for practitioners working outside public health clinics are available in the country.
- *Institutions notifying to NTP:*
 - in the regional summary table, and in the final row of the country data tables, the numbers represent the proportion of countries in the region where at least some providers of a particular type notified TB cases to the NTP in 2004.
 - in the country data tables, “All”, “Some” or “None” indicates whether any providers of a particular type notified TB cases to the NTP in 2004.

Collaborative TB/HIV activities

- *HIV testing for TB pts:*
 - in the regional summary table and in the final row of the country data tables, the numbers represent the

proportion of countries in the region that implemented a national policy of offering HIV testing and counselling to TB patients at least partially.

— in the country-specific table “Yes” indicates that the country implemented a national policy of offering HIV testing and counselling to all TB patients in 2004; “Partially” indicates that the policy was implemented in part of the country.

- *HIV surveillance among TB pts:*
 - in the regional summary table and in the final row of the country data tables, the numbers represent the proportion of countries in the region that have a national system for HIV surveillance among TB patients.
 - in the country-specific table, “Yes” or “No” indicates whether the country has a national system for HIV surveillance among TB patients.
- *TB pts tested for HIV:* the number of TB patients tested for HIV in 2003 (for European countries 2004).
- *TB pts HIV-positive:* the number of TB patients found to be HIV-positive in 2003 (in 2004 for countries in the European Region).
- *TB pts CPT:* the number of HIV-positive TB patients given co-trimoxazole preventive therapy in 2003.
- *TB pts ART:* the number of HIV-positive TB patients given antiretroviral therapy during their TB treatment in 2003.

Multidrug-resistant TB

- *Laboratory-confirmed MDR:* number of laboratory-confirmed cases of MDR-TB identified among TB patients diagnosed in 2004.
- *DST in new cases:* number of new TB cases in 2004 for which drug sensitivity testing (DST) was performed at start of treatment.
- *MDR in new cases:* number of new cases which were identified as MDR-TB based on DST at start of treatment.
- *Re-treatment DST:* number re-treatment cases registered in 2004 for which DST was performed at start of treatment.
- *Re-treatment MDR:* number of re-treatment cases identified as MDR-TB.

Table A2.5

Treatment outcomes, 2003 cohort

Treatment outcomes of new smear-positive cases treated under DOTS, non-DOTS and re-treatment cases under DOTS.

Table A2.6

Re-treatment outcomes, 2003 cohort

Re-treatment outcomes of smear-positive cases treated under DOTS after relapse, treatment failure or default.

Table A2.7

DOTS treatment success and case detection rates, 1994–2004

Treatment success rates (the proportion of registered cases cured or completed treatment) for new smear-positive cases treated under DOTS from 1994 to 2003 and smear-positive case detection rates under DOTS from 1995 to 2004.

Table A2.8

New smear-positive case notification by age and sex, absolute numbers, DOTS and non-DOTS, 2004

Breakdown by age and sex of new smear-positive cases notified from whole country (DOTS and non-DOTS). Some countries can not provide the breakdown for all smear-positive notified cases.

Table A2.9

New smear-positive case notification rates by age and sex, DOTS and non-DOTS, 2004

Notification rates of new smear-positive cases by age and sex (DOTS + non-DOTS). Rates are missing where breakdown of smear-positive notified cases is not provided, or where age- and sex-specific population data are not available. In the regional summary table, rates are excluding those countries for which breakdown of notified cases or population by age and sex is missing.

Table A2.10

Number of TB cases notified, 1980–2004

Table A2.11

Case notification rates, 1980–2004

Table A2.12

New smear-positive cases notified, numbers and rates, 1993–2004

Summary by WHO region



Africa

The Americas

Eastern Mediterranean

Europe

South-East Asia

Western Pacific

Table A2.7 DOTS treatment success and case detection rates, 1994–2004

	DOTS new smear-positive treatment success (%)										DOTS new smear-positive case detection rate (%)									
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1995	1996	1997	1998	1999	2000	2001	2002	2003
AFR	59	62	57	63	70	69	72	71	73	72	23	25	28	34	34	37	39	45	49	48
AMR	77	77	83	82	81	83	81	83	83	83	27	28	30	34	37	44	43	46	48	59
EMR	82	87	86	79	77	83	83	83	83	82	10	8.9	10	16	18	21	23	27	29	33
EUR	68	69	72	72	76	77	77	75	76	75	2.5	3.3	4.4	11	10	11	14	21	22	26
SEAR	80	74	77	72	72	73	83	84	85	85	1.5	4.1	5.6	8.2	14	19	27	34	45	57
WPR	90	91	93	93	95	94	92	93	91	91	15	28	32	33	32	37	38	39	50	65
Global	77	79	77	79	81	80	82	82	82	82	11	16	18	22	24	28	32	38	45	53

Treatment success, sum of cured and completed; DOTS new smear-positive case detection rate, notified cases divided by estimated incident cases. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Table A2.8 New smear-positive case notification by age and sex, absolute numbers, DOTS and non-DOTS, 2004

	Male										Female										Male/female ratio	
	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14	15-24	25-34	35-44	45-54	55-64	65+	All							
AFR	7 349	55 803	94 603	70 040	38 845	17 548	11 126	9 561	58 210	74 351	42 176	21 054	10 357	5 771	16 910	114 013	168 954	112 216	59 899	27 905	16 897	1.3
AMR	1 682	16 336	16 561	14 850	12 201	8 015	7 745	1 853	13 132	11 427	8 179	5 876	3 993	4 703	3 535	29 468	27 988	23 029	18 077	12 008	12 448	1.6
EMR	1 473	12 330	13 408	9 488	7 340	5 614	4 629	2 272	11 080	10 030	6 737	4 893	3 608	2 892	3 745	23 410	23 438	16 225	12 233	9 222	7 521	1.3
EUR	250	7 111	12 957	14 299	13 759	5 915	4 863	341	5 194	6 629	4 615	3 458	1 836	3 359	591	12 305	19 586	18 914	17 217	7 751	8 222	2.3
SEAR	4 583	83 939	111 760	113 176	98 654	65 556	39 341	7 767	63 166	68 595	48 068	33 615	20 303	11 117	12 350	147 105	180 345	161 242	132 269	85 859	50 458	2.0
WPR	2 082	49 424	67 398	74 000	73 345	60 898	72 748	2 393	34 361	36 925	31 860	27 718	22 864	28 467	4 455	83 785	104 323	105 860	101 063	63 762	101 215	2.2
Global	17 399	224 943	316 677	295 653	244 144	163 546	140 452	24 187	185 143	207 957	141 633	96 614	62 961	56 309	41 586	410 086	524 634	437 486	340 758	226 507	196 761	1.8

For some countries, breakdown of notified cases by age and sex is missing, or is provided for a subset of cases. See Explanatory notes on page 140 for further details. Data can be downloaded from www.who.int/tb

Table A2.9 New smear-positive case notification rates by age and sex, DOTS and non-DOTS, 2004

	Male										Female										All
	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14	15-24	25-34	35-44	45-54	55-64	65+	All						
AFR	5	76	195	228	189	137	116	6	80	152	133	96	72	48	6	78	174	180	141	102	78
AMR	1	21	25	25	25	26	25	2	18	17	13	12	12	11	2	20	21	19	18	18	17
EMR	0	11	20	33	32	35	48	48	2	21	26	24	25	30	28	2	30	28	30	39	37
SEAR	2	52	83	104	128	138	101	3	42	55	47	46	41	25	2	47	69	77	88	89	60
WPR	1	34	45	52	68	88	116	1	25	26	23	27	34	37	1	29	36	38	48	62	73
Global	2	39	63	68	74	77	70	3	33	43	33	29	28	22	2	36	53	51	51	62	43

Rates are per 100 000 population of each age/sex group. Rates are calculated excluding those countries for which breakdown of notified cases or population by age and sex is missing. Data can be downloaded from www.who.int/tb

Table A2.10 Number of TB cases notified, 1980-2004

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
AFR	219 802	224 102	240 263	258 842	264 928	296 627	301 683	333 842	373 850	365 432	418 530	412 414	432 997	418 995	550 183	504 309	585 773	598 111	687 626	750 995	783 521	856 304	999 372	1 079 333	1 173 743
AMR	227 820	248 150	237 316	238 286	226 801	227 022	227 107	233 192	241 834	239 594	231 215	252 221	253 256	166 452	241 860	258 198	256 564	254 987	262 904	240 631	236 184	229 836	233 727	227 583	235 187
EMR	522 110	514 791	433 271	234 482	171 652	186 344	230 427	288 805	275 246	255 161	234 569	301 956	94 182	201 620	119 374	121 745	145 373	136 232	233 878	171 219	141 235	165 341	190 569	206 806	243 232
EUR	348 921	346 104	324 560	319 220	308 401	298 833	302 602	290 606	277 143	267 322	242 429	231 651	248 519	242 425	243 691	288 949	322 165	353 336	349 800	373 081	373 081	368 433	373 670	358 978	354 954
SEAR	837 901	915 952	1 076 211	1 244 819	1 275 299	1 413 418	1 520 444	1 667 948	1 735 860	1 719 365	1 747 252	1 322 709	1 287 176	1 298 759	1 400 850	1 470 352	1 308 981	1 279 041	1 464 312	1 414 228	1 414 228	1 414 141	1 488 126	1 551 516	1 686 903
WPR	356 481	355 345	461 557	462 195	541 002	615 181	651 854	655 020	716 447	741 912	894 074	760 870	754 469	718 784	724 230	824 952	873 424	870 918	834 604	820 483	786 293	805 104	811 482	980 008	1 161 201
Global	2 513 035	2 604 444	2 773 198	2 757 854	2 788 083	2 947 616	3 127 091	3 321 909	3 551 568	3 605 191	3 740 182	3 706 364	3 106 132	3 035 452	3 178 157	3 400 003	3 653 651	3 522 565	3 647 853	3 821 405	3 734 542	3 839 159	4 096 946	4 405 124	4 855 220
Number reporting	193	192	192	194	191	196	197	198	198	194	194	189	183	176	175	187	193	190	197	193	193	189	201	204	200
% reporting	91	91	91	92	91	93	93	93	94	92	92	90	87	83	83	89	91	90	93	91	91	90	95	97	95

From 1995 on, number shown is all notified new and relapse cases (DOTS and non-DOTS). The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Table A2.11 Case notification rates, 1980-2004

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
AFR	58	58	60	63	62	68	67	72	78	74	82	79	80	76	97	86	98	97	109	117	119	127	145	153	163
AMR	37	40	37	34	34	33	34	34	34	34	32	34	32	32	32	31	33	32	32	30	28	27	27	26	27
EMR	183	175	143	75	53	56	67	82	76	68	61	77	23	49	28	28	33	30	50	36	29	33	37	40	46
EUR	44	43	40	39	38	36	36	35	33	32	29	27	29	28	28	33	37	41	40	43	43	42	43	41	40
SEAR	80	85	88	111	112	113	119	125	134	137	133	133	99	94	83	99	102	89	86	97	92	91	94	96	103
WPR	27	27	34	34	39	44	46	45	49	50	59	49	48	46	45	51	54	53	50	49	47	47	47	57	67
Global	57	58	60	63	66	70	69	71	69	71	69	69	63	60	62	64	61	62	64	61	62	66	70	76	

Rates are per 100 000 population. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Table A2.12 New smear-positive cases notified, numbers and rates, 1993-2004

	Number of cases																							
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
AFR	107 012	121 005	212 910	264 659	276 109	325 825	349 142	362 175	398 952	454 300	513 029	541 849	19	21	36	44	45	52	54	55	59	66	73	75
AMR	88 685	128 059	136 901	136 713	142 570	139 286	135 093	130 321	129 684	127 463	125 862	126 289	12	17	18	17	18	17	16	16	15	15	14	14
EMR	20 260	20 428	46 851	58 720	57 947	74 923	68 971	61 294	68 945	74 993	80 974	96 971	5	5	11	13	13	16	14	13	14	15	16	18
EUR	45 771	83 568	104 639	110 752	106 636	111 391	89 199	94 275	86 239	83 455	101 657	92 233	5	10	12	13	12	13	10	11	10	10	12	10
SEAR	317 355	313 430	357 882	372 867	369 583	382 171	481 332	510 053	561 939	606 730	673 171	779 172	23	23	25	26	25	26	26	32	33	36	38	42
WPR	222 809	241 672	314 269	388 141	416 952	379 699	383 626	376 109	371 806	372 641	453 814	579 594	14	15	20	24	25	23	23	22	22	22	26	33
Global	802 092	908 162	1 175 462	1 331 652	1 369 797	1 413 295	1 507 363	1 534 217	1 617 565	1 719 602	1 948 507	2 216 108	15	16	21	23	23	24	25	26	26	28	31	35

Rates are per 100 000 population. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Summary by WHO region

Africa

The Americas

Eastern Mediterranean

Europe

South-East Asia

Western Pacific

AFRICA: SUMMARY OF TB CONTROL POLICIES

	STATUS ^a	MANUAL ^b	MICROSCOPY ^c	SCC ^d	DOT ^e	MONITORING OUTCOME ^f
ALGERIA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
ANGOLA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
BENIN	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
BOTSWANA	DOTS	YES	Implemented in some units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
BURKINA FASO	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
BURUNDI	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
CAMEROON	DOTS		Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
CAPE VERDE	NON-DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas
CENTRAL AFRICAN REPUBLIC	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas	Implemented in some units/areas
CHAD	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas	Implemented in some units/areas
COMOROS	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas
CONGO	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas	Implemented in some units/areas
CÔTE D'IVOIRE	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas	Implemented in some units/areas
DR CONGO	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas	Implemented in some units/areas
EQUATORIAL GUINEA	DOTS	YES	Implemented in some units/areas	Implemented in all units/areas	Implemented in some units/areas	Not implemented
ERITREA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
ETHIOPIA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
GABON	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas	Implemented in some units/areas
GAMBIA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
GHANA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
GUINEA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
GUINEA-BISSAU	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
KENYA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
LESOTHO	DOTS	YES	Implemented in some units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas
LIBERIA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas	Implemented in some units/areas
MADAGASCAR	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
MALAWI	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
MALI	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
MAURITANIA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas	Implemented in some units/areas
MAURITIUS	DOTS	NO	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
MOZAMBIQUE	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
NAMIBIA	DOTS	YES	Implemented in some units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
NIGER	DOTS		Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
NIGERIA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
RWANDA	DOTS	YES	Implemented in all units/areas	Implemented in some units/areas	Implemented in all units/areas	Implemented in some units/areas
SAO TOME AND PRINCIPE	NON-DOTS	NO	Implemented in all units/areas	Not implemented	Implemented in all units/areas	Not implemented
SENEGAL	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas	Implemented in some units/areas
SEYCHELLES	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
SIERRA LEONE	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
SOUTH AFRICA	DOTS	YES	Implemented in some units/areas	Implemented in all units/areas	Implemented in some units/areas	Implemented in some units/areas
SWAZILAND	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
TOGO	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
UGANDA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas	Implemented in some units/areas
UR TANZANIA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
ZAMBIA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
ZIMBABWE	DOTS		Implemented in some units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas

Implemented in all units/areas
Implemented in some units/areas
Not implemented
Unknown

^a Status: DOTS status (blank indicates no report received)

^b Manual: national TB control manual (recommended)

^c Microscopy: use of smear microscopy for diagnosis (core component of DOTS)

^d SCC: short course chemotherapy (core component of DOTS)

^e DOT: directly observed treatment (core component of DOTS)

^f Outcome monitoring: monitoring of treatment outcomes by cohort analysis (core component of DOTS)

Table A2.3 DOTS coverage, case notifications and case detection rates, 2004

Country	DOTS coverage %	TB cases reported from DOTS services										Estimated incidence and case detection rate					Proportions									
		New and relapse (WHO total)		New pulmonary		New extra-pulmonary		Re-treatment cases		Other		New pulm.		Case detection rate		ss+	ss+	Retreat.								
		number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	
Algeria	100	19 809	61	1 525	26	9 447	552	120	8 930	113	105	17 469	7 854	113	105	84	42	42	42	42	42	48	3	3	3	3
Angola	56	30 120	194	16 489	106	9 722	2 399	0	1 510	281	514	40 073	17 591	75	94	63	55	8	8	8	8	8	7	7	7	7
Bahin	100	3 116	38	2 582	32	140	267	85	103	127	82	7 079	3 152	44	82	95	83	3	3	3	3	9	10	10	10	10
Botswana	100	10 131	573	3 127	177	5 975	1 184	445	32	79	3 127	11 855	4 688	85	67	37	31	31	31	31	12	12	5	5	5	5
Burkina Faso	100	2 878	22	1 825	15	326	521	105	99	56	68	24 540	10 628	12	18	86	67	67	67	67	18	18	11	11	11	11
Burundi	100	6 871	94	3 087	42	1 906	2 217	5	10	5	3 087	24 971	10 697	28	29	67	45	45	45	45	32	32	1	1	1	1
Cameroun	0	17 655	110	11 218	70	3 640	2 067	730	86	446	11 218	28 725	12 296	61	91	76	64	64	64	64	12	12	7	7	7	7
Cape Verde	0	4 027	10	220	6	1 037	808	0	80	10	20	12 852	5 345	3	4	68	55	55	55	55	20	20	4	4	4	4
Central African Republic	80	3 957	42	1 816	19	1 237	808	0	96	10	20	26 371	11 464	15	16	59	46	46	46	20	20	4	4	4	4	4
Chad	100	89	11	63	8	3	20	0	3	0	2	359	161	25	39	95	71	71	71	22	22	5	5	5	5	5
Comoros	80	9 729	251	4 121	106	2 747	2 511	350	100	27	4 121	14 626	6 344	67	65	60	42	42	42	26	26	5	5	5	5	5
Cote d'Ivoire	74	18 743	105	11 467	64	2 005	4 269	0	602	238	105	70 220	30 119	27	38	83	61	61	61	23	23	5	5	5	5	5
DR Congo	75	93 336	167	62 192	111	9 229	18 359	3 566	925	982	669	204 413	88 975	46	70	87	67	67	67	20	20	6	6	6	6	6
Equatorial Guinea	100	536	109	406	82	42	73	15	3	3	406	1 177	497	46	82	91	76	76	76	14	14	4	4	4	4	4
Eritrea	84	4 239	100	720	17	2 161	1 311	0	47	66	22	11 482	5 057	37	14	25	17	17	17	31	31	4	4	4	4	4
Ethiopia	70	123 127	163	41 430	55	37 119	42 477	2 101	424	672	424	267 147	116 241	46	36	53	34	34	34	34	3	3	3	3	3	3
Gabon	24	2 588	190	1 323	97	864	285	116	37	77	116	3 817	1 628	88	61	60	51	51	51	11	11	9	9	9	9	9
Gambia	100	2 142	145	1 011	68	969	97	65	14	44	1 011	3 448	1 540	62	66	51	47	47	47	5	5	6	6	6	6	6
Ghana	100	11 827	55	7 259	34	3 122	904	542	34	7 259	44 733	19 670	26	37	70	61	61	61	8	8	5	5	5	5	5	5
Guinea	100	7 423	81	5 015	55	590	1 581	237	59	128	59	22 062	9 682	34	52	89	68	68	68	21	21	6	6	6	6	6
Guinea-Bissau	60	1 604	104	1 008	65	464	39	93	1	51	1 008	3 057	1 338	52	75	68	63	63	63	2	2	9	9	9	9	9
Kenya	100	100 573	301	41 167	123	41 220	14 943	3 237	72	1 174	3 999	207 311	89 098	49	46	50	41	41	41	15	15	8	8	8	8	8
Lesotho	100	11 404	634	4 272	238	4 221	2 311	600	77	376	441	12 515	4 957	91	86	50	37	37	37	20	20	12	12	12	12	12
Liberia	68	4 337	134	2 490	77	919	901	27	21	39	0	10 034	4 291	43	58	73	57	57	57	21	21	2	2	2	2	2
Madagascar	100	17 863	99	12 896	71	1 271	2 707	989	122	247	12 896	39 465	17 504	45	74	91	72	72	72	15	15	7	7	7	7	7
Malawi	100	27 030	214	8 566	68	9 319	6 007	1 971	1 167	247	8 566	52 042	21 502	52	40	48	48	48	48	32	32	22	22	22	22	22
Mali	68	4 525	34	3 069	23	535	587	334	53	53	3 069	36 914	16 321	12	19	85	68	68	68	13	13	1	1	1	1	1
Mauritania	76	3 328	112	1 662	56	773	649	242	4	4	1 662	8 549	3 822	39	43	68	50	50	50	20	20	7	7	7	7	7
Mauritius	100	137	11	117	9	3	13	0	4	0	2	785	353	17	33	98	85	85	85	9	9	4	4	4	4	4
Mozambique	100	31 150	160	17 058	88	8 830	3 950	1 312	188	334	17 058	89 384	37 155	35	46	66	55	55	55	13	13	6	6	6	6	6
Namibia	100	16 026	748	5 155	257	7 614	1 806	0	751	0	1 130	14 386	5 856	104	88	40	34	34	34	10	10	5	5	5	5	5
Nigeria	50	6 822	51	4 311	32	1 039	1 029	443	142	146	4 311	21 250	9 469	32	46	81	63	63	63	15	15	10	10	10	10	10
Niger	65	57 246	44	33 755	26	20 134	1 876	1 481	662	1 278	57	373 555	161 096	15	21	63	59	59	59	3	3	6	6	6	6	6
Rwanda	100	6 487	73	4 179	47	683	1 260	0	365	72	51	32 949	14 215	20	29	86	64	64	64	19	19	8	8	8	8	8
Sao Tome & Principe	0	9 098	80	6 437	57	1 255	929	477	84	326	93	27 917	12 479	33	52	84	71	71	71	10	10	10	10	10	10	10
Senegal	100	18	23	13	16	1	4	0	0	0	0	27	12	66	106	93	72	72	72	22	22	8	8	8	8	8
Seychelles	100	5 710	107	3 735	70	1 368	484	0	123	54	4 011	23 652	10 492	24	36	73	65	65	65	8	8	5	5	5	5	5
Sierra Leone	93	256 667	544	114 227	242	66 547	39 797	0	36 096	2 808	4 264	339 078	138 099	76	83	63	45	45	45	16	16	19	19	19	19	19
South Africa	100	8 071	780	1 902	184	4 177	1 336	666	75	119	110	12 679	4 978	64	38	31	24	24	24	17	17	11	11	11	11	11
Swaziland	100	2 115	35	1 543	26	164	345	0	63	23	54	21 264	9 324	10	17	90	73	73	73	16	16	6	6	6	6	6
Togo	100	43 721	157	20 986	75	17 674	3 469	1 592	161	231	891	111 716	48 756	39	43	54	48	48	48	8	8	6	6	6	6	6
Uganda	100	62 512	166	25 823	69	21 591	13 320	2 761	1778	161	2 761	130 606	55 435	48	47	54	41	41	41	21	21	8	8	8	8	8
UR Tanzania	100	54 106	471	17 247	150	25 101	9 701	2 057	428	0	3 536	78 049	32 129	69	54	41	32	32	32	18	18	10	10	10	10	10
Zambia	100	56 162	434	14 581	113	31 610	7 996	1 975	4 956	0	4 956	87 214	35 042	64	42	32	26	26	26	14	14	11	11	11	11	11
Zimbabwe	100	56 162	434	14 581	113	31 610	7 996	1 975	4 956	0	4 956	87 214	35 042	64	42	32	26	26	26	14	14	11	11	11	11	11
AFR	84	1 154 428	160	529 956	73	349 337	205 962	2 305	66 868	7 530	15 111	2 872 988	1 097 805	45	48	60	46	46	46	18	18	9	9	9	9	9

ss+ indicates sputum smear-positive; ss-, sputum smear-negative; unk., sputum smear result unknown; re-treat., re-treatment; pulm lab. confirmed, pulmonary case confirmed by positive smear or culture. See Explanatory notes on page 139 for further details. Data can be downloaded from www.who.int/tb

Table A2.4 Public–Public and Public–Private Mix (PPM), collaborative TB/HIV activities and management of MDR-TB, 2003-2004

	Public–Public and Public–Private Mix (PPM), 2004			Collaborative TB/HIV activities, 2003 or 2004			Multidrug-resistant TB, 2004							
	Guidelines for other practitioners	Private hospitals or clinicians	Institutions providing to WTP	HIV testing for TB pts among TB pts	TB pts tested for HIV	TB pts HIV-positive	TB pts ART	Laboratory-confirmed MDR number	DST cases number	MDR in new cases number	Re-treatment MDR number			
Algeria	Yes	No	All	No	No			15	51	13	109	15		
Angola	Yes	Some	All	Partially	No									
Benin	No	All	All	Yes	No	3 822	3 276							
Botswana	No	All	All	Yes	Yes	260	40	145						
Burkina Faso	Yes	Some	All	Yes	No	88	10	0	0	0	0	0		
Burundi	No	Some	Some	No	Yes	0	0	0	0	0	0	0		
Cameroon	No	All	No	No	No	0	0	0	0	0	0	0		
Cape Verde	Yes	No	Some	No	Yes	91								
Central African Republic	No	All	No	Yes	No									
Chad	No	All	No	Yes	No									
Comoros	No	Some	No	Yes	No									
Congo	No	Some	All	Yes	No	4 067	1 689		36	0	0	36		
Côte d'Ivoire	No	All	All	Yes	No	1 742	476	280	2					
DR Congo	No	All	All	Partially	No	77	24	0	0	0	0	2		
Equatorial Guinea	Yes	No	All	Yes	Yes									
Eritrea	No	All	No	No	No									
Ethiopia	No	All	Some	Yes	Yes	520	151	151	0	0	0	0		
Gabon	No	Some	All	Yes	Yes									
Gambia	Yes	Some	All	Yes	No	1 129	360	360	360	0	0	2		
Ghana	No	No	All	No	No	0	0	0	0	0	4	25		
Guinea	Yes	Some	All	No	No									
Guinea-Bissau	Yes	Some	All	Yes	Yes									
Kenya	Yes	Some	All	No	No									
Lesotho	Yes	Some	All	No	No									
Liberia	Yes	No	All	No	No	7	3		36	0	0	36		
Madagascar	Yes	Some	All	No	No				4	0	0	4		
Malawi	No	All	Some	Yes	Yes	3 983	2 734	2 349	10	44	0	47		
Malawi	No	All	Some	Yes	Yes									
Malawi	Yes	All	All	No	No				8					
Mauritania	No	All	All	Yes	No	115	3	2	0	117	0	6		
Mauritius	Yes	Some	All	No	No				75	329	21	129		
Mozambique	No	No	All	Yes	Yes	1 829	1 234	0	0			54		
Namibia	No	No	All	Yes	Yes									
Niger	Yes	Some	Some	No	No	10 372	95	0						
Nigeria	No	All	All	No	No									
Rwanda	No	All	All	No	No									
Rwanda	No	All	All	Yes	Yes	340	8		0	0	0	0		
Sao Tome & Principe	No	No	All	No	No									
Senegal	No	All	All	No	No				20	92	3	29		
Seychelles	No	All	All	Yes	Yes	18	0	0	0	0	0	0		
Sierra Leone	Yes	Some	All	Yes	Yes									
Sierra Leone	No	Some	Some	No	No				3 060					
South Africa	No	All	All	Yes	No	12 543	4 414	4 414	0	3	0	11		
Swaziland	No	All	All	Yes	No	117	98		2	0	0	0		
Togo	No	All	All	Yes	No									
Uganda	Yes	Some	All	No	No				17	0	0	0		
Uganda	Yes	All	All	Yes	No				4	2 633	2	1 099		
UR Tanzania	Yes	All	All	No	No				37	108	7	1		
Zambia	Yes	Some	All	No	No									
Zimbabwe	Yes	Some	All	No	No									
AFR	39	59	59	57	57	41 120	14 615	7 711	364	3 342	8 465	50	3 005	204

pts indicates patients; CPT, co-trimoxazole preventive therapy; ART, antiretroviral therapy. The regional row for the first 9 columns represents the proportion of countries that provided an affirmative response ("Yes", "All", "Some" or "Partially"). See Explanatory notes on pages 139 and 140 for further details. Some countries provided the number of TB patients found to be HIV-positive, but did not provide the number of TB patients tested. The regional total of TB patients tested is therefore lower than the number of patients actually tested, and cannot be used to calculate a regional estimate of HIV prevalence in TB patients. Data can be downloaded from www.who.int/tb

Table A2.7 DOTS treatment success and case detection rates, 1994–2004

	DOTS new smear-positive treatment success (%)										DOTS new smear-positive case detection rate (%)										
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Algeria																					
Angola	86	73	72	73	77	77	87	84	89	90	133	126	115	114	114	114	114	114	114	105	
Benin	76	73	72	73	77	77	68	66	74	68	61	80	80	79	84	85	77	107	108	94	
Botswana	72	67	70	70	47	71	77	78	71	77	72	84	84	85	69	73	69	73	66	67	
Burkina Faso	45	25	29	61	59	61	60	65	64	66	12	21	16	17	18	17	17	17	17	18	
Burundi	44	45	67	74	80	80	80	80	79	79	20	25	30	19	38	34	29	31	29	29	
Cameroon																					
Cape Verde																					
Central African Republic	37						57	61		59	62	14									
Chad	63	47					64		72	78	37	14									
Comoros	94	90					85	93	92	96	54	57									
Congo	69						61	69	66	71	69	50	87	82	89	58	65				
Cote d'Ivoire	17	68	56	61	62	63	63	73	67	72	52	51	47	46	44	35	9	37	38	38	
DR Congo	71	80	48	64	70	69	78	77	78	83	42	48	45	56	54	52	57	56	64	70	
Equatorial Guinea	89	89	77	82	71	82	71	82	71	82	83	72	71	82						82	
Eritrea																					
Ethiopia	74	61	73	72	74	76	80	76	76	70	15	20	22	24	25	33	34	35	36	36	
Gabon																					
Gambia	74	76	80	70	74	75	75	75	74	75	75	69	72	76	73	70	66				
Ghana	54	51	48	59	55	50	56	60	66	66	16	14	32	32	31	38	41	41	40	37	
Guinea	78	78	75	74	73	74	68	74	72	75	43	51	48	52	52	53	52	51	50	52	
Guinea-Bissau																					
Kenya	73	75	77	65	77	78	80	80	79	80	56	57	53	57	55	46	49	48	47	46	
Lesotho	56	47	71	63	71	69	71	69	71	73	63	73	85	77	76	76	70	77	86	86	
Liberia																					
Madagascar	51	55					74	80	76	76	32	32								58	
Malawi	22	71	68	71	69	71	73	70	72	73	38	40	43	47	42	40	41	37	36	40	
Mali	68	59	65	62	70	68	50	50	50	50	14	16	18	17	16	15	15	18	19	19	
Mauritania																					
Mauritius	96						91	87	93	92	34									43	
Mozambique	67	39	54	67	71	75	77	78	76	76	54	49	47	47	46	44	45	45	45	46	
Namibia	66	58	61	51	56	63	66	63	66	63	22	82	84	86	84	84	89	87	97	86	
Niger																					
Nigeria	65	49	32	73	73	75	79	79	79	59	11	12	11	12	13	14	14	13	18	21	
Rwanda																					
Sao Tome & Principe																					
Senegal	38	44	44	55	48	58	52	53	66	70	61	64	57	55	48	54	55	50	55	52	
Seychelles	89	100	100	100	82	67	45	100	89	87	83	99	69	69	87	95	72	40	106	106	
Sierra Leone	75	69	74	79	75	77	80	81	83	83	28	40	39	36	36	34	34	33	36	36	
South Africa																					
Swaziland																					
Togo	45	60	65	66	69	76	65	65	68	67	13	13	13	12	11	12	12	12	14	17	
Uganda																					
UR Tanzania	80	73	76	77	76	78	78	81	80	81	56	55	52	53	51	48	47	44	44	43	
Zambia																					
Zimbabwe																					
AFR	59	62	57	63	70	69	72	71	73	72	23	25	28	34	34	37	39	45	49	48	

Treatment success, sum of cured and completed; DOTS new smear-positive case detection rate, notified cases divided by estimated incident cases. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Table A2.9 New smear-positive case notification rates by age and sex, DOTS and non-DOTS, 2004

	MALE					FEMALE					ALL									
	0-14	15-24	25-34	35-44	65+	0-14	15-24	25-34	35-44	65+	0-14	15-24	25-34	35-44	65+					
Algeria	1	37	61	37	39	60	2	29	30	16	20	32	47	2	33	45	26	27	36	53
Angola	17	199	302	353	314	229	22	234	307	313	247	182	128	19	217	304	332	279	204	156
Benin	1	42	123	118	121	110	94	3	36	80	43	33	37	25	2	39	101	78	74	72
Botswana	8	118	374	541	490	431	455	14	174	413	335	173	103	11	146	394	434	321	246	249
Burkina Faso	0	11	43	65	88	84	79	1	8	22	28	23	23	15	0	10	32	45	50	49
Burundi	1	44	154	180	160	84	64	3	40	80	85	54	30	15	2	42	116	132	103	52
Cameroun	4	76	191	220	191	122	94	5	76	128	101	79	58	42	5	76	160	160	133	88
Cape Verde	1	15	100	67	192	41	91	2	31	98	40	40	70	29	2	23	99	53	97	60
Central African Republic	1	15	271	368	209	39	21	2	15	162	334	134	48	10	2	15	216	351	169	44
Chad	3	17	82	115	85	39	24	2	10	55	70	49	14	11	3	14	68	92	66	26
Comoros	1	159	355	308	260	120	67	4	82	318	241	143	117	70	3	120	337	274	198	118
Cote d'Ivoire	3	74	195	203	148	119	134	5	66	152	138	92	80	71	4	70	174	172	122	101
DR Congo	9	127	261	325	324	269	202	13	139	233	253	233	176	88	11	133	247	289	277	219
Equatorial Guinea	4	105	194	236	242	162	173	8	94	145	126	83	64	37	6	100	169	180	160	121
Eritrea	1	95	21	23	37	54	81	1	22	40	34	33	28	37	1	18	30	28	35	40
Ethiopia	7	99	147	132	96	66	47	8	89	127	94	58	28	11	8	94	137	113	76	46
Gabon	6	143	305	217	179	168	193	6	126	141	122	80	86	83	6	135	221	169	129	127
Gambia	2	105	257	200	199	131	92	2	40	78	74	69	55	62	2	72	166	136	132	91
Ghana	1	23	78	122	124	108	123	3	20	44	49	42	42	48	1	21	61	85	82	74
Guinea	2	83	183	179	141	125	118	3	55	89	64	57	58	47	3	70	137	132	99	90
Guinea-Bissau	4	60	178	235	309	304	240	3	60	114	157	215	176	111	4	60	145	195	260	237
Kenya	6	138	382	392	275	201	132	8	139	264	202	124	101	61	7	138	323	293	195	148
Lesotho	8	133	751	1445	1019	580	204	6	205	522	431	228	129	75	7	170	619	799	532	311
Liberia	4	94	183	191	205	128	149	5	76	174	123	121	68	98	4	85	179	157	162	97
Madagascar	3	59	131	175	179	155	121	3	55	93	99	88	63	32	3	57	112	137	133	107
Malawi	2	54	191	231	160	113	60	3	83	209	177	113	76	42	2	69	200	203	135	94
Mali	1	22	69	98	111	123	109	1	14	33	35	45	46	31	1	18	51	65	75	80
Mauritania	2	71	162	169	180	218	236	2	36	53	78	61	64	50	2	53	107	122	117	135
Mauritius	1	13	13	24	25	10	15	0	6	8	10	5	9	11	0	9	10	17	15	9
Mozambique	7	160	805	976	680	440	390	7	199	590	558	302	223	167	7	179	696	755	472	317
Namibia	1	28	73	76	68	55	69	2	29	53	40	37	39	27	2	29	63	58	52	47
Nigeria	3	66	140	183	166	123	67	4	47	73	79	60	33	20	3	56	103	128	109	75
Rwanda	9	27	57	83	127	83	85	3	22	41	65	41	35	25	6	25	49	74	80	57
Sao Tome & Principe	3	100	201	189	158	144	206	3	58	65	62	62	66	53	3	79	133	126	108	102
Senegal	2	84	190	249	230	153	200	3	60	123	130	98	77	60	3	72	156	188	161	113
Sierra Leone	23	216	582	702	536	336	217	31	277	488	358	227	154	94	27	247	534	524	377	236
South Africa	3	121	497	770	561	280	126	7	211	512	385	202	81	67	5	166	505	540	348	164
Swaziland	1	28	83	107	96	74	92	1	29	59	45	34	35	32	1	29	71	75	64	54
Togo	4	67	243	373	290	209	177	6	67	178	203	131	80	53	5	67	210	288	206	140
Uganda	2	55	199	253	233	194	281	3	49	132	123	95	74	66	3	52	165	186	161	130
UR Tanzania	8	126	528	647	388	168	219	10	152	406	481	216	112	103	9	139	468	565	287	138
Zambia	7	52	325	528	337	169	93	8	70	333	363	174	87	44	8	61	329	446	250	125
Zimbabwe	5	76	195	228	189	137	116	6	80	152	133	96	72	48	6	78	174	180	141	102
AFR																				

Rates are per 100 000 population of each age/sex group. Rates are calculated excluding those countries for which breakdown of notified cases or population by age and sex is missing. Data can be downloaded from www.who.int/wb

Table A2.10 Number of TB cases notified, 1980–2004

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
Algeria	2 702	13 916	13 681	13 133	13 832	12 917	11 212	11 212	11 212	11 039	11 607	11 332	11 428	13 345	13 507	15 329	16 522	15 324	16 647	18 572	18 250	18 334	19 730	19 809		
Angola	10 117	7 501	7 911	6 625	10 153	9 363	8 510	8 184	9 587	10 271	11 134	11 472	8 269	7 157	5 143	15 066	14 286	14 286	14 286	12 943	16 062	21 713	29 966	36 079	35 437	
Benin	1 835	1 862	1 793	1 804	1 913	2 041	2 162	1 901	2 027	1 941	2 084	2 162	2 420	2 340	2 119	2 332	2 284	2 255	2 252	2 706	2 830	2 932	2 932	3 116	3 116	
Botswana	2 662	2 605	2 705	2 883	3 101	2 706	2 627	3 173	2 740	2 532	2 938	3 274	4 179	4 654	4 756	6 665	6 636	7 287	7 960	8 647	9 292	9 618	10 204	9 862	10 131	
Burkina Faso	2 577	2 391	2 265	3 061	877	1 018	1 407	1 407	949	1 616	1 497	1 488	1 443	1 443	861	2 572	1 814	1 643	2 074	2 310	2 310	2 406	2 376	2 620	2 878	
Burundi	789	643	951	1 053	1 904	2 317	2 569	2 739	3 745	4 608	4 575	4 883	4 484	4 677	3 840	3 326	3 796	5 335	6 546	6 365	6 478	6 371	6 871	6 871	6 871	
Cameroun	2 434	2 236	3 765	3 445	3 338	3 383	2 138	3 878	4 982	5 521	5 892	6 814	6 803	7 064	7 312	3 292	3 049	3 952	5 022	7 680	5 251	11 307	11 057	15 964	17 655	
Cape Verde	516	344	393	230	285	259	289	276	210	221	204	204	204	204	204	303	179	196	205	205	205	291	195	316	294	
Central African Republic	651	758	1 475	1 686	488	520	779	499	814	614	2 124	2 045	2 045	2 045	3 339	3 623	4 459	4 875	5 003	5 003	2 550	4 837	3 952	3 908	4 946	
Chad	220	286	1 127	1 977	1 430	1 486	1 285	1 086	2 977	2 572	2 591	2 912	2 684	2 871	3 303	3 186	1 936	2 180	2 784	4 710	4 710	5 077	4 679	4 946	4 946	
Comoros	742	1 214	3 716	4 156	2 776	2 649	3 120	3 473	6 578	1 362	1 391	1 401	1 08	129	115	123	138	134	132	153	120	138	111	73	89	
Cote d'Ivoire	4 197	4 418	5 000	6 000	6 062	5 729	6 072	6 422	6 856	6 982	7 841	8 021	9 093	9 563	14 000	11 988	13 104	13 802	14 841	15 056	12 943	16 533	16 071	17 739	20 084	
DR Congo	5 122	3 051	9 905	13 021	20 415	26 082	27 665	27 096	30 272	31 321	21 131	33 782	37 680	36 477	38 477	42 819	45 999	44 783	58 917	59 531	60 627	66 748	70 625	84 687	93 336	
Equatorial Guinea				181	17	1	1	20	157	260	331	262	309	356	306	319	366	416	416	416	60 627	66 748	70 625	84 687	93 336	
Eritrea	40 096	42 423	52 403	56 824	65 045	71 731	80 846	85 867	95 521	80 795	88 634	60 006	60 006	60 006	99 329	26 034	41 869	59 105	69 472	72 085	91 101	94 957	110 289	117 600	123 127	
Ethiopia	865	796	761	752	654	855	769	864	721	912	917	906	926	972	1 034	1 115	1 434	1 380	1 380	1 380	1 380	2 504	2 504	2 208	2 568	
Gabon																										
Gambia	239	58																								
Ghana	5 207	4 041	4 345	2 651	1 935	3 235	3 925	5 877	5 297	6 017	6 407	7 136	7 044	8 569	17 004	8 636	10 449	10 749	11 352	10 386	10 933	11 923	11 891	11 827	11 827	
Guinea	1 884	1 884	1 469	832	1 203	1 317	1 128	1 214	1 740	1 869	1 988	2 267	2 941	3 167	3 300	3 523	4 357	4 439	4 768	5 171	5 440	5 874	6 199	6 570	7 423	
Guinea-Bissau	645	465	205	376	368	530	1 310	752	778	1 362	1 163	1 246	1 059	1 568	1 647	1 613	1 678	1 445	846	1 164	1 273	1 566	1 647	1 635	1 635	
Kenya	11 049	10 027	11 966	30 668	10 460	10 022	10 515	10 957	12 592	11 788	12 320	14 599	20 451	22 930	28 142	34 980	39 738	48 936	57 266	64 159	73 017	80 183	91 522	100 573	100 573	
Lesotho	4 082	3 830	4 932	3 443	2 923	2 927	21	225	2 346	2 463	2 525	2 994	3 327	3 384	4 334	5 181	5 598	6 447	7 806	8 552	9 746	10 111	12 007	11 404	11 404	
Liberia	774	1 002	835	885	435	232	384	894	894	1 948	1 766	1 766	1 766	1 766	1 766	1 393	840	1 753	1 753	1 753	1 500	1 751	3 419	2 511	4 337	
Madagascar	9 082	7 464	3 573	3 588	8 673	3 220	3 717	4 007	4 393	5 417	6 261	6 015	8 126	9 655	10 671	21 616	12 718	14 661	14 661	22 674	24 386	23 604	25 094	25 841	27 030	
Malawi	4 758	5 033	4 411	4 707	4 404	5 335	6 260	7 851	8 559	9 431	12 395	14 743	14 237	17 105	19 496	19 155	20 630	20 676	22 674	24 386	23 604	25 094	25 841	27 030	27 030	
Mali	839	933	1 872	1 872	1 621	1 851	2 534	2 578	1 626	2 933	2 631	3 113	3 204	3 075	3 204	3 087	3 655	5 022	4 142	4 466	4 216	4 466	4 457	4 496	4 525	
Mauritania	7 576	9 427	2 327	2 333	3 977	4 406	2 257	3 722	3 928	4 040	5 284	3 064	4 316	3 996	3 849	3 849	3 837	3 788	3 617	3 649	3 087	3 649	3 649	3 326	3 326	
Mauritius	132	157	121	152	118	111	119	117	114	129	119	134	130	159	149	131	116	116	121	120	154	160	123	139	137	
Mozambique	7 457	6 984	5 787	5 937	5 204	5 645	8 263	10 966	13 863	15 893	15 893	16 609	15 085	16 588	17 158	17 882	18 443	18 443	18 443	21 329	21 158	22 094	25 544	28 602	31 150	
Namibia	717	2 871	754	673	665	688	570	556	631	608	5 200	3 703	2 671	2 500	1 756	5 500	9 947	11 147	10 035	10 799	13 064	13 064	13 282	14 490	15 026	
Niger	9 877	10 838	10 949	10 212	11 439	14 937	14 071	19 723	25 700	13 342	20 122	19 626	14 802	11 601	8 449	13 423	15 020	16 660	20 249	24 157	25 821	45 842	38 628	44 184	57 246	
Nigeria	1 495	1 386	1 364	1 419	1 327	2 460	3 287	4 145	4 741	6 387	3 200	3 200	3 200	3 200	3 200	3 054	3 535	4 710	6 112	6 483	6 063	5 473	6 011	6 812	6 487	
Rwanda	131	37	40	59	49	40	8	55	13	17	120	120	120	97	41	41	96	106	96	96	97	97	94	457	121	
Sao Tome & Principe	2 014	2 573	1 612	2 417	1 065	927	6 145	5 611	5 965	4 977	6 781	7 408	6 841	6 913	7 861	8 525	8 322	8 475	7 488	8 508	8 554	8 366	9 380	9 098	9 098	
Senegal	16	0	16	16	10	10	24	14	10	6	41	41	41	5	5	8	15	18	11	21	20	19	29	10	18	
Seychelles	750	847	869	283	816	865	358	130	120	120	632	1 466	1 665	2 691	2 564	1 955	3 241	3 160	3 270	3 760	4 673	4 793	5 289	5 710	5 710	
Sierra Leone	55 310	59 943	64 115	62 556	62 717	59 349	55 013	57 406	61 486	68 075	80 400	77 652	82 539	89 768	90 292	73 917	109 328	125 913	142 281	148 164	151 239	148 257	215 120	227 320	264 183	
South Africa	208	143	3 059	1 955	1 098	1 352	1 394	1 098	1 352	1 394	1 394	1 531	1 458	1 458	1 531	2 050	2 364	3 022	3 653	4 167	5 877	6 118	6 748	7 749	8 071	
Swaziland	208	126	204	174	343	745	596	1 184	1 071	940	1 324	1 243	1 223	1 005	1 137	1 520	1 654	1 623	1 250	1 249	1 409	1 645	1 815	2 115	2 115	
Togo	1 058	1 170	497	2 029	1 392	1 392	1 464	1 464	1 045	1 045	1 474	19 016	20 662	21 579	26 904	25 316	27 196	28 349	28 228	31 597	30 372	36 829	40 695	41 795	43 721	
Uganda	11 483	12 122	11 748	11 753	12 092	13 698	15 452	16 920	18 206	19 262	22 249	25 210	28 482	31 460	34 799	39 847	44 416	46 433	51 231	52 437	54 442	61 603	60 306	61 579	62 512	
UR Tanzania	5 321	6 162	6 525	6 860	7 272	8 246	8 716	10 025	12 876	14 266	16 863	23 373	25 448	30 496	35 222	35 968	40 417	45 240	48 206	48 206	48 206	48 206	48 206	48 206	48 206	
Zambia	4 057	4 051	4 577	3 881	5 694	4 759	5 233	5 848	6 002	6 822	9 132	11 710	16 237	20 125	23 959	30 831	35 735	43 762	47 077	50 138	50 855	56 222	59 170	53 183	56 162	
Zimbabwe	219 802	224 102	240 263	258 842	264 928	296 627	301 683	333 842	373 550	365 432	418 530	412 414	432 987	418 995	550 183	504 309	585 773	598 111	687 626	760 995	783 521	856 304	999 372	1 079 333	1 173 743	
Number reporting	40	41	39	41	37	41	41	43	44	41	43	40	37	41	38	45	44	42	45	41	38	36	43	44	46	
% reporting	87	89	85	89	80	89	89	93	96	89	93	87	87	80	89	96	96	91	98	89	83	88	93	96	100	

From 1995 on, number shown is all notified new and relapse cases (DOTS and non-DOTS). The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Table A2.11 Case notification rates, 1980-2004

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
Algeria	14	69	66	61	63	57	48	47	45	46	44	43	43	49	48	48	53	57	52	55	61	59	60	62	61	
Angola	129	93	94	76	113	93	98	87	82	94	98	103	101	71	60	42	122	117	108	105	116	153	205	240	229	
Benin	49	49	45	44	45	46	41	42	39	40	40	40	43	40	35	38	36	34	34	34	34	37	37	37	38	
Botswana	254	240	241	249	259	219	206	242	203	182	206	223	278	302	301	351	402	433	465	498	530	545	576	557	573	
Burkina Faso	39	36	33	44	12	62	13	18	12	20	18	17	16	16	9	26	18	16	19	21	20	21	21	21	22	
Burundi	19	15	22	23	40	47	51	53	70	83	81	84	76	78	63	54	61	85	104	100	98	98	93	98	94	
Cameroon	28	25	41	36	34	34	21	36	45	49	51	57	55	56	56	25	22	28	35	53	35	75	72	101	110	
Central African Republic	178	117	131	75	91	81	86	81	60	62	61	60	62	62	76	44	47	48	47	48	63	41	65	59	59	
Chad	28	32	60	66	18	19	28	18	28	2	71	66	42	43	48	45	27	29	36	59	66	124	100	98	98	
Chad	5	6	3	40	28	28	24	20	52	44	43	47	42	43	48	45	27	29	36	59	66	124	100	98	98	
Comoros	41	65	193	210	136	125	143	154	167	181	24	24	45	72	106	124	148	110	120	151	269	274	270	206	251	
Cote d'Ivoire	50	50	54	62	60	55	56	56	57	62	61	67	69	81	86	81	86	89	93	92	77	97	93	101	112	
DR Congo	18	11	33	43	65	81	83	79	86	86	56	86	93	87	88	95	100	95	123	122	121	130	134	156	167	
Equatorial Guinea					61	5	0	3	6	45	74	92	71	82	82	77	78	88	97						109	
Eritrea																										
Ethiopia	108	112	134	140	155	165	180	186	200	164	174	114	110	110	92	95	100	83	121	114	128	133	153	159	163	
Gabon	124	111	103	98	83	105	92	100	60	98	96	92	91	92	95	100	83	121	114	128	133	153	159	163	163	
Gambia	37	9																								
Ghana	46	35	36	21	15	24	28	41	36	40	41	45	43	51	98	49	58	58	60	53	55	59	56	55	55	
Guinea	38	29	16	23	24	20	21	30	31	32	35	44	45	45	47	56	56	59	63	65	68	70	73	81	81	
Guinea-Bissau	81	57	25	44	42	59	144	80	81	138	115	119	98	139	143	136	137	115	65	88	93	108	110	119	119	
Kenya	68	59	66	66	66	53	49	50	50	56	50	51	58	79	87	103	125	139	167	191	209	233	250	280	301	
Lesotho	316	289	362	246	203	199	1	15	151	157	159	186	204	205	259	306	327	372	444	482	545	562	667	634	634	
Liberia	41	62	42	43	20	11	18	41	18	41	18	41	117	117	354	86	85	65	37	65	49	55	107	78	134	
Madagascar	100	80	37	36	85	31	35	36	39	46	52	49	64	75	79	155	88	88	96	208	218	205	221	204	214	
Malawi	77	79	68	70	63	74	82	93	97	104	131	152	145	173	196	189	200	195	208	218	205	221	204	209	214	
Mali	12	13	3	7	24	21	23	31	30	19	33	29	33	33	31	30	35	47	38	39	36	36	36	35	34	
Mauritania	471	572	138	135	225	243	122	196	203	204	260	147	203	183	167	162	156	145	142	116					112	
Mauritius	14	16	12	15	12	11	12	11	11	12	11	13	12	15	13	12	10	11	10	13	13	10	11	11	11	
Mozambique	62	57	46	46	40	43	62	83	105	120	118	121	106	112	112	113	113	113	115	122	118	121	137	150	160	
Namibia																										
Niger	12	45	11	10	9	10	8	7	8	7	61	7	117	117	354	86	85	65	37	65	49	55	107	78	134	
Nigeria	14	15	15	14	15	19	17	24	30	15	22	21	15	12	8	13	14	15	18	21	22	38	31	35	44	
Rwanda	29	26	24	24	24	22	39	49	60	67	90	47	47	47	47	56	62	76	89	66	76	65	70	78	73	
Sao Tome & Principe	139	38	41	59	48	39	8	51	12	15	15	101	79	33	79	33	56	62	76	89	66	76	65	70	73	
Senegal	34	42	26	37	16	13	84	75	77	62	83	88	88	79	78	83	91	87	86	74	82	81	77	84	80	
Seychelles	25	0	24	24	15	15	35	20	14	8	57	7	11	20	24	11	20	24	14	27	26	24	37	13	23	
Sierra Leone	23	26	26	9	23	24	10	3	3	15	36	40	65	62	47	78	75	76	76	83	100	98	103	107	107	
South Africa	189	200	208	198	184	179	162	166	174	189	218	205	213	225	221	176	256	289	321	329	332	321	462	484	560	
Swaziland																										
Togo	7	4	7	6	11	22	17	33	29	24	33	31	29	24	26	34	35	34	25	24	26	24	29	31	35	
Uganda	8	9	4	15	56	62	67	71	74	76	85	93	101	108	116	129	140	143	154	154	157	174	167	166	166	
UR Tanzania	61	62	58	56	56	62	67	71	74	76	85	93	101	108	116	129	140	143	154	154	157	174	167	166	166	
Zambia	88	96	101	103	105	115	118	131	163	175	201	271	287	335	378	376	413	431	465	424	488	478	478	471	471	
Zimbabwe	55	53	58	47	67	54	57	61	61	67	86	108	146	177	206	261	297	359	382	402	404	443	463	413	434	
AFR	58	58	60	63	62	68	67	72	78	74	82	79	80	76	97	86	98	97	109	117	119	127	145	163		

Rates are per 100 000 population. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/itb

Table A2.12 New smear-positive cases notified, numbers and rates, 1993-2004

	Number of cases										Rate (per 100 000 population)													
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Algeria	6 793	5 735	6 556	7 740	7 462	7 845	8 328	7 953	8 246	8 549	8 285	24	20	23	27	25	26	27	26	27	26	27	26	
Angola	4 874	4 337	3 804	8 016	8 246	7 333	7 379	9 053	11 923	18 087	19 771	20 301	42	36	31	64	56	55	65	84	124	126	131	
Armenia	1 653	1 618	1 839	1 868	1 939	1 988	2 192	2 286	2 415	2 438	2 582	29	27	30	29	29	29	31	32	31	31	31	32	
Burkina Faso	1 508	1 668	1 903	2 530	2 824	3 112	2 746	3 091	3 057	3 334	3 050	3 127	98	106	118	153	168	182	158	176	173	188	172	177
Burkina Faso	961	1 028	1 381	1 126	1 351	1 411	1 560	1 522	1 544	1 703	1 826	6	6	10	14	11	12	13	14	13	13	14	15	
Burundi	1 861	1 527	1 121	1 833	2 022	2 762	2 924	3 040	2 791	3 087	3 087	31	25	18	25	32	44	46	46	41	44	44	42	
Burundi	2 316	1 883	2 896	2 312	3 548	4 374	5 832	3 960	4 695	7 921	10 692	11 218	18	15	22	17	25	31	40	27	31	51	68	70
Cape Verde	1 405	1 111	1 117	1 103	1 04	1 04	1 04	1 111	1 111	1 111	1 111	165	165	28	28	25	24	24	30	30	23	34	34	
Central African Republic	1 784	1 992	2 267	2 637	2 725	2 920	2 920	3 182	3 519	3 599	2 270	28	12	53	57	63	72	73	36	71	72	73	73	
Chad	2 002	870	107	100	100	99	112	87	92	72	48	63	17	17	17	16	15	16	12	13	10	6	8	
Comoros	1 681	2 013	2 505	1 984	2 044	2 222	4 218	4 319	4 207	3 477	4 121	60	69	83	64	63	67	123	122	115	92	106	106	
Congo	7 012	8 254	8 927	9 093	9 850	10 047	8 497	10 020	9 667	11 430	12 250	50	58	59	58	62	61	51	64	56	65	65	69	
Cote d'Ivoire	14 924	20 914	24 125	24 609	33 442	34 923	36 123	42 054	44 516	53 578	62 192	35	45	52	51	52	70	71	72	82	84	99	111	
DR Congo	20 914	209	226	284	284	284	284	284	284	284	284	406	406	406	406	406	406	406	406	406	406	406	406	406
Equatorial Guinea	1 405	1 350	1 361	1 788	2 398	2 476	2 729	3 041	3 167	3 652	4 272	85	80	80	104	138	141	154	170	176	203	238	238	
Ethiopia	5 752	9 040	13 160	15 957	18 664	21 587	30 510	33 028	36 541	38 698	41 430	720	10	15	21	25	29	32	45	47	51	54	55	
Ethiopia	395	486	263	577	889	916	1 137	1 137	1 033	1 233	1 323	1 323	36	43	43	43	49	73	74	88	78	92	97	
Gambia	778	778	743	820	900	861	861	861	1 035	1 040	1 011	1 011	33	33	33	33	33	33	33	33	33	33	33	33
Ghana	5 778	2 638	6 474	7 254	7 757	6 877	7 316	7 712	7 732	7 714	7 259	41	35	37	38	39	41	43	46	47	49	50	55	
Guinea	2 082	2 158	2 263	2 844	2 981	3 362	3 920	4 092	4 300	4 495	5 015	30	30	30	30	37	38	42	43	46	47	49	50	
Guinea-Bissau	10 149	11 324	13 984	16 978	19 040	24 029	27 197	28 773	31 307	34 337	38 156	1186	39	43	51	61	66	82	91	94	100	107	117	123
Kenya	1 405	1 350	1 361	1 788	2 398	2 476	2 729	3 041	3 167	3 652	4 272	85	80	80	104	138	141	154	170	176	203	238	238	
Lesotho	1 547	1 154	668	1 154	1 190	1 021	934	1 021	934	1 197	1 319	2 490	76	54	54	29	44	44	33	30	62	41	77	77
Liberia	7 366	8 026	8 456	9 639	11 092	11 387	12 881	12 881	12 881	12 881	12 881	52	54	58	59	59	63	63	72	70	64	63	68	
Madagascar	5 692	1 740	1 866	2 173	3 178	2 558	2 690	2 527	2 757	3 015	3 069	58	60	62	65	72	80	73	72	70	64	63	68	
Malawi	1 740	2 074	2 074	2 519	1 112	1 109	1 221	1 115	85	86	99	117	18	18	21	21	24	22	22	22	22	24	23	
Mali	9 526	9 677	10 566	10 478	11 116	12 116	12 825	13 257	13 964	15 236	16 138	17 058	64	63	67	64	66	71	73	74	76	82	85	88
Mozambique	463	1 865	1 492	1 865	3 220	3 588	3 760	4 012	4 535	4 689	5 155	5	5	19	42	167	183	199	203	212	235	239	276	257
Namibia	1 723	1 476	10 662	11 235	13 161	15 903	17 423	23 410	21 936	28 173	33 755	2	9	9	10	10	12	14	15	19	18	22	26	
Nigeria	1 840	2 034	2 820	4 417	4 288	3 681	3 252	3 956	4 627	4 179	4 179	33	34	36	46	65	57	46	39	46	53	47	47	
Rwanda	4 569	5 421	5 949	5 430	5 454	5 011	5 823	6 094	5 796	6 587	6 437	50	52	59	64	57	55	50	56	58	53	59	57	
Sao Tome & Principe	2	1 408	1 454	2 234	2 296	2 262	2 472	2 692	2 938	3 113	3 735	3	34	35	54	55	53	55	57	60	61	61	70	
Senegal	23 112	42 163	54 073	66 047	72 088	75 967	83 808	98 799	116 364	117 971	117 971	13	69	69	230	124	149	160	167	182	212	248	250	
Seychelles	660	2 226	904	904	904	904	904	904	904	904	904	1 802	1 203	1 203	1 203	1 203	1 203	1 203	1 203	1 203	1 203	1 203	1 203	1 203
Sierra Leone	11 949	14 763	13 631	15 312	17 254	18 222	18 463	17 246	17 291	19 088	20 310	20 966	61	73	65	71	78	80	78	71	69	74	76	75
South Africa	15 569	17 164	19 955	21 472	22 010	23 726	24 125	24 049	24 685	24 136	24 899	25 823	54	57	65	68	68	71	71	69	70	67	67	69
Swaziland	9 620	10 038	12 072	11 645	12 927	13 024	16 351	18 934	17 247	16 351	18 934	17 247	103	103	105	123	111	121	119	147	147	168	150	150
Togo	5 331	8 965	11 965	14 512	14 492	14 414	14 392	15 370	15 941	14 488	14 581	47	47	76	100	119	117	116	114	121	125	113	113	
Uganda	10 701	12 005	212 910	264 659	276 109	325 825	349 142	362 175	398 952	454 300	513 029	541 849	19	21	36	44	45	52	54	55	59	66	73	75
Uganda	15 569	17 164	19 955	21 472	22 010	23 726	24 125	24 049	24 685	24 136	24 899	25 823	54	57	65	68	68	71	71	69	70	67	67	69
Yemen	9 620	10 038	12 072	11 645	12 927	13 024	16 351	18 934	17 247	16 351	18 934	17 247	103	103	105	123	111	121	119	147	147	168	150	150
Zambia	5 331	8 965	11 965	14 512	14 492	14 414	14 392	15 370	15 941	14 488	14 581	47	47	76	100	119	117	116	114	121	125	113	113	
Zimbabwe	10 701	12 005	212 910	264 659	276 109	325 825	349 142	362 175	398 952	454 300	513 029	541 849	19	21	36	44	45	52	54	55	59	66	73	75

Rates are per 100 000 population. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Notes

Angola

The number of patients registered for treatment in 2003 is lower than the number notified for that year as a result of shortage of anti-TB drugs.

Burundi

For 2004, the number of notified cases for which no smear result was recorded was twice that for 2003. The NTP attributes this to poor diagnosis and high staff turnover.

Eritrea

Breakdown of new smear-positive cases by age and sex not provided for one zone for one quarter.

Mozambique

While DOTS is available in all administrative areas, it is estimated that only 48% of the population lives within 10 km of the nearest DOTS unit.

Breakdown of notified cases by sex not available. Of new smear-positive cases notified in 2004, 253 were in patients aged under 15 years, and 16 508 in patients aged 15 years or more.

Summary by WHO region

Africa

The Americas

Eastern Mediterranean





Europe

South-East Asia

Western Pacific

THE AMERICAS: SUMMARY OF TB CONTROL POLICIES

	STATUS ^a	MANUAL ^b	MICROSCOPY ^c	SCC ^d	DOT ^e	MONITORING OUTCOME ^f
ANGUILLA	NON-DOTS	NO	Not implemented	Not implemented	Not implemented	Not implemented
ANTIGUA AND BARBUDA						
ARGENTINA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
BAHAMAS	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
BARBADOS	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
BELIZE	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
BERMUDA	NON-DOTS	NO	Implemented in all units/areas	Not implemented	Implemented in some units/areas	Not implemented
BOLIVIA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
BRAZIL	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
BRITISH VIRGIN ISLANDS	NON-DOTS	YES	Implemented in all units/areas	Not implemented	Not implemented	Implemented in all units/areas
CANADA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
CAYMAN ISLANDS	DOTS	NO	Implemented in all units/areas	Implemented in all units/areas	Not implemented	Implemented in all units/areas
CHILE	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
COLOMBIA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas
COSTA RICA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
CUBA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
DOMINICA						
DOMINICAN REPUBLIC	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
ECUADOR	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
EL SALVADOR	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
GRENADA	NON-DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Not implemented	Implemented in all units/areas
GUATEMALA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas
GUYANA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
HAITI	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
HONDURAS	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
JAMAICA	DOTS	NO	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas
MEXICO	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
MONTSERRAT	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas
NETHERLANDS ANTILLES	NON-DOTS	NO	Implemented in all units/areas	Implemented in all units/areas	Not implemented	Not implemented
NICARAGUA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
PANAMA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
PARAGUAY	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
PERU	DOTS		Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
PUERTO RICO	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
SAINT KITTS AND NEVIS	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
SAINT LUCIA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
ST VINCENT & GRENADINES	DOTS		Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
SURINAME	NON-DOTS	NO	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas	Implemented in all units/areas
TRINIDAD AND TOBAGO	NON-DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Not implemented	Implemented in all units/areas
TURKS & CAICOS ISLANDS						
URUGUAY	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas
USA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in some units/areas
US VIRGIN ISLANDS						
VENEZUELA	DOTS	YES	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas	Implemented in all units/areas

	Implemented in all units/areas
	Implemented in some units/areas
	Not implemented
	Unknown

^a Status: DOTS status (blank indicates no report received)

^b Manual: national TB control manual (recommended)

^c Microscopy: use of smear microscopy for diagnosis (core component of DOTS)

^d SCC: short course chemotherapy (core component of DOTS)

^e DOT: directly observed treatment (core component of DOTS)

^f Outcome monitoring: monitoring of treatment outcomes by cohort analysis (core component of DOTS)

Table A2.2. Whole country case notifications and case detection rates, 2004

Country	TB cases notified from whole country (DOTS + non-DOTs)												Incidence and case detection rates				Proportions		
	Population (thousands)		New and relapse (WHO total)		New pulmonary		New extra-pulmonary		Re-treatment cases		New pulm. lab. confirm.		Estimated incidence		Case detection rates		ss+ (% of pulm.)	ss+ (% of new-relapse)	Re-treat. (% of new-re-treat.)
	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number
Anguilla	12	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0
Antigua & Barbuda	81													5	2				
Argentina	38 372	12 079	10 619	28	4 760	12	3 784	1 677	230	168	420	794	16 537	7 360	64	65	56	45	16
Bahamas	319	53	53	17	37	12	10	6	0	0	0	0	124	54	43	68	79	70	11
Barbados	269	19	19	7	19	7	19	7	0	0	0	0	31	14	62	139	100	100	0
Belize	264	83	83	31	34	13	37	2	0	10	0	0	128	57	65	60	48	41	2
Bermuda	64	6	9	0	0	0	6	0	0	0	0	0	3	1	214	0	0	0	0
Bolivia	9 009	10 004	9 801	109	6 213	69	1 380	1 657	0	551	33	170	0	19 568	8 797	50	71	82	63
Brazil	183 913	81 855	86 881	47	42 881	23	26 186	11 781	6 033	159	4 815	0	109 672	48 216	79	89	62	49	14
British Virgin Islands	22	2	2	9	2	9	0	0	0	0	0	0	1	62	138	0	0	100	100
Canada	31 958	1 572	1 517	5	428	1	391	611	2	85	0	35	1 663	742	91	58	52	28	40
Cayman Islands	44	1	1	2	1	2	0	0	0	0	0	0	2	1	52	115	100	100	0
Chile	16 124	2 756	2 664	17	1 297	8	169	620	435	143	19	67	2 567	1 140	104	114	88	49	23
Colombia	44 915	11 242	11 242	25	7 640	17	1 498	1 667	437	437	0	0	22 357	9 989	50	76	84	68	15
Costa Rica	4 253	739	712	17	419	10	148	118	0	27	3	24	492	612	274	116	153	74	59
Cuba	11 245	736	782	7	454	4	172	110	46	7	7	0	1 119	503	70	90	73	58	14
Dominica	79												12	5					
Dominican Republic	8 768	4 820	4 549	52	2 720	31	863	581	38	347	43	228	7 946	3 529	57	77	76	60	13
Ecuador	13 040	6 634	6 122	47	4 340	33	777	440	440	565	99	275	17 101	7 677	36	57	85	71	7
El Salvador	6 762	1 406	1 406	21	926	14	220	184	1	75	21	39	3 624	1 619	39	57	81	66	13
Grenada	102	2	2	2	2	2	2	2	0	0	0	0	5	2	41	90	100	100	0
Guatemala	12 295	3 370	3 313	27	2 339	19	351	233	264	126	17	40	9 469	4 216	35	55	87	71	7
Guyana	750	571	603	80	164	22	346	59	34	6	0	46	1 060	463	57	35	32	27	10
Haiti	8 407	14 579	14 533	173	7 044	84	5 873	1 345	0	271	0	0	25 707	11 114	57	63	55	48	9
Honduras	7 048	3 297	3 282	47	2 012	29	823	282	0	165	0	0	5 451	2 419	60	83	71	61	9
Jamaica	2 639	117	116	4	69	3	28	8	6	5	1	1	197	87	59	79	71	59	7
Mexico	105 699	18 401	15 101	14	11 214	11	807	2 345	735	64	478	2 761	33 529	15 054	45	74	93	74	16
Montserrat	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Netherlands Antilles	181	11	11	6	8	4	2	1	0	0	0	0	16	7	68	110	80	73	9
Nicaragua	5 376	2 220	2 220	41	1 327	25	450	327	0	116	27	107	3 390	1 522	65	87	75	60	15
Panama	3 175	1 691	1 691	53	882	28	518	239	52	24	78	149	1 443	644	117	137	63	52	14
Paraguay	6 017	2 236	2 300	38	1 201	20	829	203	67	7	62	172	4 269	1 912	54	63	59	52	9
Peru	27 562	34 276	33 082	120	18 289	66	5 541	4 966	883	3 403	642	552	49 174	22 016	67	83	77	55	15
Puerto Rico	3 932	123	123	3	65	2	44	14	0	0	0	0	191	86	64	76	60	53	11
Saint Kitts & Nevis	42	2	2	5	0	0	1	1	0	1	0	0	5	2	44	0	0	0	0
Saint Lucia	159	15	15	9	11	7	1	1	0	2	0	0	26	12	57	93	92	73	7
St Vincent & Grenadines	118	15	8	7	5	4	0	2	1	0	0	0	34	15	24	33	100	63	25
Suriname	446	101	97	22	37	8	40	12	5	3	1	2	290	128	33	29	48	38	12
Trinidad & Tobago	1 301	177	177	14	81	6	63	16	3	38	3	0	116	51	152	159	56	46	9
Turks & Caicos Islands	25												5	2					
Uruguay	3 439	727	727	21	373	11	208	89	2	55	0	0	967	434	75	86	64	51	12
US Virgin Islands	112												12	5					
USA	295 410	14 517	14 517	5	5 219	2	6 325	2 970	3	3	10	5	13 877	6 141	105	85	45	36	20
Venezuela	26 582	6 932	6 808	26	3 776	14	1 618	1 015	110	289	10	79	10 946	4 896	62	77	70	55	15
AMR	880 036	247 387	235 187	27	126 289	14	69 509	33 551	1979	13 829	1 606	7 108	363 246	161 213	65	78	68	54	14

ss+ indicates sputum smear-positive; ss-, sputum smear-negative; unk., sputum smear result unknown; re-treat., re-treatment; pulm.lab. confirmed, pulmonary case confirmed by positive smear or culture. See Explanatory notes on page 139 for further details. Data can be downloaded from www.who.int/tb

Table A2.4 Public–Public and Public–Private Mix (PPM), collaborative TB/HIV activities and management of MDR-TB, 2003-2004

	Public–Public and Public–Private Mix (PPM), 2004			Collaborative TB/HIV activities, 2003 or 2004			Multidrug-resistant TB, 2004				
	Guidelines for other practitioners	Private hospitals or clinics	Institutions notifying to WTP	HIV testing for surveillance among TB pts	TB pts tested for HIV	TB pts HIV-positive	TB pts ART	Laboratory-confirmed MDR number	DST in new cases number	MDR in new cases number	Re-treatment MDR number
Anguilla	No	No	Some	No	No	0	0	0	0	0	0
Antigua & Barbuda	Yes	All	All	Yes	Yes	34	12	12	0	47	6
Argentina	Yes	All	All	Yes	Yes	88	11	4	1	19	0
Bahamas	No	All	All	Yes	Yes	0	0	0	0	0	0
Barbados	Yes	All	All	Yes	Yes	45 083	8 330	8 330	325	0	0
Belize	Yes	All	All	Partially	No	0	0	0	0	0	0
Bermuda	Yes	All	All	Yes	Yes	0	0	0	0	0	0
Bolivia	No	No	Some	Partially	No	0	0	0	0	0	0
Brazil	Yes	All	All	Yes	Yes	45 083	8 330	8 330	325	0	0
British Virgin Islands	Yes	All	All	Yes	Yes	313	38	0	0	0	0
Canada	All	All	All	Yes	Yes	1	0	0	0	0	0
Cayman Islands	No	All	All	Yes	Yes	0	0	0	56	0	0
Chile	Yes	All	All	No	No	485	22	15	27	0	0
Colombia	Yes	All	All	Yes	Yes	807	0	0	1	0	0
Costa Rica	Yes	All	All	Yes	Yes	0	0	14	4	193	2
Cuba	Yes	All	All	Yes	Yes	0	0	0	0	0	0
Dominica	No	Some	Some	Partially	No	0	0	0	62	62	62
Dominican Republic	Yes	Some	Some	Partially	Partially	0	0	0	5	5	2
Ecuador	Yes	All	All	Yes	Yes	1 041	88	19	0	0	0
El Salvador	Yes	All	All	Yes	Yes	0	0	0	0	0	0
Grenada	Yes	All	Some	Yes	Yes	548	140	95	51	169	46
Guatemala	No	Some	All	Partially	No	197	42	0	0	0	0
Guyana	No	All	All	Partially	Yes	0	0	0	0	0	0
Haiti	Yes	All	Some	Yes	Yes	2 473	113	0	1	0	0
Honduras	No	No	All	Yes	Yes	100	40	12	0	70	0
Jamaica	Yes	All	All	Yes	No	3 779	412	0	0	0	0
Mexico	Yes	Some	All	Yes	No	0	0	0	0	0	0
Montserrat	Yes	All	Some	Partially	No	0	0	0	0	0	0
Netherlands Antilles	No	No	All	Yes	No	956	9	0	3	11	0
Nicaragua	Yes	All	All	Yes	No	0	0	0	0	0	0
Panama	Yes	Some	All	Partially	Yes	28	0	0	3	0	25
Paraguay	No	Some	All	No	No	565	452	15	8	1	0
Peru	Yes	All	All	Partially	No	0	0	0	1 911	0	4
Puerto Rico	Yes	Some	Some	No	Yes	0	0	0	0	110	0
Saint Kitts & Nevis	Yes	All	All	Yes	Yes	0	0	0	0	0	0
Saint Lucia	No	All	All	Yes	Yes	15	0	0	0	0	0
St Vincent & Grenadines	Yes	All	All	Yes	No	67	17	5	0	77	0
Suriname	All	Some	All	Yes	Yes	107	44	0	0	0	0
Trinidad & Tobago	Yes	No	All	Yes	Yes	580	73	0	1	248	0
Turks & Caicos Islands	Yes	All	All	Yes	Yes	0	0	0	0	0	0
Uruguay	Yes	All	All	Yes	Yes	8 276	1 317	0	129	13 684	105
USA	Yes	All	All	Partially	No	2 363	347	0	7	0	710
Venezuela	Yes	All	All	Yes	Yes	67 313	11 656	560	2 777	15 865	234
AMR	57	66	84	64	39	67 313	11 656	560	2 777	15 865	234
											9 499

pts indicates patients; CPT, co-trimoxazole preventive therapy; ART, antiretroviral therapy. The regional row for the first 9 columns represents the proportion of countries that provided an affirmative response ("Yes", "All", "Some" or "Partially"). See Explanatory notes on pages 139 and 140 for further details. Some countries provided the number of TB patients found to be HIV-positive, but did not provide the number of TB patients tested. The regional total of TB patients tested is therefore lower than the number of patients actually tested, and cannot be used to calculate a regional estimate of HIV prevalence in TB patients. Data can be downloaded from www.who.int/tb

Table A2.5 Treatment outcomes, 2003 cohort

	New smear-positive cases, DOTs						New smear-positive cases, non-DOTs						Smear-positive re-treatment cases, DOTs																	
	Number of cases		% of notified		% of cohort		Number of cases		% of notified		% of cohort		Number		% of cohort		Trans- Not													
	Notified	Registered	Notified	Registered	Completed	Failed	Default	Deferred	Eval.	Success	Notified	Registered	Completed	Failed	Default	Deferred	Eval.	Success												
Anguilla	1																													
Antigua & Barbuda	4 961	100	28	37	6	0	9	4	16	66																				
Argentina	29	100	62	24	0	10	3	0	62	100																				
Bahamas	0	4	100	0	0	5	2	0	100	0																				
Barbados	62	100	89	0	5	0	5	2	89	0																				
Belize																														
Bermuda	6 344	100	78	3	3	1	6	4	6	81																				
Bolivia	9 061	100	47	36	7	0	9	1	0	83																				
Brazil	592	731	123	5	31	6	1	1	57	35																				
British Virgin Islands																														
Canada	0	0																												
Cayman Islands																														
Chile	1 276	1 276	100	85	8	0	4	2	0	85																				
Colombia	755	1 721	228	70	13	5	1	8	3	0	83																			
Costa Rica	352	325	98	90	3	4	1	1	0	94																				
Cuba	507	507	100	91	3	5	1	1	0	93																				
Dominica																														
Dominican Republic	2 413	1 883	78	75	7	4	2	10	3	0	81																			
Ecuador	2 981	1 777	60	79	6	3	3	9	2	0	84																			
El Salvador	870	100	86	2	4	2	6	0	0	88																				
Grenada																														
Guatemala	1 795	1 795	100	81	10	4	1	3	1	0	91																			
Guyana	136	136	100	57	7	4	26	4	0	57																				
Haiti	5 345	5 346	100	69	9	5	1	6	8	2	78																			
Honduras	1 956	1 974	101	78	8	6	1	4	2	0	87																			
Jamaica	81	85	105	5	48	15	1	27	4	0	53																			
Mexico	12 577	10 964	87	70	13	5	1	7	3	0	83																			
Montserrat	1	1	100							100	0																			
Netherlands Antilles																														
Nicaragua	1 404	1 486	106	72	12	4	1	8	3	0	84																			
Panama	591	591	100	59	15	10	2	12	3	0	74																			
Paraguay	337	363	108	36	48	6	0	6	2	1	85																			
Peru	18 504	15 770	85	89	0	2	3	4	1	0	89																			
Puerto Rico	62	62	100	0	66	0	0	15	3	16	66																			
Saint Kitts & Nevis																														
Saint Lucia	8	18	225	39	50	11	0	0	0	0	89																			
St Vincent & Grenadines	6																													
Suriname																														
Trinidad & Tobago																														
Turks & Caicos Islands																														
Uruguay	479	428	89	75	11	11	1	2	0	0	86																			
US Virgin Islands																														
USA	5 338	5 338	100	70	8	0	2	2	17	70																				
Venezuela	0	3 742	82	0	4	0	9	4	0	82																				
AMR	78 804	77 632	99	65	16	5	1	6	3	3	82	43 282	33 550	77	28	46	5	0	12	8	0	74	9 094	56	10	6	4	13	3	8

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases registered in 2003 is used as the denominator for calculating treatment outcomes unless it is less than the sum of outcomes, in which case the sum of outcomes is used. If the number of cases registered is not reported, then the number of cases notified in 2003 is used, or the sum of outcomes if the latter is greater. Data can be downloaded from www.who.int/tb

Table A2.6 Re-treatment outcomes, 2003 cohort

	Release, DOTS					After failure, DOTS					After default, DOTS															
	Number registered	Compl- eied	Died	Failed	Trans- ferred	Not eval.	Success	%	Number registered	Compl- eied	Died	Failed	Trans- ferred	Not eval.	Success	%	Number registered	Compl- eied	Died	Failed	Trans- ferred	Not eval.	Success	%		
Anguilla	1	100	0	0	0	0	0																			
Antigua & Barbuda	102	19	49	8	0	15	3	7	68	404	16	24	5	0	12	6	37	41								
Argentina	1	100	0	0	0	0	0	100																		
Bahamas	7	57	14	0	0	29	0	0	71																	
Barbados																										
Belize																										
Bermuda																										
Bolivia																										
Brazil	819	38	32	12	1	12	5	0	70	96	13	39	7	20	13	9	0	51								
British Virgin Islands																										
Canada																										
Cayman Islands																										
Chile																										
Colombia	27	70	7	11	4	7	0	78																		
Costa Rica	57	70	18	5	4	4	0	88	6	50	33			17	83											
Cuba									3	33				33	33	0	33									
Dominica																										
Dominican Republic	325	57	8	11	3	15	5	0	65	42	48	2	5	21	19	5	0	50								
Ecuador																										
El Salvador	84	79	4	18	0	0	0	79	8	75	13	13	0	0	75											
Grenada																										
Guatemala	249	60	11	8	4	15	2	0	71																	
Guyana	27	74	4	11	11	0	0	74	5	60	20			20	0	60										
Haiti	182	60	10	5	4	12	8	1	70																	
Honduras	175	77	6	5	2	8	2	0	83																	
Jamaica	1	100	0	0	0	0	0	100	4	100																
Mexico	763	24	3	3	2	4	2	62	22	23	5	5	32	14	5	18	27									
Montserrat																										
Netherlands Antilles																										
Nicaragua	115	76	5	0	6	9	4	0	81	14	36	0	29	14	21	0	0	36								
Panama	51	63	12	10	2	12	2	0	75	13	23	15	46	15	0	38										
Paraguay																										
Peru	2 618	82	0	4	6	7	1	0	82																	
Puerto Rico																										
Saint Kitts & Nevis																										
Saint Lucia																										
St Vincent & Grenadines	5	40	40	20	0	0	0	0	80																	
Suriname																										
Trinidad & Tobago																										
Turks & Caicos Islands																										
Uruguay	33	52	21	18	3	6	0	0	73																	
US Virgin Islands																										
USA																										
Venezuela	230	70	63	8	6	4	9	3	8	617	20	24	6	7	12	6	25	44								
AMR	5 872	63	8	6	4	9	3	8	71	617	20	24	6	7	12	6	25	44	1 745	44	12	7	3	28	4	2

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases registered, the denominator for calculating treatment outcomes. The number of cases registered for treatment in 2003 is used as the denominator for calculating treatment outcomes unless it is missing or is less than the sum of outcomes, in which case the sum of outcomes is used. Data can be downloaded from www.who.int/tb

Table A2.7 DOTS treatment success and case detection rates, 1994–2004

	DOTS new smear-positive treatment success (%)										DOTS new smear-positive case detection rate (%)									
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Anguilla																				
Antigua & Barbuda																				
Argentina																				
Bahamas																				
Barbados																				
Belize																				
Bermuda																				
Bolivia																				
Brazil																				
British Virgin Islands																				
Canada																				
Cayman Islands																				
Chile																				
Colombia																				
Costa Rica																				
Cuba																				
Dominica																				
Dominican Republic																				
Ecuador																				
El Salvador																				
Grenada																				
Guatemala																				
Guyana																				
Haiti																				
Honduras																				
Jamaica																				
Mexico																				
Montserrat																				
Netherlands Antilles																				
Nicaragua																				
Panama																				
Paraguay																				
Peru																				
Puerto Rico																				
Saint Kitts & Nevis																				
Saint Lucia																				
St Vincent & Grenadines																				
Suriname																				
Trinidad & Tobago																				
Turks & Caicos Islands																				
Uruguay																				
US Virgin Islands																				
USA																				
Venezuela																				
AMR	77	77	83	82	81	83	81	83	83	82	27	28	30	34	37	44	43	46	48	59

Treatment success, sum of cured and completed; DOTS new smear-positive case detection rate, notified cases divided by estimated incident cases. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Table A2.9 New smear-positive case notification rates by age and sex, DOTS and non-DOTS, 2004

	MALE					FEMALE					ALL											
	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14	15-24	25-34	35-44	45-54	55-64	65+	
Anguilla																						
Antigua & Barbuda																						
Argentina	1	17	18	17	20	22	22	2	16	16	12	11	10	10	2	17	17	14	15	16	15	
Bahamas	7	10	23	61	62	0	12	0	11	15	4	0	27	0	3	10	19	32	29	15	5	
Barbados																						
Belize	0	14	29	57	65	57	36	2	0	5	7	23	0	6	1	7	17	32	44	30	18	
Bermuda																						
Bolivia	9	137	114	109	132	151	221	9	92	83	56	58	79	125	9	115	98	82	94	113	168	
Brazil	1	28	43	52	57	51	49	2	21	25	21	19	17	20	1	25	34	36	38	33	33	
British Virgin Islands																						
Canada	0	1	2	1	1	2	3	0	2	2	1	1	1	2	0	1	2	1	1	2	3	
Cayman Islands																						
Chile	0	6	12	15	21	21	33	0	4	6	6	6	9	10	0	5	9	11	13	15	20	
Colombia	3	17	23	25	35	48	75	3	15	18	16	16	25	33	3	16	21	20	25	36	51	
Costa Rica	0	11	19	14	17	25	38	1	9	9	11	5	15	17	0	10	14	13	11	20	27	
Cuba	0	2	7	9	10	8	9	0	2	2	1	2	4	4	0	2	5	5	6	6	7	
Dominica																						
Dominican Republic	3	43	70	61	46	50	51	3	35	43	31	26	24	20	3	39	57	46	35	37	35	
Ecuador	4	55	50	69	46	93	49	5	40	32	33	29	45	32	5	48	41	51	37	68	40	
El Salvador	0	14	21	28	36	48	59	1	10	13	14	16	26	33	1	12	17	20	26	36	44	
Grenada																						
Guatemala	2	21	32	37	56	61	59	1	21	22	39	37	30	32	1	21	27	38	46	45	45	
Guyana	8	60	166	201	277	277	24	13	47	54	92	61	61	67	11	53	108	121	159	101	49	
Haiti	6	92	159	165	151	121	117	9	116	168	175	129	85	67	7	104	163	170	139	101	90	
Honduras	4	3	70	71	107	142	15	3	2	41	98	94	87	16	3	2	56	64	100	114	15	
Jamaica	0	3	3	3	2	12	11	0	2	3	2	1	3	1	0	2	3	2	6	7	6	
Mexico	1	10	15	19	27	36	50	1	7	7	10	15	21	24	1	9	11	15	21	28	36	
Montserrat																						
Netherlands Antilles	4	6	0	26	20	0	13	0	0	6	0	0	0	0	2	3	0	16	9	0	5	
Nicaragua	2	27	44	40	61	93	89	2	27	37	32	40	43	50	2	27	40	36	50	67	68	
Panama	4	31	47	56	62	70	55	2	34	25	25	22	32	33	3	32	36	40	42	51	44	
Paraguay	2	26	30	35	43	84	127	2	18	20	20	26	40	34	2	22	25	28	34	62	74	
Peru	8	143	92	79	75	99	102	9	124	87	65	57	57	62	9	133	90	72	66	78	60	
Puerto Rico	0	1	3	3	4	6	4	0	1	1	1	2	1	2	0	1	2	2	3	3	3	
Saint Kitts & Nevis																						
Saint Lucia	0	0	0	10	34	55	59	0	13	22	0	0	0	61	0	7	11	5	16	26	60	
St Vincent & Grenadines																						
Suriname																						
Trinidad & Tobago	2	9	26	9	21	17	17	1	2	8	1	6	2	2	1	2	8	13	8	11	7	
Turks & Caicos Islands																						
Uruguay	0	14	23	25	26	18	22	0	13	10	5	9	7	3	0	14	16	15	17	12	10	
US Virgin Islands																						
USA	0	2	3	3	4	4	4	0	1	2	1	1	1	1	0	1	2	2	3	2	3	
Venezuela	1	14	22	27	34	37	56	1	12	16	14	15	18	35	1	14	19	20	24	27	44	
AMR	1	21	25	25	25	26	25	2	18	17	13	12	12	11	2	20	21	19	18	18	17	

Rates are per 100 000 population of each age/sex group. Rates are calculated excluding those countries for which breakdown of notified cases or population by age and sex is missing. Data can be downloaded from www.who.int/tb

Table A2.10 Number of TB cases notified, 1980–2004

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
Anguilla	0	0	4	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Antigua & Barbuda	8	3	0	1	3	2	7	0	0	3	1	0	6	0	0	0	3	4	4	3	4	1	4	1	0	0
Argentina	16 406	16 693	17 292	17 305	16 359	15 987	13 368	12 368	12 309	12 636	12 309	12 185	12 606	13 887	13 683	13 450	13 397	12 621	12 276	11 871	11 767	11 456	11 548	10 728	10 619	10 619
Bahamas	70	67	54	58	53	63	52	43	51	52	46	5	6	6	60	78	57	88	75	76	82	82	44	38	53	53
Barbados	64	3	30	17	14	12	7	3	4	4	5	5	5	6	6	3	3	5	7	2	3	6	5	19	19	19
Belize	21	33	44	140	35	25	23	41	28	30	57	89	65	80	59	95	99	107	123	104	106	136	135	99	83	83
Bermuda	1	2	5	10	3	3	6	2	1	2	1	2	1	2	1	4	0	4	0	0	0	0	0	0	0	6
Bolivia	4 412	5 072	4 777	5 178	4 131	7 679	6 837	8 960	10 664	12 563	11 166	11 223	9 520	8 614	9 431	14 422	10 194	9 853	10 132	9 863	10 127	10 531	10 201	9 636	9 801	9 801
Brazil	72 608	86 411	87 822	86 617	88 385	84 310	83 731	81 626	82 395	80 048	74 570	84 980	85 955	85 955	75 159	91 013	87 254	83 309	95 009	78 870	77 889	74 466	81 436	80 114	86 881	86 881
British Virgin Islands	2 885	2 554	2 515	2 186	2 345	1 980	2 046	1 972	1 947	2 035	1 997	2 018	2 108	2 012	2 074	1 931	1 868	1 976	1 791	1 806	1 694	1 703	1 556	1 451	1 517	1 517
Canada	0	2	0	1	1	4	1	0	0	0	2	2	3	3	2	2	0	0	3	2	5	1	1	1	2	2
Cayman Islands	8 523	7 337	6 941	6 989	6 561	6 644	6 854	6 280	6 324	6 728	6 151	5 488	5 304	4 598	4 138	4 150	4 178	3 880	3 652	3 429	3 021	3 006	2 448	2 226	2 664	2 664
Chile	11 589	11 483	12 126	13 716	12 792	12 024	11 639	11 437	11 469	11 329	12 447	12 263	11 199	11 043	8 901	9 912	9 702	8 042	9 155	10 989	11 630	11 480	11 376	11 640	11 242	11 242
Colombia	396	521	459	479	393	376	418	434	442	311	230	201	118	313	325	596	636	692	730	851	585	630	543	527	712	712
Costa Rica	1 133	833	815	762	705	680	656	630	628	581	546	514	410	790	1 681	1 553	1 465	1 346	1 234	1 135	1 183	926	898	840	782	782
Cuba	2 20	26	16	16	5	8	35	27	13	145	13	14	13	7	12	8	10	6	5	2	2	2	2	2	2	2
Dominica	2 174	1 778	2 457	2 959	3 100	2 335	2 634	2 587	3 081	3 145	2 597	1 837	3 480	4 033	4 337	4 053	6 302	5 381	5 114	5 767	5 291	4 766	4 040	4 896	4 549	4 549
Dominican Republic	3 950	3 966	3 880	3 985	4 301	4 798	5 687	5 987	5 497	5 480	8 243	6 879	7 313	7 050	9 685	7 893	8 397	9 435	7 164	5 756	6 908	6 015	5 829	6 442	6 122	6 122
El Salvador	2 255	2 091	2 171	2 053	1 564	1 461	1 659	1 647	2 378	617	2 367	2 304	2 495	3 347	3 901	2 422	1 886	1 662	1 700	1 623	1 485	1 458	1 550	1 383	1 406	1 406
Grenada	17	1	1	6	4	2	2	0	4	4	0	0	3	0	3	4	0	2	2	5	0	0	1	2	2	2
Guatemala	5 624	6 641	7 277	6 013	6 586	6 570	4 806	5 700	5 739	4 900	3 813	2 631	2 517	2 474	2 508	3 119	3 232	2 948	2 755	2 820	2 913	2 419	2 909	2 642	3 313	3 313
Guyana	124	117	135	149	165	215	190	117	150	120	168	134	182	91	266	296	314	407	318	407	422	422	590	631	603	603
Haiti	8 306	6 550	3 337	6 839	5 803	4 959	8 514	8 054	8 100	8 054	8 100	10 237	10 237	10 237	10 237	6 212	6 632	10 116	9 770	9 124	10 420	10 224	12 066	14 004	14 533	14 533
Honduras	1 674	1 696	1 714	1 935	2 120	3 377	4 213	4 227	3 982	4 026	3 647	4 560	4 155	3 745	4 291	4 984	4 176	4 030	4 916	4 568	3 984	4 435	4 579	3 102	3 282	3 282
Honduras	1 176	1 178	1 53	157	160	130	88	133	65	86	123	121	111	115	109	109	121	118	121	115	127	121	106	120	116	116
Jamaica	31 247	32 572	24 853	22 795	14 531	15 017	13 180	14 631	15 371	15 489	14 437	15 216	14 446	15 145	16 353	11 329	20 722	23 575	21 514	19 802	18 434	18 879	17 790	17 078	15 101	15 101
Mexico	1	0	0	1	7	9	5	13	6	5	1	1	0	0	0	0	0	1	1	2	4	0	0	1	0	0
Montserrat	1 300	3 723	3 082	2 773	2 705	2 604	2 617	2 983	2 737	3 106	2 944	2 797	2 885	2 798	2 750	2 842	3 003	2 806	2 604	2 558	2 402	2 447	2 092	2 283	2 220	2 220
Netherlands Antilles	643	580	429	413	614	709	765	770	672	672	846	863	750	1 146	827	1 300	1 314	1 473	1 422	1 387	1 169	1 711	1 575	1 620	1 691	1 691
Nicaragua	1 354	1 388	1 415	1 800	1 718	1 931	1 628	1 502	1 438	2 270	2 167	2 283	1 927	2 037	1 850	1 745	2 072	1 946	1 831	2 115	1 950	2 073	2 175	2 175	2 300	2 300
Paraguay	16 011	21 925	21 579	22 753	22 792	24 438	24 702	30 571	36 908	35 687	37 905	40 580	52 552	51 675	48 601	45 310	41 739	42 062	43 723	40 345	38 661	37 197	36 092	31 273	33 082	33 082
Peru	686	621	473	452	418	338	363	303	275	314	159	241	257	257	274	263	110	257	201	200	174	121	138	115	123	123
Puerto Rico	7	4	6	2	3	0	0	0	0	0	0	0	1	4	6	2	5	12	5	5	3	2	3	1	2	2
Saint Kitts & Nevis	41	39	37	48	55	21	34	25	32	28	13	25	26	26	24	11	35	22	20	16	9	15	17	14	15	15
Saint Lucia	78	11	14	4	23	14	9	3	6	3	2	1	4	13	0	13	6	6	8	9	16	10	10	14	8	8
St Vincent & Grenadines	78	81	56	78	76	50	60	77	77	70	82	47	58	45	53	53	53	76	85	95	89	75	97	95	97	97
Suriname	80	82	62	112	108	112	119	122	108	124	120	141	142	112	129	166	204	260	199	159	198	206	133	147	177	177
Trinidad & Tobago	2	0	2	5	0	4	2	12	0	0	0	0	0	0	0	0	0	0	0	17	3	3	3	6	6	6
Turks & Caicos Islands	1 874	1 699	1 450	1 359	1 389	1 201	1 082	1 023	951	987	886	759	699	689	666	625	701	708	668	627	645	689	536	643	727	727
US Virgin Islands	27 749	27 373	25 520	23 846	22 265	22 201	22 768	22 517	22 436	23 495	25 701	26 283	26 673	25 099	24 203	22 727	21 211	19 751	18 287	17 498	16 309	15 945	15 057	14 852	14 517	14 517
USA	4 233	4 093	4 159	4 266	4 737	4 822	4 974	4 954	4 857	4 524	5 457	5 216	5 444	5 169	4 877	5 578	5 650	5 984	6 273	6 598	6 466	6 251	6 204	6 734	6 808	6 808
Venezuela	227 820	248 150	237 316	238 296	226 801	227 022	227 107	233 192	241 834	239 594	231 215	252 221	253 256	166 452	241 860	258 198	256 564	254 987	262 904	240 631	236 184	229 636	233 727	227 583	235 187	235 187
Number reporting	42	42	42	42	42	42	42	42	41	41	41	42	39	33	35	39	40	41	40	40	40	40	40	43	40	40
% reporting	95	95	95	95	95	95	95	95	93	93	93	95	89	75	80	88	91	93	91	91	91	91	98	91	91	91

From 1995 on, number shown is all notified new and relapse cases (DOTS and non-DOTS). The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Table A2.11 Case notification rates, 1980-2004

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
Anguilla	0	0	57	0	0	14	0	0	0	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0
Antigua & Barbuda	13	5	0	2	5	3	11	0	5	5	2	2	0	0	0	0	4	6	5	4	5	1	5	1	5	1
Argentina	58	59	60	59	53	67	48	43	42	39	38	37	38	41	40	39	38	35	34	33	32	31	31	28	28	17
Bahamas	33	31	25	26	23	27	22	18	21	21	18	20	24	22	28	20	21	31	26	26	27	14	14	12	17	28
Barbados	26	1	12	7	6	5	3	1	2	2	2	2	2	2	2	1	1	2	3	1	1	2	2	2	7	7
Belize	15	22	29	91	22	15	14	24	16	17	31	47	33	40	28	44	45	47	53	44	44	55	53	38	31	31
Bermuda	2	4	9	18	5	5	10	3	2	3	0	5	7	0	0	7	0	6	0	0	0	0	0	0	0	9
Bolivia	82	93	85	91	71	129	112	144	167	193	167	164	136	120	129	193	133	126	127	124	122	124	118	111	109	109
Brazil	60	69	69	66	66	62	60	58	57	55	55	56	56	56	48	56	53	50	56	46	45	42	46	44	47	47
British Virgin Islands	12	10	10	9	9	8	8	7	7	7	7	7	7	7	7	7	6	6	6	6	6	5	5	5	9	9
Canada	0	11	0	5	5	19	5	0	0	8	8	11	10	10	7	6	0	0	8	5	13	2	0	0	0	2
Cayman Islands	76	65	60	60	55	56	50	50	52	47	41	39	33	29	29	29	29	26	24	23	20	19	16	14	17	17
Chile	41	39	41	45	41	38	36	35	34	33	36	34	31	30	24	26	25	20	22	27	28	27	26	26	25	25
Colombia	17	22	18	19	15	14	15	15	10	7	6	4	9	10	17	18	19	19	19	22	15	16	13	13	17	17
Costa Rica	12	9	8	8	7	7	6	6	6	6	5	4	4	7	16	14	13	12	11	10	11	8	8	7	7	7
Cuba	27	35	24	22	7	11	48	37	10	16	19	18	10	16	11	13	8	6	6	6	6	4	3	3	3	3
Dominica	38	30	41	48	49	36	40	37	45	45	37	25	48	54	57	53	81	68	64	71	64	57	47	54	52	52
Dominican Republic	50	48	46	46	49	53	61	61	56	55	80	65	68	64	87	69	72	80	60	47	56	48	46	50	47	47
Ecuador	49	45	46	44	33	31	34	34	48	12	46	44	47	62	70	43	29	28	28	26	24	23	24	21	21	21
El Salvador	19	1	1	7	4	2	1	2	0	4	0	1	3	0	3	4	0	2	2	5	0	1	2	2	2	2
Grenada	80	92	99	80	85	83	59	69	68	56	43	29	27	26	26	31	32	28	26	26	26	21	25	22	27	27
Guatemala	16	15	18	20	22	29	25	16	20	16	23	18	25	12	36	40	43	55	43	55	57	79	84	80	80	80
Guyana	152	117	58	117	97	81	137	132	122	120	147	147	147	147	84	88	133	127	117	131	127	148	169	173	173	
Haiti	47	46	45	49	52	81	98	95	86	85	75	91	80	70	78	89	72	68	81	73	62	67	68	45	47	
Honduras	6	8	7	7	7	6	4	6	3	4	5	5	5	5	4	4	5	5	5	4	5	5	4	5	4	
Jamaica	46	47	35	31	20	20	17	18	19	19	17	18	16	17	16	12	22	25	22	20	18	19	17	16	14	14
Mexico	8	0	0	9	61	80	45	118	55	46	9	9	0	0	0	0	0	16	41	0	0	0	0	26	0	
Montserrat	42	118	95	83	79	74	72	81	72	80	74	69	69	66	63	63	66	60	55	53	48	48	41	43	41	41
Netherlands Antilles	33	29	28	21	19	28	32	34	33	28	35	35	30	45	32	49	48	53	50	48	40	57	51	52	53	53
Nicaragua	43	43	43	53	49	54	44	39	36	55	51	53	43	44	39	36	42	38	35	40	36	37	37	37	38	38
Panama	92	123	119	122	120	125	124	150	177	167	174	183	233	225	208	190	172	170	174	158	149	141	135	115	120	
Paraguay	21	16	14	14	12	10	11	9	8	9	5	5	7	7	7	7	3	7	5	5	5	3	3	3	3	
Peru	16	9	14	5	7	0	0	0	0	0	0	0	2	10	15	5	12	7	30	12	7	0	5	7	5	
Puerto Rico	35	33	30	39	44	17	26	19	24	21	9	18	18	18	16	16	7	23	15	13	10	6	10	11	9	9
Saint Kitts & Nevis	78	11	14	4	22	13	9	3	6	3	2	1	4	12	0	12	5	5	7	8	14	9	9	12	7	7
Saint Lucia	22	23	15	21	20	13	15	20	19	18	20	12	14	11	13	13	18	20	22	21	17	22	21	22	21	
St Vincent & Grenadines	7	7	6	10	9	10	10	10	9	10	10	10	12	9	10	13	16	20	16	12	15	16	10	11	14	
Suriname	27	0	24	58	0	42	20	117	0	0	0	0	0	0	0	0	0	0	93	14	14	14	25	25	25	
Trinidad & Tobago	64	58	49	46	46	40	36	34	31	32	29	24	22	22	21	19	22	22	20	19	19	20	16	19	21	
Turks & Caicos Islands	0	1	1	2	3	1	1	2	6	4	4	4	4	4	4	4	7	0	0	0	0	0	0	0	0	
Uruguay	12	12	11	10	9	9	9	9	9	9	10	10	10	10	10	9	8	8	7	7	6	6	6	5	5	
USA	28	26	26	26	28	28	28	27	24	24	28	26	26	24	23	25	25	26	27	28	26	25	24	26	26	
Venezuela	37	40	37	37	34	34	33	34	34	34	34	32	34	34	34	33	33	32	32	32	29	28	27	26	27	
AMR	37	40	37	37	34	34	33	34	34	34	34	32	34	34	34	33	33	32	32	29	28	27	26	27	26	

Rates are per 100 000 population. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/itb

Table A2.12 New smear-positive cases notified, numbers and rates, 1993–2004

	Number of cases													Rate (per 100 000 population)												
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004		
Anguilla																										
Antigua & Barbuda																										
Argentina	5 937	5 696	5 698	5 787	5 307	5 186	4 830	4 749	5 595	5 498	4 961	4 760	17	17	16	16	15	14	13	13	15	1	4	0		
Bahamas	41	41	38	25	57	30	37	56	33	32	29	37	15	15	14	9	20	10	12	19	10	10	9	12		
Barbados																										
Belize	50	36	36	46	32	52	48	44	53	71	62	34	25	17	17	21	14	23	20	18	21	28	24	13		
Bermuda																										
Bolivia	6 833	6 905	7 010	6 949	6 458	6 750	6 673	6 458	6 672	6 829	6 344	6 213	96	94	94	91	83	85	82	78	79	79	72	69		
Brazil	39 167	45 650	44 503	43 490	43 554	41 619	41 186	38 478	41 371	39 938	42 881	42 881	25	25	24	27	26	26	24	24	22	22	23	23		
British Virgin Islands																										
Canada	542	404	404	156	487	471	395	506	502	445	592	428	2	2	1	1	2	2	1	2	2	1	2	1		
Cayman Islands	2	0	0	0	0	2	2	5	1	0	0	0	7	0	0	0	0	5	5	13	2	0	0	2		
Chile	2 629	1 951	1 561	1 562	1 582	1 576	1 497	1 290	1 355	1 412	1 276	1 297	19	14	11	11	11	10	10	8	9	9	8	8		
Colombia	6 987	6 532	7 530	7 572	6 090	6 969	8 329	8 358	8 022	7 787	7 972	7 640	19	17	20	19	15	17	20	20	19	18	18	17		
Costa Rica	2 302	2 302	2 453	3 022	3 520	3 520	3 449	3 449	3 585	3 228	3 546	419	5	7	7	8	9	9	12	9	10	8	8	10		
Cuba	565	914	834	835	765	746	720	675	559	540	507	454	5	8	8	8	7	7	6	6	5	5	5	4		
Dominica	6	8	5	7	5	5							8	11	7	9	7	6								
Dominican Republic	2 297	3 177	2 787	3 733	3 162	2 669	3 278	2 907	2 622	2 179	2 806	2 720	31	42	36	48	40	33	40	35	31	26	32	31		
Ecuador	5 325	6 674	5 890	6 428	7 214	4 900	4 300	5 064	4 439	4 223	4 488	4 340	49	60	52	55	61	41	35	41	36	33	35	33		
El Salvador	2 471	2 144	2 144	965	882	1 071	1 023	1 008	1 003	980	870	926	46	39	2	0	1	15	18	17	16	15	13	14		
Grenada	0	3	2	0	1	2	3	0	0	0	2	2	0	3	2	0	1	2	3	0	0	0	2	2		
Guatemala	2 128	1 994	2 368	2 224	2 218	2 255	2 264	2 052	1 669	1 865	1 795	2 339	22	20	24	22	21	21	21	18	15	16	15	19		
Guyana	51	61	85	71	105	85	178	119	174	138	244	164	7	8	12	10	10	14	12	24	16	23	18	33		
Haiti																										
Honduras	2 016	2 385	2 306	1 808	1 928	2 311	2 415	2 415	2 839	2 856	1 956	2 012	38	44	41	31	32	38	39	38	43	44	28	29		
Jamaica	83	61	93	81	84	90	90	90	75	60	81	69	3	2	4	3	3	4	4	4	3	3	2	3		
Mexico	8 164	9 726	9 220	8 495	15 440	11 473	11 968	11 676	15 103	11 555	12 933	11 214	9	11	10	9	16	12	12	12	15	11	12	11		
Montserrat	0	0	0	0	0	1	2	0	0	0	1	0	0	0	0	0	0	16	41	0	0	0	0	26		
Netherlands Antilles																										
Nicaragua	1 714	1 615	1 568	1 722	1 670	1 648	1 564	1 471	1 510	1 320	1 404	1 327	40	37	35	38	36	35	32	30	30	26	27	25		
Panama	1 046	748	1 066	804	592	1 383	432	460	671	773	778	882	41	29	40	33	21	49	15	16	22	25	25	28		
Paraguay	985	873	748	894	859	850	1 041	900	915	1 004	1 166	1 201	21	19	15	18	17	16	20	16	16	17	20	20		
Peru	35 646	33 925	32 096	26 800	27 498	27 707	24 511	22 580	21 685	20 533	18 504	18 289	155	145	135	110	111	110	96	87	82	77	68	66		
Puerto Rico	117	128	110	126	106	106	82	71	76	62	65	65	3	3	3	3	3	3	3	3	2	2	2	2		
Saint Kitts & Nevis	2	2	4	2	4	4	2	0	0	1	1	0	0	5	5	10	5	10	5	0	0	0	0	0		
Saint Lucia	11	17	11	22	14	10	9	7	6	8	8	11	10	12	7	15	9	7	6	5	4	5	5	7		
St Vincent & Grenadines																										
Suriname																										
Trinidad & Tobago																										
Turks & Caicos Islands																										
Uruguay																										
US Virgin Islands	388	381	349	426	423	374	392	348	340	308	373	373	12	12	11	13	13	11	12	10	10	9	11	11		
USA	0	0	8 094	7 454	6 935	6 624	6 275	5 884	5 651	5 436	5 338	5 219	0	0	3	3	3	2	2	2	2	2	2	2		
Venezuela	2 849	2 738	3 056	3 195	3 234	3 450	3 670	3 525	3 476	3 444	3 862	3 776	13	13	14	14	14	15	15	14	14	14	15	14		
AMR	88 885	128 059	138 901	136 713	142 570	139 286	135 093	130 321	129 684	127 483	125 862	126 289	12	17	18	17	18	17	16	16	15	15	14	14		

Rates are per 100 000 population. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Notes

Argentina

Treatment outcomes for 2517 new smear-positive patients who received DOT are as follows: cured 40%, completed 41%, died 7%, failed 0.4%, defaulted 7%, transferred 4%, not evaluated 1%. For 2444 patients who did not receive DOT, treatment outcomes are: cured 16%, completed 33%, died 4%, failed 0.1%, defaulted 10%, transferred 5%, not evaluated 31%.

Bahamas

Breakdown by age and sex provided are for all notified pulmonary cases as opposed to only new smear-positive cases.

Bolivia

The NTP estimates that 60% of the population has access to DOTS services.

Canada

Notified new pulmonary smear-positive cases include those diagnosed by bronchial wash/aspirations, gastric wash, lung or airway biopsy.

Ecuador

Data in Tables A2.8 and A2.9 include new smear-positive cases notified under DOTS and non-DOTS.

Guyana

The sum of cases notified by age and sex (for DOTS and non-DOTS) does not match the number of TB cases notified. All cases aged 45–64 years are shown in the 45–55 years age category.

Honduras

100% of administrative units are classified as DOTS, but the NTP estimates that 80% of the population has access to DOTS services.

Suriname

Breakdown by age and sex provided are for all notified TB cases as opposed to only new smear-positive cases.

Uruguay

Treatment outcomes are for laboratory-confirmed cases.

Summary by WHO region

Africa

The Americas

Eastern Mediterranean





Europe

South-East Asia

Western Pacific

EASTERN MEDITERRANEAN: SUMMARY OF TB CONTROL POLICIES

	STATUS ^a	MANUAL ^b	MICROSCOPY ^c	SCC ^d	DOT ^e	MONITORING OUTCOME ^f
AFGHANISTAN	DOTS	YES				
BAHRAIN	DOTS	YES				
DJIBOUTI	DOTS	YES				
EGYPT	DOTS	YES				
IRAN	DOTS	YES				
IRAQ	DOTS	YES				
JORDAN	DOTS	YES				
KUWAIT	DOTS	NO				
LEBANON	DOTS	YES				
LIBYAN ARAB JAMAHIRIYA	DOTS	NO				
MOROCCO	DOTS	YES				
OMAN	DOTS	YES				
PAKISTAN	DOTS	YES				
QATAR	DOTS	NO				
SAUDI ARABIA	DOTS	YES				
SOMALIA	DOTS	YES				
SUDAN	DOTS	YES				
SYRIAN ARAB REPUBLIC	DOTS	YES				
TUNISIA	DOTS	YES				
UNITED ARAB EMIRATES	DOTS	YES				
YEMEN	DOTS	YES				
WEST BANK AND GAZA STRIP	DOTS	NO				

	Implemented in all units/areas
	Implemented in some units/areas
	Not implemented
	Unknown

^a Status: DOTS status (blank indicates no report received)

^b Manual: national TB control manual (recommended)

^c Microscopy: use of smear microscopy for diagnosis (core component of DOTS)

^d SCC: short course chemotherapy (core component of DOTS)

^e DOT: directly observed treatment (core component of DOTS)

^f Outcome monitoring: monitoring of treatment outcomes by cohort analysis (core component of DOTS)

Table A2.3 DOTS coverage, case notifications and case detection rates, 2004

DOTS coverage %	TB cases reported from DOTS services												Estimated incidence and case detection rate				Proportions		
	New and relapse (WHO total)			New extra-pulmonary			Re-treatment cases			Estimated incidence		Case detection rate		ss+ (% of pulm.)	ss+ (% of Extrapulm. new+relapse)	Re-treat. (% of new+re-treat.)			
	number	rate	ss+ number	number	rate	ss+ number	Other new	Release	After default	Other re-treat.	number	ss+ number	new and relapse %				new ss+ %		
68	18 404	64	8 273	29	5 437	3 900	894	0	0	0	0	0	0	19	60	45	21		
100	244	34	69	10	58	117	0	0	0	0	0	0	0	78	54	28	48		
100	2 940	377	1 086	139	763	924	0	167	42	30	0	0	0	51	59	37	31		
100	11 620	16	5 383	7	2 339	3 308	590	156	159	0	0	0	0	59	70	46	28		
100	10 191	15	4 897	7	2 155	2 827	312	125	0	0	0	0	0	55	69	46	28		
100	10 488	37	3 381	12	3 153	3 107	857	0	0	0	0	0	0	28	52	32	30		
100	324	6	91	2	55	176	0	2	3	3	5	0	0	126	62	28	54		
100	568	21	248	10	65	242	0	3	0	0	0	0	0	84	79	44	43		
100	393	11	146	4	85	155	0	7	0	0	0	0	0	99	63	37	39		
100	1 653	29	872	15	780	1 139	1	0	2	0	0	0	0	144	100	53	47		
100	25 909	84	12 280	40	1 990	11 639	0	0	0	0	0	0	0	76	80	47	45		
100	292	12	160	6	39	86	0	7	0	0	0	0	0	101	80	55	29		
79	101 562	66	33 746	22	50 311	15 476	0	2 029	0	3 280	0	0	0	36	40	33	15		
100	272	35	73	9	58	141	0	0	0	0	0	0	0	59	56	27	52		
100	3 341	14	1 692	7	587	933	0	129	0	0	0	0	0	35	74	51	28		
100	11 747	147	6 479	81	3 005	1 822	0	441	19	10	0	0	0	36	68	55	16		
82	26 567	75	12 095	34	8 205	4 603	0	1 664	12	24	0	0	0	34	60	46	17		
100	4 588	25	1 561	8	819	2 125	0	83	50	27	43	0	0	61	66	34	46		
100	1 998	20	944	9	227	779	0	48	0	0	0	0	0	91	81	47	39		
20	92	2	57	1	5	26	4	0	0	0	0	0	0	13	92	62	28		
100	23	1	4	0	19	8	0	0	1	0	0	0	0	3	17	17	4		
98	6 930	34	3 239	16	1 756	1 561	0	374	0	0	0	0	0	38	65	47	23		
EMR	240 146	45	96 776	18	81 131	54 627	0	7 612	408	3 536	48	0	102 556	37	644 531	289 058	33	5	

ss+ indicates sputum smear-positive; ss-, sputum smear-negative; unk., sputum smear result unknown; re-treat., re-treatment; pulm lab. confirmed, pulmonary case confirmed by positive smear or culture. See Explanatory notes on page 139 for further details. Data can be downloaded from www.who.int/tb

Table A2.4 Public–Public and Public–Private Mix (PPM), collaborative TB/HIV activities and management of MDR-TB, 2003-2004

	Public–Public and Public–Private Mix (PPM), 2004			Institutions notifying to NTP			Collaborative TB/HIV activities, 2003 or 2004			Multidrug-resistant TB, 2004						
	Guidelines for other practitioners	Private hospitals or clinics	Public practitioners	Private practitioners	Public hospitals	Prisons	Military	Insurance	HIV testing for TB pts among TB pts	TB pts for HIV surveillance	TB pts HIV-positive	TB pts CPT	TB pts ART	Laboratory-confirmed MDR	DST cases in new MDR in	Re-treatment MDR
	Yes	No	All	Yes	No	All	Some	All	Yes	No	0	3	0	0	0	0
Afghanistan	No	No	All	No	No	All	Some	No	No	No	0	0	0	0	0	0
Bahrain	All	All	All	All	All	All	All	All	Yes	Yes	0	0	0	0	0	0
Djibouti	No	No	All	No	No	All	Some	No	No	No	0	0	0	0	0	0
Egypt	Yes	No	All	No	No	All	No	All	No	No	1 480	94	13	7	1	0
Iran	Yes	Some	All	Some	All	All	Some	Some	No	No	0	0	0	0	0	0
Iraq	Yes	No	All	All	Some	No	No	No	Yes	Yes	110	0	0	0	8	60
Jordan	No	All	All	All	All	All	All	No	Yes	Yes	566	4	4	4	8	558
Kuwait	No	All	All	All	All	All	All	No	No	No	0	0	0	0	4	105
Lebanon	Yes	Some	All	All	All	All	All	No	Yes	No	400	55	0	0	1	7
Libyan Arab Jamahiriya	Yes	Some	All	All	All	All	Some	No	Yes	No	0	0	0	0	0	0
Morocco	Yes	No	All	All	All	All	No	No	Yes	Yes	212	14	0	0	2	114
Oman	Yes	All	Some	All	All	All	All	All	Yes	Yes	0	0	0	0	0	0
Pakistan	Yes	No	Some	No	Some	No	No	No	No	No	0	0	0	0	0	0
Qatar	No	All	All	All	All	All	All	All	Yes	Yes	275	0	0	4	4	0
Saudi Arabia	No	Some	All	All	All	Some	No	No	Partially	No	0	0	0	0	0	0
Somalia	Yes	Some	Some	Some	All	No	No	No	Partially	No	230	12	10	0	0	0
Sudan	Yes	Some	Some	Some	Some	Some	No	No	No	No	0	0	0	0	0	0
Syrian Arab Republic	No	Some	All	All	All	All	All	All	Partially	Yes	236	0	0	1	0	0
Tunisia	Yes	All	All	All	All	All	All	All	No	Yes	94	1	1	1	0	0
United Arab Emirates	Yes	Some	All	All	All	All	All	Some	Yes	Yes	16	0	0	1	0	0
West Bank and Gaza Strip	No	All	All	All	All	All	All	All	Yes	Yes	0	0	0	0	0	0
Yemen	No	No	All	All	All	All	All	No	No	No	0	0	0	1	0	0
EMR	28	68	73	95	91	77	32	55	45	3 619	183	28	12	81	841	22
																4

pts indicates patients; CPT, co-trimoxazole preventive therapy; ART, antiretroviral therapy. The regional row for the first 9 columns represents the proportion of countries that provided an affirmative response ("Yes", "All", "Some" or "Partially"). See Explanatory notes on pages 139 and 140 for further details. Some countries provided the number of TB patients found to be HIV-positive, but did not provide the number of TB patients tested. The regional total of TB patients tested is therefore lower than the number of patients actually tested, and cannot be used to calculate a regional estimate of HIV prevalence in TB patients. Data can be downloaded from www.who.int/tb



Table A2.5 Treatment outcomes, 2003 cohort

	New smear-positive cases, DOTS										New smear-positive cases, non-DOTS										Smear-positive re-treatment cases, DOTS														
	Number of cases					% of cohort					Number of cases					% of cohort					Number					% of cohort									
	Notified	Registrd	of notif	registrd	Cured	Compl-	Died	Failed	Default	Trans- Not	Success	%	Notified	Registrd	of notif	registrd	Cured	Compl-	Died	Failed	Default	Trans- Not	Success	%	Registrd	Cured	eted	Failed	Default	ferred eval.	Success	%			
Afghanistan	6 510	6 783	104	81	5	3	2	5	4	0	86														241	42	7	3	7	34	5	2	49		
Bahrain	16	31	194	48	48	3	0	0	0	0	97														623	53	12	9	9	10	8	0	65		
Dibouti	1 202	1 202	100	60	13	1	1	14	9	1	73														523	62	15	5	6	7	3	1	77		
Egypt	5 118	5 118	100	69	11	3	2	3	3	10	80														898	67	13	3	7	8	2	0	80		
Iran	5 188	5 188	100	79	5	6	3	4	3	0	84														4	75	0	0	25	0	0	0	75		
Iraq	3 577	3 577	100	78	7	2	3	8	2	0	85														4	100	0	0	0	0	0	0	100		
Jordan	108	108	100	75	12	3	2	7	1	0	87														9	78	0	11	0	0	11	0	78		
Kuwait	201	201	100	37	25	1	1	16	20	0	62														1 701	65	5	4	6	13	5	2	70		
Lebanon	134	138	103	86	6	1	1	4	2	0	92														4	100	0	0	0	0	0	0	100		
Libyan Arab Jamahiriya	764	764	100	49	12	2	1	30	2	4	62														4 836	49	16	2	2	17	7	6	65		
Morocco	12 842	12 840	100	81	5	2	1	9	0	1	86														108	54	15	11	1	9	1	9	69		
Oman	110	88	80	90	0	9	0	1	0	0	90														443	84	2	4	3	5	2	0	85		
Pakistan	20 982	20 982	100	62	13	2	1	13	5	4	75														1 777	48	33	3	1	8	3	4	81		
Qatar	95	95	100	97	5	3	1	0	23	0	73														167	49	15	5	14	11	5	0	64		
Saudi Arabia	1 646	1 337	81	73	6	8	1	11	2	0	79														38	71	3	11	13	0	3	0	74		
Somalia	5 190	5 141	98	88	2	4	1	3	2	0	90														1	0	0	0	0	100	0	0	0	0	
Sudan	11 003	11 841	108	63	19	3	1	9	3	2	82														423	58	4	3	4	9	4	17	62		
Syrian Arab Republic	1 545	1 545	100	74	14	2	3	6	1	0	88														11 801	55	16	3	4	13	5	4	70		
Tunisia	878	878	100	87	3	3	1	2	3	0	91														191	191	100	36	38	2	2	19	4	0	73
United Arab Emirates	77	77	100	52	12	1	12	22	1	0	64														191	100	36	38	2	2	19	4	0	73	
West Bank and Gaza Strip	15	15	100	67	13	13	7	7	3	1	80														191	100	36	38	2	2	19	4	0	73	
Yemen	3 602	3 602	100	71	11	3	1	9	3	1	82														191	100	36	38	2	2	19	4	0	73	
EMR	80 783	81 541	101	71	10	3	1	9	3	2	82														11 801	55	16	3	4	13	5	4	70		

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases registrd, the denominator for calculating treatment outcomes. The number of cases registered for treatment in 2003 is used as the denominator for calculating treatment outcomes unless it is less than the sum of outcomes, in which case the sum of outcomes is used. If the number of cases registered is not reported, then the number of cases notified in 2003 is used, or the sum of outcomes if the latter is greater. Data can be downloaded from www.who.int/bd

Table A2.6 Re-treatment outcomes, 2003 cohort

	Release, DOTS					After failure, DOTS					After default, DOTS																
	Number registered	Completed	Failed	Defaulted	Transferred	Not eval.	Success	%	Number registered	Completed	Failed	Defaulted	Transferred	Not eval.	Success	%	Number registered	Completed	Failed	Defaulted	Transferred	Not eval.	Success	%			
Afghanistan	180	50	4	3	4	32	6	0	54	39	13	10	8	26	33	0	10	23	22	27	18	0	0	50	45		
Bahrain	318	70	10	6	5	6	3	0	80	124	72	8	2	8	6	2	2	80									
Djibouti	898	67	13	3	7	8	2	0	80																		
Egypt	2	100	0	0	0	0	0	100	2	50	0	0	0	50	0	0	0	50	0								
Iraq	4	100	0	0	0	0	0	100																			
Jordan	9	78	0	11	0	0	11	0	78																		
Kuwait																											
Lebanon																											
Libyan Arab Jamahiriya	1385	69	6	3	4	11	5	2	75	84	52	6	23	12	7	0	52	232	49	5	12	28	5	0	49		
Morocco	4	100	0	0	0	0	0	100																			
Oman	1640	60	12	3	2	12	4	8	72										3196	43	18	2	2	20	9	62	
Pakistan	108	54	15	11	1	9	1	9	69																		
Qatar																											
Saudi Arabia	397	84	1	4	3	5	3	0	85	20	75	10	10	5	0	0	0	85	26	77	8	8	4	0	0	85	
Somalia	1735	47	34	3	1	8	3	4	81	14	71	14	14	0	0	0	0	86	28	89	7	4	0	0	0	96	
Sudan	76	50	18	4	12	13	3	0	68	56	43	14	7	25	2	9	0	57	35	57	9	6	3	20	6	66	
Syrian Arab Republic	38	71	3	11	13	0	3	0	74																		
Tunisia	1					100																					
United Arab Emirates																											
West Bank and Gaza Strip	423	58	4	3	4	9	4	17	62	0																	
Yemen																											
EMR	7 219	61	15	4	3	4	3	4	76	339	55	8	5	16	9	4	2	63	3 639	44	17	2	2	20	8	5	61

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases registered, the denominator for calculating treatment outcomes. The number of cases registered for treatment in 2003 is used as the denominator for calculating treatment outcomes unless it is missing or is less than the sum of outcomes, in which case the sum of outcomes is used. Data can be downloaded from www.who.int/tb



Table A2.7 DOTS treatment success and case detection rates, 1994–2004

	DOTS new smear-positive treatment success (%)										DOTS new smear-positive case detection rate (%)											
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004		
Afghanistan			45	33	87	86	84	87	86	87	86			2	5	8	13	17	16	19		
Bahrain				13	95	73	87	88	97	88	97				14	15	15	12	11	49		
Dili/outi		75	77	76	79	72	62	78	82	73		95	99	84	74	63	57	53	49	43		
Egypt	52		81	82	87	87	87	82	88	80	43	1	11	17	31	45	49	54	57	61		
Iran			87	84	83	82	85	85	85	84	46	46	12	34	52	58	61	61	60	58		
Iraq				83	85	92	89	91	85					2	5	21	23	25	22	20		
Jordan	90			92	88	88	90	86	89	87	114			75	72	66	72	73	90	79		
Kuwait																						
Lebanon	89		73	96	92	91	91	91	92	62	54											
Libyan Arab Jamahiriya			68	67	68	67	61	61	62					146	112	136	146	169				
Morocco	86	90	88	89	88	88	89	87	89	86	93	93	92	88	88	84	83	84	84	80		
Oman	84	87	91	86	95	93	90	92	90	90	119	120	113	87	120	115	113	84	123			
Pakistan	74	70	67	66	70	74	77	77	75	75	1	2	4	2	3	5	13	17	27			
Qatar	83	81	72	79	84	74	66	60	75	73	40	31	26	44	36	32	44	34	48	35		
Saudi Arabia				57	66	73	77	76	79					22	29	28	30	31	36	37	44	
Somalia		86	84	90	88	88	83	86	89	90				2	1	27	28	32	30	32	33	35
Sudan			70	65	81	79	80	78	82	82				2	1	27	28	32	30	32	33	35
Syrian Arab Republic			92	88	88	84	79	81	87	88				8	20	28	41	42	41	45	46	
Tunisia				91	91	91	91	90	92	91						98	103	103	90	87	95	
United Arab Emirates						74	62	79	64							25	23	19	24	17		
West Bank and Gaza Strip						80	75	80	80	80						10	13	13	4	1		
Yemen		66	78	81	80	79	75	80	80	82	2	8	30	37	51	55	52	47	44	40		
EMR	82	87	86	79	77	83	83	83	83	82	10	9	10	16	18	21	23	27	29	33		

Treatment success, sum of cured and completed; DOTS new smear-positive case detection rate, notified cases divided by estimated incident cases. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Table A2.8 New smear-positive case notification by age and sex, absolute numbers, DOTS and non-DOTS, 2004

	Male					Female					All					Male/female ratio					
	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14		15-24	25-34	35-44	45-54	55-64
Alghanistan	139	537	568	360	358	386	310	256	1 360	1 561	1 096	645	413	256	385	1 897	2 129	1 456	1 003	799	566
Bahrain	0	0	0	2	2	0	1	0	1	1	1	0	1	2	0	1	1	3	2	1	3
Djibouti	19	217	225	142	68	38	28	16	111	115	49	23	25	10	35	328	340	191	91	63	38
Egypt	14	563	763	588	502	204	204	44	491	317	233	233	111	54	58	1054	1090	821	735	613	258
Iran	16	360	542	357	305	298	640	65	419	301	213	283	378	710	81	779	843	570	598	676	1350
Iraq	28	615	770	288	244	183	125	57	334	243	139	162	113	80	85	949	1013	427	406	286	205
Jordan	0	8	12	14	6	17	0	0	10	4	3	5	12	0	0	16	17	11	11	29	0
Kuwait	0	20	63	38	22	9	7	0	14	44	12	7	5	7	0	34	107	50	29	14	14
Lebanon	1	11	25	18	18	8	6	0	18	21	10	5	1	4	1	29	46	28	23	9	10
Libyan Arab Jamahiriya	5	113	310	173	53	24	20	1	44	50	20	23	13	23	6	157	360	193	76	37	43
Morocco	68	2 081	2 397	1 676	1 114	533	539	149	1 196	981	517	373	331	325	217	3277	3378	2193	1487	864	864
Oman	1	15	12	23	30	12	14	0	0	9	1	0	0	0	1	15	21	24	30	12	14
Pakistan	394	3 977	3 514	2 877	2 539	2 203	1 680	1 003	4 496	3 848	2 672	1 937	1 433	889	1 397	8473	7362	5549	4476	3636	2569
Qatar	0	9	13	13	8	10	1	0	6	5	4	2	2	0	0	15	18	17	10	12	1
Saudi Arabia	4	202	289	217	163	89	85	24	204	171	80	53	47	64	28	408	460	297	216	136	149
Somalia	175	1 228	1 039	610	419	326	278	129	676	618	428	266	157	110	304	1904	1677	1038	665	483	388
Sudan	537	1 377	1 791	1 465	1 035	697	467	426	978	1 187	897	601	400	237	963	2355	2978	2362	1636	1097	704
Syrian Arab Republic	13	318	308	115	113	77	50	20	230	121	46	56	59	35	33	548	429	161	169	136	85
Tunisia	9	100	181	128	123	62	91	7	44	55	39	47	19	39	16	144	236	167	170	81	130
United Arab Emirates	1	7	6	7	3	1	7	3	6	2	7	2	2	3	4	13	8	14	5	3	10
West Bank and Gaza Strip	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yemen	49	571	559	377	214	139	76	72	442	376	269	160	86	44	121	1013	935	646	374	225	120
EMR	1 473	12 330	13 408	9 488	7 340	5 614	4 629	2 272	11 080	10 030	6 737	4 893	3 608	2 892	3 745	23 410	23 438	16 225	12 233	9 222	7 521

For some countries, breakdown of notified cases by age and sex is missing, or is provided for a subset of cases. See Explanatory notes on page 140 for further details. Data can be downloaded from www.who.int/tb



Table A2.9 New smear-positive case notification rates by age and sex, DOTS and non-DOTS, 2004

	MALE						FEMALE						ALL								
	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14	15-24	25-34	35-44	45-54	55-64	65+
Afghanistan	2	21	32	28	42	72	90	5	59	95	93	80	79	71	4	39	62	60	61	76	80
Bahrain	0	0	0	2	4	0	10	0	2	2	2	0	9	19	0	1	1	2	2	4	15
Dibouti	12	313	458	419	307	250	269	11	161	233	141	97	149	80	11	237	345	278	198	197	166
Egypt	0	7	15	15	15	26	13	0	6	6	6	7	6	3	0	7	10	10	11	15	8
Iran	0	4	10	9	11	21	40	1	5	6	5	10	23	45	0	4	8	7	10	22	43
Iraq	1	23	39	21	28	34	36	1	13	13	11	19	21	20	1	18	26	16	23	27	27
Jordan	0	1	2	4	4	14	0	0	2	1	1	3	11	0	0	2	2	3	3	12	0
Kuwait	0	10	18	10	11	15	29	0	8	22	7	8	14	37	0	9	20	9	10	15	32
Lebanon	0	3	8	7	13	9	6	0	5	6	4	3	1	3	0	4	7	5	7	5	4
Libyan Arab Jamahiriya	1	17	61	54	22	14	17	0	7	10	7	11	10	21	0	12	36	31	17	12	19
Morocco	1	64	88	84	80	78	87	3	38	37	26	26	42	41	2	51	63	54	53	59	61
Oman	0	5	4	8	23	20	41	0	0	5	1	0	0	0	0	3	4	6	15	12	22
Pakistan	1	25	33	36	43	62	58	3	29	37	35	34	40	30	2	27	35	36	39	51	44
Qatar	0	20	21	13	11	43	14	0	15	18	10	7	23	0	0	16	20	12	10	38	9
Saudi Arabia	0	9	12	12	16	19	23	1	9	9	6	8	12	19	0	9	11	9	13	16	21
Somalia	7	124	161	142	149	208	252	5	68	92	96	89	90	83	6	96	126	119	118	146	160
Sudan	8	40	69	81	86	88	81	6	30	46	49	49	47	35	7	35	57	65	67	67	56
Syrian Arab Republic	0	15	21	12	20	24	20	1	11	8	5	9	18	11	0	13	15	8	14	21	15
Tunisia	1	9	21	19	26	24	32	1	4	6	6	10	7	12	1	7	14	12	18	15	22
United Arab Emirates	0	3	2	1	1	1	26	1	3	1	4	2	6	16	1	3	1	2	1	2	22
West Bank and Gaza Strip	0	0	0	0	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Yemen	1	26	43	45	37	44	34	1	21	31	31	27	27	18	1	24	37	38	32	35	26
EMR	1	22	33	32	35	48	48	2	21	26	24	25	30	28	2	21	30	28	30	39	37

Rates are per 100 000 population of each age/sex group. Rates are calculated excluding those countries for which breakdown of notified cases or population by age and sex is missing. Data can be downloaded from www.who.int/tb

Table A2.10 Number of TB cases notified, 1980–2004

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Alghanistan	71 685	71 554	41 752	52 502	18 784	10 742	14 351	18 091	16 051	14 386	4 332	23 067						1 290	3 084	3 314	7 107	10 139	13 794	13 808	18 404
Bahrain	219	262	156	232	208	194	156	120	142	122	117	142	140	114		43	49	45	83	145	207	188	191	261	244
Djibouti	2 265	671	1 489	2 262	1 864	1 864	1 864	1 978	2 030	2 040	2 100	2 900	2 884	3 489	3 311	3 332	3 830	3 830	3 785	4 133	3 971	4 198	3 191	3 231	2 940
Egypt	1 637	1 306	1 805	1 932	1 572	1 308	1 209	22 063	1 378	1 492	2 142	3 634	8 876	3 428	3 911	11 145	12 338	13 971	12 662	11 763	10 762	10 549	11 177	11 490	11 620
Iran	42 717	11 728	9 509	8 589	10 493	8 728	8 032	10 034	9 967	12 005	9 255	14 246	14 121	20 569	13 021	15 936	14 189	12 659	11 794	12 062	11 850	11 783	11 464	10 900	10 191
Iraq	11 809	10 614	7 741	6 970	6 807	6 485	6 846	6 517	6 504	8 032	14 684		18 553	19 733	9 697	29 196	26 607	29 410	29 897	9 697	10 478	11 898	11 656	10 498	
Jordan	298	646	860	886	672	769	592	537	553	484	439	390	504	427	443	498	468	397	380	373	306	342	312	310	324
Kuwait	847	819	860	885	812	717	611	540	460	468	277	330	282	217	940	983	636	701	640	679	571	516	437	380	393
Lebanon		67	75	284	410	1 943	2 257	2 478				884	884												
Libyan Arab Jamahiriya	718	481	512	610	357	325	276	331	416	265	442	239	1 164			1 440	1 282	1 575	1 615	1 341			1 824	1 917	1 653
Morocco	24 878	28 637	28 095	26 944	22 279	26 790	27 553	27 159	25 717	26 756	27 688	27 638	25 403	27 626	30 316	29 829	31 771	30 227	29 087	29 854	28 852	28 285	29 804	26 789	25 909
Oman	1 872	928	897	802	843	861	1 265	616	477	478	482	442	367	281	304	276	300	298	287	249	321	292	290	255	292
Pakistan	316 340	324 576	326 492	117 739	91 572	111 419	149 004	179 480	194 323	170 562	156 759	184 323	73 175			13 142	4 307	89 599	20 936	11 050	34 066	52 172	69 916	101 562	
Qatar	257	213	172	206	203	250	220	248	223	191	184	195	200	200		304	257	212	253	259	279	284	278	276	272
Saudi Arabia	10 956	8 263	8 529	7 551	7 163	3 966	3 696	3 029	2 433	2 583	2 415	2 221	2 016	2 386	2 518			3 138	3 235	3 452	3 452	3 327	3 374	3 317	3 341
Somalia						2 722	3 079	7 322	2 728	1 323								4 150	4 320	4 802	5 686	6 862	7 391	9 278	11 747
Sudan	32 971	47 431				1 508	2 460	800	693	701	212	16 423	19 503	37 516	23 178	14 320	20 230	20 694	22 318	26 875	24 807	23 997	24 554	25 105	26 567
Syrian Arab Republic	1 889	1 908	1 838	1 867	2 111	2 163	3 942	4 290	4 952	5 504	6 018	5 651	5 437	5 127	4 404	5 200	4 972	5 417	5 447	5 090	4 997	4 766	4 820	4 588	
Tunisia	2 504	2 316	2 554	3 062	2 501	2 510	2 487	2 272	2 309	2 403	2 054	2 064	2 164	2 565	2 376	2 383	2 387	2 211	2 158	2 038	1 945	1 885	1 965	1 998	
United Arab Emirates	522	638	597	507	534	568	464	618	339	308	285	234	227	426		77	507	773	66	115	74	90	117	92	
West Bank and Gaza St	191	139	136	136	123	113	63	82	85	145	64	89	97			40		18	18	82			36	23	
Yemen									3 446	4 913	4 650	6 844	10 113	11 076	11 510	14 428	14 364	12 013	12 383	13 085	13 651	13 029	11 677	10 413	10 016
EMR	522 110	514 791	433 271	234 482	171 652	186 344	230 427	288 805	275 246	255 161	234 569	301 956	94 182	201 620	119 374	121 745	145 373	136 232	233 878	171 219	141 235	165 341	190 569	206 806	243 232
Number reporting	18	20	19	19	20	21	21	21	20	20	19	19	16	14	15	17	19	16	21	19	20	18	19	22	22
% reporting	86	95	90	90	95	100	100	100	95	95	90	90	76	67	71	81	90	76	100	90	95	86	90	100	100

From 1995 on, number shown is all notified new and relapse cases (DOTS and non-DOTS). The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb



Table A2.11 Case notification rates, 1980-2004

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Afghanistan	471	475	282	363	133	77	104	133	117	103	30	148	26	21	554	7	8	6	14	14	30	41	53	51	64
Bahrain	63	73	42	60	52	47	36	27	31	26	24	28	26	21	591	7	8	7	13	22	31	27	27	37	34
Djibouti	639	184		388	562	434	427	407	383	376	504	493	493	591	554	533	592	565	596	556	573	426	422	422	377
Egypt	4	3	4	4	3	3	2	42	3	3	4	4	6	15	6	18	20	22	20	18	16	15	16	16	16
Iran	109	29	22	19	23	18	16	19	19	22	16	25	24	34	21	26	22	20	18	18	18	18	17	16	15
Iraq	84	73	52	45	43	40	41	38	37	45	79	45	91	91	94	45	131	116	124	123	39	41	45	43	37
Jordan	13	28	36	34	26	28	21	19	19	16	13	11	14	11	11	12	11	9	8	8	6	7	6	6	6
Kuwait	62	57	59	55	50	42	33	28	23	22	13	16	14	12	14	20	23	29	29	29	17	15	13	22	21
Lebanon	2	2	3	10	15	70	81	90	32	31	26	32	31	26	30	31	26	21	19	20	17	15	13	11	11
Libyan Arab Jamahiriya	24	15	15	17	10	9	7	8	10	6	10	5	26	106	114	110	116	108	103	104	99	95	99	88	84
Morocco	127	143	137	128	103	121	121	117	108	111	112	110	99	106	114	110	116	108	103	104	99	95	99	88	84
Oman	159	74	68	58	58	56	79	37	28	27	26	23	19	14	14	13	13	13	12	10	13	12	12	10	12
Pakistan	399	396	384	134	100	118	152	177	185	157	140	169	61	61	10	3	3	3	66	15	8	23	35	46	66
Qatar	112	85	62	68	61	69	57	61	52	42	39	40	40	40	58	48	48	39	45	45	46	44	41	38	35
Saudi Arabia	114	81	79	66	59	31	27	21	16	16	15	13	12	13	14	58	48	16	16	17	16	15	15	14	14
Somalia	165	230	43	42	42	42	47	112	41	20	3	1	62	71	134	32	40	62	69	65	71	81	95	99	120
Sudan	19	20	19	19	20	20	35	37	41	44	47	43	40	40	36	30	34	32	34	33	30	29	27	27	25
Syrian Arab Republic	39	35	38	44	35	34	33	30	29	30	25	25	25	29	27	27	26	24	23	24	23	21	20	19	20
Tunisia	51	58	51	40	40	40	31	52	20	17	15	12	11	18	18	20	20	20	27	2	4	2	2	3	2
United Arab Emirates	13	9	9	8	7	6	3	4	4	7	3	4	4	4	3	3	1	1	1	1	1	3	1	1	1
West Bank and Gaza Strip																									
Yemen																									
EMR	183	175	143	75	53	56	67	82	76	68	61	77	23	49	28	28	33	30	50	36	29	33	37	40	46

Rates are per 100 000 population. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/ib

Table A2.12 New smear-positive cases notified, numbers and rates, 1993–2004

	Number of cases																	Rate (per 100 000 population)																
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004										
Afghanistan	82	1 743	1 744	1 744	1 904	1 690	1 564	1 391	1 312	1 253	1 202	1 086	15	282	292	279	294	252	226	195	179	167	157	139										
Bahrain	1 668	1 811	4 229	5 084	5 469	4 915	5 094	4 606	4 514	4 889	5 118	5 363	282	292	3	7	8	9	8	8	7	7	7	7										
Djibouti	5 240	4 615	5 347	5 373	5 253	5 105	5 426	5 866	5 529	5 366	5 188	4 897	26	28	15	46	36	38	41	13	14	15	13	12										
Egypt	173	161	187	170	136	110	102	89	94	91	108	91	4	4	4	4	3	2	2	2	2	2	2	2										
Iran	148	155	175	153	201	185	201	185	202	201	248	201	8	9	10	9	11	9	7	7	6	5	4	10										
Iraq	148	148	197	198	206	224	249	202	171	148	134	146	5	5	6	6	6	6	7	7	6	5	4	4										
Jordan																																		
Kuwait																																		
Lebanon																																		
Libyan Arab Jamahiriya																																		
Morocco	123	135	135	164	165	156	120	164	156	151	110	160	6	6	6	7	7	7	5	7	6	6	4	6										
Oman	11 020	2 578	1 849	1 849	1 849	6 248	3 285	10 935	16 265	20 962	33 746	9	9	2	1	9	7	12	10	9	12	9	13	9										
Pakistan	800	60	60	46	39	69	58	53	77	64	95	73	4																					
Qatar																																		
Saudi Arabia																																		
Somalia																																		
Sudan																																		
Syrian Arab Republic																																		
Tunisia	1 006	983	1 243	1 005	1 066	1 099	1 077	927	878	944	944	12	11	14	11	13	13	11	11	11	11	9	9											
United Arab Emirates																																		
West Bank and Gaza Strip																																		
Yemen	0	0	3 681	4 371	4 717	4 896	5 427	5 565	4 968	4 259	3 793	3 434	0	0	24	28	29	29	31	27	22	19	17											
EMR	20 260	20 428	46 851	58 720	57 947	74 923	68 971	61 284	68 945	74 993	80 974	96 971	5	5	11	13	13	16	14	14	13	14	15	16	18									

Rates are per 100 000 population. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Notes

Bahrain

Notified cases include those in nationals (80) and non-nationals (164). Breakdown by age and sex provided for cases in nationals only.

Egypt

Health insurance organizations, prisons and universities notify cases to the NTP, but do not provide breakdown by age and sex, treatment outcomes or information on laboratory activities.

Morocco

The outcomes of patients who transfer are compiled at national level on the basis of aggregated data. Treatment outcomes for individual patients are neither recorded nor reported by the unit where treatment was initiated.

Oman

Notified cases include the number of cases that were notified in previous years and are still under treatment (including 43 cases notified as “new smear-positive”). Treatment outcomes are provided only for TB cases in nationals. 22 non-nationals left Oman after conversion to smear-negative and were excluded from the cohort for treatment outcome monitoring.

Saudi Arabia

The number of new smear-positive cases registered for treatment in 2003 excludes 260 cases that were notified in 2003 but subsequently deported.

Somalia

The population estimate used by the NTP (6.99 million) differs from that of the United Nations Population Division (7.96 million). Using the smaller population estimate gives a notification rate for new smear-positive cases of 93 per 100 000 population, and a smear-positive case detection rate of 51%.

Sudan

DOTS coverage calculated to reflect coverage in the northern (100% coverage) and southern (40% coverage) parts of the country. Treatment outcome data for treatment after failure and treatment after default are from southern Sudan.

Yemen

Treatment outcome data are missing from one governorate and a number of rural districts.

Summary by WHO region

Africa

The Americas

Eastern Mediterranean





Europe

South-East Asia

Western Pacific

EUROPE: SUMMARY OF TB CONTROL POLICIES

	STATUS ^a	MANUAL ^b	MICROSCOPY ^c	SCC ^d	DOT ^e	MONITORING OUTCOME ^f
ALBANIA	DOTS	YES				
ANDORRA	DOTS	YES				
ARMENIA	DOTS	YES				
AUSTRIA	DOTS					
AZERBAIJAN	DOTS	YES				
BELARUS	DOTS	YES				
BELGIUM	DOTS	NO				
BOSNIA & HERZEGOVINA	DOTS	YES				
BULGARIA	DOTS	NO				
CROATIA	NON-DOTS	YES				
CYPRUS	DOTS	NO				
CZECH REPUBLIC	DOTS	YES				
DENMARK	DOTS	YES				
ESTONIA	DOTS	YES				
FINLAND	NON-DOTS	NO				
FRANCE	NON-DOTS	YES				
GEORGIA	DOTS	YES				
GERMANY	DOTS	YES				
GREECE	NON-DOTS					
HUNGARY	DOTS	YES				
ICELAND	DOTS	NO				
IRELAND	NON-DOTS	YES				
ISRAEL	DOTS	YES				
ITALY	DOTS	YES				
KAZAKHSTAN	DOTS	YES				
KYRGYZSTAN	DOTS	YES				
LATVIA	DOTS	YES				
LITHUANIA	DOTS	YES				
LUXEMBOURG	DOTS	NO				
MALTA	DOTS	YES				
MONACO						
NETHERLANDS	DOTS	YES				
NORWAY	DOTS	YES				
POLAND	DOTS	YES				
PORTUGAL	DOTS	YES				
REPUBLIC OF MOLDOVA	DOTS	YES				
ROMANIA	DOTS	YES				
RUSSIAN FEDERATION	DOTS	YES				
SAN MARINO	DOTS	NO				
SERBIA AND MONTENEGRO	DOTS	YES				
SLOVAKIA	DOTS	YES				
SLOVENIA	DOTS	NO				
SPAIN	NON-DOTS	YES				
SWEDEN	DOTS	YES				
SWITZERLAND	NON-DOTS	YES				
TAJKISTAN	DOTS	YES				
TFYR MACEDONIA	DOTS	YES				
TURKEY	DOTS	YES				
TURKMENISTAN	DOTS	YES				
UKRAINE	DOTS	YES				
UZBEKISTAN	DOTS	YES				
UNITED KINGDOM	NON-DOTS	YES				

	Implemented in all units/areas
	Implemented in some units/areas
	Not implemented
	Unknown

^a Status: DOTS status (blank indicates no report received)

^b Manual: national TB control manual (recommended)

^c Microscopy: use of smear microscopy for diagnosis (core component of DOTS)

^d SCC: short course chemotherapy (core component of DOTS)

^e DOT: directly observed treatment (core component of DOTS)

^f Outcome monitoring: monitoring of treatment outcomes by cohort analysis (core component of DOTS)

Table A2.1 Estimated burden of TB, 1990 and 2004

	Incidence, 1990				Prevalence, 1990				TB mortality, 1990				Incidence, 2004				Prevalence, 2004				TB mortality, 2004				HIV prevalence in adult incident TB cases (%)	
	All forms*		Smear-positive*		All forms*		Smear-positive*		All forms*		All forms*		Smear-positive*		All forms*		Smear-positive*		All forms*		All forms*		All forms*		HIV prevalence in adult incident TB cases (%)	
	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate
Albania	815	25	367	11	1 360	41	136	4	689	22	51	51	310	10	984	31	122	4	51	51	1	51	0.1			
Andorra	19	36	8	16	17	32	2	4	12	18	5	5	5	5	17	17	5	5	5	5	1	2	5	5	0.3	
Armenia	961	27	432	12	1 526	43	166	5	2 371	78	15	51	1 065	35	2 973	98	8	5	374	12	4	51	0.9			
Austria	1 546	20	693	9	1 212	16	140	2	1 144	14	37	51	511	6	880	11	18	5	114	1	4	51	6.9			
Azerbaijan	2 514	35	1 131	16	4 143	57	379	5	6 293	75	3	51	2 832	34	7 485	90	1	51	840	5	1	0.1	0.1			
Belarus	3 940	38	1 768	17	6 436	63	560	5	5 868	60	120	1	2 628	27	6 684	68	60	51	789	8	22	51	2.9			
Belgium	1 973	20	886	9	1 536	15	197	2	1 353	13	36	51	605	6	1 088	10	18	5	141	1	4	51	5.7			
Bosnia & Herzegovina	4 042	94	1 818	42	6 880	160	642	15	2 055	53	3	51	924	24	2 089	53	1	51	243	6	4	51	0.2			
Bulgaria	2 343	27	1 054	12	3 826	44	329	4	2 812	36	51	51	1 265	16	2 812	36	51	51	306	4	51	51	≤0.05			
Croatia	3 336	74	1 501	33	5 670	126	520	12	1 878	41	51	51	845	19	2 951	66	51	51	292	6	51	51	1.4			
Cyprus	41	6	18	3	67	10	4	51	32	4	51	51	15	2	35	4	51	51	3	51	51	51	2.0			
Czech Republic	3 722	36	1 675	16	3 889	38	421	4	1 105	11	10	51	496	5	1 149	11	5	51	125	1	51	51	5.6			
Denmark	790	15	356	7	642	12	82	2	418	8	11	51	187	3	336	6	5	51	44	51	1	51	51	6.8		
Estonia	497	31	224	14	841	53	68	4	612	46	29	2	273	20	656	49	14	1	91	7	6	51	1.8			
Finland	897	18	403	8	698	14	90	2	455	9	4	51	204	4	364	7	2	51	47	51	51	51	11			
France	16 204	29	7 254	13	13 166	23	1 684	3	7 411	12	388	51	3 296	5	5 901	10	194	51	775	1	45	51	2.4			
Georgia	2 078	38	935	17	2 856	52	381	7	3 717	82	51	1	1 667	37	4 033	89	25	51	591	13	10	51	1.9			
Germany	20 453	26	9 191	12	15 915	20	2 046	3	6 773	8	98	51	3 038	4	5 243	6	49	51	677	51	9	51	3.1			
Greece	3 123	31	1 402	14	2 840	28	389	4	2 089	19	45	51	938	8	1 881	17	22	51	263	2	8	51	4.6			
Hungary	4 258	41	1 916	16	6 966	67	565	5	2 633	26	5	51	1 184	12	3 003	30	2	51	352	3	51	51	0.3			
Iceland	16	6	7	3	13	5	2	51	8	3	51	51	4	1	6	2	51	51	49	1	51	51	4.3			
Ireland	856	24	385	11	696	20	89	3	467	11	8	51	210	5	377	9	4	51	49	1	51	51	3.5			
Israel	817	18	367	8	663	15	85	2	599	9	8	51	269	4	464	7	4	51	60	51	51	51	2.9			
Italy	7 969	14	3 565	6	6 425	11	901	2	4 093	7	245	51	1 817	3	3 225	6	122	51	462	51	27	51	13			
Kazakhstan	9 697	59	4 364	26	15 835	96	1 361	8	22 427	151	375	3	10 055	68	131	51	23 786	160	188	1	3 010	20	66	51	2.4	
Kyrgyzstan	2 412	55	1 065	25	3 966	90	368	8	6 353	122	44	51	2 855	55	7 111	137	22	51	929	18	8	51	1.0			
Latvia	9 915	34	4 12	15	1 505	55	140	5	1 569	68	44	2	702	30	1 657	71	22	51	231	10	8	51	3.9			
Lithuania	1 471	40	662	18	2 397	65	200	5	2 180	63	8	51	971	28	2 291	67	4	51	292	8	1	51	0.5			
Luxembourg	88	23	39	10	71	19	9	2	54	12	1	51	24	5	43	9	51	51	6	1	51	51	5.5			
Malta	41	11	18	5	36	10	5	1	23	6	51	51	10	3	18	5	51	51	3	51	51	51	4.4			
Monaco	1	4	51	2	1	4	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	12			
Netherlands	1 883	13	845	6	1 465	10	188	1	1 330	8	41	51	594	4	1 023	6	21	51	133	51	4	51	6.7			
Norway	447	11	201	5	363	9	46	1	243	5	3	51	109	2	189	4	2	51	24	51	51	51	2.7			
Poland	19 897	52	8 951	23	33 373	88	2 845	7	10 999	29	35	51	4 946	13	12 312	32	18	51	1 470	4	6	51	0.6			
Portugal	7 276	73	3 256	33	5 662	57	728	7	4 378	42	227	2	1 947	79	3 629	35	113	1	479	5	31	51	1.1			
Republic of Moldova	2 780	64	1 250	29	4 540	104	390	9	5 807	138	58	1	2 608	62	9 020	214	29	51	844	20	17	51	1.4			
Romania	17 057	73	7 675	33	28 152	121	2 404	10	31 814	146	24	51	14 314	66	40 847	188	12	51	4 249	20	5	51	0.1			
Russian Federation	75 116	51	33 784	23	120 894	82	14 584	10	166 196	116	7 982	6	73 969	51	2 797	2	230 728	160	3 986	3	29 783	21	2 421	2	6.8	
San Marino	3	12	1	5	2	10	51	1	2	6	51	51	51	51	51	51	51	51	51	51	51	51	0.3			
Serbia & Montenegro	6 029	59	2 711	27	10 262	101	957	9	3 495	33	21	51	1 671	15	5 238	50	11	51	549	5	6	51	1.1			
Slovakia	2 087	40	939	18	2 821	54	339	6	1 015	19	51	51	457	8	1 265	23	51	51	168	3	51	51	0.1			
Slovenia	822	43	370	19	1 360	71	97	5	298	15	51	51	134	7	331	17	51	51	40	2	51	51	0.2			
Spain	25 129	64	11 217	29	20 418	52	2 611	7	10 672	25	753	2	4 727	11	263	51	8 436	20	376	51	1 119	3	88	51	15	
Sweden	680	8	306	4	529	6	68	51	390	4	5	51	175	2	302	3	2	51	39	51	51	51	2.5			
Switzerland	1 161	17	520	8	904	13	116	2	535	7	25	51	238	3	409	6	12	51	53	51	2	51	10			
Tajikistan	5 921	112	2 664	50	10 357	195	1 173	22	11 386	177	1	51	5 124	80	17 797	277	51	51	2 178	34	51	51	≤0.05			
TFYR Macedonia	1 036	54	462	24	1 743	81	212	11	611	30	51	51	975	14	683	34	51	51	105	5	51	51	≤0.05			
Turkey	28 301	49	12 735	22	47 256	82	4 805	8	19 944	28	4	51	8 974	12	32 371	45	2	51	3 815	5	2	51	5.0			
Turkmenistan	2 356	64	1 060	29	3 674	106	360	10	5 116	65	51	51	1 402	29	3 940	83	51	51	466	10	51	51	≤0.05			
Ukraine	21 520	41	9 648	19	35 576	69	3 177	6	47 227	101	2 795	6	20 873	45	978	2	70 878	151	1 397	3	7 226	15	836	2	8.3	
United Kingdom	6 545	12	2 942	5	5 093	9	665	5	7 101	12	104	51	3 185	5	5 487	9	52	51	710	1	10	51	3.1			
Uzbekistan	14 026	68	6 312	31	23 482	114	2 113	10	30 743	117	220	51	13 813	53	77	51	40 947	156	110	51	4 347	17	54	51	1.0	
EUR	337 898	40	151 787	18	470 321	85	49 832	6	444 777	50	13 898	2	198 760	23	4 864	51	575 448	65	6 949	51	69 018	8	3 714	51	4.7	

* Incidence, prevalence and mortality estimates include patients with HIV. Estimates labelled "HIV+" are estimates of TB in HIV-positive adults (aged 15-49 years). Estimates for all years are re-calculated as new information becomes available and techniques are refined, so they may differ from those published previously. See Explanatory notes on page 139 for further details. Data can be downloaded from www.who.int/tb

Table A2.2 Whole country case notifications and case detection rates, 2004

	TB cases notified from whole country (DOTS + non-DOTS)										Incidence and case detection rates										Proportions								
	Population		Country total		New and relapse (WHO total)		New pulmonary		New extra-pulmonary		Other		Relapse After failure		After default		Other re-treat.		New pulm. lab. confirm.		Estimated incidence all forms		Case detection rate new and relapse %		ss+ (% of pulm.) new+relapse		Extrapulm. (% of new+re-treat.)		
	thousands	number	number	rate	number	rate	ss+	ss-/unk.	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	
Albania	3 112	581	1 226	11	391	4	434	303	0	0	0	0	0	0	0	0	0	0	0	0	689	310	79	65	60	37	39	6	
Andorra	67	7	10	3	4	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	12	5	58	55	60	43	29	4	
Armenia	3 026	1 701	1 660	55	602	20	659	297	102	27	14	0	0	0	0	0	0	0	0	0	2 371	1 065	70	57	48	36	18	8	
Austria	8 171	915	895	11	216	3	532	147	0	0	0	0	0	0	0	0	0	0	0	0	1 144	511	78	42	29	24	16	2	
Azerbaijan	8 365	6 801	5 404	65	1 472	18	2 201	640	1 091	245	882	0	0	0	0	0	0	0	0	0	6 293	2 832	86	52	40	27	12	34	
Belarus	9 811	6 950	5 443	55	1 109	11	3 959	365	1 047	0	0	0	0	0	0	0	0	0	0	0	5 863	2 623	93	42	22	20	7	16	
Belgium	10 400	1 226	1 128	11	391	4	434	303	0	0	0	0	0	0	0	0	0	0	0	0	1 353	605	83	65	47	35	27	8	
Bosnia & Herzegovina	3 909	2 382	2 353	60	889	23	1 156	192	116	0	0	0	0	0	0	0	0	0	0	0	2 055	924	115	96	43	38	8	6	
Bulgaria	7 780	3 323	3 025	39	1 315	17	2 663	345	102	207	1 263	0	0	0	0	0	0	0	0	0	1 812	1 265	108	104	51	43	10	10	
Croatia	4 540	1 297	1 170	26	416	9	606	148	0	0	0	0	0	0	0	0	0	0	0	0	1 878	845	62	49	41	36	13	10	
Cyprus	826	30	4	10	1	16	3	3	1	0	0	0	0	0	0	0	0	0	0	0	1 105	496	93	61	38	29	23	3	
Czech Republic	10 229	1 057	1 027	10	302	3	492	233	0	0	0	0	0	0	0	0	0	0	0	0	418	187	85	78	55	41	25	8	
Denmark	5 414	365	356	7	146	3	121	89	59	9	24	24	0	0	0	0	0	0	0	0	612	273	88	74	47	38	9	20	
Estonia	1 335	584	537	40	203	15	225	50	0	0	0	0	0	0	0	0	0	0	0	0	455	204	70	61	56	39	30	4	
Finland	5 235	333	319	6	124	2	98	97	0	0	0	0	0	0	0	0	0	0	0	0	217	103	70	61	56	39	30	4	
France	60 257	5 514	5 004	8	1 923	3	1 701	1 390	0	0	0	0	0	0	0	0	0	0	0	0	7 411	3 296	68	58	53	38	28	7	
Georgia	4 518	5 967	4 011	89	1 311	29	1 055	148	224	488	1 244	0	0	0	0	0	0	0	0	0	3 717	1 667	108	79	47	33	26	35	
Germany	82 645	6 583	6 007	7	1 562	2	3 049	1 238	158	14	46	330	186	0	0	0	0	0	0	0	6 773	3 038	89	51	34	26	21	9	
Greece	11 098	774	688	6	176	2	409	83	0	0	0	0	0	0	0	0	0	0	0	0	2 089	936	32	19	30	26	12	6	
Hungary	10 124	2 476	2 251	22	560	6	1 389	134	188	0	0	0	0	0	0	0	0	0	0	0	2 633	1 184	86	47	29	25	6	16	
Iceland	292	11	4	2	1	3	6	6	0	0	0	0	0	0	0	0	0	0	0	0	8	4	140	57	40	18	10	5	
Ireland	4 080	437	380	9	127	3	148	102	3	0	0	0	0	0	0	0	0	0	0	0	467	210	81	61	46	33	27	8	
Israel	6 601	519	497	8	91	1	279	119	8	0	3	19	0	0	0	0	0	0	0	0	599	269	83	34	25	18	24	6	
Italy	59 033	4 220	3 968	7	1 058	2	1 770	1 140	0	0	0	0	0	0	0	0	0	0	0	0	4 093	1 817	97	58	37	27	29	6	
Kazakhstan	14 839	32 131	28 493	179	7 927	53	14 314	922	3 330	1 168	1 590	2 880	0	0	0	0	0	0	0	0	8 854	22 427	10 095	118	36	30	3	28	
Kyrgyzstan	5 204	6 641	6 104	117	1 761	34	2 069	1 876	398	0	0	487	0	0	0	0	0	0	0	0	6 353	2 855	96	62	46	29	31	13	
Latvia	2 318	1 610	1 579	68	582	25	566	205	206	1	30	262	530	0	0	0	0	0	0	0	1 569	702	101	83	50	37	13	15	
Lithuania	3 443	2 514	2 036	59	863	25	793	380	0	0	0	0	0	0	0	0	0	0	0	0	2 160	971	94	89	52	42	19	19	
Luxembourg	459	31	7	20	4	9	2	2	0	0	0	0	0	0	0	0	0	0	0	0	54	24	58	83	69	65	6	6	
Malta	400	19	18	5	2	1	12	4	0	0	0	0	0	0	0	0	0	0	0	0	23	10	78	19	14	11	22	5	
Monaco	35	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	
Netherlands	16 226	1 344	1 316	8	360	2	418	530	8	0	10	18	0	0	0	0	0	0	0	0	1 330	594	99	61	42	35	28	13	10
Norway	4 598	302	278	6	50	1	132	96	0	0	0	0	0	0	0	0	0	0	0	0	243	109	114	46	27	18	35	6	
Poland	38 559	9 493	8 696	23	2 777	7	4 812	764	345	0	0	0	0	0	0	0	0	0	0	0	10 999	4 946	79	56	37	32	9	12	
Portugal	10 441	3 873	3 600	34	1 514	15	1 027	918	141	5	71	183	14	0	0	0	0	0	0	0	4 378	1 947	82	78	60	42	26	10	
Republic of Moldova	4 218	6 008	4 806	114	1 536	36	1 624	675	771	410	262	530	0	0	0	0	0	0	0	0	5 807	2 608	83	59	46	32	14	33	
Romania	21 790	31 814	28 570	131	10 888	50	10 180	3 958	3 544	1 808	495	941	0	0	0	0	0	0	0	0	31 814	14 314	90	76	52	38	14	21	
Russian Federation	143 889	152 438	121 426	84	30 890	21	83 614	4 420	2 502	0	0	0	0	0	0	0	0	0	0	0	166 196	73 989	73	42	27	25	4	22	
San Marino	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	
Serbia & Montenegro	10 510	3 633	3 600	34	1 244	12	1 709	459	188	11	9	152	61	0	0	0	0	0	0	0	3 485	1 571	103	79	42	35	28	13	10
-Kosovo	1 009	965	965	272	498	195	44	44	188	11	9	108	44	0	0	0	0	0	0	0	1 592	722	103	79	42	35	28	13	10
Serbia & Montenegro	2 824	2 635	2 635	972	1 211	264	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1 015	457	65	34	32	24	20	12	
Slovakia	5 401	705	664	12	157	3	330	133	44	2	37	0	0	0	0	0	0	0	0	0	1 015	457	65	34	32	24	20	12	
Slovenia	1 967	263	249	13	89	5	94	46	20	0	6	7	0	0	0	0	0	0	0	0	298	134	84	66	49	36	18	13	
Spain	42 648	6 392	6 015	14	2 082	5	3 051	852	20	0	0	377	0	0	0	0	0	0	0	0	10 672	4 727	56	44	40	35	14	6	
Sweden	9 008	461	416	5	120	1	158	137	1	0	1	31	13	0	0	0	0	0	0	0	390	175	107	69	43	29	33	7	
Switzerland	7 240	593	528	7	119	2	270	139	0	0	65	0	0	0	0	0	0	0	0	0	535	238	99	50	31	23	23	11	
Tajikistan	6 430	5 122	4 529	70	1 058	16	2 012	1 398	61	3	10	580	0	0	0	0	0	0	0	0	11 386	5 124	40	21	34	23	31	13	
TFYR Macedonia	2 030	680	644	32	200	10	240	167	37	4	12																		

Table A2.3 DOTS coverage, case notifications and case detection rates, 2004

Country	DOTS coverage (%)		New and relapse (WHO total)				New pulmonary				TB cases reported from DOTS services				Re-treatment cases				Estimated incidence and case detection rate				Proportions		
	ss+	ss-	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	ss+ (% of pulm.)	ss+ (% of new+relapse)	Extrapulm. (% of new+relapse)
Albania	33	270	9	104	3	66	99	1	2	15	0	117	689	310	39	34	61	39	37	6	6	61	39	37	6
Andorra	100	7	10	3	4	2	0	0	0	0	0	0	12	5	58	55	60	43	29	0	0	43	31	20	0
Armenia	100	1 497	49	464	15	634	297	102	27	14	0	464	2 371	1 065	63	44	42	31	20	9	9	42	31	20	9
Austria	100	895	11	216	3	532	147	0	0	20	0	519	1 144	511	78	42	29	24	16	2	2	29	24	16	2
Azerbaijan	88	4 188	50	1 333	16	1 665	401	799	140	208	0	1 333	6 293	2 832	67	47	45	32	10	25	16	45	32	10	25
Belarus	70	5 443	55	1 109	11	3 969	365	1 047	0	0	2 287	5 868	2 628	93	42	22	20	22	20	16	16	22	20	16	16
Belgium	100	1 128	11	391	4	434	303	0	0	98	0	689	1 353	605	83	65	47	35	27	8	8	47	35	27	8
Bosnia & Herzegovina	100	2 353	60	889	23	1 156	116	116	0	29	0	1 553	2 055	924	115	66	43	38	8	6	6	43	38	8	6
Bulgaria	100	3 025	39	1 315	17	1 263	345	102	0	207	0	1 315	2 812	1 265	108	104	51	43	11	10	10	51	43	11	10
Croatia	0	0	0	0	0	0	0	0	0	0	0	0	1 878	845	0	0	0	0	0	0	0	0	0	0	0
Cyprus	100	30	4	10	1	16	3	1	0	0	0	18	32	15	93	69	38	33	10	3	3	38	29	23	3
Czech Republic	100	1 027	10	302	3	492	233	0	0	30	0	543	1 105	496	93	61	38	29	23	3	3	38	29	23	3
Denmark	100	356	7	146	3	121	89	0	0	29	0	203	418	187	85	78	55	41	25	8	8	55	41	25	8
Estonia	100	537	40	203	15	225	50	59	9	24	0	336	612	273	88	74	47	36	9	20	20	47	36	9	20
Finland	0	0	0	0	0	0	0	0	0	0	0	455	204	0	0	0	0	0	0	0	0	0	0	0	0
France	0	4 011	89	1 311	29	1 497	1 055	148	224	488	1 244	0	1 311	7 411	3 296	79	47	33	26	35	35	47	33	26	35
Georgia	100	6 007	7	1 562	2	3 049	1 238	158	14	46	330	186	3 436	6 773	3 038	89	51	34	26	21	21	34	26	21	9
Germany	100	2 251	22	560	6	1 389	134	168	0	0	225	0	923	2 633	1 184	86	47	29	25	6	16	47	29	25	6
Hungary	100	11	4	2	1	3	6	0	0	0	0	4	8	4	140	57	40	18	18	16	16	40	18	18	16
Iceland	0	0	0	0	0	0	0	0	0	0	0	0	467	210	0	0	0	0	0	0	0	0	0	0	0
Ireland	100	497	8	91	1	279	119	8	0	3	19	0	208	589	269	83	34	25	18	24	6	25	18	24	6
Israel	21	3 968	7	1 058	2	1 770	1 140	0	0	251	1	1 829	4 093	1 817	97	56	37	27	18	35	6	37	27	18	35
Italy	100	26 493	179	7 927	53	14 314	922	3 330	1 168	1 890	2 880	0	8 854	22 427	10 055	118	79	36	30	3	28	79	36	30	3
Kazakhstan	100	6 104	117	1 761	34	2 069	1 876	398	0	487	0	0	6 353	2 855	96	62	62	46	29	31	13	62	46	29	31
Kyrgyzstan	100	1 579	68	582	25	586	205	206	1	30	0	869	1 569	702	101	83	50	37	13	15	15	50	37	13	15
Latvia	100	2 036	59	863	25	793	380	0	0	478	0	1 147	2 160	971	94	89	52	42	19	19	19	52	42	19	19
Lithuania	98	31	7	20	4	9	2	0	0	0	0	29	54	24	58	83	69	65	65	6	6	69	65	65	6
Luxembourg	100	18	5	2	1	12	4	0	0	0	0	5	23	10	78	19	14	11	22	5	5	14	11	22	5
Malta	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Mexico	100	1 316	8	360	2	418	530	8	0	10	18	0	577	1 330	584	99	61	46	27	40	3	46	27	40	3
Netherlands	100	278	6	50	1	132	96	0	0	18	6	0	151	243	109	114	46	27	18	35	6	27	18	35	6
Norway	100	8 898	23	2 777	7	4 812	764	345	0	0	795	0	4 450	10 999	4 946	79	56	37	32	9	12	37	32	9	12
Poland	100	3 600	34	1 514	15	1 027	918	141	5	71	183	14	2 044	4 378	1 947	82	78	60	42	26	10	60	42	26	10
Portugal	100	4 806	114	1 536	36	1 824	675	771	410	262	530	0	1 536	5 807	2 608	83	59	46	32	14	33	46	32	14	33
Republic of Moldova	100	14 942	69	5 895	27	5 140	2 051	1 856	936	239	406	0	7 093	31 814	14 314	47	41	53	39	14	21	53	39	14	21
Romania	54	35 204	24	9 926	7	20 002	2 774	2 502	0	2 374	0	11 971	166 196	73 989	21	13	33	28	8	13	13	33	28	8	13
Russian Federation	45	35 204	24	9 926	7	20 002	2 774	2 502	0	2 374	0	11 971	166 196	73 989	21	13	33	28	8	13	13	33	28	8	13
San Marino	100	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0
Serbia & Montenegro	48	1 456	14	497	5	684	238	37	0	0	59	1	577	3 485	1 571	42	32	42	34	16	6	42	34	16	6
Kosovo	100	865	272	498	195	498	195	37	0	44	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-Serbia & Montenegro	35	491	157	225	166	43	43	37	0	15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slovakia	100	664	12	157	3	330	133	44	2	2	37	0	276	1 015	457	65	34	32	24	20	12	32	24	20	12
Slovenia	100	249	13	89	5	94	46	20	1	6	7	0	170	298	134	84	66	49	36	18	13	49	36	18	13
Spain	0	0	0	0	0	0	0	0	0	0	0	0	10 672	4 727	0	0	0	0	0	0	0	0	0	0	0
Sweden	100	416	5	120	1	158	137	1	0	1	31	13	240	390	175	107	69	43	29	33	7	43	29	33	7
Switzerland	0	0	0	0	0	0	0	0	0	0	0	0	535	238	0	0	0	0	0	0	0	0	0	0	0
Tajikistan	32	1 722	27	601	9	578	498	45	3	10	543	0	601	11 386	5 124	15	12	51	35	29	26	51	35	29	26
Tajikistan	100	644	32	200	10	240	167	37	4	12	20	0	231	611	275	105	73	45	31	26	11	45	31	26	11
Tajikistan	100	616	1	288	0	124	161	33	0	7	13	0	332	19 944	8 974	3	3	71	48	26	8	71	48	26	8
Turkey	37	1 678	35	532	11	602	493	51	0	787	0	532	3 116	1 402	54	38	47	32	29	34	34	47	32	29	34
Turkmenistan	15	0	0	0	0	0	0	0	0	0	0	0	47 227	20 973	0	0	0	0	0	0	0	0	0	0	0
Ukraine	0	0	0	0	0	0	0	0	0	0	0	0	7 101	3 185	0	0	0	0	0	0	0	0	0	0	0
United Kingdom	84	13 116	50	3 914	15	5 482	2 938	782	150	79	1 967	0	3 914	30 743	13 813	43	28	42	30	22	19	42	30	22	19
Uzbekistan	0	0	0	0	0	0	0	0	0	0	0	0	64 452	444 777	198 760	37	26	39	31	14	18	39	31	14	18
EUR	47	163 167	19	50 690	6	77 982</																			

Table A2.4 Public–Public and Public–Private Mix (PPM), collaborative TB/HIV activities and management of MDR-TB, 2003-2004

	Public–Public and Public–Private Mix (PPM) 2004			Collaborative TB/HIV activities, 2003 or 2004			Multidrug-resistant TB, 2004			
	Guidelines for other practitioners	Private hospitals or clinics	Institutions providing to WTP	HIV testing for TB pts among TB pts	TB pts tested for HIV	TB pts CPT ART	Laboratory-confirmed MDR	DST cases	MDR in new cases	Re-treatment MDR
	practitioners	practitioners	practitioners	Practically	number	number	number	number	number	number
Albania	No	All	Some	Partially	145	0	0	167	0	11
Andorra	All	All	All	Partially	269	8	0	5	0	0
Armenia	No	All	All	No	0	0	0	157	464	168
Austria	No	All	All	Yes	3 295	25	17	515	16	26
Azerbaijan	All	All	All	Yes	0	0	0	0	0	1
Belarus	Yes	All	All	Yes	1 226	55	340	1 815	110	1 281
Belgium	Yes	All	All	No	0	0	12	629	3	68
Bosnia & Herzegovina	Yes	All	All	No	0	0	12	1 460	5	141
Bulgaria	No	All	All	No	0	0	47	480	11	342
Croatia	No	All	Some	No	0	0	3	671	3	86
Cyprus	All	All	All	No	0	0	0	15	0	0
Czech Republic	All	All	All	No	0	0	6	480	4	10
Denmark	Yes	Some	Some	Yes	477	26	0	288	0	21
Estonia	Yes	All	All	Yes	0	0	90	358	51	94
Finland	All	All	Some	No	0	0	26	1 431	14	137
France	Yes	All	All	Yes	1 079	0	0	26	1 431	14
Georgia	No	All	Some	Partially	0	0	0	98	3 111	41
Germany	Yes	All	All	No	0	0	0	0	0	264
Greece	No	All	All	No	0	0	0	0	0	0
Hungary	No	All	All	No	12	1	1	9	469	5
Iceland	All	All	All	Yes	0	0	0	0	7	88
Ireland	Yes	All	All	No	0	0	0	0	0	0
Israel	All	Some	All	No	13	13	12	207	11	15
Italy	All	All	Some	Partially	404	11	24	510	6	88
Kazakhstan	No	All	All	No	0	0	4 828	8 446	1 339	8 774
Kyrgyzstan	No	All	All	No	0	0	259	768	169	173
Latvia	Yes	All	All	Yes	1 610	40	196	896	112	209
Lithuania	Yes	All	All	Partially	2 514	8	318	1 128	104	458
Luxembourg	All	All	All	Partially	0	0	1	31	1	0
Malta	Yes	All	All	Yes	19	1	1	8	0	0
Monaco	Yes	All	All	No	1 344	46	3	636	1	17
Netherlands	All	All	All	Partially	0	0	4	223	4	11
Norway	Yes	All	All	No	0	0	0	0	0	0
Poland	All	All	All	No	15	15	51	2 716	8	522
Portugal	All	Some	Some	Yes	3 873	607	22	1 099	12	151
Republic of Moldova	No	No	No	Yes	0	0	0	0	0	0
Romania	Yes	All	All	Yes	1 710	5	459	1 769	104	1 292
Russian Federation	No	Some	All	Yes	4 506	0	3 500	3 500	0	355
San Marino	All	All	All	No	0	0	0	0	0	0
Serbia & Montenegro	Yes	Some	Some	No	0	10	2	264	1	33
Slovakia	Yes	All	All	Yes	705	0	1	282	1	46
Slovenia	Yes	All	All	Yes	89	3	0	199	0	28
Spain	All	All	All	Yes	2 453	328	59	307	3	75
Sweden	All	All	All	No	0	0	6	347	5	22
Switzerland	Yes	All	All	Yes	0	0	5	340	3	29
Tajikistan	Yes	All	Some	No	0	0	2	127	0	15
TFYR Macedonia	Yes	Some	All	Yes	10	1	0	0	0	2
Turkey	All	All	All	No	0	0	0	0	0	0
Turkmenistan	Yes	All	All	No	0	0	0	0	0	0
Ukraine	No	All	All	No	0	0	0	0	0	0
United Kingdom	Yes	All	All	No	0	0	0	0	0	0
Uzbekistan	No	No	All	No	31 579	138	0	9	132	582
EUR	38	63	71	46	52 813	5 812	14	10 595	32 911	5 726
										15 282
										4 713

pts indicates patients; CPT, co-trimoxazole preventive therapy; ART, antiretroviral therapy. The regional row for the first 9 columns represents the proportion of countries that provided an affirmative response ("Yes", "All", "Some" or "Partially"). See Explanatory notes on pages 139 and 140 for further details. Some countries provided the number of TB patients found to be HIV-positive, but did not provide the number of TB patients tested. The regional total of TB patients tested is therefore lower than the number of patients actually tested, and cannot be used to calculate a regional estimate of HIV prevalence in TB patients. Data can be downloaded from www.who.int/tb



Table A2.5 Treatment outcomes, 2003 cohort

	New smear-positive cases, DOTS												New smear-positive cases, non-DOTS												Smear-positive re-treatment cases, DOTS											
	Number of cases				% of cohort				Number of cases				% of cohort				Number				% of cohort															
	Notified	Registered	of notified registered	Completed	Died	Failed	Default	Transferred	Not evaluated	Success	Notified	Registered	of notified registered	Completed	Died	Failed	Default	Transferred	Not evaluated	Success	Registered	Cured	Completed	Died	Failed	Default	Transferred	Not evaluated	Success							
Albania	96	95	64	26	3	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	5	80	20	0	0	0	0	0	100							
Andorra	7	6	86	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180	23	24	4	11	12	6	21	47							
Armenia	418	406	97	67	10	2	4	7	5	5	7	0	0	0	0	0	0	0	0	0	5	0	60	0	0	0	0	40	60							
Austria	269	251	93	0	68	10	0	7	0	14	68	0	0	0	0	0	0	0	0	0	401	31	20	9	17	13	3	6	51							
Azerbaijan	808	1 889	234	53	17	2	3	5	17	3	70	383	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Belarus	2 239	2 236	100	0	73	8	10	3	6	0	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Belgium	362	262	72	26	47	5	0	1	0	21	73	0	0	0	0	0	0	0	0	0	40	23	40	13	0	0	0	25	63							
Bosnia & Herzegovina	493	272	55	39	1	2	2	1	0	0	94	0	0	0	0	0	0	0	0	0	49	65	29	2	0	4	0	0	94							
Bulgaria	1 254	1 254	100	91	0	3	2	3	1	0	91	438	438	100	31	7	5	0	2	1	54	0	0	0	0	0	0	0	0							
Croatia	14	14	100	79	0	0	0	14	7	0	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Cyprus	338	340	101	63	16	5	0	1	14	79	0	0	0	0	0	0	0	0	0	0	13	46	38	0	0	0	0	15	86							
Czech Republic	143	141	99	50	35	11	0	1	2	1	84	0	0	0	0	0	0	0	0	0	9	67	11	22	0	0	0	0	78							
Denmark	201	201	100	67	2	13	0	4	0	12	70	138	0	0	0	0	0	0	0	0	62	26	3	26	10	16	0	19	29							
Estonia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Finland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
France	989	989	100	49	18	2	4	15	8	4	66	2 219	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Georgia	1 679	1 236	74	40	31	10	0	2	0	17	71	0	0	0	0	0	0	0	0	0	751	28	14	6	10	23	11	8	42							
Germany	526	522	99	37	11	9	12	7	4	19	48	234	0	0	0	0	0	0	0	0	160	29	23	17	0	5	0	26	52							
Greece	1	1	100	100	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Hungary	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	121	26	12	11	21	7	2	21	39							
Iceland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Ireland	150	159	106	70	10	8	1	1	7	3	80	141	105	74	3	68	9	1	3	0	17	0	0	0	0	0	0	0	0							
Israel	1 481	1 118	8	11	84	2	0	3	1	0	95	0	0	0	0	0	0	0	0	0	9	78	0	0	0	22	0	0	78							
Italy	8 665	8 660	100	73	1	5	14	4	2	0	75	0	0	0	0	0	0	0	0	0	11	0	100	0	0	0	0	0	100							
Kazakhstan	1 643	1 634	99	79	5	4	6	4	1	0	84	0	0	0	0	0	0	0	0	0	3 976	49	1	12	26	9	3	0	51							
Kyrgyzstan	641	641	100	72	2	12	1	6	0	7	74	0	0	0	0	0	0	0	0	0	434	20	54	8	11	6	1	0	74							
Latvia	912	897	98	74	0	9	3	9	1	4	74	0	0	0	0	0	0	0	0	0	174	41	3	14	1	8	0	33	45							
Lithuania	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	422	32	0	21	5	19	0	22	32							
Luxembourg	2	2	100	0	100	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Malta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Monaco	282	248	88	13	73	5	0	2	1	6	86	0	0	0	0	0	0	0	0	0	17	0	65	6	0	6	0	24	65							
Netherlands	52	38	73	63	34	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4	50	0	0	0	0	0	50	50							
Nonway	2 983	2 981	100	69	9	5	2	7	2	6	78	0	0	0	0	0	0	0	0	0	520	61	9	5	4	13	2	6	70							
Poland	1 742	1 613	93	10	74	4	0	5	3	4	84	0	0	0	0	0	0	0	0	0	231	11	63	6	1	9	3	7	74							
Portugal	1 029	1 025	100	60	5	8	12	11	3	1	65	185	0	0	0	0	0	0	0	0	970	28	9	16	20	19	5	3	37							
Republic of Moldova	5 757	5 801	101	66	14	5	5	6	1	3	80	4 661	4 804	103	65	14	5	6	7	0	3	79	2 507	36	11	10	11	13	1	16	47					
Romania	6 322	6 311	100	58	3	10	12	8	4	5	61	22 546	0	0	0	0	0	0	0	0	946	40	4	14	29	7	5	1	45							
Russian Federation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	100	0	0	0	0	0	0	100							
San Marino	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	103	48	29	4	4	8	4	4	77							
Serbia & Montenegro	611	532	87	68	21	3	0	6	1	1	89	0	0	0	0	0	0	0	0	0	27	15	70	15	0	0	0	0	86							
Slovakia	200	199	100	7	80	13	0	0	0	0	87	0	0	0	0	0	0	0	0	0	14	50	43	0	0	7	0	0	93							
Slovenia	116	116	100	34	51	9	0	5	0	1	85	2 876	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Spain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Sweden	109	109	100	0	83	8	0	1	0	7	83	0	0	0	0	0	0	0	0	0	12	0	83	8	0	0	0	0	8	83						
Switzerland	0	0	0	0	0	0	0	0	0	0	0	107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
Tajikistan	0	342	86	0	4	5	4	0	0	0	86	0	585	8	14	13	9	7	2	48	22	57	60	7	9	19	4	2	0	67						
Tajikistan (FYR)	141	200	142	60	24	2	0	13	1	2	84	59	0	0	0	0	0	0	0	0	51	35	35	2	0	27	0	0	71							
Turkey	458	292	64	82	11	2	1	1	3	0	93	5 358	5 790	108	0	71	2	0	4	3	21	71	51	39	25	6	4	12	8	6	65					
Turkmenistan	715	715	100	72	10	5	9	3	1	0	82	482	482	100	53	0	14	17	16	0	0	53	484	36	27	11	14	11	1	0	63					
Ukraine	0	0	0	0	0	0	0	0	0	0	0	12 785	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
United Kingdom	2 742	2 726	99	70	11	5	6	7	0	0	81	1 455	1 948	100	91	0	9	0	0	0	0	0	805	52	17	11	8	13	0	0	68					
Uzbekistan	46 621	45 474	98	60	15	6	7	6	3	3	75	56 257	14 268	25	38	35	5	3	5	1	13	73	13 749	40	12	11	16	12	3	6	52					

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases registered for treatment in 2003 is used as the denominator for calculating treatment outcomes unless it is less than the sum of outcomes, in which case the sum of outcomes is used. The number of cases registered in 2003 is used as the denominator for calculating treatment outcomes unless it is less than the sum of outcomes, in which case the sum of outcomes is used. The number of cases notified in 2003 is used, or the sum of outcomes if the latter is greater. Data can be downloaded from www.who.int/bd

Table A2.7 DOTS treatment success and case detection rates, 1994–2004

	DOTS new smear-positive treatment success (%)										DOTS new smear-positive case detection rate (%)																
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004						
Albania								98	90	91								25	30	31	34						
Andorra								100	100	100	100	100	100	100	100	100	100	100	100	100	100						
Armenia		83	77	82	81	88	87	90	79	77		13	28	224	14	58	15	48	34	123	55						
Austria								77	73	64	78	68						50	31	31	42	44					
Azerbaijan								86	88	88	91	66	84	70	7	7	6	0	46	29	47	47					
Belarus																						42					
Belgium																						65					
Bosnia & Herzegovina								93	88	90	94	98	95	94	38	66	70	79	53	51	96						
Bulgaria								87	86	91								24	11	49	90	104					
Croatia																											
Cyprus								42	92	75	79	79	79	79	78	39	61	61	43	85	69						
Czech Republic		73	60	66	69	65	78	70	73	73	79	79	79	79	65	60	61	56	62	62	61						
Denmark																						78					
Estonia								63	70	64	67	70						64	57	61	67	74					
Finland																											
France																											
Georgia								58	65	78	61	63	67	65	34	45	34	58	57	58	79						
Germany								54	54	58	77	67	69	71	62	63	64	50	52	51	51						
Greece																											
Hungary								80	64	46	55	48			36	25	36	39	40	47	47						
Iceland																											
Ireland																											
Israel																											
Italy								80	82	69	72	71	74	40	13	55	31	10	64	78	56						
Kazakhstan																											
Kyrgyzstan								79	79	78	78	75	75	75	4	79	93	92	94	86	79						
Kyrgyzstan								88	76	82	81	82	84	84	3	4	31	58	42	48	56	62					
Latvia								61	64	65	71	74	72	73	72	70	73	76	77	84	83						
Lithuania																											
Luxembourg								79	84	92	75	72	74		3	2	30	56	86	89	89						
Malta								100	100	100	100	100	100	100	34	21	45	70	41	66	125	83					
Monaco																						19					
Netherlands								81	72	81	80	65	79	76	77	49	44	46	48	53	46	61					
Norway								77	80	44	69	77	70	87	67	67	35	15	28	47	26	46	46				
Poland																											
Portugal								48	69	74	78	74	85	79	75	65	84	78	83	95	95	86	78				
Republic of Moldova																											
Romania																											
Russian Federation								65	62	67	68	65	68	67	0	1	1	2	4	5	7	8	13				
San Marino								100							100												
Serbia & Montenegro																											
Slovakia								96	64	73	67	85	79	82	80	85	34	40	35	37	34	38	34				
Slovenia								90	87	82	78	88	84	82	79	59	65	75	71	73	75	75	66				
Spain																											
Sweden																											
Switzerland																											
Tajikistan																											
TFYR Macedonia																											
Turkey																											
Turkmenistan																											
Ukraine																											
United Kingdom																											
Uzbekistan																											
EUR								68	69	72	72	76	77	75	76	75	75	2	3	4	11	10	11	14	21	22	26

Treatment success, sum of cured and completed; DOTS new smear-positive case detection rate, notified cases divided by estimated incident cases. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Table A2.8 New smear-positive case notification by age and sex, absolute numbers, DOTs and non-DOTs, 2004

	Male										Female										All					Male/female ratio	
	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14	15-24	25-34	35-44		45-54
Albania	5	12	19	21	24	23	20	2	12	12	8	11	10	22	7	24	31	29	35	33	42	1.6					
Andorra	0	0	0	1	1	0	0	0	0	1	1	0	0	0	3	0	0	1	1	1	0	0	2.0				
Armenia	2	131	73	77	62	25	24	1	24	17	12	10	3	3	3	155	90	89	72	28	27	5.6					
Austria	1	19	19	38	27	92	21	0	12	15	9	3	3	16	1	31	34	47	30	27	37	2.6					
Azerbaijan	8	248	311	222	167	92	83	8	120	65	57	34	33	24	16	368	376	279	201	125	107	3.3					
Belarus	84	170	260	235	83	56	56	1	31	38	38	35	11	67	1	115	208	298	270	94	123	4.0					
* Belgium	1	26	55	30	37	24	48	6	18	16	20	3	8	14	7	44	71	90	40	32	62	2.6					
Bosnia & Herzegovina	3	66	79	95	82	77	115	3	45	67	43	51	59	102	6	111	146	138	133	136	217	1.4					
Bulgaria	10	97	156	166	204	153	111	4	64	111	64	49	35	71	14	181	267	230	253	188	182	2.1					
Croatia	1	18	32	68	81	39	53	3	18	17	11	12	7	56	4	36	49	79	93	46	109	2.4					
Cyprus	0	3	3	0	1	1	1	0	0	1	0	0	0	0	0	0	4	3	0	1	1	1	9.0				
Czech Republic	0	10	28	36	71	30	35	0	11	17	9	13	13	29	0	21	45	45	84	43	64	2.3					
Denmark	1	6	12	17	27	15	12	2	10	16	10	9	7	2	3	16	28	27	36	22	14	1.6					
Estonia	0	6	24	42	54	14	11	0	4	12	10	13	6	7	0	10	36	52	67	20	18	2.9					
* Finland	0	1	5	7	17	13	33	0	1	0	3	4	3	15	0	2	5	10	21	16	48	2.9					
France	13	109	222	220	200	138	216	11	96	116	82	53	34	171	24	205	338	302	253	172	387	2.0					
Georgia	3	157	292	226	177	80	66	3	87	81	52	32	26	29	6	244	373	278	209	106	95	3.2					
* Germany	5	63	130	182	161	110	198	6	75	110	97	42	32	116	11	138	240	279	203	142	314	1.8					
* Greece	1	9	14	22	18	13	34	0	3	7	10	3	3	14	1	12	21	32	21	16	48	2.8					
* Hungary	2	7	38	99	145	64	63	2	6	23	25	29	14	40	4	13	61	124	174	78	103	3.0					
Iceland	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0				
Ireland	1	4	17	10	12	7	10	0	10	9	2	2	3	6	1	14	26	12	14	10	16	1.9					
Israel	2	2	7	13	10	3	16	1	4	12	8	2	0	11	3	6	19	21	12	3	27	1.4					
* Italy	34	52	130	115	64	43	123	16	48	73	39	21	19	56	50	100	203	154	86	62	179	2.1					
Kazakhstan	24	989	1 291	1 183	899	336	196	62	844	912	517	307	178	189	86	1 833	2 203	1 700	1 206	514	385	1.6					
Kyrgyzstan	3	221	277	265	164	58	69	11	196	228	104	59	34	72	14	417	505	369	223	92	141	1.5					
Latvia	0	30	74	119	109	53	38	2	29	32	36	29	12	19	2	59	106	155	138	65	57	2.7					
* Lithuania	0	39	100	161	173	92	71	1	21	48	47	47	24	32	1	60	148	208	220	116	103	2.9					
Luxembourg	0	1	0	4	3	1	1	0	0	0	5	5	0	0	0	0	1	5	9	3	1	1	1.0				
Malta	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1.0				
Monaco	6	36	54	37	26	22	31	4	20	33	15	4	4	12	10	56	87	52	30	26	43	2.3					
* Netherlands	1	5	6	6	1	1	2	0	3	8	4	2	1	6	1	8	14	10	3	2	8	0.9					
* Norway	1	85	225	425	664	243	292	2	92	136	126	118	79	285	3	177	361	551	782	322	577	2.3					
* Poland	4	97	256	336	216	98	115	3	89	122	65	22	16	50	7	186	380	401	238	114	165	3.1					
Republic of Moldova	8	210	277	284	267	89	42	11	91	97	57	53	28	22	19	301	374	341	320	117	64	3.3					
* Romania	31	718	1 582	1 798	1 999	917	629	59	682	797	546	458	230	432	90	1 400	2 379	2 344	2 457	1 147	1 061	2.4					
Russian Federation	18	2 355	5 079	6 165	6 053	2 167	1 184	45	1 399	2 051	1 895	1 415	528	736	63	3 754	7 130	7 860	7 468	2 895	1 920	2.9					
San Marino	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
* Serbia & Montenegro	4	61	105	125	182	128	157	3	66	89	75	48	41	145	7	127	195	200	230	169	302	1.6					
* Slovakia	0	2	17	30	30	12	21	1	1	2	3	6	4	26	1	3	19	33	36	16	47	2.6					
Slovenia	0	5	7	10	10	8	13	0	4	6	4	3	2	17	0	9	13	14	13	10	30	1.5					
Spain	14	140	301	312	229	142	227	9	158	202	125	48	22	82	23	288	503	437	277	164	309	2.1					
Sweden	1	10	19	8	8	12	13	0	11	11	13	2	3	9	1	21	30	21	10	15	22	1.4					
* Switzerland	0	10	14	8	11	6	11	0	6	11	11	7	6	4	0	16	25	15	17	10	16	1.5					
Tajikistan	7	146	90	58	34	12	10	11	77	59	41	23	17	16	18	223	149	99	57	29	26	1.5					
TFYR Macedonia	2	12	18	19	33	21	15	0	15	20	19	6	3	17	2	27	38	38	39	24	32	1.5					
Turkey	0	50	38	50	41	28	19	2	24	21	8	4	7	6	2	74	59	58	45	35	25	3.1					
Turkmenistan	0	129	250	174	123	37	12	2	90	128	68	45	26	19	2	219	378	242	168	63	31	1.9					
Ukraine	10	118	203	148	103	85	94	13	126	176	85	47	33	65	23	244	379	233	150	118	159	1.4					
* United Kingdom	23	512	835	607	502	275	252	31	430	600	341	274	211	226	54	942	1 435	948	776	486	478	1.4					
Uzbekistan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
EUR	250	7 111	12 957	14 299	13 759	5 915	4 863	341	5 194	6 629	4 615	3 458	1 836	3 359	591	12 305	19 586	18 914	17 217	7 751	8 222	2.3					

For countries marked with *, cases with "history unknown" are included in Tables A2.2 and A2.3 but not in this table. For some countries, breakdown of notified cases by age and sex is missing, or is provided for a subset of cases. See Explanatory notes on page 140 for further details. Data can be downloaded from www.who.int/tb



Table A2.9 New smear-positive case notification rates by age and sex, DOTS and non-DOTS, 2004

	MALE					FEMALE					ALL				
	0-14	15-24	25-34	35-44	65+	0-14	15-24	25-34	35-44	65+	0-14	15-24	25-34	35-44	65+
Albania	1	4	7	8	14	20	21	0	4	5	3	7	9	19	20
Andorra	1	43	31	32	31	29	19	0	8	8	5	4	3	2	2
Armenia	0	4	3	5	5	5	4	0	3	3	1	1	1	2	3
Austria	1	31	55	32	40	58	34	1	15	10	8	8	18	6	6
Azerbaijan	0	10	25	35	34	22	12	0	4	6	5	4	2	7	8
Belarus	0	4	8	4	5	4	6	1	3	2	3	0	1	1	3
Belgium	1	20	25	26	25	44	57	1	14	22	12	16	29	36	45
Bosnia & Herzegovina	2	17	26	31	37	34	21	1	16	19	12	8	7	9	14
Bulgaria	0	6	11	22	25	17	19	1	6	6	4	4	3	12	15
Croatia	0	5	5	0	2	2	2	0	2	0	0	0	0	0	1
Cyprus	0	1	3	5	9	5	6	0	2	2	1	2	2	3	4
Czech Republic	0	2	3	4	7	4	3	0	4	4	3	2	2	0	2
Denmark	0	6	26	49	64	23	15	0	4	13	11	13	7	5	8
Estonia	0	0	2	2	4	4	10	0	0	0	1	1	1	3	6
Finland	0	3	5	5	5	4	5	0	3	3	2	1	1	3	4
France	1	38	78	61	56	41	23	1	22	23	13	9	11	6	13
Georgia	0	1	3	2	3	2	3	0	2	2	1	1	1	1	2
Germany	0	1	2	3	2	2	4	0	0	1	1	0	1	0	1
Greece	0	1	5	16	20	12	12	0	1	3	4	4	2	4	7
Hungary	0	0	0	0	5	7	0	0	0	0	0	0	0	0	0
Iceland	0	1	5	4	3	3	4	0	3	3	1	1	2	2	4
Ireland	1	2	3	2	2	1	3	0	2	2	1	1	1	1	2
Israel	1	66	109	111	103	81	43	3	58	76	45	30	33	23	30
Italy	0	41	69	81	69	56	53	1	37	57	31	23	29	35	42
Kazakhstan	0	16	47	75	76	49	31	1	17	20	22	17	8	7	15
Kyrgyzstan	0	15	44	64	84	62	40	0	8	20	18	20	12	9	20
Latvia	0	4	0	10	9	4	4	0	0	15	13	0	0	0	2
Lithuania	0	0	0	0	3	0	0	0	0	0	0	3	0	0	0
Luxembourg	0	4	5	3	2	2	3	0	2	3	1	0	0	1	2
Malta	0	4	5	3	2	2	3	0	2	3	1	0	0	1	2
Monsaco	0	4	5	3	2	2	3	0	2	3	1	0	0	1	2
Netherlands	0	2	2	2	0	0	1	0	1	3	1	1	1	0	1
Norway	0	3	8	17	22	14	16	0	3	5	4	4	9	0	12
Poland	0	15	31	47	34	19	17	0	14	15	9	3	3	5	10
Portugal	2	52	87	100	92	58	26	3	23	30	19	16	14	8	15
Republic of Moldova	2	41	83	119	132	89	48	3	40	43	36	29	20	23	33
Romania	0	20	49	59	57	39	18	0	12	20	16	12	7	5	10
Russian Federation	0	7	13	17	24	25	25	0	9	12	11	6	7	17	21
San Marino	0	0	4	8	8	5	9	0	0	0	1	1	1	1	7
Serbia & Montenegro	0	4	5	7	6	7	11	0	3	4	3	2	2	0	10
Slovakia	0	5	8	10	9	7	8	0	6	6	4	2	1	2	4
Slovenia	0	2	3	1	1	2	2	0	2	2	0	0	1	1	1
Spain	0	2	3	1	1	2	2	0	2	2	2	0	1	1	1
Sweden	0	2	3	1	2	1	2	0	2	3	1	1	1	1	1
Switzerland	1	21	19	16	15	11	8	1	11	13	11	10	16	9	14
Tajikistan	0	7	11	13	24	23	16	0	9	13	13	4	3	14	14
TFYR Macedonia	0	1	1	1	1	1	1	0	0	0	0	0	0	0	1
Turkey	0	25	64	55	60	41	13	0	17	33	21	20	26	14	13
Turkmenistan	0	3	5	3	3	3	2	0	3	4	2	1	1	1	2
Ukraine	1	18	40	36	46	57	45	1	15	29	20	24	41	28	35
United Kingdom	0	11	20	22	24	15	10	0	8	10	7	6	4	4	7
Uzbekistan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EUR	0	11	20	22	24	15	10	0	8	10	7	6	4	4	7

Rates are per 100 000 population of each age/sex group. Rates are calculated excluding those countries for which breakdown of notified cases or population by age and sex is missing. Data can be downloaded from www.who.int/tb

Table A2.10 Number of TB cases notified, 1980–2004

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
Albania	1 050	954	978	891	975	916	989	915	759	695	653	628	628	707	641	738	655	694	733	604	555	594	543	547		
Andorra																										
Armenia	756	924	1 549	702	774	768	832	760	651	649	590	741	23	24	24	17	19	8	10	12	10	10	5	10	7	
Austria	2 191	2 061	1 942	1 825	1 442	1 377	1 766	1 442	1 334	1 521	1 426	1 354	1 267	1 264	1 399	1 375	1 369	1 307	1 085	1 185	1 013	1 044	946	860	1 695	
Azerbaijan	3 080	3 180	3 217	3 176	3 506	3 772	3 804	3 677	3 340	3 989	2 620	2 771	2 821	3 036	2 839	6 300	4 480	4 635	4 672	4 654	5 187	4 898	5 142	3 840	5 404	
Belarus	5 954	6 198	5 468	5 509	5 065	4 873	4 128	3 911	3 769	3 708	3 039	3 745	4 414	4 134	4 348	4 854	5 598	6 150	7 339	6 799	5 505	5 139	5 106	5 443		
Belgium	2 687	2 837	2 652	2 190	2 149	1 966	1 893	1 772	1 588	1 648	1 577	1 482	1 335	1 503	1 521	1 380	1 348	1 263	1 203	1 124	1 278	1 321	1 211	1 030	1 128	
Bosnia & Herzegovina	4 421	4 376	4 478	4 468	4 691	4 666	4 605	4 422	4 093	4 176	4 073	3 546	600	680	680	1 132	2 132	2 869	2 711	2 923	2 476	2 469	1 691	1 740	2 353	
Bulgaria	3 280	3 007	2 989	2 882	2 856	2 550	2 352	2 387	2 301	2 072	2 058	2 606	3 096	3 213	3 296	3 245	3 109	3 437	4 117	3 530	3 349	3 862	3 359	3 069	3 025	
Croatia	3 999	4 021	3 718	3 632	3 612	3 605	3 355	3 326	2 973	2 861	2 576	2 158	2 189	2 279	2 217	2 114	2 174	2 054	2 118	1 785	1 630	1 376	1 443	1 356	1 170	
Cyprus	69	69	86	73	39	61	35	39	39	39	39	43	37	37	37	36	24	47	45	39	33	40	20	35	30	
Czech Republic	4 862	4 312	4 146	4 016	3 653	3 117	2 553	2 196	2 047	1 905	1 937	2 079	1 986	1 864	1 960	1 834	1 969	1 834	1 805	1 605	1 414	1 291	1 156	1 101	1 027	
Denmark	430	394	378	348	302	312	299	322	304	328	350	359	411	495	448	484	554	529	587	587	484	403	378	356	356	
Estonia	614	560	563	587	546	541	522	446	471	422	423	406	403	532	624	624	744	708	754	791	708	620	557	537	637	
Finland	2 247	2 204	2 170	1 882	1 791	1 819	1 546	1 419	1 078	970	772	771	700	542	553	661	645	573	629	565	527	460	449	392	319	
France	17 199	16 459	15 425	13 831	12 302	11 290	10 535	10 241	9 191	9 027	9 030	8 510	8 605	9 551	9 093	8 723	7 656	6 832	5 981	6 052	6 122	5 814	5 709	5 740	5 004	
Georgia	2 698	2 124	2 168	1 881	1 865	1 822	1 833	1 810	1 896	1 609	1 537	2 130	3 741	3 741	3 741	1 625	3 522	3 446	4 302	4 793	4 397	4 006	4 490	4 212	4 011	
Germany	29 991	27 083	25 397	22 977	20 243	20 074	17 906	17 102	16 282	15 385	14 653	13 474	14 113	14 161	12 982	12 198	11 814	11 163	10 440	9 794	9 064	6 959	6 331	6 526	6 007	
Greece	5 412	7 334	5 193	3 880	1 956	1 556	1 566	1 193	907	1 068	877	762	920	920	939	945	767	1 152	936	703	503	570	571	668	668	
Hungary	5 412	5 322	5 181	5 028	4 472	4 852	4 522	4 125	4 016	3 769	3 588	3 658	3 960	4 209	4 163	4 339	4 403	4 240	3 999	3 532	3 073	2 923	2 720	2 507	2 251	
Iceland	25	23	25	24	26	13	13	12	16	18	18	15	16	11	18	12	11	10	17	10	13	12	8	5	11	
Ireland	1 152	1 018	975	924	837	804	602	581	534	672	624	640	640	598	544	458	434	416	424	455	386	393	375	354	380	
Israel	249	227	232	222	257	368	239	184	226	160	234	505	345	479	395	398	369	422	656	480	557	546	485	505	497	
Italy	3 311	3 182	3 850	4 253	3 472	4 113	4 077	3 278	3 610	3 996	4 246	3 719	4 685	4 734	5 616	5 627	4 155	4 596	5 727	4 429	3 501	4 287	3 925	4 234	3 968	
Kazakhstan	14 442	13 876	13 808	13 357	12 563	12 423	13 090	13 288	13 601	13 307	10 969	10 821	10 920	10 425	10 519	11 310	13 944	16 109	20 623	24 979	25 843	26 224	27 546	26 936	26 493	
Kyrgyzstan	1 973	2 085	2 051	1 981	2 022	2 094	2 122	2 088	2 159	2 132	2 306	2 515	2 582	2 427	2 726	3 393	4 093	5 189	5 706	6 376	6 205	6 654	6 613	6 172	6 104	
Latvia	1 194	1 140	1 077	1 072	1 054	1 223	982	948	938	857	906	944	955	994	1 131	1 541	1 761	2 003	2 625	2 711	1 982	2 000	1 803	1 886	1 579	
Lithuania	1 636	1 599	1 495	1 477	1 420	1 453	1 412	1 372	1 339	1 381	1 471	1 556	1 598	1 895	2 135	2 362	2 608	2 926	3 016	2 800	2 657	2 598	2 414	2 866	2 036	
Luxembourg	71	45	41	41	46	42	46	48	16	45	48	48	25	35	33	32	41	38	44	37	44	31	54	31	31	
Malta	24	26	13	24	15	14	14	14	12	16	13	26	30	26	25	11	28	11	16	22	16	16	24	6	18	
Monaco	1	0	0	0	1	2	2	2	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
Netherlands	1 701	1 734	1 514	1 423	1 400	1 362	1 238	1 227	1 341	1 317	1 369	1 345	1 465	1 587	1 811	1 619	1 678	1 486	1 341	1 398	1 244	1 408	1 355	1 282	1 316	
Norway	499	461	448	396	373	374	343	307	294	255	285	290	288	256	242	236	217	205	244	213	221	276	243	320	278	
Poland	25 807	24 087	23 685	23 411	22 527	21 650	20 603	19 757	18 537	16 185	16 136	16 496	16 581	16 828	16 653	15 958	15 358	13 302	12 168	10 931	10 163	10 163	10 069	9 677	8 698	
Portugal	6 873	7 249	7 309	7 052	6 908	6 868	6 624	7 099	6 363	6 664	6 214	5 980	5 927	5 447	5 619	5 577	5 248	5 110	5 280	4 599	4 227	4 320	4 381	3 861	3 600	
Republic of Moldova	2 781	2 852	3 197	2 888	2 954	2 732	3 022	2 810	2 281	1 728	1 910	1 835	2 426	2 628	2 925	2 922	2 922	2 908	2 625	2 711	2 935	3 608	3 769	3 619	4 606	
Romania	13 553	13 602	13 588	13 570	12 952	12 677	12 860	13 361	14 137	14 676	16 256	15 482	18 097	20 349	21 422	23 271	24 789	23 903	25 758	26 107	27 470	28 580	29 752	28 335	28 570	
Russian Federation	74 270	73 369	72 236	73 280	74 597	64 644	71 764	70 132	67 553	62 987	50 641	50 407	53 148	63 591	70 822	84 960	111 075	119 123	110 935	134 360	140 677	132 477	128 873	124 041	121 426	
San Marino																										
Serbia & Montenegro	6 232	6 381	6 274	6 443	6 454	6 246	6 126	6 042	5 583	5 045	4 194	4 502	3 771	3 843	3 606	2 798	4 017	4 082	3 028	2 646	2 864	4 556	4 232	3 895	3 600	
Slovakia	2 465	2 304	2 263	2 252	2 152	1 989	2 022	1 830	1 651	1 448	1 620	1 733	1 799	1 760	1 760	1 540	1 503	1 298	1 292	1 100	1 010	986	975	904	664	
Slovenia	1 085	939	982	925	896	923	816	792	760	768	722	583	640	646	646	526	525	481	449	423	368	359	338	275	249	
Spain	4 853	5 552	7 961	8 987	10 078	10 749	13 755	9 468	8 497	8 058	7 600	9 007	9 703	9 441	8 764	8 331	9 347	8 927	8 393	7 983	6 851	7 983	7 343	6 015	6 015	
Sweden	826	875	784	832	754	702	640	545	536	595	557	521	610	616	537	564	497	456	446	479	417	394	375	386	416	
Switzerland	1 160	1 193	1 167	1 057	946	961	881	1 018	1 201	1 104	1 278	1 134	987	930	924	830	765	747	750	756	544	539	591	554	528	
Tajikistan	2 647	2 631	2 628	2 509	2 427	2 485	2 610	2 727	2 474	2 621	2 460	2 116	1 671	1 652	892	2 029	1 647	2 143	2 448	2 553	2 779	3 508	4 052	4 260	4 529	
TFYR Macedonia	36 716	39 992	26 457	28 634	27 589	30 960	31 029	30 531	27 884	26 669	24 468	25 166	25 455	27 511	22 981	20 212	25 685	25 501	22 088	18 038	17 263	18 043	17 923	17 543	17 543	
Turkey	1 677	1 625	1 559	1 541	1 604	1 607	1 614	1 956	1 904	2 169	2 325	2 358	2 074	2 751	1 939	2 072	3 438	3 839	4 092	4 038	3 948	3 671	3 771	3 382	3 382	
Turkmenistan	26 095	25 646	24 710	24 216	24 356	24 058	22 946	22 145	20 744	20 182	16 465	16 713	18 140	19 964	20 622	21 459	23 414	28 344	27 763	32 879	32 945	36 784	40 175	37 043	38 403	
Ukraine	10 488	9 290	8 436	7 814	7 026	6 666	6 841	5 732	5 793	6 059	5 908	6 088	6 411	6 481	6 196	6 176	6 238	6 355	6 176	6 183	6 220	6 027	6 889	6 400	7 039	
United Kingdom	9 163																									

Table A2.11 Case notification rates, 1980-2004

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
Albania	39	35	35	31	34	31	33	29	24	21	24	19	19	22	20	24	21	23	24	20	20	18	19	18	18	
Andorra																										
Armenia	24	29	24	22	24	23	24	22	19	18	17	21	17	17	23	36	29	33	47	48	43	45	47	51	55	
Austria	29	27	26	24	23	19	18	18	17	20	18	17	16	16	16	16	17	17	17	16	13	15	12	13	12	
Azerbaijan	50	51	51	49	53	57	56	53	48	42	36	38	38	40	37	21	31	58	58	58	64	60	62	46	65	
Belarus	62	64	56	56	51	49	41	39	37	36	30	36	33	40	42	47	55	59	61	73	68	55	52	52	65	
Belgium	27	29	27	22	22	20	19	18	16	17	16	15	13	15	15	15	14	13	12	11	12	11	12	13	12	
Bosnia & Herzegovina	113	111	117	111	115	113	110	106	94	96	95	85	15	16	45	62	65	82	75	78	64	63	43	44	60	
Bulgaria	37	34	34	32	32	29	28	26	27	26	26	30	36	38	38	39	38	42	51	44	42	49	42	39	39	
Croatia	91	91	84	82	81	81	75	74	66	64	57	47	48	49	48	45	47	44	44	39	36	31	32	30	26	
Cyprus	11	11	14	12	6	9	7	5	6	3	4	6	6	5	5	5	3	6	6	6	5	4	5	2	4	
Czech Republic	48	42	40	39	35	30	25	21	20	18	19	20	19	18	19	18	19	18	18	16	14	13	11	11	11	
Denmark	8	8	7	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Estonia	42	38	38	39	36	35	34	29	22	20	15	15	14	11	11	11	13	13	11	12	11	10	9	9	8	
Finland	47	46	45	39	37	37	31	29	22	20	15	15	14	11	11	11	13	13	11	12	11	10	9	9	8	
France	32	30	28	25	22	20	19	18	16	16	16	15	15	17	16	15	13	12	10	10	10	10	10	10	8	
Georgia	41	42	42	36	35	34	34	34	29	29	28	28	40	72	32	32	32	32	32	32	32	32	32	32	32	
Germany	38	35	33	30	26	26	23	22	21	19	18	17	18	18	16	15	14	14	13	12	11	8	8	8	7	
Greece	56	75	53	39	20	16	16	12	9	11	9	7	9	9	9	9	9	9	9	9	9	9	9	9	6	
Hungary	51	50	48	47	42	46	43	39	38	36	35	35	38	41	40	42	43	41	39	34	30	29	27	25	22	
Iceland	11	10	11	10	11	5	5	5	6	7	7	6	6	4	7	4	4	4	4	4	4	5	4	3	2	4
Ireland	34	30	28	26	24	23	17	16	15	19	18	18	17	17	15	13	12	11	11	12	10	10	10	9	9	
Israel	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Italy	6	6	7	8	6	7	7	6	6	7	7	7	8	8	10	10	7	8	10	8	6	6	7	7	7	
Kazakhstan	97	92	91	87	81	79	82	82	83	81	66	66	67	64	66	71	89	104	135	165	172	176	185	181	179	
Kyrgyzstan	54	56	54	51	51	52	52	52	50	51	49	52	57	58	54	60	74	88	110	119	131	125	133	130	117	
Latvia	48	45	43	42	41	47	38	36	35	32	33	35	36	38	44	62	72	82	91	79	84	85	77	72	68	
Lithuania	48	47	43	42	40	41	39	38	37	38	40	42	43	52	58	65	72	82	82	85	79	76	75	70	59	
Luxembourg	20	12	11	11	13	11	12	13	4	12	13	13	6	9	8	8	10	9	10	9	10	10	7	7	7	
Malta	7	8	4	7	4	3	4	4	3	4	4	4	7	8	7	7	3	7	3	4	6	4	4	6	2	5
Monaco	4	0	0	0	0	4	7	7	7	3	3	0	3	3	3	3	0	0	0	0	0	0	0	0	0	
Netherlands	12	12	11	10	10	9	8	8	9	9	9	9	10	10	12	10	11	10	10	9	9	8	9	8	8	
Norway	12	11	11	10	9	9	8	7	7	6	7	7	7	6	6	5	5	5	5	5	5	5	6	5	7	
Poland	73	67	65	64	61	58	55	52	49	43	42	43	43	44	43	41	40	36	34	31	28	26	26	25	23	
Portugal	70	74	74	71	69	69	66	71	64	67	62	60	59	55	56	56	52	51	52	45	41	42	42	37	34	
Republic of Moldova	69	70	78	69	61	65	71	66	58	52	40	44	42	42	42	42	42	42	42	42	42	42	42	42	42	
Romania	61	61	61	60	57	56	56	58	61	63	70	67	78	89	94	103	107	107	107	115	118	124	130	136	131	
Russian Federation	54	53	51	52	52	45	50	48	46	43	34	34	36	43	48	57	75	81	75	91	96	91	89	86	84	
San Marino																										
Serbia & Montenegro	65	66	65	66	66	63	62	61	56	50	41	44	37	37	34	27	38	38	29	25	27	43	40	37	34	
Slovakia	50	46	45	44	42	39	39	35	32	29	28	31	33	34	33	29	28	24	24	24	20	19	18	17	12	
Slovenia	59	51	53	50	48	49	43	42	40	40	37	30	33	33	27	27	29	24	23	22	19	16	17	14	13	
Spain	13	15	21	24	26	28	36	24	22	21	19	23	25	24	22	21	21	23	22	21	20	17	18	17	14	
Sweden	11	11	9	10	9	8	8	6	6	7	7	6	7	7	6	6	6	5	5	5	5	4	4	4	5	
Switzerland	18	19	18	17	15	15	13	15	18	16	19	16	14	13	13	12	11	11	11	11	11	8	7	8	7	
Tajikistan	67	65	63	58	55	54	55	56	49	51	46	39	30	12	16	35	28	36	41	42	45	56	64	67	70	
TFYR Macedonia																										
Turkey	79	84	54	57	54	59	58	56	50	47	43	43	43	43	37	32	40	39	33	26	25	26	25	24	24	
Turkmenistan	59	55	52	50	51	50	49	58	55	61	63	62	53	69	46	49	79	87	92	90	86	79	80	71	71	
Ukraine	52	51	49	48	48	47	45	43	40	39	32	32	35	38	40	42	46	56	55	66	67	76	84	78	82	
United Kingdom	19	17	15	14	13	12	12	10	10	11	10	11	11	11	11	11	11	11	11	11	11	11	11	10	12	11
Uzbekistan	57	59	52	51	48	48	51	51	52	53	46	44	44	44	44	44	44	44	44	44	44	44	44	44	44	
EUR	44	43	40	39	38	36	36	35	33	32	29	27	29	28	28	33	37	41	40	43	43	42	43	43	41	40

Rates are per 100 000 population. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Table A2.12 New smear-positive cases notified, numbers and rates, 1993–2004

	Number of cases												Rate (per 100 000 population)											
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Albania	250	139	173	241	212	168	171	171	171	225	211	201	8	4	6	8	7	5	6	6	7	5	6	7
Andorra	15	24	8	17	1	4	1	3	2	7	3	3	25	38	12	26	2	6	2	5	3	11	4	4
Armenia	319	436	327	400	475	576	621	572	572	511	575	602	10	14	10	13	15	19	20	19	17	17	20	
Austria	662	580	370	323	324	262	220	269	216	216	216	216	7	8	7	5	4	4	3	3	3	3	3	
Azerbaijan	499	513	669	990	981	727	763	890	927	1661	1018	1472	7	7	9	13	12	9	11	11	20	14	10	
Belarus	1 493	1 775	1 845	2 117	2 273	5 047	2 769	2 547	2 341	1 018	1 018	1 109	15	17	18	21	22	50	27	25	23	10	11	
Belgium	484	427	400	364	434	418	403	409	472	419	362	391	5	4	4	4	4	4	4	4	5	4	3	
Bosnia & Herzegovina	865	927	803	640	786	759	800	526	493	869	869	869	25	27	23	18	21	20	21	20	21	13	23	
Bulgaria	3 096	1 087	903	1 037	1 325	1 697	2 524	897	1 007	1 254	1 315	1 315	37	37	13	11	13	16	21	32	11	13	16	
Croatia	1 204	1 228	1 073	1 129	748	0	421	437	438	416	416	416	26	26	26	23	25	17	0	9	10	10	9	
Cyprus	6	3	19	20	9	4	0	8	14	10	10	10	1	1	1	3	3	1	1	0	1	2	1	
Czech Republic	548	524	487	586	481	545	449	420	391	329	338	302	5	5	5	6	5	5	4	4	3	3	3	
Denmark	243	120	128	97	114	132	172	171	127	135	143	146	5	2	2	2	2	2	3	3	2	3	3	
Estonia	303	347	369	240	269	289	274	255	212	203	201	203	20	24	26	17	19	22	20	19	16	15	15	
Finland	244	240	186	188	179	205	150	138	124	138	124	124	8	6	6	5	5	4	4	3	3	2	2	
France	4 455	3 196	3 449	3 002	2 430	2 325	1 815	2 398	2 276	2 219	1 923	1 923	8	6	6	5	4	4	4	3	4	4	4	
Georgia	221	482	595	547	746	601	1 014	987	989	1 311	1 311	1 311	6	5	5	5	4	4	4	0	2	2	2	
Germany	4 730	4 177	3 852	3 689	3 346	3 124	2 918	0	1 935	1 868	1 679	1 562	6	5	5	5	4	4	4	0	2	2	2	
Greece	285	313	143	235	213	212	234	176	176	176	176	176	18	13	8	10	7	6	6	4	5	5	6	
Hungary	1 905	1 357	796	1 066	702	667	660	412	546	556	526	560	18	13	8	10	7	6	6	4	5	5	6	
Iceland	6	2	1	4	2	2	1	3	2	2	1	2	4	2	1	1	1	1	1	0	1	1	0	
Ireland	339	123	116	117	138	123	100	141	127	100	141	127	3	2	9	3	3	3	3	4	3	3	4	
Israel	150	129	147	207	221	170	171	172	164	150	91	91	3	2	4	4	4	3	0	3	3	2	1	
Italy	1 441	1 413	1 738	1 903	2 361	1 277	687	1 361	1 275	1 481	1 058	1 058	3	2	3	3	3	4	2	1	2	2	3	
Kazakhstan	7 606	4 000	6 955	6 819	3 497	3 502	3 177	3 180	3 155	3 060	2 983	2 777	20	10	18	18	9	9	8	8	8	8	7	
Portugal	2 072	2 019	1 938	1 628	2 016	1 801	1 863	2 042	1 976	1 742	1 514	1 514	15	18	21	20	19	16	20	18	18	20	19	
Republic of Moldova	615	704	665	219	397	477	609	651	1 060	1 146	1 214	1 536	14	16	15	5	9	11	14	15	25	27	29	
Romania	9 339	10 385	10 469	11 666	10 841	10 317	10 202	11 184	10 703	10 418	10 888	10 888	41	46	46	46	52	49	46	46	51	49	48	
Russian Federation	30 389	37 512	42 534	42 094	42 219	21 744	27 467	26 605	27 865	28 868	30 890	30 890	19	20	25	29	29	29	15	19	18	19	20	
San Marino	0	1	0	0	0	0	1	0	0	0	0	0	4	2	1	1	1	2	2	1	1	1	1	
Serbia & Montenegro	1 497	1 783	1 702	1 873	2 517	0	461	402	611	1 244	1 244	1 244	14	17	16	18	24	0	4	4	4	6	12	
Slovakia	882	409	788	760	283	303	246	236	226	200	157	157	17	8	15	14	5	6	5	4	4	4	4	
Slovenia	361	294	303	221	156	157	165	145	139	130	116	89	18	15	15	11	8	8	7	7	7	6	5	
Spain	312	106	102	90	94	97	117	118	105	109	109	120	4	1	1	1	1	1	1	1	1	1	1	
Sweden	528	507	185	172	144	165	98	118	116	123	107	119	8	7	3	2	2	2	1	2	2	1	2	
Switzerland	1 042	232	373	435	0	434	719	687	0	1 058	1 058	1 058	18	4	6	7	0	7	12	11	0	16	10	
Tajikistan	319	209	192	179	122	167	164	200	200	200	200	200	16	16	11	10	9	6	8	8	10	10	10	
TFYR Macedonia	4 383	2 816	3 439	3 692	4 124	4 315	4 444	0	5 816	5 870	5 870	5 870	7	4	5	6	6	6	6	6	6	6	8	
Turkey	472	847	823	7 827	9 533	10 412	10 738	0	12 785	0	12 785	0	12	13	13	18	18	22	23	27	27	27	25	
Turkmenistan	8 314	8 471	8 263	4 147	844	1 342	797	1 204	946	1 365	1 455	1 893	16	16	16	15	19	21	21	22	0	0	27	
Ukraine	283	270	4 787	2 735	3 350	3 388	3 504	3 977	3 825	4 608	4 690	5 119	0	0	0	1	2	1	2	2	2	2	3	
United Kingdom	7 487	7 487	7 487	7 487	7 487	7 487	7 487	7 487	7 487	7 487	7 487	7 487	33	33	33	33	33	33	33	33	33	33	33	
Uzbekistan	45 771	83 568	104 639	110 752	106 636	111 391	89 199	94 275	86 239	83 455	101 657	92 233	5	10	12	13	12	13	10	11	10	11	12	
EUR	45 771	83 568	104 639	110 752	106 636	111 391	89 199	94 275	86 239	83 455	101 657	92 233	5	10	12	13	12	13	10	11	10	11	12	

Rates are per 100 000 population. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb



Notes

Azerbaijan

The large number of re-treatment cases notified in 2004 was attributed by the NTP to rapid DOTS expansion and to the availability of drugs supplied through GDF, combined with some deficiencies in capturing patient history in the data system during a transition phase.

Belarus

Treatment outcomes are for laboratory-confirmed cases.

Bosnia and Herzegovina

Treatment outcomes are from the Republic of Srpska only.

Denmark

Data for Denmark exclude Greenland. A total of 67 TB cases were notified in Greenland for 2004 (118 per 100 000 population). DST was performed for 48 cases in Greenland; 2 cases were found to be mono-resistant, no cases of MDR were identified.

Summary by WHO region

Africa

The Americas

Eastern Mediterranean





Europe

South-East Asia

Western Pacific

SOUTH-EAST ASIA: SUMMARY OF TB CONTROL POLICIES

	STATUS ^a	MANUAL ^b	MICROSCOPY ^c	SCC ^d	DOT ^e	MONITORING OUTCOME ^f
BANGLADESH	DOTS	YES				
BHUTAN	DOTS	YES				
DPR KOREA	DOTS	YES				
INDIA	DOTS	YES				
INDONESIA	DOTS	YES				
MALDIVES	DOTS	YES				
MYANMAR	DOTS	YES				
NEPAL	DOTS	YES				
SRI LANKA	DOTS	YES				
THAILAND	DOTS	YES				
TIMOR-LESTE	DOTS	YES				

	Implemented in all units/areas
	Implemented in some units/areas
	Not implemented
	Unknown

^a Status: DOTS status (blank indicates no report received)

^b Manual: national TB control manual (recommended)

^c Microscopy: use of smear microscopy for diagnosis (core component of DOTS)

^d SCC: short course chemotherapy (core component of DOTS)

^e DOT: directly observed treatment (core component of DOTS)

^f Outcome monitoring: monitoring of treatment outcomes by cohort analysis (core component of DOTS)

Table A2.1 Estimated burden of TB, 1990 and 2004

	Incidence, 1990			Prevalence, 1990			TB mortality, 1990			Incidence, 2004			Prevalence, 2004			TB mortality, 2004			HIV prevalence in adult incident TB cases (%)						
	All forms* number	Smear-positive* number	rate	All forms* number	rate	ratio	All forms* number	rate	ratio	All forms HIV+ number	rate	ratio	All forms* number	rate	ratio	All forms HIV+ number	rate	ratio	All forms HIV+ number	rate	ratio				
Bangladesh	274 460	284	123 507	119	665 709	640	80 660	78	263	≤ 1	143 637	103	92	≤ 1	606 106	435	132	≤ 1	70 422	61	118	≤ 1	0.1		
Bhutan	3 351	204	1 508	92	6 086	371	653	40	2 285	107	≤ 1	1 019	48	≤ 1	3 886	184	≤ 1	≤ 1	420	20	≤ 1	≤ 1	0.1		
DPR Korea	35 004	178	15 752	80	83 468	424	11 581	59	39 793	178	≤ 1	17 907	80	≤ 1	39 793	178	≤ 1	≤ 1	2 885	13	≤ 1	≤ 1	≤ 0.05		
India	1 425 475	168	638 346	75	4 838 614	570	360 915	42	1 824 395	168	64 080	6	814 570	75	22 428	2	3 394 040	312	32 040	3	329 115	30	20 077	2	5.2
Indonesia	621 955	343	279 880	154	804 156	443	168 113	93	539 189	245	3 198	1	242 315	110	1 119	≤ 1	605 759	275	1 599	≤ 1	100 736	46	1 221	≤ 1	0.9
Maldives	319	148	143	66	334	155	18	9	157	49	≤ 1	71	22	≤ 1	184	57	≤ 1	≤ 1	11	4	≤ 1	≤ 1	0.3		
Myanmar	69 653	171	31 221	77	170 701	419	20 407	50	85 484	171	4 089	8	38 050	76	1 431	3	89 811	180	2 045	4	10 326	21	591	1	7.1
Nepal	46 445	243	20 877	109	117 680	616	9 785	51	48 834	184	1 070	4	21 868	82	375	1	68 247	257	535	2	6 426	24	249	≤ 1	3.2
Sri Lanka	10 760	60	4 842	27	19 442	109	1 871	11	12 445	60	30	≤ 1	5 597	27	10	≤ 1	18 700	91	15	≤ 1	1 849	9	9	≤ 1	0.4
Thailand	77 727	142	34 410	63	196 550	360	14 854	27	90 607	142	5 241	8	40 249	63	1 834	3	132 306	208	2 621	4	12 328	19	1 291	2	8.5
Timor-Leste	4 112	556	1 850	250	8 777	1 186	935	126	4 927	556	19	2	2 215	250	7	≤ 1	6 137	692	10	1	758	85	3	≤ 1	0.6
SEAR	2 569 261	199	1 152 336	89	6 911 497	536	669 812	52	2 967 328	182	77 992	5	1 327 498	81	27 297	2	4 964 979	304	38 996	2	535 278	33	23 560	1	3.9

* incidence, prevalence and mortality estimates include patients with HIV. Estimates labelled 'HIV+' are estimates of TB in HIV-positive adults (aged 15-49 years). Estimates for all years are re-calculated as new information becomes available and techniques are refined, so they may differ from those published previously. See Explanatory notes on page 139 for further details. Data can be downloaded from www.who.int/tb

Table A2.2 Whole country case notifications and case detection rates, 2004

Population thousands	Country total number	TB cases notified from whole country (DOTS + non-DOTS)										Incidence and case detection rates				Proportions			
		New and relapse (WHO total)		New extra-pulmonary		Other new		Re-treatment cases		New pulm. lab. confirm.		Estimated incidence	Case detection rate		ss+	ss+	Re-treat		
		number	rate	number	rate	number	rate	number	rate	number	rate	number	new	relapse %	(% of pulm.)	(% of new+relapse)	(% of new+relapse)		
139 215	Bangladesh	96 234	71	62 500	45	23 871	8 630	3 233	0	0	0	0	0	0	0	0	0	0	
2 116	Bhutan	1 002	988	47	356	17	242	36	5	9	62 500	143 637	31	44	72	64	9	3	
22 384	DPR Korea	52 455	44 602	199	18 479	83	18 720	5 707	33	1 663	1 170	1 019	44	35	60	36	36	5	
1 067 124	India	1 275 998	1 136 506	105	489 031	45	432 862	151 263	0	63 350	16 537	39 793	17 907	112	103	50	41	13	18
220 077	Indonesia	2 14 658	2 10 229	96	128 981	59	76 981	4 267	0	63 350	16 537	814 570	62	60	53	43	13	16	
321	Maldives	1 119	37	66	21	16	30	0	0	5	0	157	71	76	79	55	25	2	4
50 004	Myanmar	99 431	96 662	193	31 408	63	34 332	26 216	0	4 706	1 522	65 464	38 050	113	83	48	32	27	8
26 591	Nepal	32 678	31 979	120	14 614	55	9 008	6 287	0	2 070	337	48 834	21 868	65	67	62	46	20	8
20 570	Sri Lanka	8 952	8 562	42	4 302	21	2 309	1 735	0	216	40	12 445	5 597	69	77	65	50	20	5
63 694	Thailand	55 306	55 306	87	28 421	45	18 088	7 093	0	1 704	0	90 607	40 249	61	71	61	51	13	3
887	Timor-Leste	3 738	3 716	419	1 014	114	2 166	507	0	20	8	4 927	2 215	75	46	32	27	14	1
1 632 982	SEAR	1 842 571	1 686 903	103	779 172	48	618 597	212 089	33	77 003	19 619	2 967 328	1 327 498	57	59	56	46	13	13

ss+ indicates sputum smear-positive; ss-, sputum smear-negative; unk., sputum smear result unknown; re-treat., re-treatment; pulm.lab. confirmed, pulmonary case confirmed by positive smear or culture. See Explanatory notes on page 139 for further details. Data can be downloaded from www.who.int/tb



Table A2.3 DOTS coverage, case notifications and case detection rates, 2004

Country	TB cases reported from DOTS services										Estimated incidence and case detection rate				Proportions				
	DOTS coverage %	New and relapse (WHO total) number	New and relapse rate	New pulmonary ss+ number	New extra-pulmonary ss- / unk. number	Other new number	Relapse number	After default number	Other re-treat. number	Other number	New pulm. lab. confirm. number	Estimated incidence all forms number	ss+ number	Case detection rate new ss+ %	ss+ (% of pulm.)	ss+ (% of new+relapse)	Extrapulm. (% of new+re-treat.)	Re-treat. (% of new+re-treat.)	
Bangladesh	99	98 234	71	62 500	45	23 871	8 630	3 233	0	0	0	62 500	143 637	31	44	72	64	9	3
Bhutan	90	988	47	356	17	242	354	5	9	0	356	2 265	1 019	44	35	60	36	36	5
DPR Korea	100	44 602	199	18 479	83	18 720	5 707	33	1 663	1 170	18 479	39 793	17 907	112	103	50	41	13	18
India	84	1 053 364	97	465 354	43	381 198	144 471	0	62 341	16 322	465 354	1 824 395	814 570	58	57	55	44	14	17
Indonesia	98	2 10 229	96	128 961	59	76 961	4 267	0	4 429	0	128 961	539 189	242 315	39	53	63	61	2	2
Maldives	100	119	37	66	21	18	30	0	5	0	66	157	71	76	79	55	25	2	4
Myanmar	95	98 662	193	31 408	63	34 332	26 216	0	4 706	1 522	31 408	85 464	38 050	113	83	48	32	27	8
Nepal	100	31 979	120	14 614	55	9 008	6 287	0	2 070	337	17 363	48 834	21 868	65	67	62	46	20	8
Sri Lanka	88	7 611	37	3 928	19	1 906	1 578	0	199	37	4 163	12 445	5 597	61	70	67	52	21	5
Thailand	100	56 306	87	28 421	45	18 088	7 093	1 704	0	0	28 421	90 607	40 249	61	71	61	51	13	3
Timor-Leste	85	3 716	419	1 014	114	2 166	507	0	20	8	1 014	4 927	2 215	75	46	32	27	14	1
SEAR	89	1 602 810	98	755 121	46	566 530	205 140	33	75 977	19 401	70 380	2 967 328	1 327 496	54	57	47	47	13	13

ss+ indicates sputum smear-positive; ss-, sputum smear-negative; unk., sputum smear result unknown; re-treat., re-treatment; pulm.lab. confirmed, pulmonary case confirmed by positive smear or culture. See Explanatory notes on page 139 for further details. Data can be downloaded from www.who.int/tb

Table A2.4 Public–Public and Public–Private Mix (PPM), collaborative TB/HIV activities and management of MDR-TB, 2003-2004

	Public–Public and Public–Private Mix (PPM), 2004			Collaborative TB/HIV activities, 2003 or 2004			Multidrug-resistant TB, 2004										
	Guidelines for other practitioners	Private hospitals or clinics	Institutions notifying to NTP	HIV testing for TB pts	HIV surveillance among TB pts	TB pts tested for HIV	TB pts CPT	TB pts ART	Laboratory-confirmed MDR	MDR in new cases	Re-treatment MDR						
	Practitioners	hospitals	Prisons	Military	Insurance	hospitals	Prisons	Military	Insurance	number	number	number					
Bangladesh	No	No	All	All	No	No	Yes	No	0	0	0	0					
Bhutan	No	No	All	All	No	No	Yes	No	0	0	0	0					
DPR Korea	Yes	Some	All	Some	No	No	No	No	0	0	0	0					
India	No	Some	Some	Some	No	No	Yes	Yes	0	0	0	1					
Indonesia	Yes	All	All	All	No	No	No	No	0	0	0	1					
Maldives	Yes	Some	Some	Some	No	No	Yes	No	0	0	0	1					
Myanmar	Yes	Some	Some	No	Some	No	No	No	0	0	0	3					
Nepal	Yes	Some	All	All	No	No	Yes	Yes	0	0	0	2					
Sri Lanka	Yes	No	No	All	No	No	Yes	Yes	4	3	2	441					
Thailand	Yes	Some	No	All	Some	No	No	No	5	1	1	1					
Timor-Leste	Yes	All	All	All	No	No	No	No	5	5	4	3					
SEAR	15	15	55	64	55	45	9	27	5	5	4	3	79	505	1	445	10

pts indicates patients; CPT, co-trimoxazole preventive therapy; ART, antiretroviral therapy. The regional row for the first 9 columns represents the proportion of countries that provided an affirmative response ("Yes", "All", "Some" or "Partially"). See Explanatory notes on pages 139 and 140 for further details. Some countries provided the number of TB patients found to be HIV-positive, but did not provide the number of TB patients tested. The regional total of TB patients tested is therefore lower than the number of patients actually tested, and cannot be used to calculate a regional estimate of HIV prevalence in TB patients. Data can be downloaded from www.wpro.int/tb

Table A2.6 Re-treatment outcomes, 2003 cohort

	Release, DOTS						After failure, DOTS						After default, DOTS												
	Number registered	Cured	Completed	Failed	Default	Transferred	Not evaluated	Success	Number registered	Cured	Completed	Failed	Default	Transferred	Not evaluated	Success	Number registered	Cured	Completed	Failed	Default	Transferred	Not evaluated	Success	
Bangladesh	2505	89	5	4	2	7	5	9	74	291	70	3	4	13	6	0	73	1532	70	3	5	4	13	6	0
Bhutan	37	65	14	5	11	0	5	0	78	11	45	36	0	9	9	0	82	9	9	0	0	0	0	100	
DPR Korea	1732	80	4	3	5	3	5	0	84	1107	76	4	5	7	4	0	80	878	77	5	4	7	4	3	0
India	46471	71	3	7	5	12	0	0	75	11638	56	4	9	14	16	1	60	54349	64	5	8	5	18	1	0
Indonesia	4086	59	19	2	2	5	3	9	78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69
Maldives	3	100	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	69
Myanmar	4821	62	13	9	4	9	4	0	75	964	31	15	7	12	16	4	16	395	74	4	9	2	3	9	0
Nepal	2052	81	2	8	3	3	3	0	83	293	65	1	9	16	5	4	0	67	154	45	9	6	0	34	3
Sri Lanka	181	70	3	6	1	14	7	0	72	46	57	7	2	15	17	2	0	63	154	45	9	6	0	34	3
Thailand	1471	61	6	15	6	8	5	0	67	560	43	8	19	10	11	9	0	52	18	44	11	6	6	33	0
Timor-Leste	20	75	5	15	0	5	0	0	80	8	50	0	25	0	25	0	50	18	44	11	6	6	33	0	56
SEAR	63179	70	5	7	5	11	1	1	75	14938	56	5	9	13	15	2	1	57335	65	5	8	5	17	1	0

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases registered; the denominator for calculating treatment outcomes. The number of cases registered for treatment in 2003 is used as the denominator for calculating treatment outcomes unless it is missing or is less than the sum of outcomes, in which case the sum of outcomes is used. Data can be downloaded from www.who.int/tb



Table A2.7 DOTS treatment success and case detection rates, 1994–2004

	DOTS new smear-positive treatment success (%)										DOTS new smear-positive case detection rate (%)										
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Bangladesh	73	71	72	78	80	81	83	84	84	85	85	7	15	19	24	25	26	28	32	38	44
Bhutan	71	97	96	85	90	85	90	93	86	90	86	29	25	24	23	27	31	33	34	34	35
DPR Korea					91	94	91	91	88	88					2	26	54	81	92	103	
India	83	79	79	82	84	82	84	85	87	86	0	1	1	2	7	12	24	31	45	57	
Indonesia	94	91	81	54	56	50	87	86	86	87	1	4	7	12	19	20	22	31	38	53	
Maldives	95	97	93	94	94	94	97	97	95	91	101	99	99	93	91	96	74	71	76	91	94
Myanmar		66	79	82	82	81	82	81	81	81		25	26	28	32	47	56	65	73	83	
Nepal		85	87	89	87	86	88	88	86	87	5	11	11	16	44	57	58	61	66	67	
Sri Lanka	77	79	80	76	76	84	77	80	81	81	59	57	67	71	70	63	68	66	66	70	
Thailand		78	62	68	68	77	69	75	74	73		0	5	21	39	46	73	65	71	71	
Timor-Leste								73	81	81											
SEAR	80	74	77	72	72	73	83	84	85	85	1	4	6	8	14	19	27	34	45	57	

Treatment success, sum of cured and completed; DOTS new smear-positive case detection rate, notified cases divided by estimated incident cases. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Table A2.8 New smear-positive case notification by age and sex, absolute numbers, DOTS and non-DOTS, 2004

	Male					Female					All					Male/female ratio						
	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14		15-24	25-34	35-44	45-54	55-64	65+
Bangladesh	420	6 171	8 281	8 914	8 327	6 276	5 144	569	5 081	4 869	3 758	2 518	1 434	718	1 009	11 252	13 150	12 672	10 845	7 710	5 862	2.3
Bhutan	1	54	52	28	27	18	23	8	54	35	33	10	8	5	9	108	87	61	37	26	28	1.3
DPR Korea	175	1 284	2 559	2 991	2 858	1 464	460	118	887	1 577	1 640	1 473	724	269	293	2 171	4 136	4 631	4 331	2 188	729	1.8
India	3 016	57 191	72 119	74 440	62 141	40 741	22 383	5 854	41 002	42 799	26 983	16 106	9 699	5 017	8 870	98 193	114 918	101 433	78 247	50 440	27 400	2.3
Indonesia	697	12 546	17 137	14 881	14 772	9 669	5 197	803	11 509	13 597	10 953	9 586	5 422	2 212	1 500	24 055	30 734	25 834	24 358	15 091	7 409	1.4
Maldives	0	13	11	3	8	5	6	0	8	3	2	1	2	4	0	21	14	5	9	7	10	2.3
Myanmar	96	2 777	5 025	4 866	4 081	2 271	1 567	120	2 020	2 622	2 228	1 800	1 122	713	216	4 797	7 647	7 194	5 881	3 383	2 280	2.0
Nepal	121	1 991	1 749	1 652	1 710	1 739	763	188	1 282	1 138	849	677	540	215	309	3 273	2 887	2 501	2 387	2 279	978	2.0
Sri Lanka	6	358	472	664	800	521	371	18	283	237	192	176	122	102	24	621	709	856	976	643	473	2.9
Thailand	46	1 421	4 211	4 542	3 831	2 787	3 379	50	951	1 602	1 335	1 217	1 203	1 846	96	2 372	5 813	5 877	5 048	3 990	5 225	2.5
Timor-Leste	5	133	134	95	99	65	48	19	109	116	83	51	27	16	24	242	250	178	150	92	64	1.4
SEAR	4 583	83 939	111 750	113 176	98 654	65 556	39 341	7 767	63 166	68 595	48 066	33 615	20 303	11 117	12 350	147 105	180 345	161 242	132 269	85 859	50 458	2.0

For some countries, breakdown of notified cases by age and sex is missing, or is provided for a subset of cases. See Explanatory notes on page 140 for further details. Data can be downloaded from www.who.int/tb

Table A2.9 New smear-positive case notification rates by age and sex, DOTS and non-DOTS, 2004

	MALE					FEMALE					ALL										
	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14	15-24	25-34	35-44	45-54	55-64	65+
Bangladesh	1	39	69	100	140	203	215	2	34	43	45	46	45	29	2	37	57	74	95	123	120
Bhutan	0	22	32	26	34	33	49	2	23	22	32	13	14	9	1	23	27	29	24	23	28
DPR Korea	6	70	134	160	256	139	70	4	50	86	91	133	64	30	5	60	110	126	194	100	47
India	2	54	82	104	120	127	85	3	42	54	41	33	30	17	3	48	69	74	78	78	48
Indonesia	2	58	89	98	139	153	96	3	54	71	73	91	76	34	2	56	80	86	115	112	62
Maldives	0	37	48	18	76	84	101	0	23	14	14	9	36	74	0	30	31	16	42	61	88
Myanmar	1	57	118	161	184	165	146	2	42	61	70	76	75	56	1	50	89	115	129	118	97
Nepal	2	76	92	121	187	286	170	4	53	63	64	74	84	42	3	65	78	93	131	182	102
Sri Lanka	0	20	30	44	68	63	54	1	15	16	14	17	19	15	1	18	23	30	44	44	34
Thailand	1	25	75	97	113	135	195	1	17	28	26	33	54	84	1	21	51	60	71	93	133
Timor-Leste	4	121	237	190	281	316	393	14	108	275	175	155	125	125	9	115	253	183	220	218	256
SEAR	2	52	83	104	128	138	101	3	42	55	47	46	41	25	2	47	69	77	88	89	60

Rates are per 100 000 population of each age/sex group. Rates are calculated excluding those countries for which breakdown of notified cases or population by age and sex is missing. Data can be downloaded from www.who.int/tb

Table A2.10 Number of TB cases notified, 1980–2004

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Bangladesh	39 774	42 844	49 870	52 961	45 679	41 802	45 599	45 355	44 280	45 191	48 673	56 052	31 400	54 001	48 276	56 437	63 471	63 420	72 256	79 339	75 557	76 302	81 963	88 156	98 234
Bhutan	1 539	2 657	720	1 017	904	1 073	1 562	608	1 126	1 525	1 154	996	140	108	1 159	1 299	1 271	1 211	1 292	1 174	1 140	1 037	1 089	1 026	988
DPR Korea	0							0										11 050	1 152	12 287	34 131	29 284	40 159	41 810	44 602
India	705 600	769 540	923 095	1 075 098	1 109 310	1 168 804	1 279 536	1 403 122	1 457 288	1 510 500	1 519 182	1 555 353	1 121 120	1 081 279	1 114 374	1 218 183	1 290 343	1 132 859	1 102 002	1 218 743	1 115 718	1 085 075	1 060 951	1 073 282	1 136 506
Indonesia	25 235	32 461	33 000	31 809	32 432	17 661	16 750	97 505	105 516	74 470	60 808	98 458	62 966	49 647	35 529	24 647	22 184	22 184	40 497	69 064	84 591	92 792	155 188	174 174	210 229
Maldives	73	112	111	143	123	91	111	115	85	203	152	123	92	175	249	231	212	173	176	153	132	139	125	137	119
Myanmar	12 744	12 461	12 069	11 012	11 045	10 506	10 840	11 966	9 348	10 940	12 416	14 905	17 000	19 009	15 583	18 229	22 201	17 122	14 756	19 628	30 840	42 838	57 012	75 744	96 662
Nepal	1 020	337	1 459	700	190	52	252	1 012	1 603	1 003	10 142	8 943	6 802	6 809	6 132	5 710	5 366	6 542	24 158	27 356	29 519	29 519	30 359	30 925	31 979
Sri Lanka	6 212	6 288	7 334	6 696	6 376	5 889	6 596	6 411	6 092	6 429	6 666	6 174	6 802	6 809	6 132	5 710	5 366	6 542	6 925	7 157	8 413	7 489	8 939	8 998	8 562
Thailand	45 704	49 452	48 553	65 413	69 240	77 611	62 152	51 835	50 021	44 553	46 510	43 858	47 697	49 668	47 767	45 428	39 871	30 262	15 850	29 413	34 187	49 656	49 581	54 504	55 306
Timor-Leste																							2 760	2 760	3 716
SEAR	837 901	915 952	1 076 211	1 244 819	1 275 299	1 413 418	1 520 444	1 620 444	1 667 348	1 735 860	1 719 365	1 747 252	1 322 709	1 287 176	1 298 759	1 400 850	1 470 352	1 308 961	1 279 041	1 464 312	1 414 228	1 414 141	1 488 126	1 551 516	1 686 903
Number reporting	9	8	8	8	8	8	8	7	9	8	8	8	7	8	8	8	8	9	9	9	9	9	10	11	11
% reporting	100	89	89	89	89	89	89	78	100	89	89	89	78	89	89	89	89	100	100	100	100	100	100	100	100

From 1995 on, number shown is all notified new and relapse cases (DOTS and non-DOTS). The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb



Table A2.11 Case notification rates, 1980-2004

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Bangladesh	48	51	58	60	50	45	48	47	45	44	47	53	29	48	42	48	53	52	58	63	59	58	61	65	71
Bhutan	119	201	53	74	64	74	106	40	72	95	70	60	8	6	68	75	72	67	70	62	59	52	54	50	47
DPR Korea							0											52	5	57	156	133	181	188	199
India	102	109	128	146	148	153	164	176	179	181	179	179	127	120	121	130	135	117	112	121	109	105	101	100	105
Indonesia	17	21	21	20	20	11	10	10	56	59	41	33	53	33	26	18	12	11	20	33	40	44	72	80	96
Maldives	46	69	66	83	69	50	59	59	42	97	70	55	40	74	102	92	82	65	64	54	45	47	41	44	37
Myanmar	38	36	34	31	30	28	29	31	24	27	30	36	40	44	36	41	49	37	32	42	65	89	117	153	193
Nepal	7	2	9	4	1	0	1	6	9	59	53	46	37	64	74	91	103	106	103	115	121	118	119	119	120
Sri Lanka	41	41	47	42	39	36	39	38	35	37	37	34	37	37	33	30	28	34	36	36	42	37	44	44	42
Thailand	99	105	101	134	139	153	101	99	94	83	85	79	85	87	83	78	68	51	26	48	56	80	79	86	87
Timor-Leste																									
SEAR	80	85	98	111	112	113	119	125	134	137	133	133	99	94	93	99	102	89	86	97	92	91	94	96	103

Rates are per 100 000 population. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/rb

Table A2.12 New smear-positive cases notified, numbers and rates, 1993–2004

	Number of cases												Rate (per 100 000 population)												
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
Bangladesh	18 993	1 710	20 524	29 674	33 117	37 737	37 821	38 484	40 777	46 811	53 618	62 500	17	2	18	25	27	30	30	30	31	35	39	45	
Bhutan		352	367	308	284	270	315	347	359	364	360	356		21	21	17	16	15	17	18	18	18	17	17	
DPR Korea					3 980	403	5 073	16 440	14 429	18 576	17 392	18 479					19	2	23	75	66	84	78	83	
India	225 256	226 543	264 515	290 953	274 877	278 275	345 150	349 374	384 827	395 833	433 564	489 031	25	25	28	31	28	28	34	34	37	38	40	45	
Indonesia	62 966	49 647	31 768	11 790	19 492	32 280	49 172	52 338	53 965	76 230	92 566	128 981	33	26	16	6	10	16	24	25	25	25	36	43	59
Maldives	126	125	114	106	95	88	88	65	59	60	68	66	53	51	45	41	36	32	31	22	20	20	22	21	
Myanmar		946	8 681	9 716	9 695	10 089	11 458	17 254	21 161	24 162	27 448	31 408		2	20	21	21	22	24	24	36	44	49	55	63
Nepal	6 679	10 442	8 591	10 365	11 323	11 306	13 410	13 683	13 683	13 714	14 348	14 614	32	49	40	47	50	48	56	56	55	54	55	55	
Sri Lanka	3 335	3 405	3 049	2 958	3 506	3 761	3 911	4 314	4 316	4 297	4 321	4 302	18	18	16	16	18	19	20	22	22	21	21	21	
Thailand		20 260	20 273	16 997	13 214	7 962	14 934	17 754	28 363	25 593	28 459	28 421		35	35	29	22	13	25	29	46	41	45	45	
Timor-Leste										1 090	1 027	1 014										141	124	114	
SEAR	317 355	313 430	357 882	372 867	369 583	382 171	481 332	510 053	561 939	606 730	673 171	779 172	23	23	25	26	25	26	32	33	36	38	42	48	

Rates are per 100 000 population. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Notes

Bhutan

The population estimate used by the NTP (0.80 million) differs from that of the United Nations Population Division (2.11 million). Using the smaller population estimate gives a notification rate for new smear-positive cases of 45 per 100 000 population, and a smear-positive case detection rate of 92%.

Summary by WHO region

Africa

The Americas

Eastern Mediterranean

Europe





South-East Asia

Western Pacific



WESTERN PACIFIC: SUMMARY OF TB CONTROL POLICIES

	STATUS ^a	MANUAL ^b	MICROSCOPY ^c	SCC ^d	DOT ^e	MONITORING OUTCOME ^f
AMERICAN SAMOA	DOTS	YES				
AUSTRALIA	DOTS	NO				
BRUNEI DARUSSALAM	DOTS	YES				
CAMBODIA	DOTS	YES				
CHINA	DOTS	YES				
CHINA, HONG KONG SAR	DOTS	YES				
CHINA, MACAO SAR	DOTS	NO				
COOK ISLANDS	DOTS	YES				
FIJI	DOTS	YES				
FRENCH POLYNESIA	DOTS	YES				
GUAM	DOTS	YES				
JAPAN	DOTS	YES				
KIRIBATI	DOTS	YES				
LAO PDR	DOTS	YES				
MALAYSIA	DOTS	YES				
MARSHALL ISLANDS	DOTS	YES				
MICRONESIA	DOTS	YES				
MONGOLIA	DOTS	YES				
NAURU						
NEW CALEDONIA	DOTS	YES				
NEW ZEALAND	DOTS	YES				
NIUE	DOTS	YES				
NORTHERN MARIANA IS	DOTS	YES				
PALAU	DOTS	YES				
PAPUA NEW GUINEA	DOTS	YES				
PHILIPPINES	DOTS	YES				
REP. KOREA	DOTS	YES				
SAMOA						
SINGAPORE	DOTS	YES				
SOLOMON ISLANDS	DOTS	YES				
TONGA						
VANUATU	DOTS	YES				
VIET NAM	DOTS	NO				
WALLIS & FUTUNA IS						
TOKELAU						
TUVALU						

	Implemented in all units/areas
	Implemented in some units/areas
	Not implemented
	Unknown

^a Status: DOTS status (blank indicates no report received)

^b Manual: national TB control manual (recommended)

^c Microscopy: use of smear microscopy for diagnosis (core component of DOTS)

^d SCC: short course chemotherapy (core component of DOTS)

^e DOT: directly observed treatment (core component of DOTS)

^f Outcome monitoring: monitoring of treatment outcomes by cohort analysis (core component of DOTS)

Table A2.1 Estimated burden of TB, 1990 and 2004

	Incidence 1990			Prevalence 1990			TB mortality 1990			Incidence 2004			Prevalence 2004			TB mortality 2004			HIV prevalence in adult incident TB cases (%)				
	All forms* number	Smear-positive* number	rate	All forms* number	rate	ratio	All forms* number	rate	ratio	All forms* number	rate	ratio	All forms* number	rate	ratio	All forms* number	rate	ratio	All forms* number	rate	ratio		
American Samoa	24	52	11	23	35	117	5	12	5	18	28	5	31	49	3	5	5	1	3	5	5	1	0.1
Australia	1 060	6	476	3	1 113	7	110	5	1	1 132	6	20	5	1 147	6	10	5	1	113	5	1	2	3.9
Brunei Darussalam	159	62	72	28	292	114	31	12	1	197	54	5	230	63	5	19	5	1	19	5	1	5	0.1
Cambodia	56 894	584	25 218	259	92 259	947	11 207	115	5 488	40	31 118	226	1 921	14	97 790	709	2 744	20	12 980	94	1 901	14	13
China	1 345 828	116	605 478	52	3 781 608	327	286 535	25	1 324 633	101	7 037	5	2 463	5	2 892 422	221	3 518	5	217 130	17	2 176	5	0.9
China, Hong Kong SAR	6 327	111	2 846	50	8 468	148	706	12	5 223	75	12	5	2 349	77	5	5 334	77	6	450	6	1	5	0.4
China, Macao SAR	347	93	156	42	461	124	4	12	373	75	2	167	37	414	90	1	45	10	45	10	5	1	1.0
Cook Islands	10	52	4	23	22	117	2	12	5	28	5	2	13	9	51	5	5	5	5	5	5	5	0.1
Fiji	376	52	169	23	612	85	67	9	239	28	1	107	13	343	41	5	40	5	5	5	5	5	1.0
French Polynesia	101	52	46	23	229	117	23	12	72	28	5	32	13	142	56	5	12	5	17	10	5	1	2.3
Guam	180	134	81	60	406	303	40	30	98	59	2	44	26	152	91	5	17	10	5	1	5	1	2.6
Japan	66 354	54	29 841	24	88 294	71	8 227	7	37 814	30	105	5	17 006	13	50 394	39	53	5	4 709	4	12	5	0.6
Kiribati	96	134	43	60	218	303	22	30	57	59	5	26	27	57	59	5	4	4	4	4	4	4	≤0.05
Lao PDR	7 372	178	3 317	80	19 601	474	1 546	37	9 019	156	27	5	4 056	70	18 407	318	13	5	1 470	25	109	5	0.5
Malaysia	21 798	122	9 803	55	35 074	197	3 898	22	25 527	103	383	2	11 449	46	33 037	133	192	5	4 037	16	109	5	2.5
Marshall Islands	63	134	29	60	143	303	14	30	35	59	5	16	27	35	59	5	3	4	3	4	4	4	≤0.05
Micronesia	129	134	58	60	210	218	22	23	65	59	5	29	27	65	59	5	5	4	5	4	4	4	≤0.05
Mongolia	4 872	220	2 193	99	12 725	574	1 113	50	5 018	192	11	5	2 257	86	5 480	209	5	5	633	24	2	5	0.4
Nauru	5	52	2	23	11	117	1	12	4	28	5	2	13	5	5	35	5	4	5	4	4	4	0.1
New Caledonia	229	134	103	60	415	243	46	26	137	59	1	62	26	272	117	5	1	28	12	12	5	1	1.5
New Zealand	362	11	163	5	370	11	36	1	424	11	4	5	191	5	432	11	2	5	42	1	5	1	2.1
Niue	1	52	5	23	2	117	5	12	5	28	5	1	13	5	5	57	5	5	5	6	5	5	0.1
Northern Mariana Is	60	134	27	60	135	303	12	28	46	59	5	21	27	5	53	68	5	6	6	8	5	5	0.1
Palau	20	134	9	60	26	169	2	12	12	59	5	5	27	18	91	5	1	7	5	1	7	5	0.1
Papua New Guinea	10 986	267	4 943	120	34 686	843	2 983	73	13 455	233	302	5	6 025	104	25 879	448	151	3	2 448	42	64	1	3.7
Philippines	205 377	336	92 420	151	545 918	893	48 090	79	239 459	293	190	5	107 738	132	378 094	463	95	5	39 357	48	66	5	0.1
Rep. Korea	35 605	83	16 022	37	55 846	130	4 642	11	43 029	90	239	5	19 339	41	59 383	125	119	5	4 940	10	28	5	0.9
Samoa	84	52	38	23	136	84	15	9	52	28	5	24	13	78	43	5	5	5	9	5	5	5	0.4
Singapore	1 784	59	801	27	1 659	62	202	7	1 691	40	41	5	757	18	1 744	41	20	5	191	4	4	4	6.2
Solomon Islands	425	134	191	60	961	303	88	28	274	59	5	123	27	274	59	5	20	4	5	5	5	5	0.1
Tokelau	5	52	5	23	2	117	5	8	5	28	5	1	13	5	5	57	5	5	5	6	5	5	0.1
Tonga	49	52	22	23	87	92	9	10	29	28	5	1	13	5	43	42	5	5	5	5	5	5	0.1
Tuvalu	5	52	2	23	11	117	5	8	3	28	5	1	13	5	6	57	5	5	5	5	5	5	0.1
Vanuatu	200	134	90	60	453	303	45	30	122	59	5	55	27	133	64	5	11	5	5	5	5	5	0.1
Viet Nam	133 851	202	60 223	91	330 287	499	28 628	43	146 695	176	2 681	3	65 745	79	192 674	232	1 340	2	18 680	22	686	5	3.0
Wallis & Futuna Is	7	52	3	23	16	117	1	9	4	28	5	2	13	4	28	5	2	5	5	5	5	5	0.1
WPR	1 901 041	125	854 901	56	5 013 011	330	398 415	26	1 925 332	111	16 548	5	864 745	50	3 764 564	216	8 274	5	307 411	18	5 064	5	1.4

* Incidence, prevalence and mortality estimates include patients with HIV. Estimates labelled "HIV+" are estimates of TB in HIV-positive adults (aged 15-49 years). Estimates for all years are re-calculated as new information becomes available and techniques are refined, so they may differ from those published previously. See Explanatory notes on page 139 for further details. Data can be downloaded from www.who.int/tb

Table A2.3 DOTS coverage, case notifications and case detection rates, 2004

Country	DOTS coverage %	TB cases reported from DOTS services										Estimated incidence and case detection rate				Proportions					
		New and relapse (WHO total)		New pulmonary		New extra-pulmonary		Re-treatment cases		Re-treatment cases		New pulm. lab. confirm.		all forms number	ss+ (% of pulm.)	ss+ (% of new+relapse)	Extrapulm. (% of new+relapse)	Re-treat. (% of new+relapse)			
		number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate		
American Samoa	100	5	8	2	3	2	0	0	0	0	0	2	0	18	8	28	25	67	40	40	
Australia	63	655	3	168	1	236	231	20	6	5	351	120	1	132	507	58	33	42	26	35	
Bunei Darussalam	100	176	48	115	31	38	8	0	1	9	120	0	197	89	89	129	88	65	22	5	
Cambodia	100	30 838	223	18 978	138	5 800	645	41	29	197	18 978	0	70 370	31 118	44	61	77	62	62	18	3
China	96	763 035	58	377 846	29	269 226	37 866	78 697	85 409	7 592	377 846	0	1 324 633	595 361	56	63	58	49	5	19	19
China, Hong Kong SAR	100	4 579	66	1 290	19	2 271	501	0	517	3	43	0	5 223	2 349	88	55	36	28	11	13	13
China, Macao SAR	100	323	71	128	28	129	38	0	28	3	5	207	373	167	87	76	50	40	40	12	10
Cook Islands	98	1	6	1	6	0	0	0	0	0	0	1	5	2	19	43	100	100	100	100	2
French Polynesia	100	134	16	62	7	38	31	0	3	0	62	0	239	107	56	58	62	46	23	2	2
Guam	100	60	24	30	12	9	9	0	0	2	30	0	72	32	84	93	71	50	15	15	15
Japan	71	21 755	17	7 572	6	9 129	4 278	776	0	0	11 527	0	37 814	17 006	56	45	45	35	20	4	4
Kiribati	100	310	318	142	146	59	107	0	2	0	142	0	57	26	540	550	71	46	35	1	1
Laos PDR	98	3 173	55	2 241	39	472	343	0	117	15	52	0	9 019	4 056	35	55	83	71	11	11	6
Malaysia	100	14 896	60	7 843	32	5 136	1 643	0	464	27	357	0	25 527	11 449	59	69	60	52	10	10	6
Marshall Islands	100	119	199	39	65	38	37	5	2	1	39	0	35	16	338	246	51	33	31	7	7
Micronesia	90	118	108	35	32	51	26	0	6	0	69	0	65	29	183	120	41	30	22	18	18
Mongolia	100	4 570	175	1 808	69	866	1 718	178	53	33	1 808	0	5 018	2 257	91	80	68	40	38	6	6
Nauru	100	61	26	14	6	30	2	2	0	0	24	0	4	2	0	0	52	25	49	3	3
New Caledonia	100	373	9	112	3	86	129	37	9	5	176	0	424	191	88	59	57	30	35	4	4
Niue	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern Mariana Is	100	53	67	14	18	34	5	0	0	0	24	0	46	21	114	67	29	26	9	9	9
Palau	95	5	25	5	25	0	0	0	0	0	5	0	12	5	43	95	100	100	100	100	100
Papua New Guinea	47	8 751	152	1 151	20	3 959	3 396	245	0	0	1 151	0	13 455	6 025	65	19	23	13	39	39	3
Philippines	100	130 530	160	78 163	96	47 937	1 275	0	3 155	79	78 163	0	239 459	107 738	55	73	62	60	1	2	2
Rep. Korea	100	12 357	26	4 044	8	6 680	127	0	1 506	4	344	0	43 029	19 339	29	21	38	33	1	21	21
Samoa	100	1 516	35	506	12	660	182	168	0	0	892	0	52	24	0	0	43	33	12	12	12
Solomon Islands	100	340	73	152	33	107	68	13	0	0	152	0	274	123	124	123	59	45	20	20	4
Tokelau	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tonga	100	0	0	0	0	0	0	0	0	0	0	0	29	13	0	0	0	0	0	0	0
Tuvalu	100	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0
Vanuatu	100	115	55	59	28	32	23	0	1	2	59	0	122	55	94	107	65	51	20	3	3
Viet Nam	100	98 389	118	58 389	70	17 106	16 218	6 676	522	251	58 389	0	146 695	65 745	67	89	77	59	16	16	8
Wallis & Futuna Is	100	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0	0	0
WPR	94	1 087 378	63	560 632	32	370 103	73 346	45	93 252	750	1 153	86 742	9 218	1 925 332	864 745	57	65	60	51	7	15

ss+ indicates sputum smear-positive; ss-, sputum smear-negative; unk., sputum smear result unknown; re-treat., re-treatment; pulm.lab. confirmed, pulmonary case confirmed by positive smear or culture. See Explanatory notes on page 139 for further details. Data can be downloaded from www.who.int/tb

Table A2.4 Public–Public and Public–Private Mix (PPM), collaborative TB/HIV activities and management of MDR-TB, 2003-2004

	Public–Public and Public–Private Mix (PPM) 2004			Collaborative TB/HIV activities, 2003 or 2004			Multidrug-resistant TB, 2004			
	Guidelines for other practitioners	Public practitioners	Institutions notifying to WTP	HIV testing for TB pts among TB pts	TB pts for HIV surveillance	TB pts for HIV-positive CPT ART	Laboratory-confirmed MDR number	DST cases number	MDR in new cases number	Re-treatment MDR number
American Samoa	Yes	No	No	No	0	0	0	0	0	0
Australia	All	All	All	Partially	No	12	12	12	5	2
Brunei Darussalam	Yes	All	All	Yes	Yes	1	0	181	0	0
Cambodia	No	No	No	No	No	0	0	0	0	0
China	Some	All	No	No	No	2	15	3 566	16	513
China, Hong Kong SAR	Yes	All	Some	Yes	Yes	1	0	8	5	22
China, Macao SAR	Yes	All	All	Yes	Yes	0	0	207	0	0
Cook Islands	Yes	Some	All	No	No	0	0	0	0	0
Fiji	All	All	All	Partially	No	4	0	5	4	1
French Polynesia	All	All	All	Yes	Yes	0	0	51	0	11
Guam	All	All	All	Yes	Yes	0	0	29	0	0
Japan	Yes	All	All	No	No	0	0	0	0	0
Kiribati	Yes	No	All	Yes	No	0	0	0	0	0
Lao PDR	No	No	Some	Partially	Yes	0	0	0	0	0
Malaysia	Yes	Some	All	Yes	Yes	1 263	0	0	0	0
Marshall Islands	No	All	Some	Partially	No	0	0	2	2	8
Micronesia	Yes	No	No	Partially	No	0	0	26	1	4
Monrovia	Yes	No	Some	No	No	8	0	1	28	1
Nauru	No	No	Some	No	No	510	0	1	8	4
New Caledonia	Yes	All	All	Yes	Yes	16	0	2	2	0
New Zealand	Yes	All	All	No	No	141	2	3 278	3	10
Niue	No	All	All	Yes	Yes	53	0	0	0	0
Northern Mariana Is	Yes	All	All	Yes	Yes	4	0	1	5	1
Palau	No	All	All	Yes	Yes	0	0	0	0	0
Papua New Guinea	No	No	All	No	No	0	0	0	0	0
Philippines	Yes	Some	Some	No	No	0	0	0	0	0
Rep. Korea	No	All	All	No	No	0	0	230	269	2
Samoa	All	All	All	No	No	0	0	110	2 636	71
Singapore	Yes	All	All	No	No	0	0	2	838	2
Solomon Islands										
Tokelau										
Tonga										
Tuvalu										
Vanuatu	No	Some	All	No	No	0	0	0	0	0
Viet Nam	No	No	No	No	No	0	0	0	0	0
Wallis & Futuna Is	No	No	No	No	No	0	0	0	0	0
WPR	50	53	50	42	31	19 872	1 285	410	8 196	116
										1 009
										80

pts indicates patients; CPT, co-trimoxazole preventive therapy; ART, antiretroviral therapy. The regional row for the first 9 columns represents the proportion of countries that provided an affirmative response ("Yes", "All", "Some" or "Partially"). See Explanatory notes on pages 139 and 140 for further details. Some countries provided the number of TB patients found to be HIV-positive, but did not provide the number of TB patients tested. The regional total of TB patients tested is therefore lower than the number of patients actually tested, and cannot be used to calculate a regional estimate of HIV prevalence in TB patients. Data can be downloaded from www.who.int/tb

Table A2.5 Treatment outcomes, 2003 cohort

	New smear-positive cases, DOTS										New smear-positive cases, non-DOTS										Smear-positive re-treatment cases, DOTS									
	Number of cases					% of cohort					Number of cases					% of cohort					Number					% of cohort				
	Notified	Registered	Completed	Failed	Success	Notified	Registered	Completed	Failed	Success	Notified	Registered	Completed	Failed	Success	Notified	Registered	Completed	Failed	Success	Notified	Registered	Completed	Failed	Success	Notified	Registered	Completed	Failed	Success
American Samoa	2	2	100	100	100	0	0	0	0	100	0	0	0	0	100	0	0	0	0	100	1	0	100	0	0	0	0	0	100	
Australia	48	272	567	17	65	9	0	1	7	1	82	0	0	0	86	14	29	57	7	0	7	0	0	0	0	0	86			
Bunei Darussalam	121	121	100	45	15	6	0	2	33	0	60	0	0	0	38	8	25	13	0	0	0	0	0	0	13	50	38			
Cambodia	18 923	19 088	101	90	3	3	0	2	1	0	93	0	0	0	87	833	80	7	6	3	2	1	0	0	0	87				
China	257 287	257 287	100	91	3	1	1	1	1	2	94	0	0	0	89	78 265	82	6	3	3	2	1	3	0	0	89				
China, Hong Kong SAR	1 470	1 470	100	73	5	5	9	4	4	0	78	0	0	0	78	255	67	11	5	11	3	4	0	0	0	78				
China, Macao SAR	0	0	100	85	2	5	0	2	3	2	88	0	0	0	88	35	74	11	6	0	0	6	3	0	0	88				
Cook Islands	0	0	100	86	0	8	0	6	0	0	86	0	0	0	86	6	50	0	17	0	33	0	0	0	0	50				
Fiji	78	78	100	86	0	8	0	6	0	0	86	0	0	0	83	6	0	83	17	0	0	0	0	0	0	83				
French Polynesia	21	36	171	83	11	6	0	0	0	83	0	0	0	0	83	6	0	83	17	0	0	0	0	0	0	0	83			
Guam	0	25	96	0	4	0	0	0	0	0	96	0	0	0	96	6	0	83	17	0	0	0	0	0	0	96				
Japan	7 212	7 278	101	50	26	13	4	2	6	0	76	0	0	0	76	3 631	2 303	63	17	16	1	3	0	63	0	33	0	72		
Kiribati	69	69	100	74	14	10	0	1	9	4	2	88	0	0	88	2	100	0	0	0	0	0	0	0	0	100				
Leo PDR	1 868	1 868	100	70	9	8	1	9	4	0	79	0	0	0	79	136	46	7	14	3	8	4	17	54	0	72				
Malaysia	7 969	6 716	84	69	3	9	1	9	5	4	72	0	0	0	72	453	37	25	13	0	12	4	8	63	0	63				
Marshall Islands	20	20	100	90	0	5	0	5	0	0	90	0	0	0	90	4	50	25	0	0	25	0	0	0	0	75				
Micronesia	26	26	100	27	65	4	0	4	0	0	92	0	0	0	92	8	0	50	38	0	13	0	0	0	0	50				
Mongolia	1 541	1 541	100	84	4	3	4	4	2	0	87	0	0	0	87	235	51	20	6	11	7	3	0	0	0	72				
Nauru	1	1	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
New Caledonia	12	12	100	75	25	5	0	1	4	55	36	0	0	0	75	2	100	0	0	0	0	0	0	0	0	100				
New Zealand	181	185	102	36	5	1	4	55	36	0	36	0	0	0	36	5	0	60	20	0	0	0	0	0	20	60				
Niue	0	0	100	75	0	6	0	0	13	6	75	0	0	0	75	0	0	0	0	0	0	0	0	0	0	0				
Northern Mariana Is	16	16	100	80	0	0	0	20	0	0	80	0	0	0	80	0	0	0	0	0	0	0	0	0	0	0				
Palau	5	5	100	80	0	0	0	20	0	0	80	0	0	0	80	0	0	0	0	0	0	0	0	0	0	0				
Papua New Guinea	1 061	1 067	101	41	17	4	1	19	6	11	58	1 249	0	0	58	75	23	24	11	4	29	7	3	47	0	47				
Philippines	72 670	68 377	94	81	8	3	1	5	3	0	88	0	0	0	88	2 963	57	19	5	6	9	3	0	76	0	76				
Rep. Korea	4 379	4 342	99	81	2	1	1	4	11	0	82	6 597	0	0	82	3 890	67	2	2	2	7	20	0	69	0	69				
Samoa	12	12	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Singapore	341	583	171	77	17	0	4	2	0	0	77	242	0	0	77	208	0	70	20	0	7	1	1	70	0	70				
Solomon Islands	138	139	101	68	19	7	0	4	2	0	87	0	0	0	87	5	80	20	0	0	0	0	0	0	0	100				
Tokelau	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Tonga	11	11	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Tuvalu	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Vanuatu	40	40	100	70	5	18	5	0	3	0	75	0	0	0	75	2	100	0	0	0	0	0	0	0	0	100				
Viet Nam	55 937	55 842	100	90	2	3	1	2	2	0	92	0	0	0	92	6 011	80	6	5	5	2	3	0	85	0	85				
Wallis & Futuna Is	7	7	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
WPR	431 646	426 675	99	87	4	2	1	2	2	1	91	22 243	12 928	58	51	8	1	1	2	14	22	59	94 156	80	7	3	3	2	87	

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases registered, the denominator for calculating treatment outcomes. The number of cases registered in 2003 is used as the denominator for calculating treatment outcomes unless it is less than the sum of outcomes, in which case the sum of outcomes is used. If the number of cases registered is not reported, then the number of cases notified in 2003 is used, or the sum of outcomes if the latter is greater. Data can be downloaded from www.who.int/tb

Table A2.6 Re-treatment outcomes, 2003 cohort

	Release, DOTS						After failure, DOTS						After default, DOTS					
	Number registered	Completed	Cured	Failed	Died	% Success	Number registered	Completed	Cured	Failed	Died	% Success	Number registered	Completed	Cured	Failed	Died	% Success
American Samoa	1	100				100												
Australia	14	29	57	7	7	86												
Brunei Darussalam	8	25	13	0	0	38	0											
Cambodia	754	84	6	5	2	89												
China	233	69	11	4	11	80	1	0	100	0	0	100	21	52	0	14	14	19
China, Hong Kong SAR	29	76	10	7	0	86	0						6	67	17			
China, Macao SAR	0						0						0					
Cook Islands	6	50	0	17	0	50												
Fiji	6	83	17			83												
French Polynesia																		
Guam	734	49	23	14	5	72												
Japan	2	100				100												
Kiribati	86	53	7	12	1	60	7	29	0	29	0	14	43	35	9	16	2	14
Lao PDR	351	40	30	13	1	71	28	18	14	11	0	21	74	30	7	12	0	31
Malaysia	3	67	33			100							1					
Marshall Islands	4	0	50	25	0	50	58	45	26	3	17	5	4	0	50	0	0	0
Micronesia	146	55	19	7	10	75							31	45	16	10	10	16
Mongolia																		
Nauru	2	100				100												
New Caledonia	5	60	20			60												
New Zealand	0						0						0					
Niue	0						0						0					
Northern Mariana Is	0						0						0					
Palau	0						0						0					
Papua New Guinea	75	23	24	11	4	47												
Philippines	2 454	61	19	5	4	80	509	39	19	7	16	16	4	0	4	0	56	
Rep. Korea	1 608	68	2	2	2	70	7	71					29	0	71			
Samoa																		
Singapore	180	70	22	0	0	100	12	83					16					
Solomon Islands	5	80	20	0	0	100	0						0					
Tokelau																		
Tonga																		
Tuvalu																		
Tuvalu	2	100	0	0	0	100												
Vanuatu	5 444	81	6	5	4	87	488	60	7	7	17	5	79	87	8	1	0	4
Viet Nam																		
Wallis & Futuna Is																		
WPR	12 152	70	11	5	4	81	1 110	47	14	7	16	10	605	56	8	5	1	17

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases registered, the denominator for calculating treatment outcomes. The number of cases registered for treatment in 2003 is used as the denominator for calculating treatment outcomes unless it is missing or is less than the sum of outcomes, in which case the sum of outcomes is used. Data can be downloaded from www.wpro.int/tub

Table A2.7 DOTS treatment success and case detection rates, 1994–2004

	DOTS new smear-positive treatment success (%)										DOTS new smear-positive case detection rate (%)										
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
American Samoa	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
Australia		66	75	84	74	66	78	82	82	82	82	82	82	82	82	82	82	82	82	82	
Brunei Darussalam		85	76	63	56	84	60	80	80	80	80	80	80	80	80	80	80	80	80	80	
Cambodia	84	91	94	91	95	93	91	92	92	92	93	93	93	93	93	93	93	93	93	93	
China	94	96	96	96	97	96	96	96	93	94	94	94	94	94	94	94	94	94	94	94	
China, Hong Kong SAR		85	78	76	78	79	78	78	78	78	78	78	78	78	78	78	78	78	78	78	
China, Macao SAR	75		81	81	78	89	86	89	88	88	88	88	88	88	88	88	88	88	88	88	
Cook Islands		90	86	86	91	90	92	85	85	78	86	86	86	86	86	86	86	86	86	86	
French Polynesia		67	95	100	74	85	97	80	82	83	83	83	83	83	83	83	83	83	83	83	
Fiji			94	93	71	68	96	96	96	96	96	96	96	96	96	96	96	96	96	96	
Guam			76	70	75	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	
Japan			83	88	91	86	94	88	88	88	88	88	88	88	88	88	88	88	88	88	
Kiribati		70	55	62	75	84	82	77	78	79	76	72	64	68	68	68	68	68	68	68	
Lao PDR		69																			
Malaysia																					
Marshall Islands																					
Micronesia	64	80	78	86	84	86	87	87	87	87	87	87	87	87	87	87	87	87	87	87	
Mongolia																					
Nauru																					
New Caledonia	62	75		70	77	89	84	85	75	24	31										
New Zealand																					
Niue																					
Northern Mariana Is																					
Palau	64	67	75		80	81	74	71	75	115	53	96									
Papua New Guinea																					
Philippines	80		93	72	66	63	67	53	58	0	0	3	10	20	48	57	61	68	73	73	
Rep. Korea	71	76	71	82	83	88	88	88	88	34	65	56	57								
Samoa	50	80	100	86	94	92	77	84	84	47	29	47									
Singapore	88	86								57	26										
Solomon Islands	65	73	92	92	92	81	89	90	87	57	73	94	64	78	87	82	108	123			
Tokelau																					
Tonga	89	75	82	75	94	80	93	92	83	49	80	65	98	63	99	55	163	81			
Tuvalu																					
Vanuatu																					
Viet Nam	91	91	90	85	93	92	92	93	92	30	59	78	83	83	82	83	87	85	89	89	
Wallis & Futuna Is																					
WPR	90	91	93	93	95	94	92	93	91	15	28	32	33	32	32	37	38	39	50	65	

Treatment success, sum of cured and completed; DOTS new smear-positive case detection rate, notified cases divided by estimated incident cases. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Table A2.8 New smear-positive case notification by age and sex, absolute numbers, DOTS and non-DOTS, 2004

	Male					Female					All					Male/female ratio						
	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14	15-24	25-34	35-44	45-54	55-64	65+								
American Samoa																						
Australia	0	18	16	17	15	11	32	0	6	17	5	7	3	19	0	24	33	22	22	14	51	2.0
Brunei Darussalam	0	10	13	12	16	11	10	0	6	11	12	8	2	4	0	16	24	24	24	13	14	1.9
Cambodia	38	850	1 466	2 261	1 942	1 759	1 538	28	658	1 276	1 882	2 176	1 836	1 270	64	1 508	2 742	4 143	4 118	3 595	2 808	1.1
China	1 375	35 465	43 594	45 408	46 256	41 846	50 797	1 659	25 951	25 150	20 613	16 985	14 038	15 739	3 034	61 416	68 744	66 021	63 251	55 884	66 536	2.2
China, Hong Kong SAR	3	59	94	128	228	175	477	6	97	112	87	56	34	140	9	156	206	215	282	209	617	2.2
China, Macao SAR	0	8	7	18	31	12	14	0	5	7	12	3	2	9	0	13	14	30	34	14	23	2.4
Cook Islands	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Fiji	0	8	6	6	6	7	2	0	8	6	3	5	2	1	0	16	12	11	11	9	3	1.5
French Polynesia	1	1	2	3	0	1	4	4	4	6	1	4	2	1	1	5	8	4	4	3	5	0.7
Guam	0	0	1	2	6	2	3	0	0	1	2	3	1	1	0	0	2	4	9	3	4	1.8
Japan	2	193	462	599	934	1 363	3 759	6	182	364	230	222	294	1 861	8	375	826	829	1 156	1 657	5 620	2.3
Kiribati	8	17	10	12	10	9	3	7	31	9	12	7	6	1	15	48	19	24	17	15	4	0.9
Lao PDR	15	122	182	234	318	260	276	12	75	137	155	172	165	118	27	197	319	389	490	425	394	1.7
Malaysia	191	1 195	2 105	2 189	1 890	1 440	1 595	227	925	1 014	852	694	605	532	418	2 120	3 119	3 041	2 584	2 045	2 087	2.2
Marshall Islands	2	5	4	3	3	2	1	1	7	5	3	3	0	1	3	12	9	6	6	2	1	1.0
Micronesia	0	4	0	0	0	2	1	3	4	4	1	1	3	1	3	8	4	3	1	5	2	0.5
Mongolia	6	287	256	229	112	54	43	18	283	249	162	62	24	23	24	570	505	391	174	78	66	1.2
Nauru																						
New Caledonia	0	2	1	3	2	1	2	0	2	1	0	0	1	0	0	4	2	3	2	2	2	2.8
New Zealand	3	10	14	10	6	5	16	0	10	14	4	5	1	14	3	20	28	14	11	6	30	1.3
Niue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern Mariana Is	0	0	2	2	4	1	0	0	1	2	1	1	0	0	0	1	4	3	5	1	0	1.8
Palau	0	0	0	0	1	2	0	0	1	1	1	1	1	0	0	1	1	1	2	2	2	1.5
Papua New Guinea	28	153	138	90	61	43	6	30	164	161	66	38	18	3	58	317	299	156	99	61	9	1.1
Philippines	312	6 192	10 328	12 229	11 413	7 526	4 289	291	3 507	5 080	5 008	4 327	3 210	2 183	603	10 299	15 418	17 237	15 740	10 736	6 472	2.2
Rep. Korea	18	709	1 278	1 365	1 249	1 020	1 604	26	662	848	497	343	362	1 520	44	1 371	2 126	1 862	1 592	1 362	3 124	1.7
Samoa																						
Singapore	1	12	32	56	84	75	120	0	6	15	18	17	19	51	1	18	47	74	101	94	171	3.0
Solomon Islands	6	11	12	8	11	9	5	10	22	20	13	14	8	3	16	33	32	21	25	17	8	0.7
Tokelau																						
Tonga																						
Turvalu																						
Vanuatu	1	7	11	2	6	3	5	3	5	8	2	2	2	2	4	12	19	4	8	5	7	1.5
Viet Nam	54	3 486	7 364	9 110	8 743	5 257	8 206	66	1 740	2 398	2 218	2 551	2 226	4 970	120	5 226	9 762	11 328	11 294	7 483	13 176	2.6
Wallis & Futuna Is																						
WPR	2 062	49 424	67 398	74 000	73 345	60 888	72 748	2 393	34 361	36 925	31 860	27 718	22 864	28 467	4 455	83 785	104 323	105 860	101 063	83 762	101 215	2.2

For some countries, breakdown of notified cases by age and sex is missing, or is provided for a subset of cases. See Explanatory notes on page 140 for further details. Data can be downloaded from www.who.int/tb

Table A2.9 New smear-positive case notification rates by age and sex, DOTS and non-DOTS, 2004

	MALE						FEMALE						ALL									
	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14	15-24	25-34	35-44	45-54	55-64	65+	0-14	15-24	25-34	35-44	45-54	55-64	65+	
American Samoa																						
Australia	0	1	1	1	1	1	3	0	0	1	0	1	0	1	0	1	1	1	1	1	1	2
Bunei Darussalam	0	29	37	44	75	121	176	0	19	29	45	50	36	70	0	24	33	45	65	89	123	
Cambodia	1	50	181	323	431	683	1080	1	39	155	237	387	498	457	1	45	168	277	407	574	668	
China, Hong Kong SAR	1	32	38	40	55	82	114	1	25	23	19	21	29	30	1	29	31	30	39	56	68	
China, Macao SAR																						
Cook Islands																						
Fiji	0	9	9	14	14	29	13	0	10	9	5	12	8	6	0	10	9	10	13	18	9	
French Polynesia	3	4	10	16	0	12	69	17	32	6	32	27	16	16	1	10	21	11	15	19	42	
Guam	0	0	9	14	57	32	60	0	0	9	18	33	19	19	0	0	9	16	46	26	39	
Japan	0	3	5	7	11	15	36	0	3	4	3	3	3	13	0	3	4	5	7	9	23	
Kiribati																						
Leo PDR	1	21	44	83	168	239	283	1	13	33	62	86	132	104	1	17	39	67	126	181	187	
Malaysia	5	51	108	131	149	200	296	6	42	53	52	56	86	88	5	47	81	92	103	144	184	
Marshall Islands																						
Micronesia	0	32	0	35	0	94	57	15	34	52	17	22	137	46	7	33	27	26	11	116	51	
Mongolia	1	98	110	129	114	103	100	4	98	109	90	61	44	41	3	98	110	109	87	73	67	
Nauru																						
New Caledonia	0	10	5	17	16	11	31	0	11	5	0	0	13	0	0	10	5	9	8	12	15	
New Zealand	1	4	6	3	2	3	8	0	4	5	1	2	1	5	0	4	6	2	2	2	6	
Niue																						
Northern Mariana Is																						
Palau																						
Papua New Guinea	2	26	31	27	29	37	8	3	31	36	20	19	17	4	2	28	34	23	24	28	6	
Philippines	2	81	160	259	349	387	312	2	43	80	106	129	160	127	2	62	120	183	238	271	209	
Rep. Korea	0	19	30	32	39	51	97	1	19	21	12	11	17	63	0	19	25	22	25	33	77	
Samoa																						
Singapore	0	4	10	14	23	38	75	0	2	5	4	5	10	27	0	3	8	9	14	24	49	
Solomon Islands	6	21	31	35	74	92	73	10	46	55	55	94	86	45	8	33	42	45	84	89	60	
Tokelau																						
Tonga																						
Tuvalu																						
Vanuatu	2	30	74	18	76	63	140	7	23	53	17	26	46	58	5	27	64	17	52	55	100	
Viet Nam	0	40	106	165	244	300	400	1	21	34	39	69	119	207	0	31	70	101	155	207	296	
Wallis & Futuna Is																						
WPR	1	34	45	52	68	89	116	1	25	26	23	27	34	37	1	29	36	38	48	62	73	

Rates are per 100 000 population of each age/sex group. Rates are calculated excluding those countries for which breakdown of notified cases or population by age and sex is missing. Data can be downloaded from www.who.int/tb

Table A2.10 Number of TB cases notified, 1980–2004

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
American Samoa	2	6	6	8	12	5	8	9	13	5	9	3	1	4	4	0	0	6	3	4	3	3	2	3	5
Australia	1 457	1 386	1 270	1 219	1 299	1 088	906	907	954	952	1 016	950	1 011	991	1 057	1 073	1 043	899	1 073	1 043	980	1 013	949	1 059	1 059
Brunei Darussalam	196	285	245	276	256	238	212	189	126	128	143	180	180	160	160	160	160	160	160	160	160	160	160	160	160
Cambodia	2 576	1 980	8 158	7 572	10 241	10 145	10 325	9 106	10 691	7 906	6 501	10 903	16 148	13 270	15 172	14 803	14 857	15 629	16 946	19 266	18 891	19 170	24 610	28 216	30 838
China	0	98 654	117 557	151 564	228 899	265 095	251 600	304 639	310 607	375 481	345 000	320 426	344 218	363 904	515 764	504 758	466 394	445 704	449 518	454 372	470 221	462 609	615 868	790 603	790 603
China, Hong Kong SAR	8 065	7 729	7 527	7 301	7 843	7 545	7 432	7 269	7 021	6 704	6 510	6 283	6 534	6 537	6 319	6 212	6 501	7 072	7 673	5 605	6 015	6 788	6 277	5 914	6 143
China, Macao SAR	1 101	565	233	455	671	571	420	389	320	274	343	329	294	285	264	402	570	575	465	449	465	388	371	323	323
Cook Islands	37	10	19	29	20	36	17	16	20	18	1	8	12	6	4	0	0	0	0	3	2	2	1	0	1
Fiji	210	180	163	163	165	230	199	173	162	218	228	247	240	183	225	203	200	171	166	192	144	163	148	185	134
French Polynesia	76	66	65	78	80	78	85	80	63	73	59	49	83	78	89	86	86	91	105	93	62	63	64	50	60
Guam	55	41	49	48	54	37	49	34	41	75	0	0	0	70	94	0	0	0	0	0	54	62	51	22	51
Japan	70 916	65 867	63 940	62 021	61 521	59 690	56 496	54 357	53 112	51 821	50 612	48 956	48 461	44 425	43 078	42 122	42 122	42 190	44 016	40 800	39 384	35 489	32 828	31 638	29 736
Kiribati	146	187	193	127	111	103	129	110	208	121	68	91	100	99	253	327	327	464	276	255	252	189	196	284	310
Lao PDR	7 630	4 706	4 700	6 528	4 258	1 514	3 468	7 279	2 952	1 826	1 951	994	2 083	1 135	830	1 440	1 440	1 923	2 153	2 434	2 234	2 418	2 621	2 766	3 173
Malaysia	11 218	10 970	11 944	11 634	10 577	10 569	10 735	11 068	10 944	10 686	11 702	11 059	11 420	12 285	11 708	11 778	12 691	13 539	14 115	14 908	15 057	14 830	14 389	15 671	14 986
Marshall Islands	6	7	12	15	12	15	37	32	11	7	68	367	350	111	173	172	126	107	123	49	84	56	51	60	119
Micronesia	0	0	67	73	75	66	60	96	77	68	367	350	111	173	173	172	126	107	123	49	84	56	51	60	119
Monrovia	1 160	1 094	1 325	1 514	1 652	2 994	2 819	2 433	2 538	2 233	1 659	1 611	1 516	1 418	1 730	2 780	4 062	3 592	2 915	3 348	3 109	3 526	3 929	3 918	4 570
Nauru	0	2	8	0	0	8	8	6	8	0	7	0	0	4	4	0	0	0	2	2	4	3	5	3	3
New Caledonia	108	128	120	171	144	104	98	74	111	128	143	140	140	104	97	87	104	88	90	78	94	61	65	38	61
New Zealand	474	448	437	415	404	359	320	296	295	303	348	335	317	274	352	391	352	321	365	447	344	377	329	386	373
Niue	1	0	2	3	1	0	5	0	3	0	0	0	2	1	2	0	2	0	0	1	0	0	4	0	0
Northern Mariana Is	0	26	75	74	58	64	16	56	27	28	28	6	67	4	46	48	51	93	97	66	75	58	53	45	53
Palau	17	10	17	14	20	26	13	38	17	3	3	6	4	25	41	19	5	15	32	32	32	32	11	9	5
Papua New Guinea	2 525	2 508	2 742	2 955	3 505	3 453	2 877	2 251	4 261	3 396	2 497	3 401	2 540	7 451	5 335	8 041	3 195	7 977	11 291	13 003	10 520	12 658	11 197	12 798	12 743
Philippines	112 307	116 821	104 715	106 300	151 863	151 028	153 129	163 740	183 113	217 272	317 008	207 371	236 172	178 134	180 044	119 186	165 453	185 767	162 360	145 807	119 914	107 133	118 408	132 759	130 530
Rep. Korea	89 803	98 532	100 878	91 572	85 689	87 169	88 789	87 419	74 460	70 012	63 904	57 864	48 070	46 999	38 155	42 117	39 315	33 215	34 661	32 075	21 762	37 268	34 967	33 843	34 671
Samoa	59	49	43	41	37	43	65	29	29	37	44	44	26	49	45	45	31	32	22	31	43	22	31	27	27
Singapore	2 710	2 425	2 179	2 065	2 143	1 952	1 760	1 616	1 666	1 617	1 591	1 841	1 778	1 830	1 677	1 889	1 951	1 977	2 120	1 805	1 728	1 536	1 516	1 891	1 516
Solomon Islands	266	313	324	302	337	377	292	334	372	488	382	309	364	367	332	352	299	318	295	289	302	292	256	293	340
Tokelau	0	1	0	0	0	2	0	9	1	0	0	1	1	1	0	2	0	0	0	0	0	0	0	0	0
Tonga	64	49	45	50	54	49	35	24	14	36	23	20	29	33	23	20	22	21	30	22	24	12	29	16	16
Tuvalu	33	18	12	23	9	32	27	22	24	24	26	23	30	30	28	19	36	18	14	14	16	16	13	30	30
Vanuatu	178	92	173	196	188	124	131	90	118	144	140	230	103	114	152	79	126	184	178	120	152	175	101	104	115
Viet Nam	43 062	43 506	51 206	43 185	43 875	48 941	47 557	55 505	52 463	52 270	50 203	59 784	56 594	52 994	51 763	55 739	74 711	77 838	87 468	88 879	89 782	90 728	95 044	92 741	98 389
Wallis & Futuna Is	23	24	5	17	14	14	14	34	1	30	22	22	4	11	11	6	8	14	14	14	14	14	19	15	15
WPR	356 481	355 345	461 567	462 195	541 002	615 181	651 854	655 020	716 447	741 912	894 074	760 870	754 469	718 784	724 290	824 952	873 424	870 918	834 604	820 483	786 283	805 104	811 482	960 908	1 161 201
Number reporting	36	33	36	36	36	36	36	36	36	35	33	31	35	33	33	28	31	31	31	33	35	35	36	36	30
% reporting	100	92	100	100	100	100	100	100	100	97	92	86	97	92	92	78	86	86	86	86	92	97	97	100	86

From 1995 on, number shown is all notified new and relapse cases (DOTS and non-DOTS). The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb



Table A2.11 Case notification rates, 1980-2004

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
American Samoa	6	18	17	22	32	13	19	21	29	11	19	6	2	8	8	0	11	5	7	5	5	5	3	5	8
Australia	10	9	8	8	8	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5	5	5	5
Brunei Darussalam	102	143	120	131	118	107	92	80	52	51	56	67	66	57	66	6	6	52	84	92	63	66	66	58	48
Cambodia	39	29	116	103	132	125	122	104	118	84	67	108	155	124	137	128	127	131	139	154	148	147	185	209	223
China	10	11	14	21	24	21	24	23	27	27	33	29	27	29	30	42	41	38	36	36	36	37	36	47	60
China, Hong Kong SAR	160	150	144	137	145	138	135	131	126	119	114	109	111	109	104	100	103	111	119	86	91	101	92	86	88
China, Macao SAR	437	226	87	163	229	188	131	117	92	76	92	86	75	71	97	136	135	107	101	104	104	86	82	71	71
Cook Islands	208	57	107	162	111	198	93	88	110	5	5	43	63	31	20	26	0	0	5	16	11	11	5	0	6
Fiji	33	28	24	27	24	32	28	24	23	30	31	34	33	24	30	26	22	21	24	18	22	18	22	16	16
French Polynesia	50	42	41	47	47	45	48	44	34	38	30	25	41	38	42	39	39	41	46	40	26	26	26	20	24
Guam	52	38	44	42	46	31	40	27	32	57	32	43	43	50	66	66	66	66	66	35	40	32	13	31	31
Japan	51	56	54	52	51	48	47	46	44	43	42	41	39	39	36	34	33	33	35	32	31	28	26	25	23
Kiribati	267	333	334	214	182	164	200	166	305	173	95	124	133	129	322	398	553	322	291	281	206	210	298	318	318
Lao PDR	238	141	137	185	118	41	91	186	73	44	46	23	47	25	18	30	39	43	47	42	45	47	49	55	55
Malaysia	82	78	82	78	69	67	67	67	65	61	66	60	61	64	59	58	61	63	64	66	65	63	60	64	60
Marshall Islands	20	22	36	43	33	39	92	76	25	15	54	105	122	163	160	117	99	114	85	85	105	92	104	189	
Micronesia	70	64	76	84	89	157	143	120	121	103	75	71	66	61	73	116	168	148	119	135	124	140	150	152	175
Nauru	0	26	104	0	0	0	95	69	90	0	74	80	78	57	51	45	53	44	44	37	44	28	29	17	26
New Caledonia	76	88	81	114	94	67	62	46	68	76	84	80	78	57	51	45	53	44	44	37	44	28	29	17	26
New Zealand	15	14	14	13	13	11	10	9	9	9	10	10	10	9	8	10	11	10	9	10	12	9	10	8	10
Niue	31	0	69	110	39	0	216	0	141	0	0	0	106	54	110	0	114	0	0	61	0	0	262	0	0
Northern Mariana Is	147	397	362	258	254	56	173	74	69	63	38	25	152	242	109	28	82	82	168	150	98	108	80	71	59
Palau	139	80	133	106	147	186	91	263	116	20	63	81	59	168	117	172	66	162	223	251	199	234	202	228	221
Papua New Guinea	78	76	81	85	98	94	77	59	109	85	61	81	59	369	272	269	174	237	274	223	196	158	139	150	166
Philippines	234	237	207	205	287	278	276	288	314	364	519	332	369	272	269	174	237	274	223	196	158	139	150	166	160
Philippines Rep. Korea	236	255	257	230	212	214	215	210	177	165	149	134	110	106	86	94	87	73	75	69	47	79	74	71	73
Samoa	38	32	28	26	24	27	41	18	18	23	27	27	16	30	27	27	18	19	13	18	24	12	17	15	15
Singapore	112	98	86	80	81	72	64	57	58	55	53	59	56	50	54	54	53	56	46	43	37	36	37	35	35
Solomon Islands	116	132	132	119	128	139	104	115	125	159	121	95	109	107	94	97	80	83	74	71	72	68	58	65	73
Tokelau	0	67	0	0	0	127	0	575	64	0	66	67	68	0	142	0	0	0	0	0	0	0	0	0	0
Tonga	66	51	47	53	58	53	38	28	15	38	24	21	30	34	24	21	23	21	30	22	24	12	29	16	16
Tuvalu	410	221	145	274	106	370	307	245	263	280	244	315	312	289	195	367	367	179	138	157	156	126	290	290	290
Vanuatu	152	77	141	166	146	94	97	65	83	99	94	150	122	70	91	46	71	102	97	64	79	90	51	51	55
Viet Nam	81	80	93	76	76	79	79	90	83	81	76	88	82	75	72	76	100	103	114	115	114	114	118	113	118
Wallis & Futuna Is	200	200	40	130	104	101	243	7	216	158	29	78	77	42	55	96	96	96	96	96	96	96	96	96	96
WPR	27	27	34	34	39	44	46	45	49	50	59	49	48	46	45	51	54	53	50	49	47	47	47	47	57

Rates are per 100 000 population. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/ib

Table A2.12 New smear-positive cases notified, numbers and rates, 1993–2004

	Number of cases												Rate (per 100 000 population)											
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
American Samoa	1	4	0	0	6	2	3	2	2	1	2	2	2	8	0	11	4	5	3	3	2	3	3	
Australia	557		226	203	285	251	228	210	113	285			3		1	1	2	1	1	1	1	1	1	
Brunei Darussalam	68		0	0	0	102	84	95	112	115			24		0	0	31	25	28	32	34	31		
Cambodia	11 058	11 101	12 065	12 686	13 865	15 744	14 822	14 361	17 258	18 923	18 978		100	98	103	106	114	126	116	130	140	138		
China	84 898	104 729	134 488	203 670	236 021	202 817	201 775	204 765	204 591	194 972	267 414	384 886	7	9	11	17	19	16	16	16	15	21	29	
China, Hong Kong SAR	2 429	0	1 774	1 943	2 091	1 536	1 940	1 857	1 892	1 794	1 694		41	0	28	30	32	23	29	28	28	26	24	
China, Macao SAR	108	141	258	325	276	276	160	157	147	138	128		27	34	61	76	64	36	35	33	30	28		
Cook Islands	4	1	0	0	1	1	0	2	1	0	1		21	5	0	0	5	0	0	11	5	0	6	
Fiji	58	0	68	69	66	74	65	62	73	74	78	62	8	0	9	8	9	8	8	9	9	9	7	
French Polynesia	38	37	41	34	33	29	0	28	21	30	0		18	17	18	15	14	12	0	11	8	12		
Guam	40					43	43	47	31	0	22		28					28	30	19	0	13		
Japan	17 890	16 770	14 367	12 867	13 571	11 935	12 909	11 853	11 408	10 807	10 843	10 471	14	13	11	10	11	9	10	9	8	8	8	
Kiribati	99	184	144	144	50	52	59	54	64	82	99	142	129	234	175	60	61	67	60	70	88	104	146	
Lao PDR			886	1 234	1 494	1 719	1 526	1 563	1 629	1 868	2 241		10	18	25	30	33	29	29	33	33	33	39	
Malaysia	6 954	6 861	6 688	7 271	7 496	7 802	8 207	8 156	8 309	7 958	7 843		36	35	33	35	36	36	35	35	33	33	32	
Marshall Islands	12				11	17	11	15	15	20	39		24		23	22	33	21	28	33	35	65	65	
Micronesia	0	145	455	769	1 171	1 356	1 513	1 389	1 631	1 670	1 541	1 808	0	6	19	32	48	55	61	56	65	60	69	
Mongolia																								
Nauru	0	2	26	24	26	22	20	19	21	12	15		9	15	11	13	12	13	10	9	9	5	6	
New Caledonia	16	28	21	26	24	26	22	20	19	21	12	15	9	15	11	13	12	13	10	9	9	9	5	
New Zealand	91	61	78	90	83	106	94	74	68	88	106	112	3	2	2	2	2	3	2	2	2	2	3	
Niue	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	57	0	61	0	0	0	0	0	
Northern Mariana Is	8	11	9	4	7	20	15	27	19	21	16	14	49	65	52	22	38	105	22	39	26	21	18	
Papua New Guinea	92 279	87 401	94 768	86 695	80 163	69 476	73 373	67 056	59 341	65 148	72 670	78 163	141	131	139	124	112	95	99	89	77	83	91	
Philippines	16 630	13 266	11 754	11 420	9 957	10 359	9 559	8 216	11 805	11 345	10 976	11 501	38	30	26	25	22	22	21	18	25	24	23	
Rep. Korea	21	18	15	9	14	7	17	13	11	19	12		13	11	9	5	8	4	10	7	6	11	7	
Samoa	513	861	455	519	436	482	465	248	357	549	583	506	16	26	13	14	12	13	12	6	9	13	14	
Singapore	155	114	109	90	113	140	93	109	118	108	138	152	45	32	30	24	29	35	23	26	27	24	30	
Salomon Islands																								
Tokelau	16	17	9	14	11	16	10	15	8	23	11		17	18	9	14	11	16	10	15	8	23	11	
Tonga	2	1	6										21	10	61									
Tuvalu																								
Vanuatu	62	37	550	48 911	50 016	54 889	53 805	53 169	54 238	56 811	55 937	58 389	37	17	28	37	21	23	33	29	19	20	28	
Viet Nam																								
Wallis & Futuna Is																								
WPR	222 809	241 672	314 269	388 141	416 952	379 699	383 626	376 109	371 806	372 641	453 814	579 594	14	15	20	24	25	23	22	22	22	26	33	

Rates are per 100 000 population. The table includes updated information; data shown here may differ from those published in previous reports. Data can be downloaded from www.who.int/tb

Notes

American Samoa

Breakdown by age and sex provided are for all notified TB cases as opposed to new smear-positive cases only.

Australia

Breakdown of new smear-positive cases by age and sex provided by only 5 of 8 jurisdictions.

Lao PDR

The population estimate used by the NTP (5.48 million) differs from that of the United Nations Population Division (5.79 million). Using the smaller population estimate gives a notification rate for new smear-positive cases of 40.6 per 100 000 population, and a case detection rate of 57%.

Malaysia

Breakdown by age and sex provided are for all notified TB cases as opposed to new smear-positive cases only.

New Zealand

Treatment outcomes are for laboratory-confirmed cases.

Rep. Korea

All public sector health-care facilities are classified as DOTS (coverage 100%), but only 36% of notified cases are notified by the public sector.

**The World Health Organization monitors
the global tuberculosis epidemic and evaluates
surveillance, planning and financial data in support
of national TB control programmes.**

**For further information about tuberculosis,
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ISBN 95 4 156314 1

