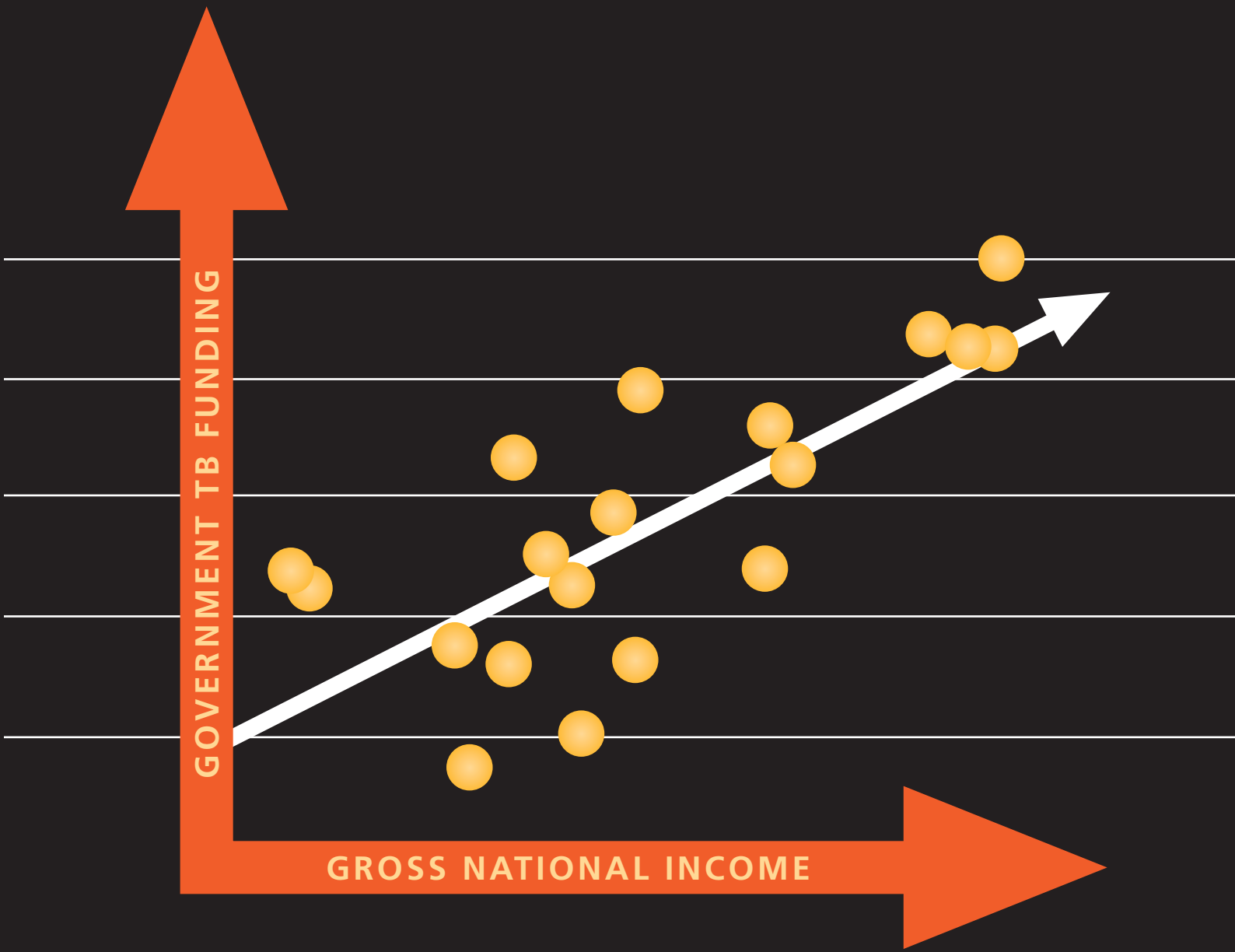
WHO REPORT 2006

Global Tuberculosis Control

Surveillance, Planning, Financing



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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.

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Abbreviations

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

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 coinfected 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 healthcare 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 resources (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 à 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), parmis 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 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'Ethiopie, 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 africaine, 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 control 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 recidivantes, 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 farmacorresistencia, 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, 2006-20015, 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 detraer 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 Tanzanía 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

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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 Plan[3] 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 coinfected with HIV). The number of people dying from TB in 2015 should be less than approximately 1 million, including those coinfected 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:
- 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:

MDG 6, Target 8:
Halt and begin to reverse the incidence of TB by 2015.

Targets linked to the MDGs and endorsed by the Stop TB Partnership:
- 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

1. **Pursuing high-quality DOTS expansion and enhancement**
   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**
   - 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**
   - 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**
   - Public–Public and Public–Private Mix (PPM) approaches
   - Implement International Standards for Tuberculosis Care
5. **Empowering people with TB, and communities**
   - Advocacy, communication and social mobilization
   - Community participation in TB care
   - Patients' Charter for Tuberculosis Care
6. **Enabling and promoting research**
   - 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 1). 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).

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;

[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).

- 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 activities[1] 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 countries[3] 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

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[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/dotsplus/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 costs[5] 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

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[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	151263	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

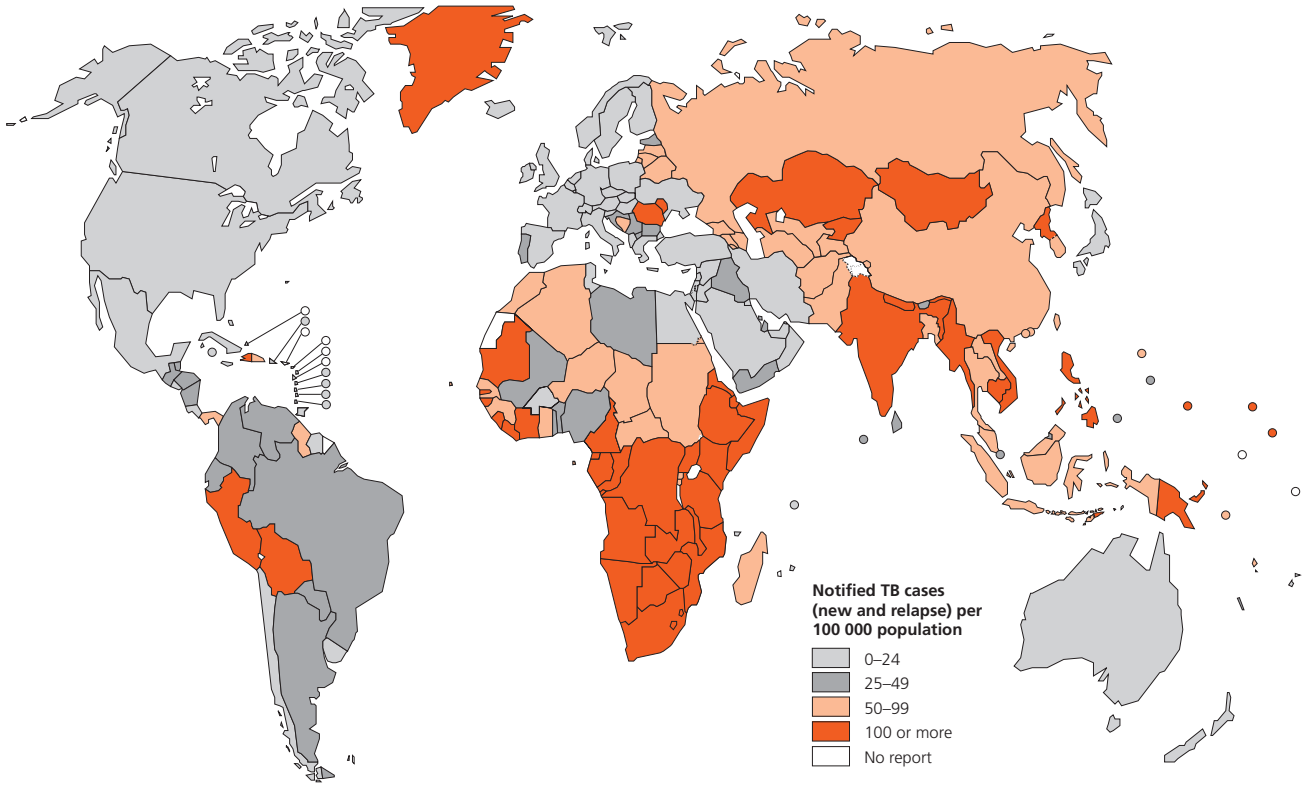


TABLE 6
Estimated TB burden, 2004

		INCIDENCE[a]				PREVALENCE		MORTALITY		
		ALL FORMS		SMEAR-POSITIVE		ALL FORMS		ALL FORMS		
	POPULATION 1000s	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	HIV PREV. IN INCIDENT TB CASES[b] %
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

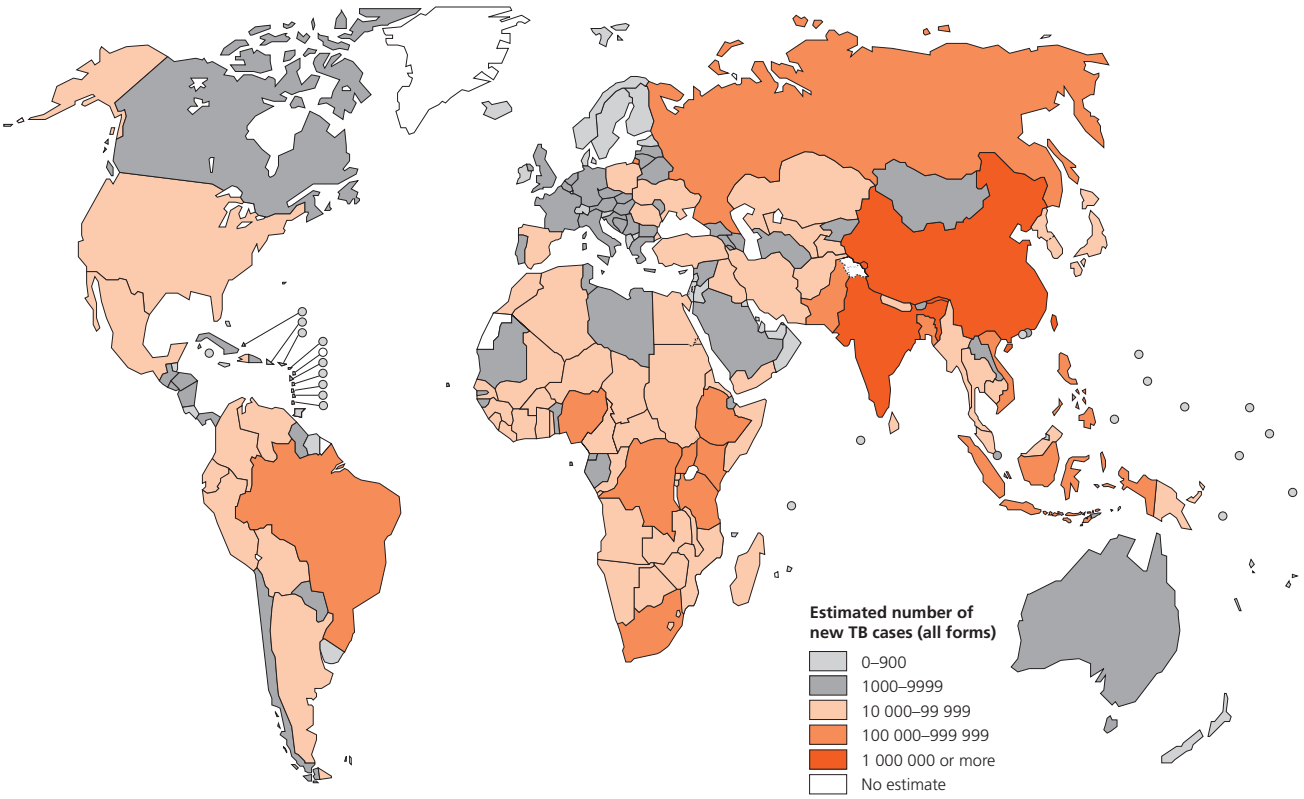
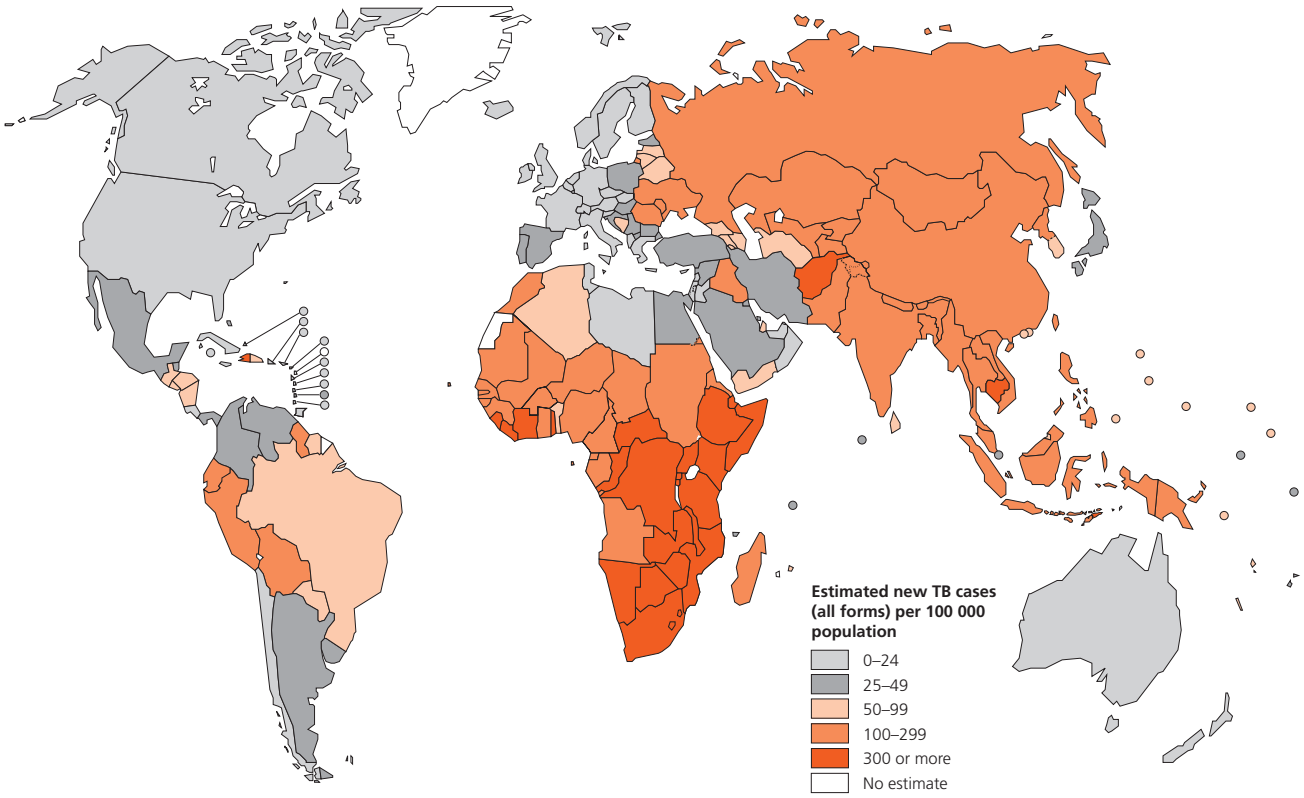


FIGURE 3
Estimated TB incidence rates, 2004



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

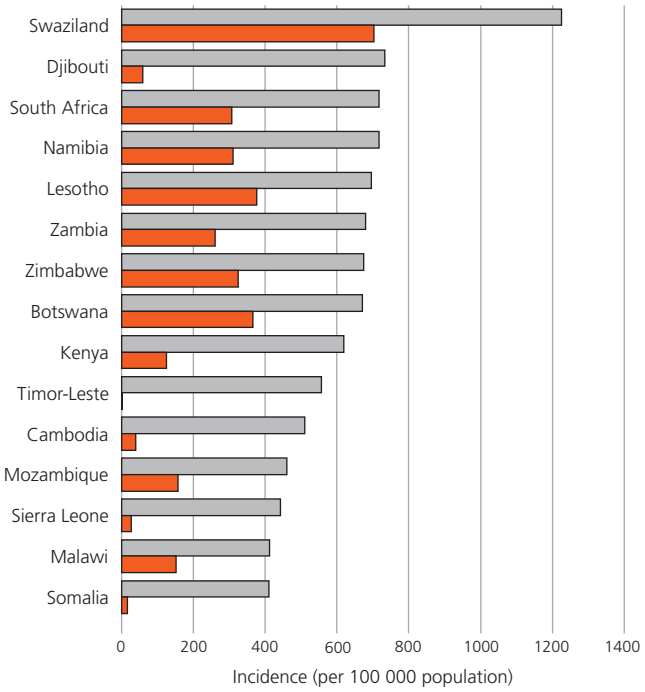


FIGURE 5

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, Kyrgystan, 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, Nicargua, 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:** Amerian 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

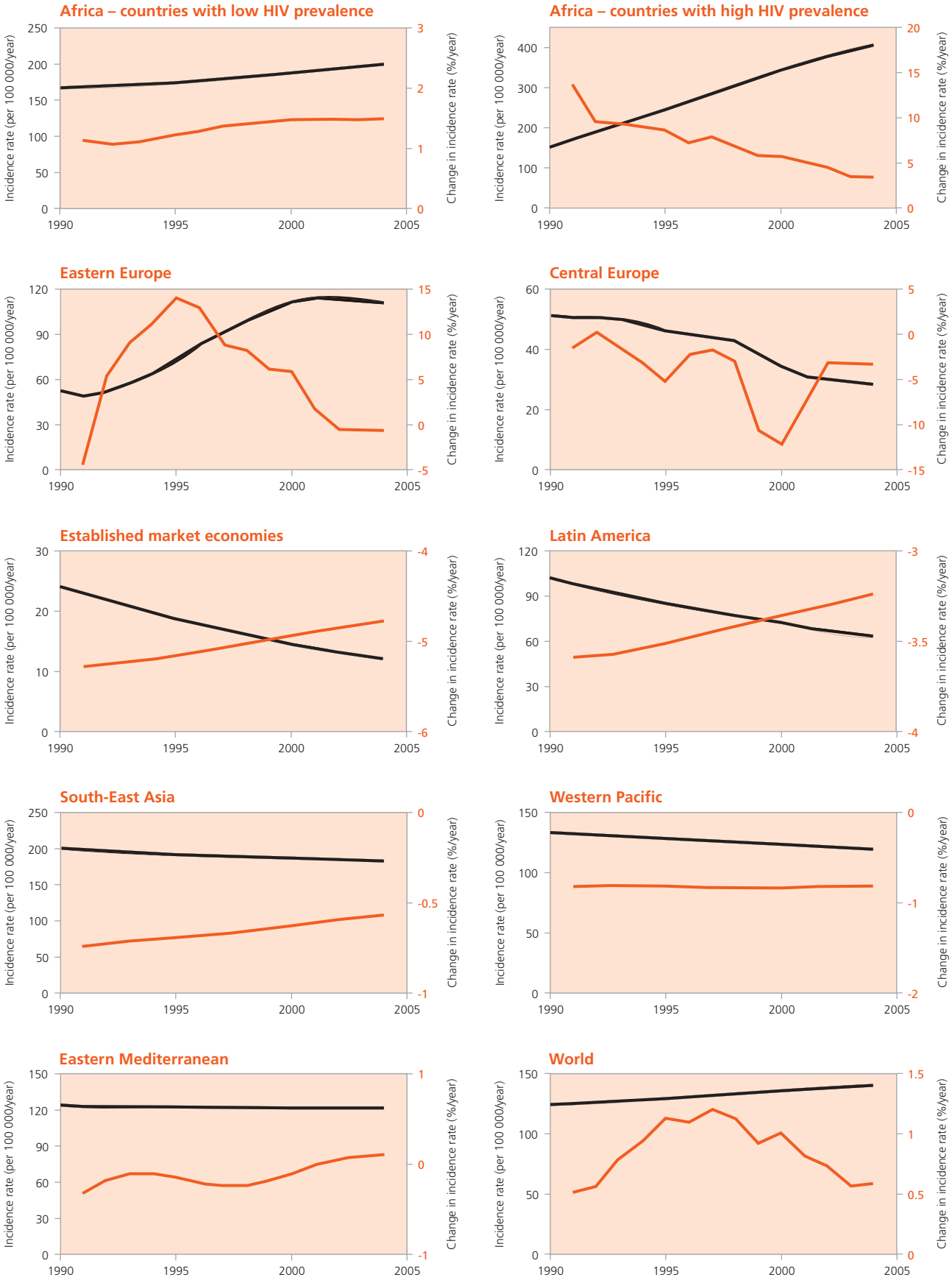


FIGURE 6
Estimated HIV prevalence in new adult TB cases, 2004

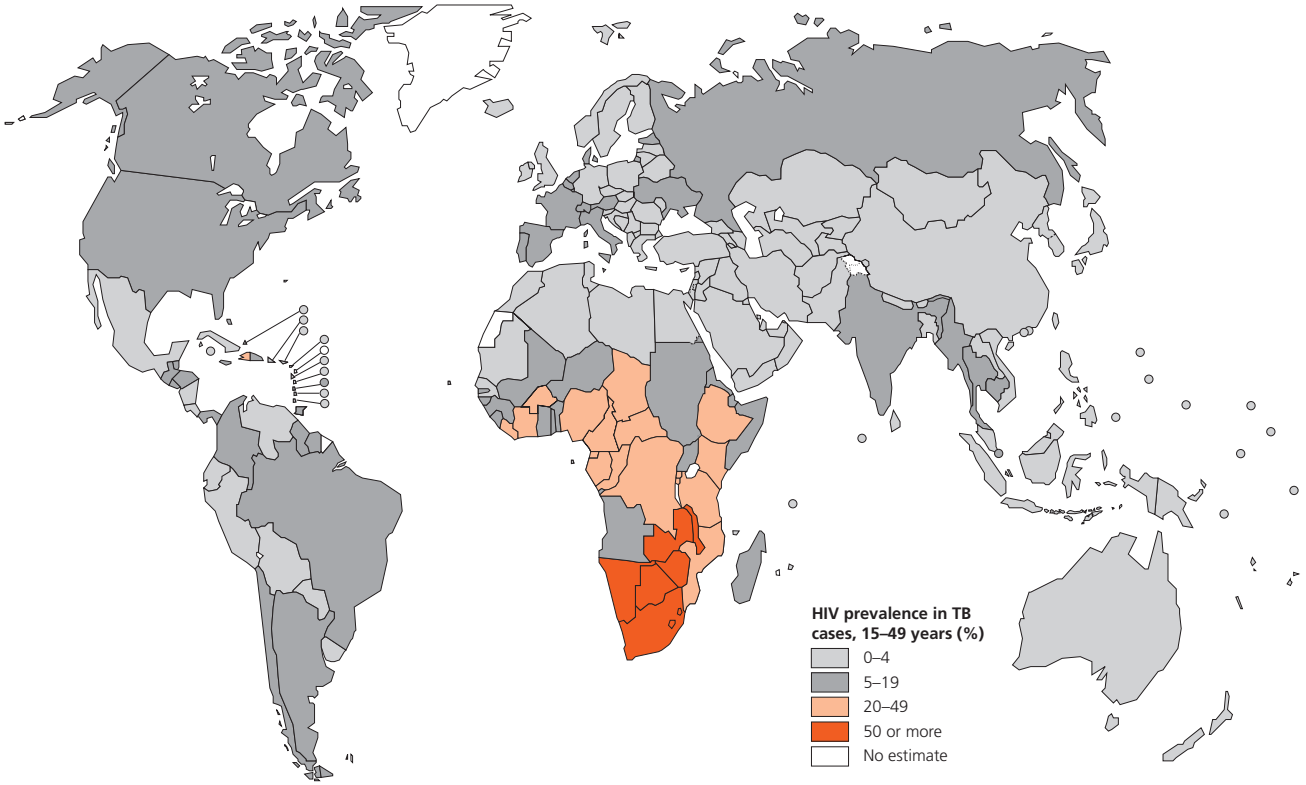


FIGURE 7
Number of countries implementing DOTS (out of a total of 211 countries), 1991–2004

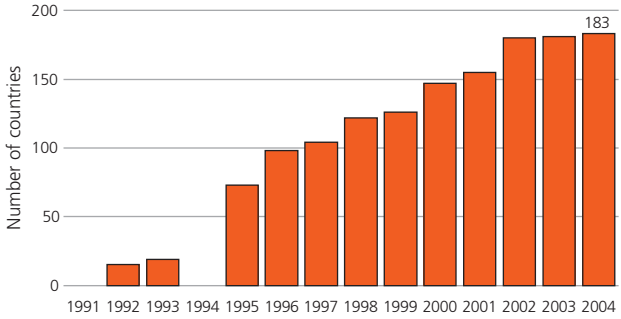


FIGURE 8
DOTS coverage, 1995–2004

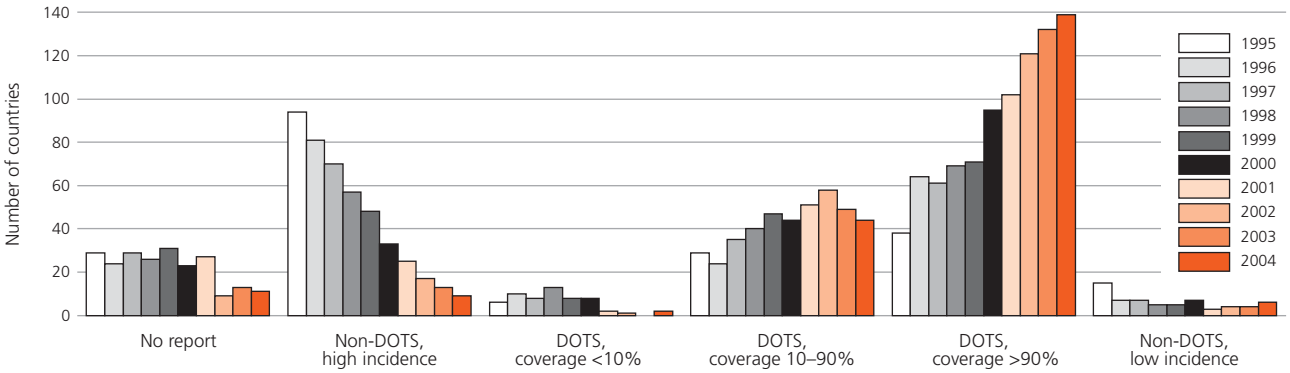


TABLE 7
Progress in DOTS implementation, 1995–2004

	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.

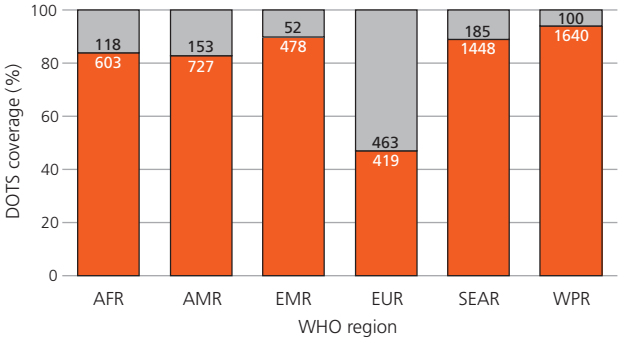
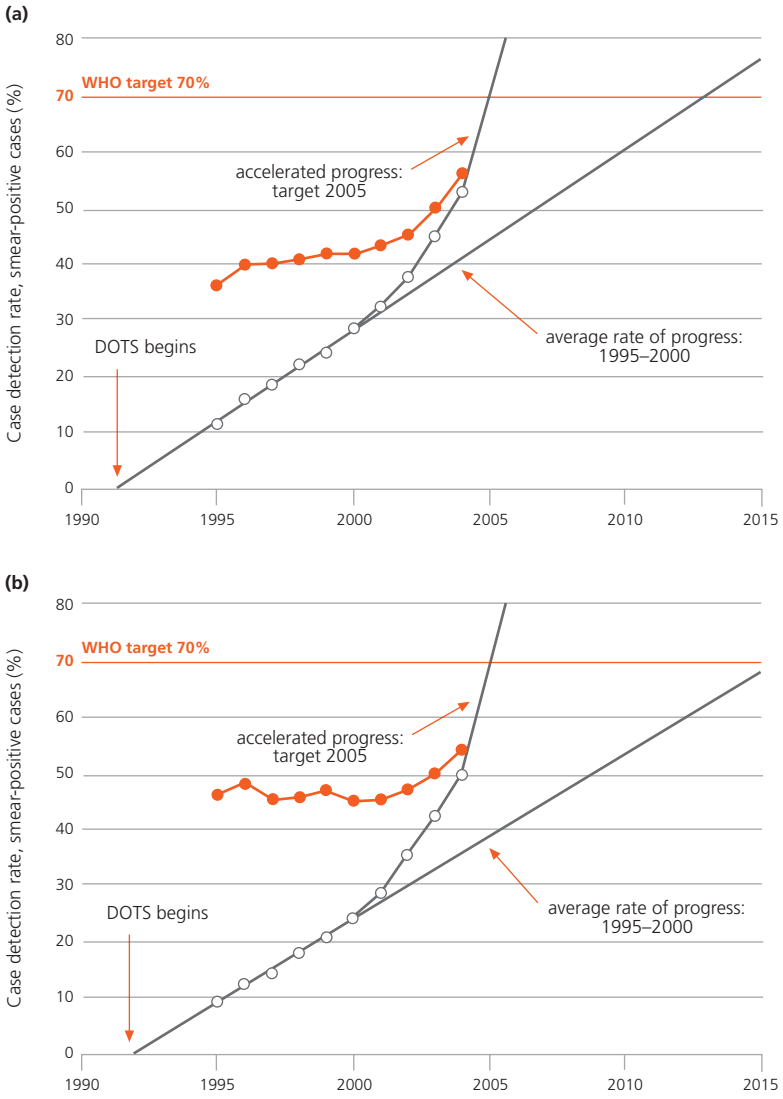


FIGURE 10

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).

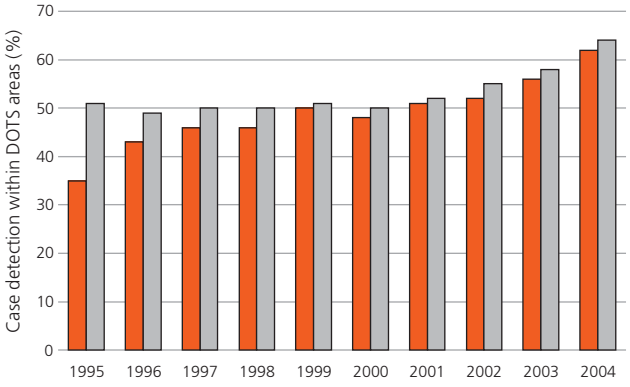
The rate of improvement in case detection by DOTS programmes has been roughly the same in the African Region, the Eastern Mediterranean Region and the European Region. None of these three regions is on course to reach the 70% target by the end of 2005.

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.

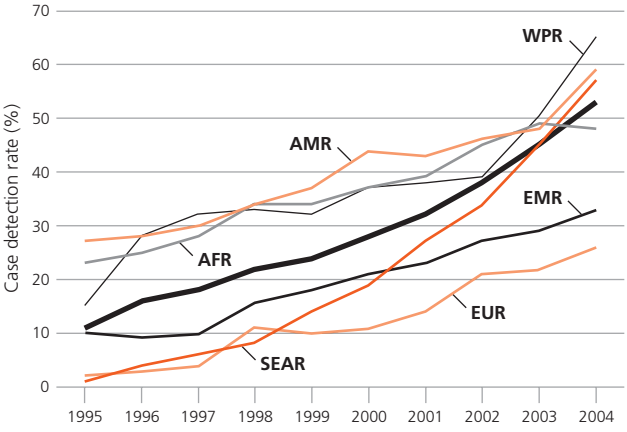


TABLE 8

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**

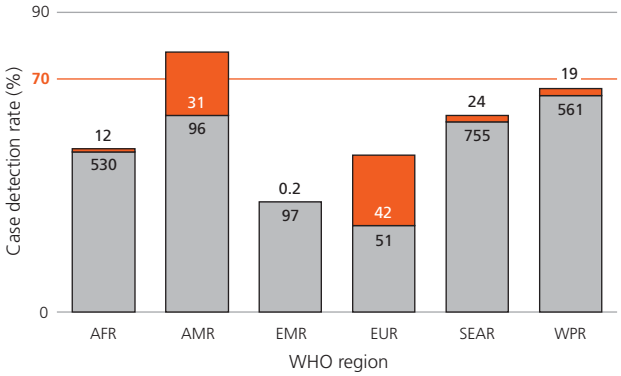
— Indicates not available.

* 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.

(a) Smear-positive



(b) New and relapse

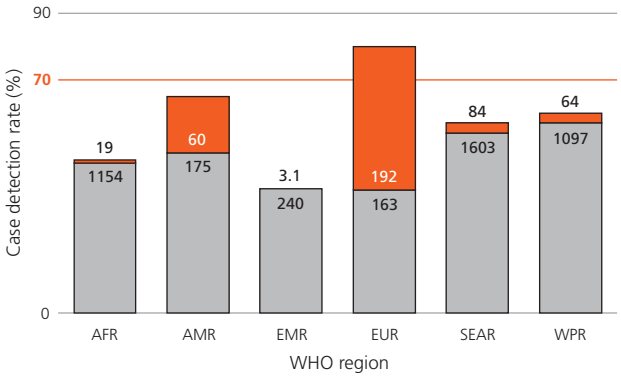
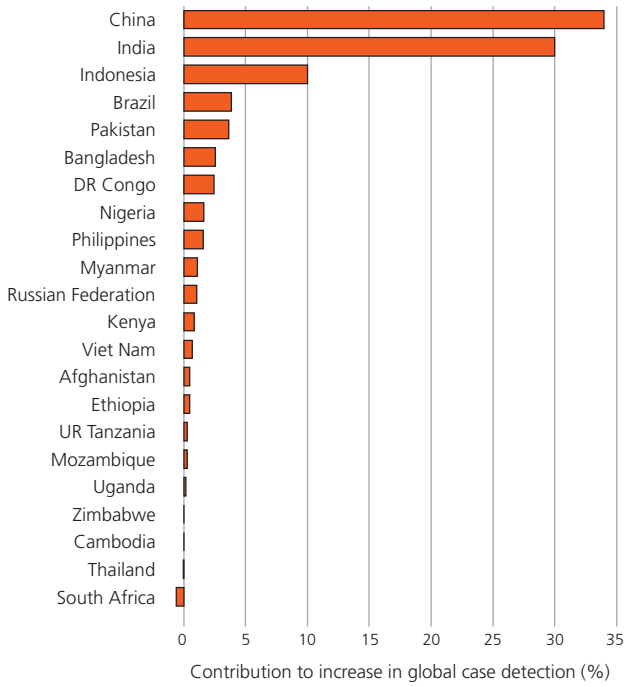


FIGURE 14

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.

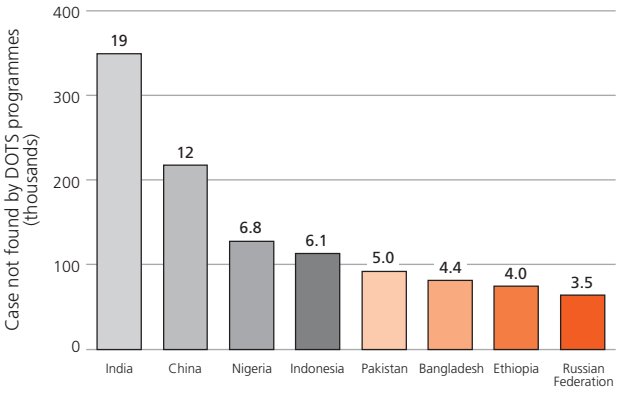


FIGURE 16

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).

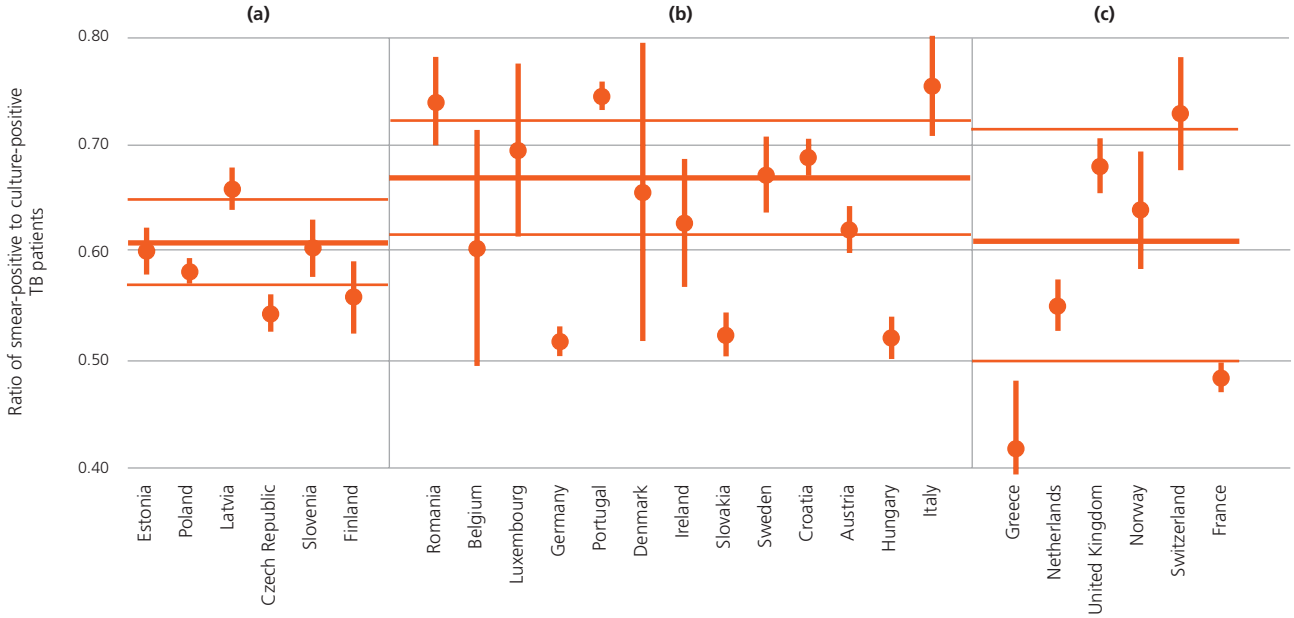


FIGURE 17

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.

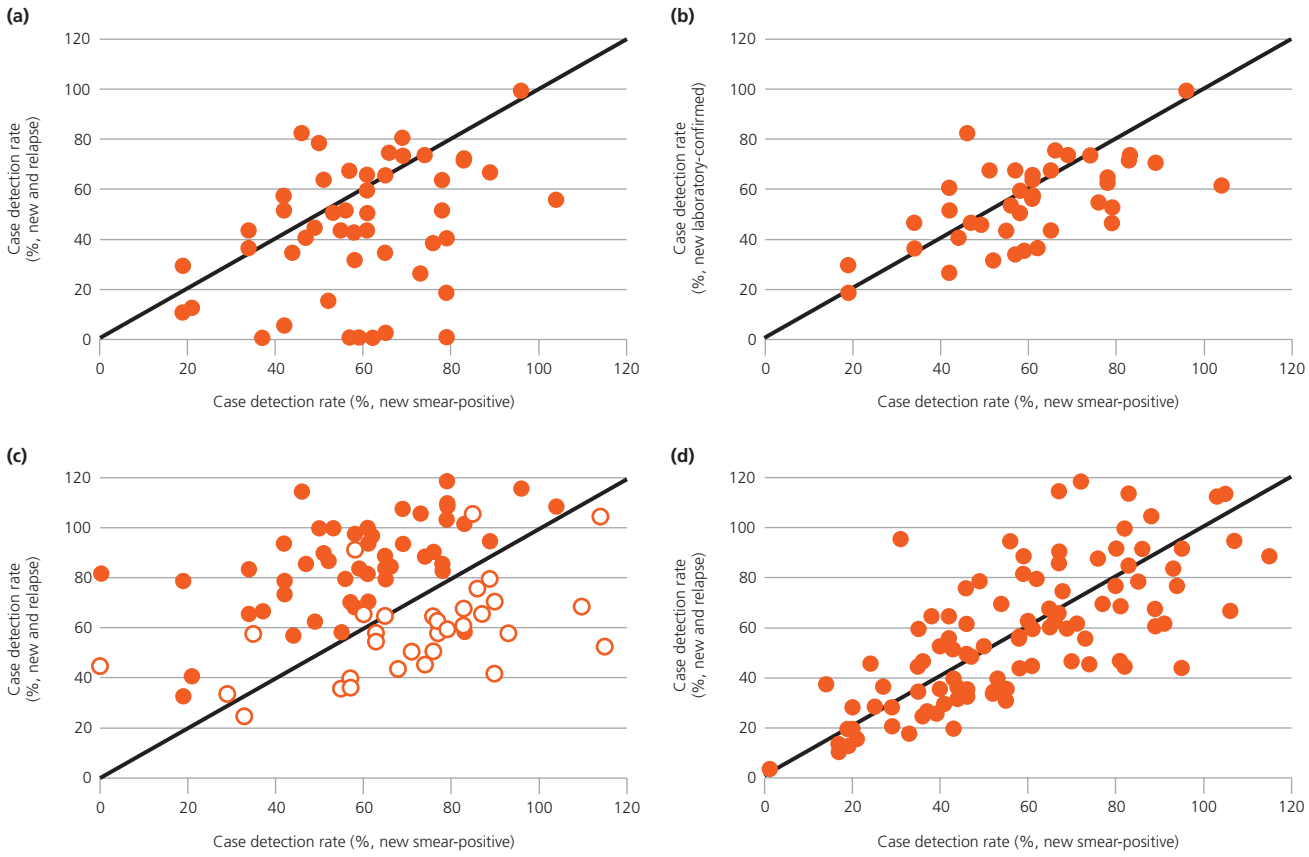


FIGURE 18

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

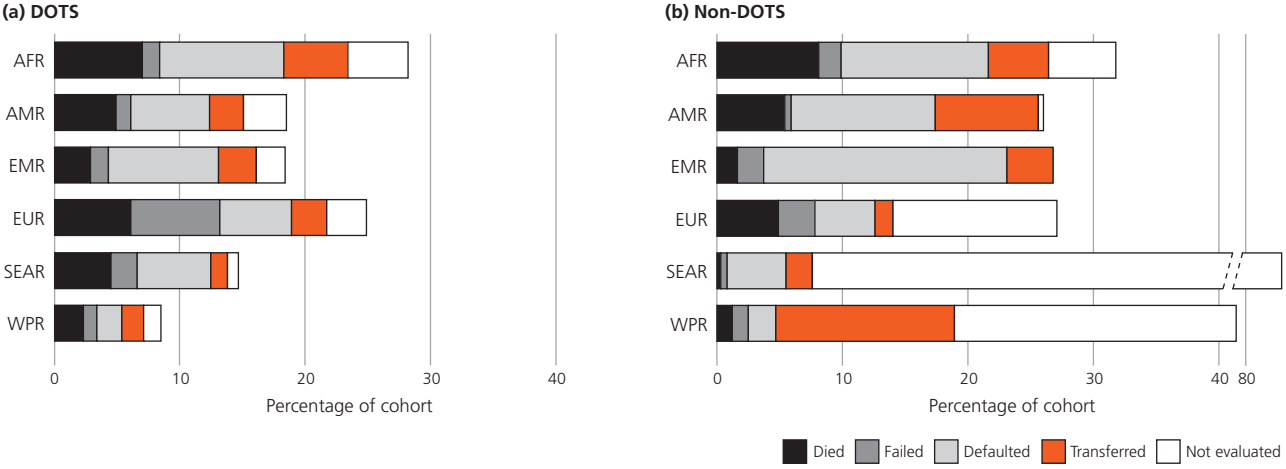


TABLE 9
Treatment outcomes for new smear-positive cases, DOTS strategy, 2003 cohort[a]

	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 ≥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 11
Treatment outcomes for new smear-positive cases, non-DOTS strategy, 2003 cohort[a]

	NOTIFIED	REGISTERED	REGST'D (%)	TREATMENT OUTCOMES (%) CURED	COMPLETED TREATMENT	DIED	FAILED	DEFAULTED	TRANS-FERRED	NOT EVAL'D	TREATMENT SUCCESS (%)
1 India	74 786	61 183	82	11	4.6	0.2	0.4	4.6	2.0	78	15
2 China	10 127	10 127	100	61	5.2	0.9	0.9	2.7	0.9	29	66
3 Indonesia	—	—	—	—	—	—	—	—	—	—	—
4 Nigeria	—	—	—	—	—	—	—	—	—	—	—
5 South Africa	33	4 512	13 673	41	21	11	0.9	11	7.0	8.5	62
6 Bangladesh	—	—	—	—	—	—	—	—	—	—	—
7 Pakistan	—	—	—	—	—	—	—	—	—	—	—
8 Ethiopia	—	—	—	—	—	—	—	—	—	—	—
9 Philippines	—	—	—	—	—	—	—	—	—	—	—
10 Kenya	—	—	—	—	—	—	—	—	—	—	—
11 DR Congo	—	—	—	—	—	—	—	—	—	—	—
12 Russian Federation	22 546	—	—	—	—	—	—	—	—	—	—
13 Viet Nam	—	—	—	—	—	—	—	—	—	—	—
14 UR Tanzania	—	—	—	—	—	—	—	—	—	—	—
15 Uganda	—	—	—	—	—	—	—	—	—	—	—
16 Brazil	30 877	29 041	94	24	51	5.3	0.4	11	8.8	0.0	75
17 Afghanistan	—	—	—	—	—	—	—	—	—	—	—
18 Thailand	—	—	—	—	—	—	—	—	—	—	—
19 Mozambique	—	—	—	—	—	—	—	—	—	—	—
20 Zimbabwe	—	—	—	—	—	—	—	—	—	—	—
21 Myanmar	—	—	—	—	—	—	—	—	—	—	—
22 Cambodia	—	—	—	—	—	—	—	—	—	—	—
High-burden countries	**138 369**	**104 863**	**76**	**21**	**18**	**2.1**	**0.5**	**6.3**	**4.0**	**48**	**39**
AFR	6 927	8 898	128	48	20	8.1	1.8	12	4.8	5.4	68
AMR	43 282	33 530	77	28	46	5.4	0.5	12	8.2	0.4	74
EMR	191	191	100	36	38	1.6	2.1	19	3.7	0.0	73
EUR	56 257	14 269	25	38	35	4.9	2.9	4.8	1.4	13	73
SEAR	76 402	62 799	82	12	4.7	0.3	0.5	4.7	2.1	76	17
WPR	22 243	12 928	58	51	7.8	1.2	1.3	2.2	14	22	59
Global (non-DOTS)	**205 302**	**132 615**	**65**	**25**	**20**	**2.7**	**0.9**	**6.7**	**4.9**	**40**	**45**

— Indicates not available.
[a] See notes for Table 9.

Trends in case detection and treatment success: overview of national DOTS programmes

Data on both treatment success and case detection were provided by 172 DOTS countries. Case detection exceeded 50%, and treatment success exceeded 70%, in 82 countries (Figure 19). They include the HBCs Cambodia, China, Democratic Republic of the Congo, India, Indonesia, Myanmar, the Philippines, Thailand and Viet Nam. Of these countries, 26 appear to have reached the WHO targets, but together they accounted for only 9% of all new smear-positive cases reported in 2003. Among the HBCs, Viet Nam has exceeded both targets since 1997. Based on the cohort data for 2003 (treatment success 88%) and case notifications for 2004, the Philippines is the second HBC to have reached both targets (Figure 20). Cambodia, China and Myanmar are approaching these targets. Two HBCs

FIGURE 19
DOTS status in 2004: countries close to targets. 82 countries reported treatment success rates 70% or over and DOTS detection rates 50% or over; 26 countries (including 7 countries out of range of graph) have reached both targets.

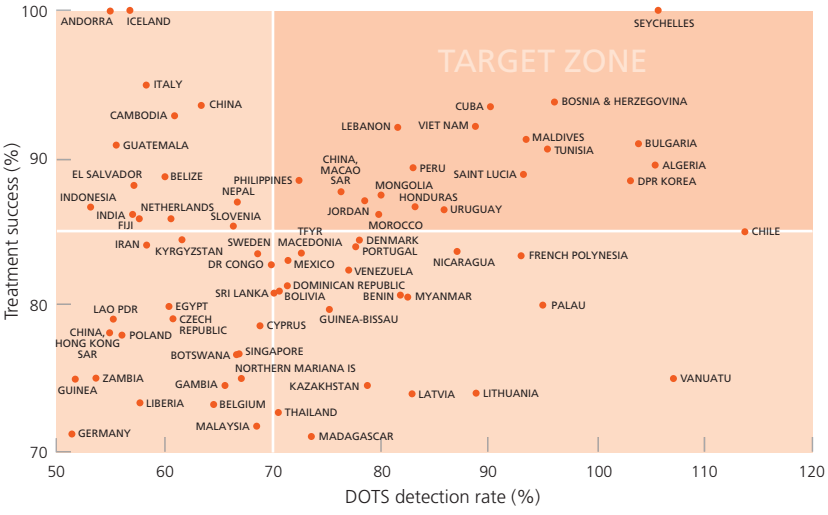
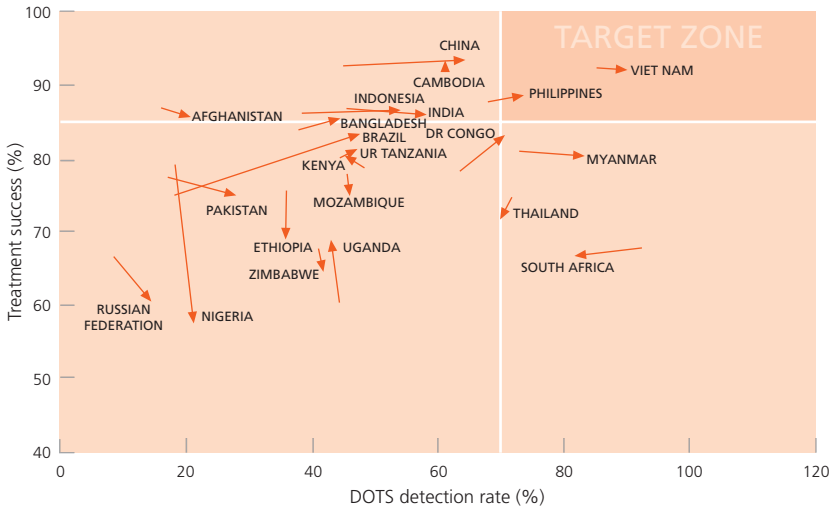


TABLE 12
Re-treatment outcomes for smear-positive cases, DOTS strategy, 2003 cohort[a]

	REGISTERED	TREATMENT OUTCOMES (%) CURED	COMPLETED TREATMENT	DIED	FAILED	DEFAULTED	TRANS-FERRED	NOT EVAL'D	TREATMENT SUCCESS (%)
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 coinfected with HIV (248 000).

Figure 22 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).

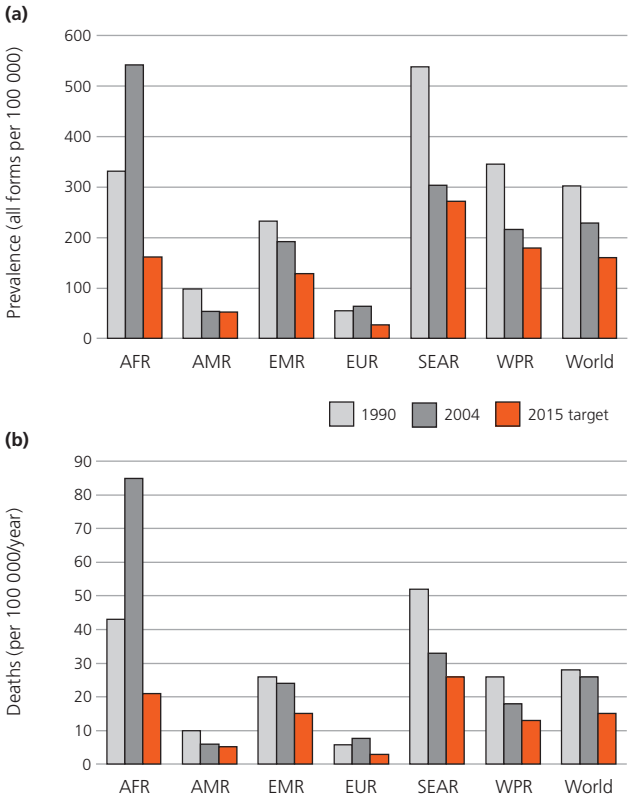
Pursuing high-quality DOTS expansion and enhancement

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				PLAN FOR SUPERVISION	EQA (% OF LABORATORIES INCLUDED)	NATIONAL POLICY FOR USE OF CULTURE	CULTURE USED FOR							SHORTAGE OF / INSUFFICIENT	
		SPUTUM SMEAR (AVERAGE POPULATION PER LABORATORY)		MTB CULTURE	DST				DIAGNOSIS				DRUG SUSCEPTIBILITY TESTING				OTHER	HUMAN RESOURCES	INFRASTRUCTURE/ EQUIPMENT
									ALL TB SUSPECTS	SMEAR-NEGATIVE TB	EXTRA-PULMONARY TB	OTHER	NON-CONVERTERS	RE-TREATMENT CASES	TREAT-MENT FAILURES	DRS			
1 India	Y	>12 000	(<90 000)	5	4	Y	Y (50)	N							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	
4 Nigeria	Y	598	(215 000)	2	2	Y	Y (67)	Y		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							Y		Operational research	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 II, 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	
13 Viet Nam	Y	729	(115 000)	15	2	Y	Y (100)	Y		Y	Y	Paediatric TB			Y	Y		Y	Y (poor coverage in remote areas)
14 UR Tanzania[d]	Y	581	(65 000)	3	1	Y	Y (86)	Y						Y			25% of new cases	Y	
15 Uganda	Y (weak)	472	(60 000)	2	2	Y	Y (24)	Y						Y	Y			Y	
16 Brazil	Y	4 029	(45 000)	187	33	Y	Y (40)	Y		Y		HIV+			Y (cat I)	Y		Y	Y (poor coverage in remote areas)
17 Afghanistan	N	184	(155 000)	1 (private)	1 (private)	N	N (piloted in 2 regions)	N										Y	Y
18 Thailand	Y	846	(75 000)	90	8	Y	Y (100)	Y								Y	Confirmation of MTB, and of viability, monitoring of treatment		
19 Mozambique[e]	Y	206	(95 000)	1	1	Y	limited	Y					Y	Y		Y			Y
20 Zimbabwe	Y	180	(70 000)	1	1	limited	Y (50)	Y			Y (gastric aspirates)			Y	Y	Y	On request of physician	Y	
21 Myanmar	Y	384	(130 000)	2	1	limited	Y (75)	N							Y (cat I, cat II, chronic cases)	Y		Y	
22 Cambodia	Y	180	(75 000)	3	0	Y	Y (100)	Y				HIV+				Y		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.

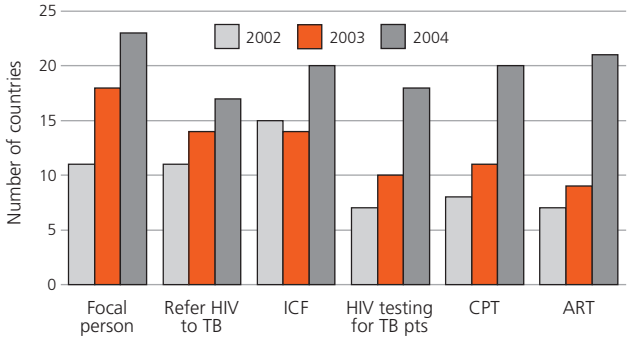
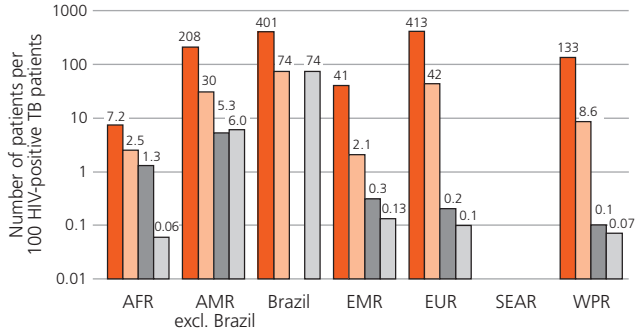


FIGURE 23

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.

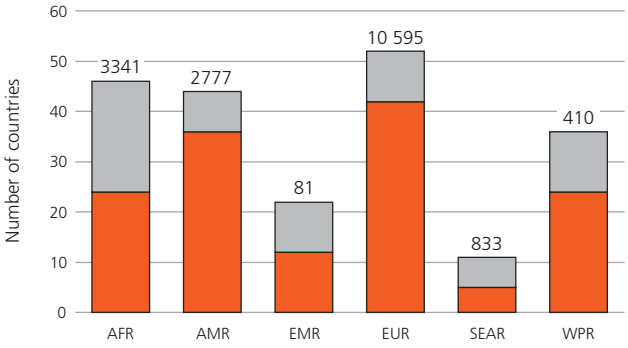
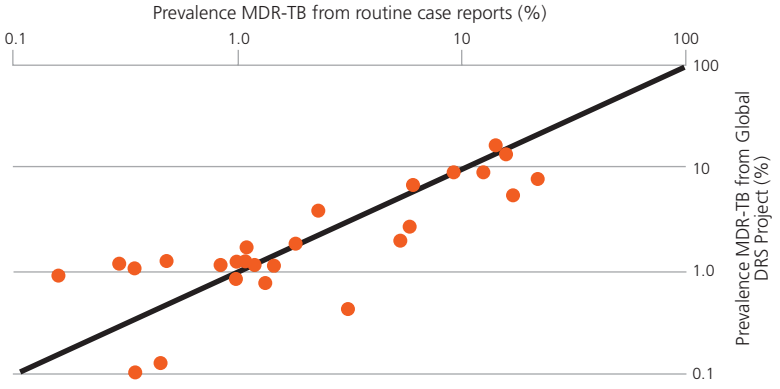


FIGURE 25

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

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[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)

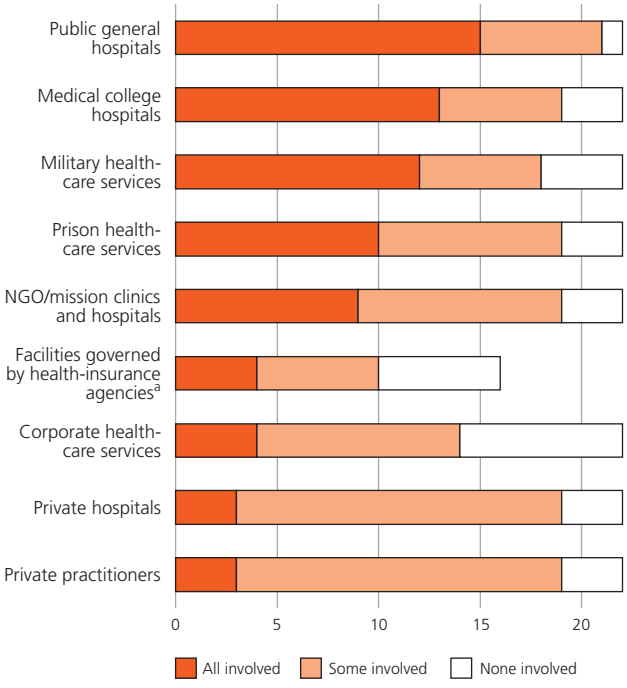
In the context of the new Stop TB Strategy, ACSM is being scaled up significantly. In February 2005, the Stop TB Partnership inaugurated a new ACSM Working Group to sustain political, social and financial commitment to eliminate TB, and to foster the development of more effective ACSM activities for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

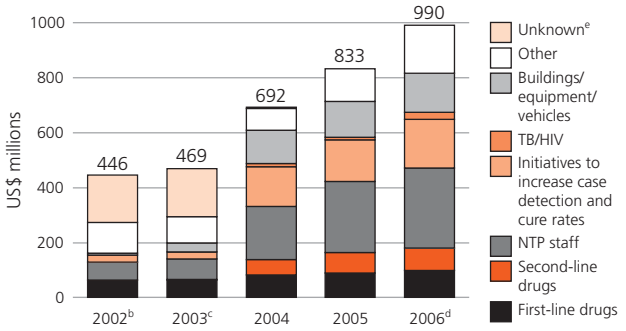
TABLE 16
Budget, expenditure and utilization data received, high-burden countries, 2006

	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

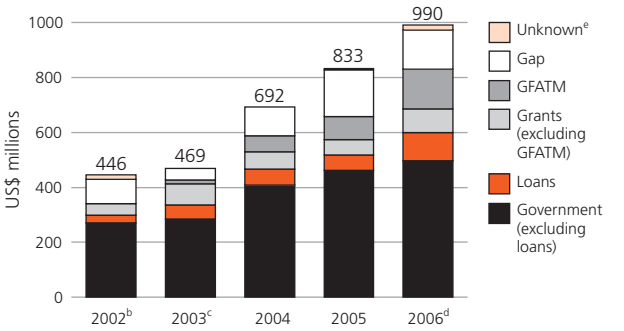
Total NTP budgets by line item, 21 high-burden countries,[a] 2002–2006



[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.

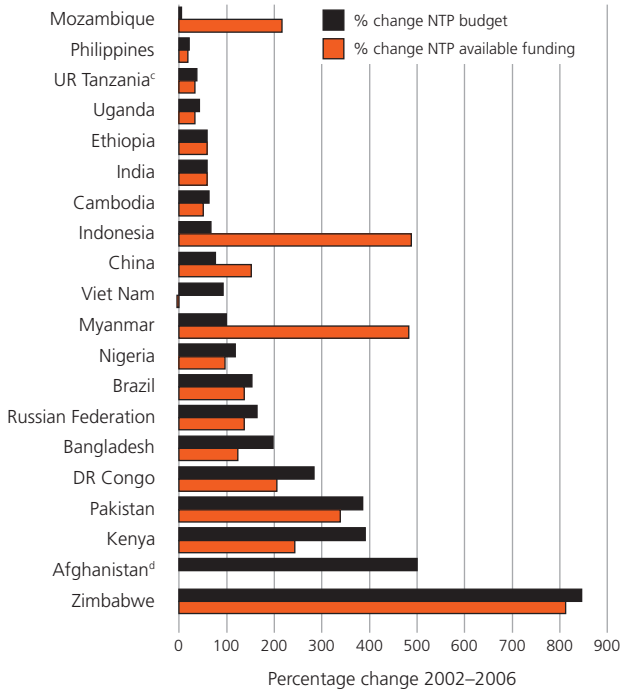
the US$ 446 million budgeted in 2002. The Russian Federation has by far the largest budget (US$ 428 million), followed by China (US$ 173 million) and then by India and Indonesia (both at US$ 57 million), making a combined total that is 72% of the NTP budgets reported by HBCs. There are 7 countries with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

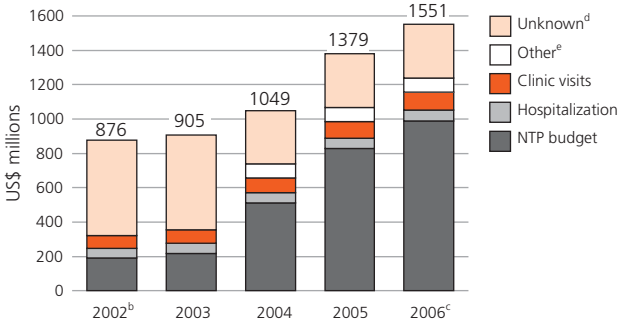
[a] TB control costs for 2006 were estimated using budget data, whereas those for 2002 were estimated using expenditure data wherever possible. Estimates assume expenditure 2002 equal to available funding 2002 (Kenya and UR Tanzania), to expenditure 2003 (Afghanistan, Bangladesh, Mozambique, Nigeria,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

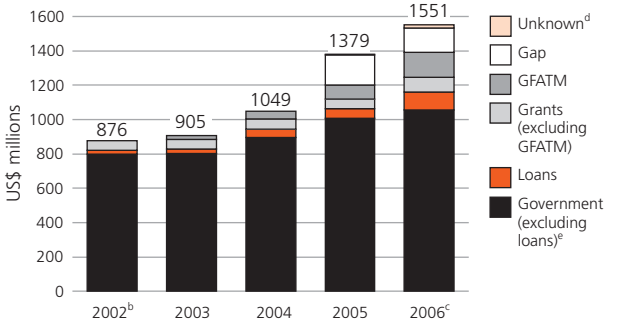
[b] Estimates assume costs 2002 equal to costs 2003 for Afghanistan, Bangladesh, Mozambique, Nigeria, Russian Federation, Uganda and Zimbabwe.

[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.

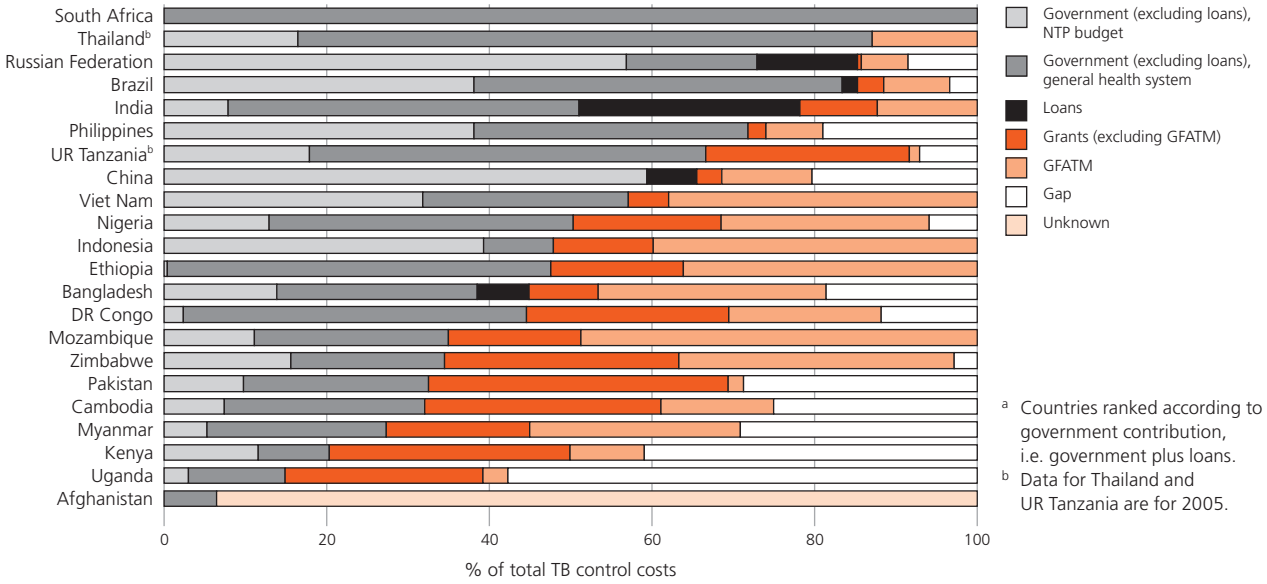
[c] Estimates assume costs 2006 equal to costs 2005 for Thailand and UR Tanzania.

[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]

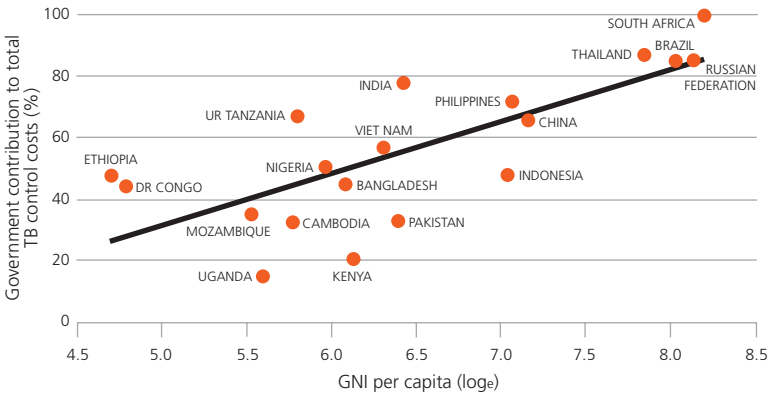


[a] Countries ranked according to government contribution, i.e. government plus loans.

[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,[a] 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.

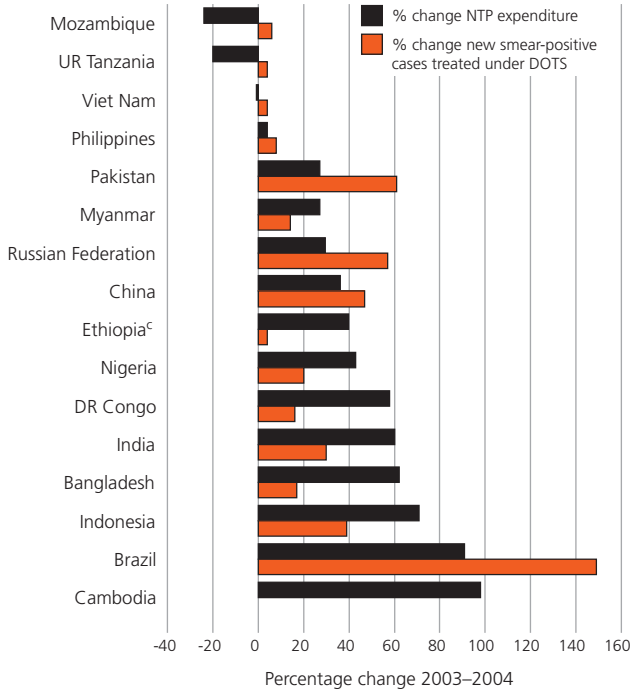
Further details, including charts that show five per pa-

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 Philippines Viet Nam
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 (YEARS 1–5)[a] US$ MILLIONS	GRANT AMOUNT PHASE 1 (YEARS 1–2)[b] US$ MILLIONS	GRANT AMOUNT PHASE 2 (YEARS 3–5) US$ MILLIONS	TOTAL DISBURSEMENT BY END 2005 (AS OF 27 DEC 2005) US$ MILLIONS	TOTAL DISBURSEMENT BY END 2005 AS % OF GRANT AGREEMENT		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)
						ACTUAL (%)	EXPECTED (%)[c]					
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	2
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	2
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 disbursal, 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.

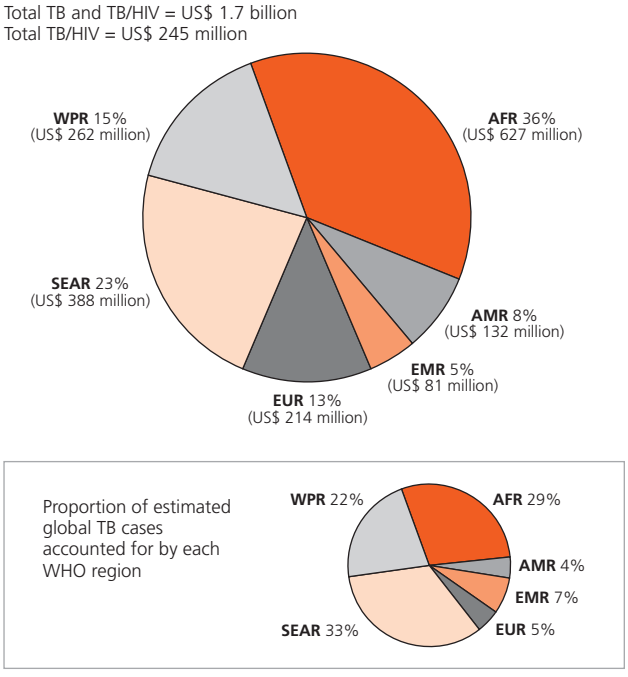
NTP budgets by WHO region, HBCs and other countries

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 Mediterranean 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 contol by WHO region, as of end 2005[a]

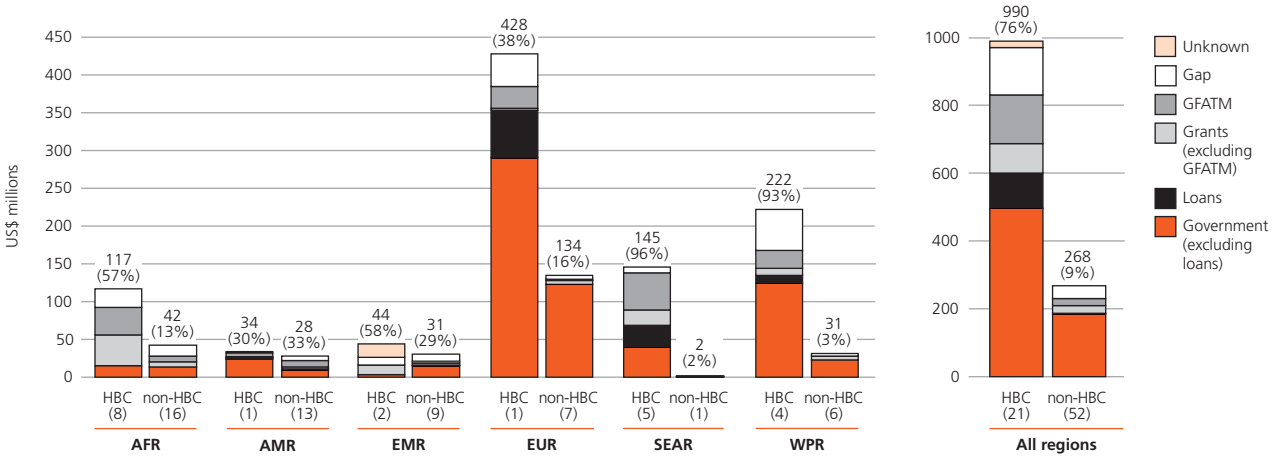


[a] Refers to the total budgets approved in rounds 1–5.

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

FIGURE 36

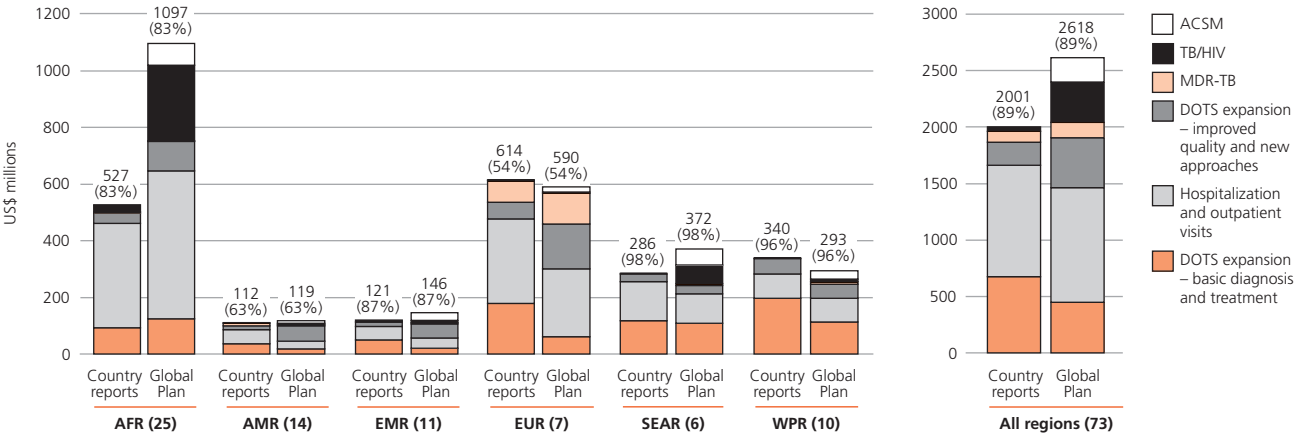
Regional distribution of NTP budgets by source of funding, 21 high-burden countries[a] and 52 non high-burden countries, 2006. Numbers in parentheses above bars show the percentage of all estimated TB cases in the region accounted for by the countries included in the bar. Numbers in parentheses in the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

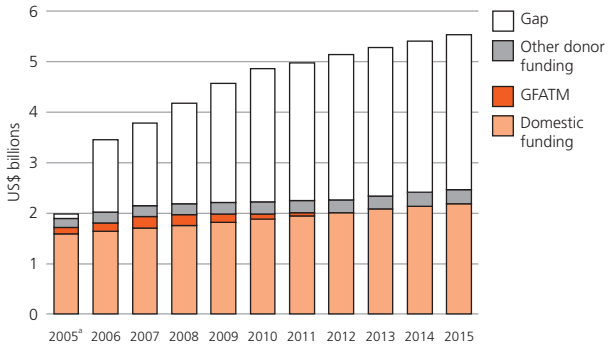


[a] The Netherlands is excluded since it was not included in *The Global Plan to Stop TB, 2006–2015*.

[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

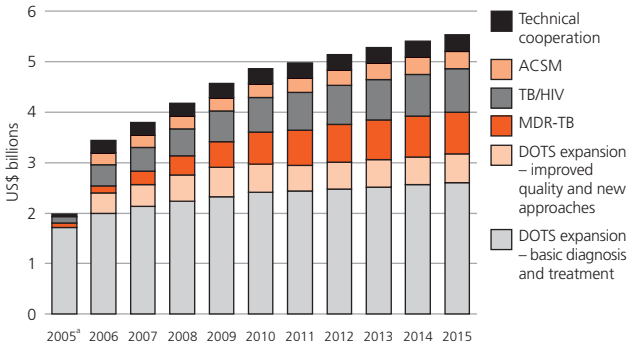
Funding and funding gaps for *The Global Plan to Stop TB, 2006–2015*, excluding research and development



[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 sustained 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 American 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

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[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] India[4] 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

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[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-negative 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 epidemiological 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

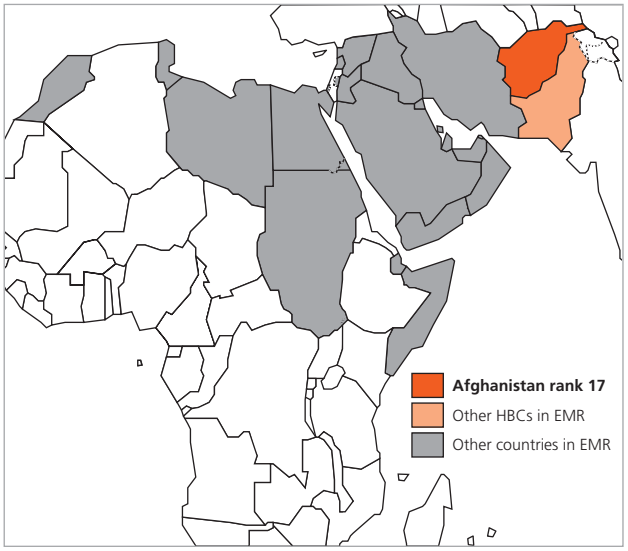
Profiles of high-burden countries

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 (%)	—

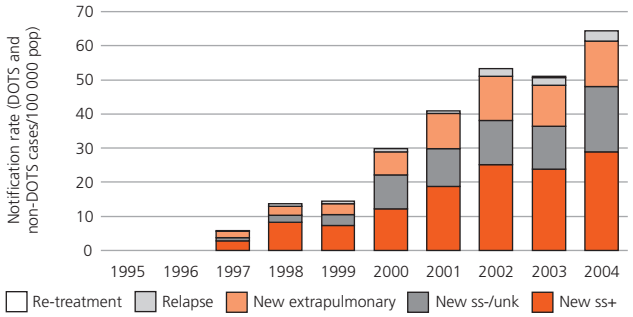


WHO Eastern Mediterranean Region (EMR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

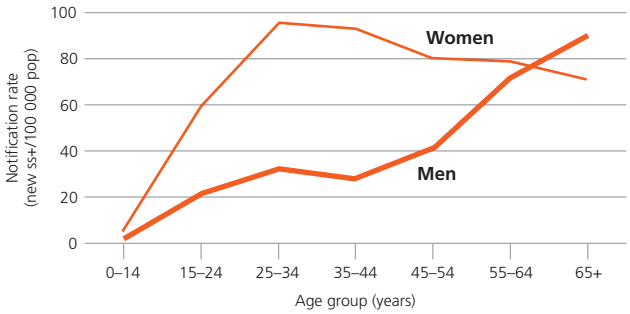
Case notifications

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 STRATEGY[1]

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

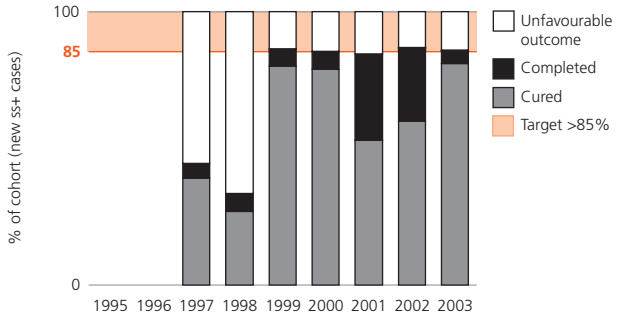
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—	—	—	—

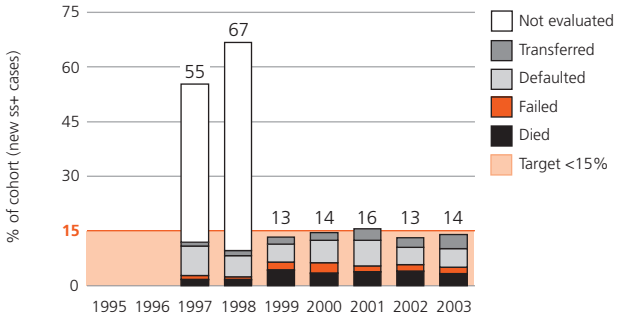
Treatment success, DOTS

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



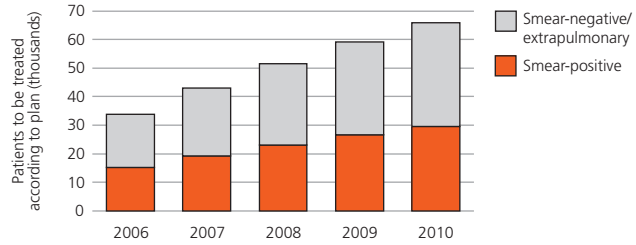
Unfavourable treatment outcomes, DOTS

Since 1999, outcomes recorded for all patients registered



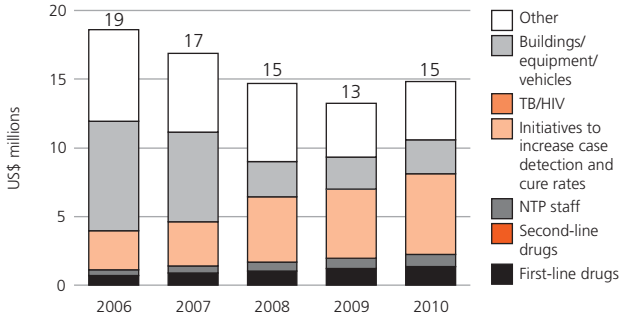
BUDGET AND FINANCE

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 theGlobal 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.



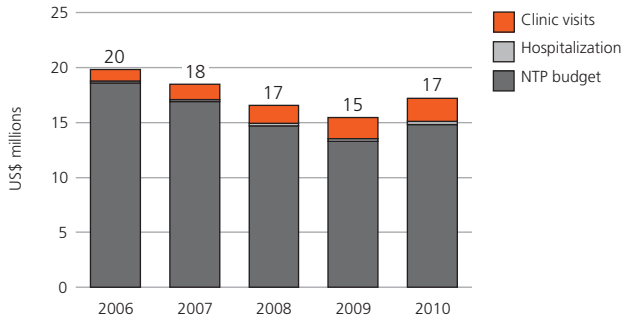
NTP budget by line item

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



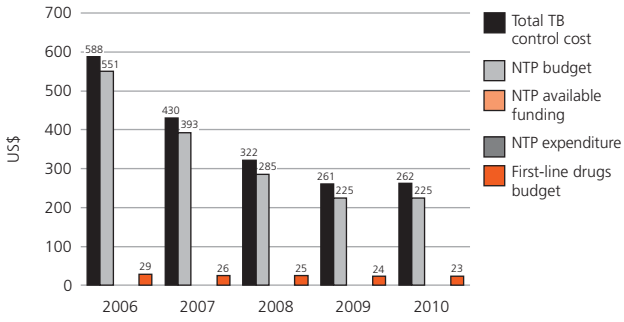
Total TB control costs by line item

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



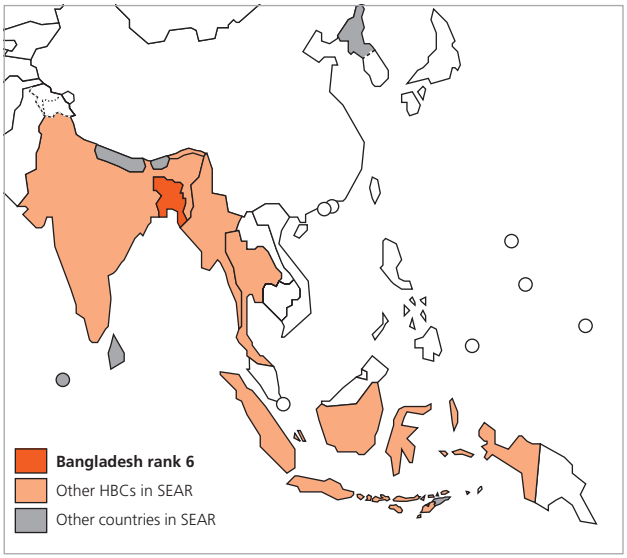
pop indicates population; ss+, smear-positive; yr, year; — not available.

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

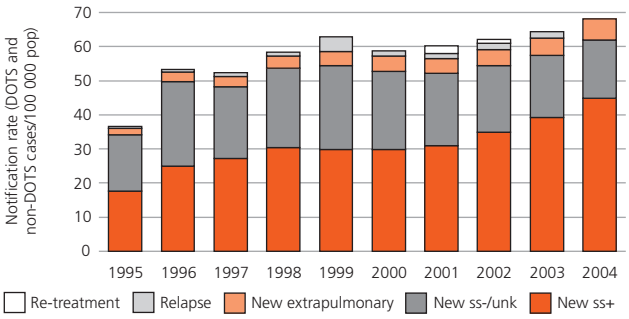


WHO South-East Asia Region (SEAR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

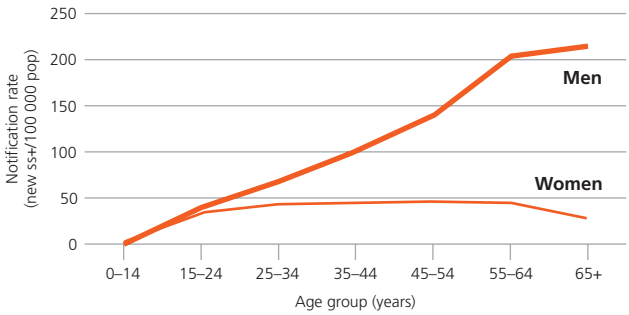
Case notifications

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,[e] 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 STRATEGY[1]

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 (HNPSP) 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 HNPSP
- Coordinating large number of NGOs involved in delivery of health services

Planned activities

- Strengthen collaboration with HNPSP 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

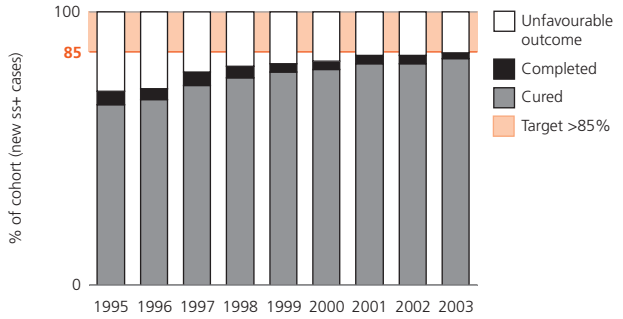
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

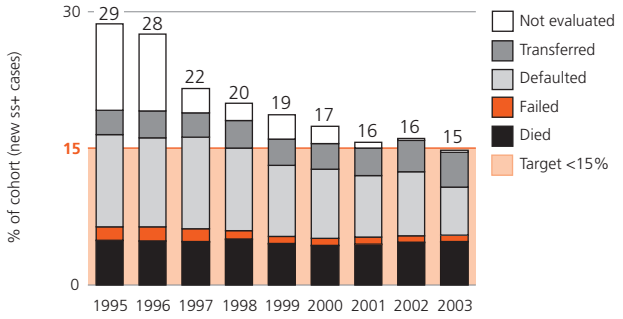
Treatment success, DOTS

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



Unfavourable treatment outcomes, DOTS

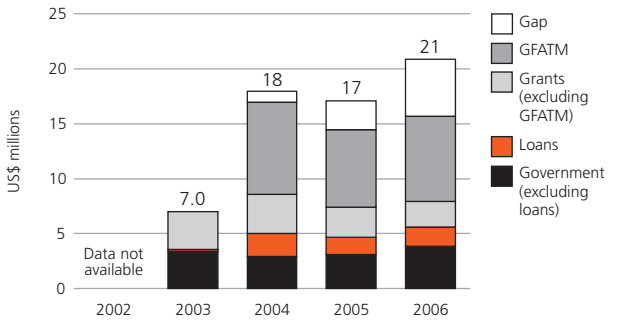
Outcomes recorded for all registered patients; declining proportion of patients defaulting since 1997



BUDGET AND FINANCE

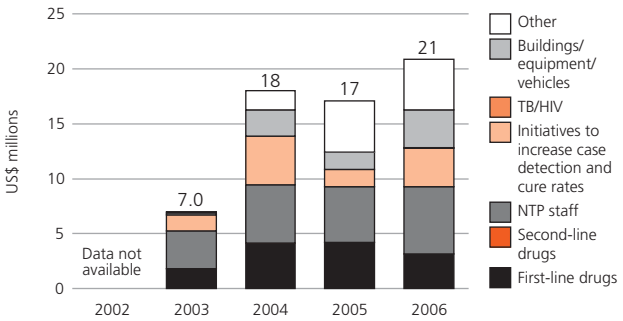
NTP budget by source of funding

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



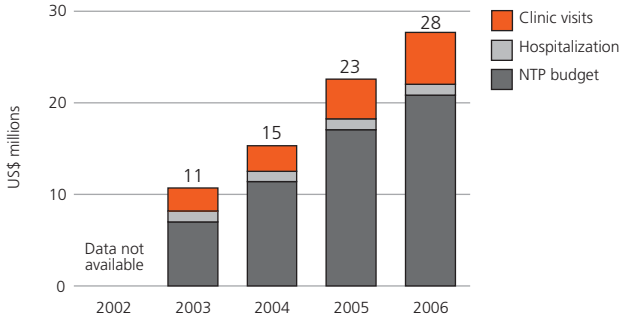
NTP budget by line item

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



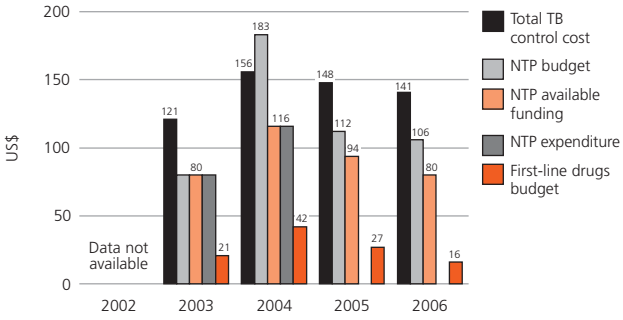
Total TB control costs by line item[a]

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

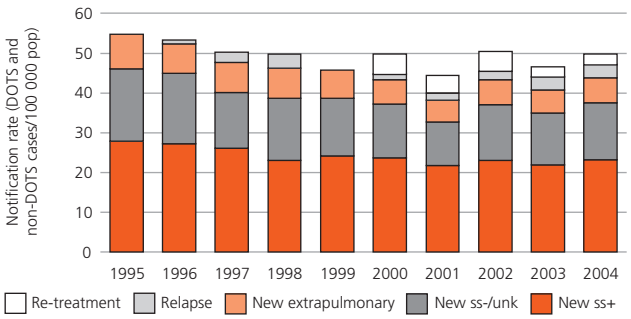
Population (thousands)[a]	183 913
TB burden (2004 estimates)[b]	
Incidence (all cases/100 000 pop/yr)	60
Trend in incidence rate (%/yr)[c]	**-3.3**
Incidence (ss+/100 000 pop/yr)	26
Prevalence (all cases/100 000 pop)[c]	**77**
Mortality (deaths/100 000 pop/yr)[c]	**7.8**
Prevalence of HIV in adult TB 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

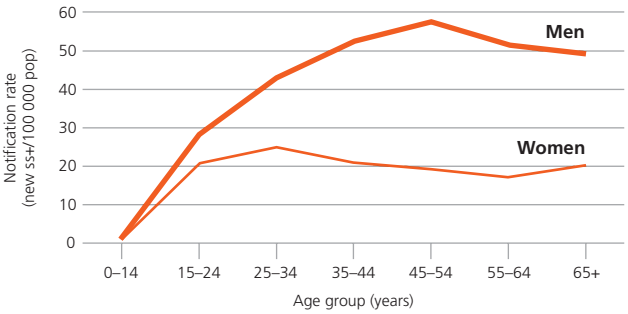
Case notifications

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,[e] 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 STRATEGY[1]

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

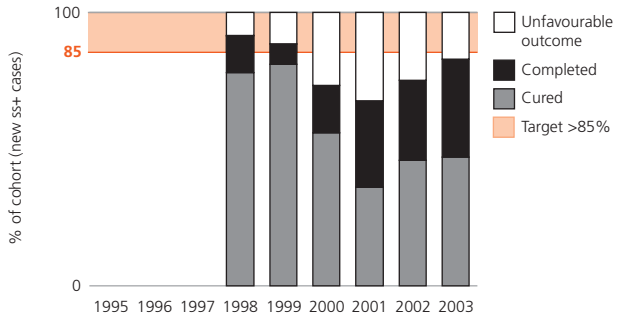
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

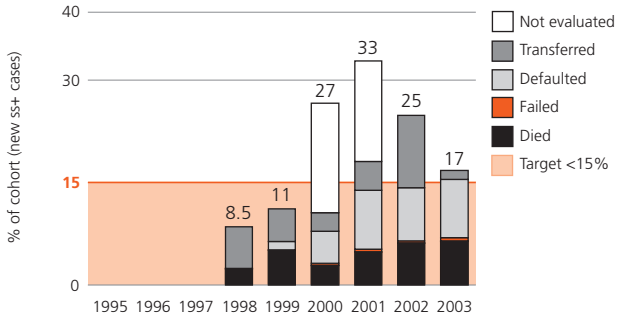
Treatment success, DOTS

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

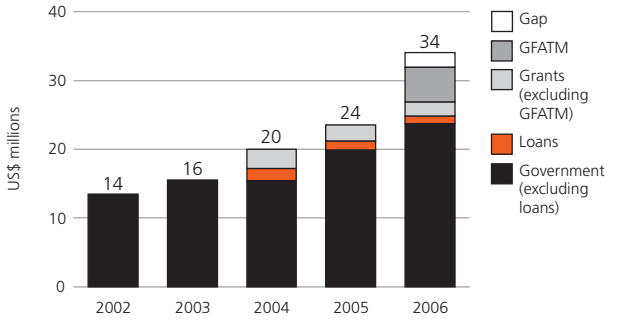
Improved follow-up of transfers (compared with 2002 cohort), default main barrier to success, high death rate may be linked to HIV



BUDGET AND FINANCE

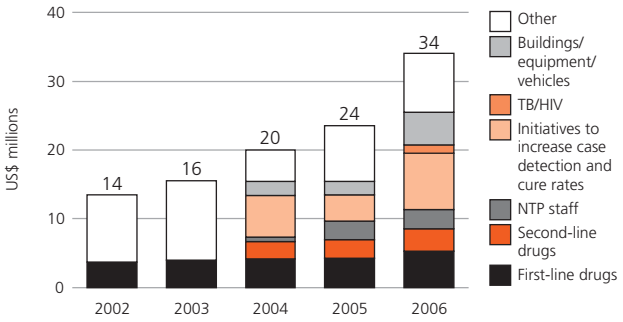
NTP budget by source of funding

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



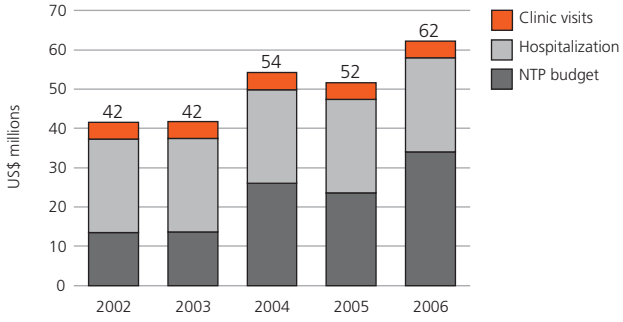
NTP budget by line item

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



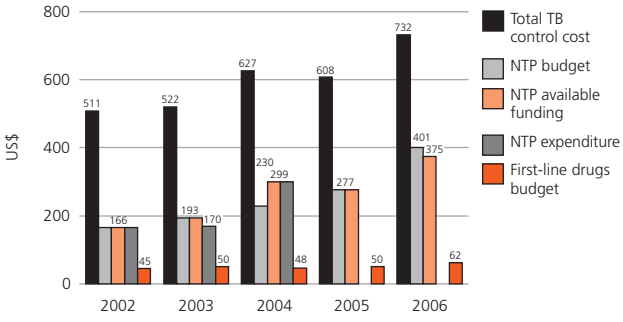
Total TB control costs by line item[a]

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.

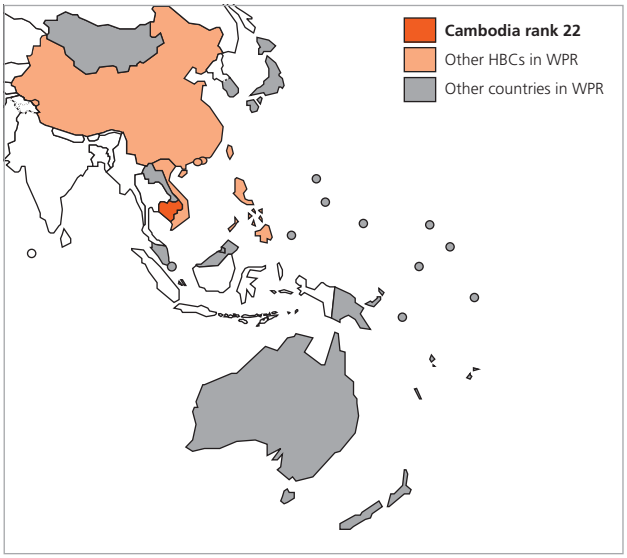
pop indicates population; ss+, smear-positive; yr, year; — not available or not applicable.

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

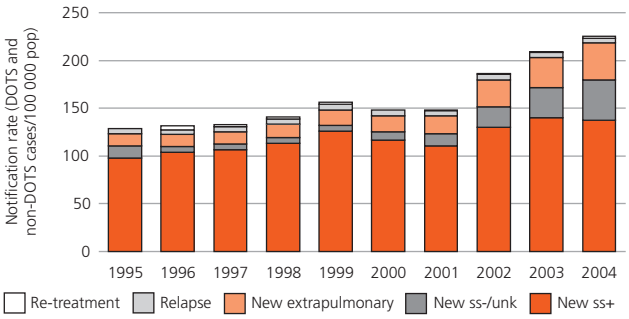


WHO Western Pacific Region (WPR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

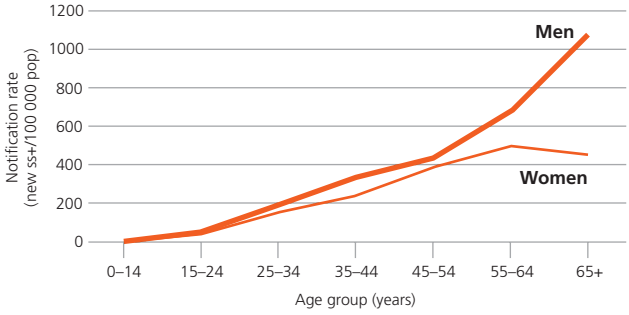
Case notifications

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 STRATEGY[1]

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

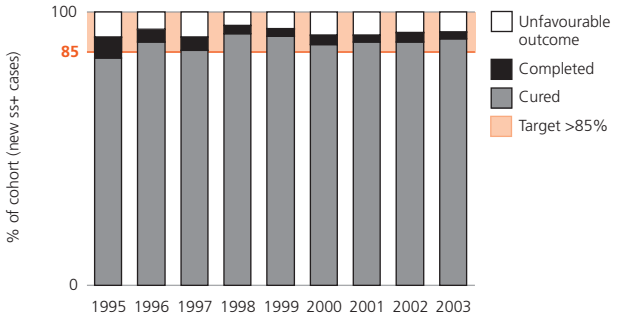
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

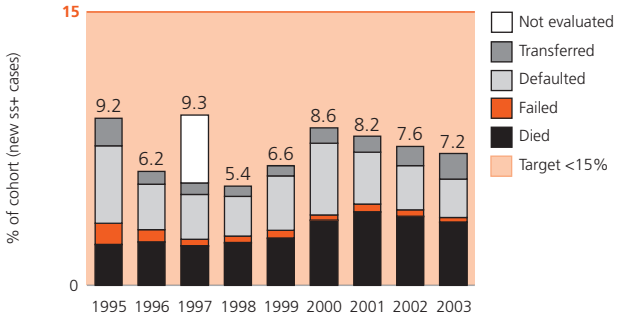
Treatment success, DOTS

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



Unfavourable treatment outcomes, DOTS

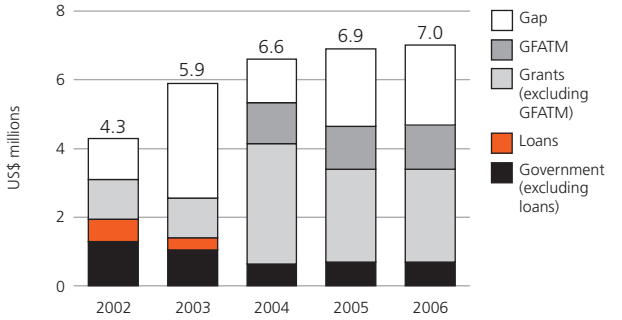
Outcomes provided for all registered cases, proportion of patients defaulting decreasing since year 2000



BUDGET AND FINANCE

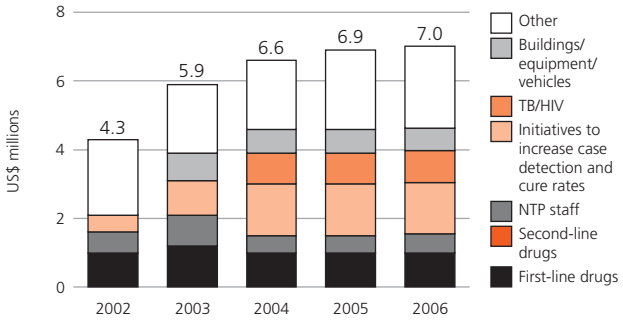
NTP budget by source of funding

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



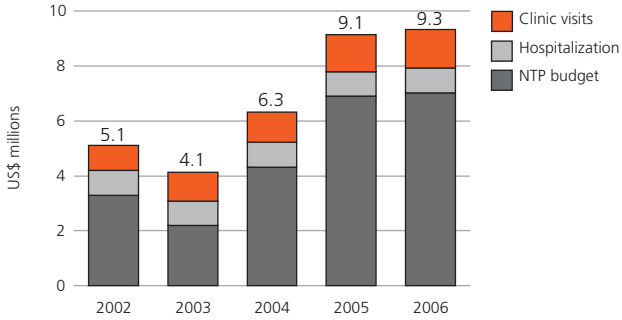
NTP budget by line item

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



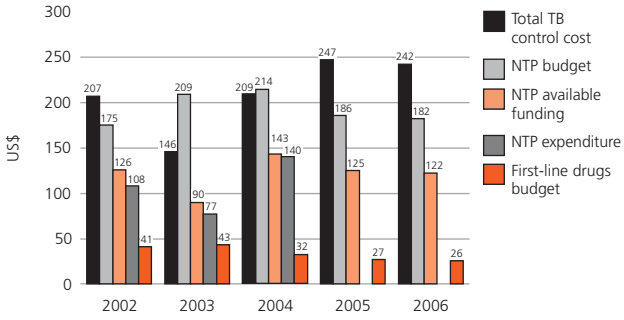
Total TB control costs by line item[a]

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.

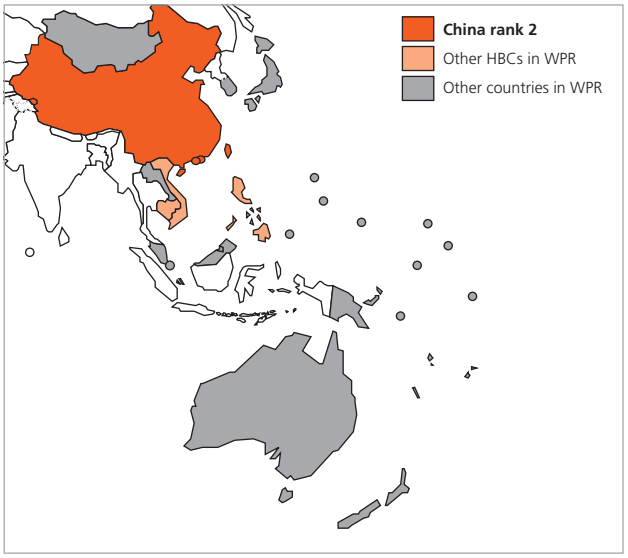
pop indicates population; ss+, smear-positive; yr, year; — not available.

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

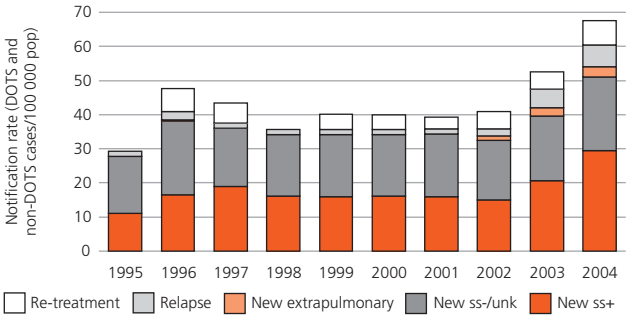


WHO Western Pacific Region (WPR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

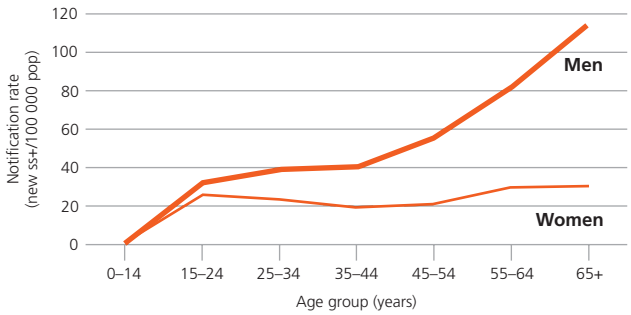
Case notifications

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 STRATEGY[1]

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

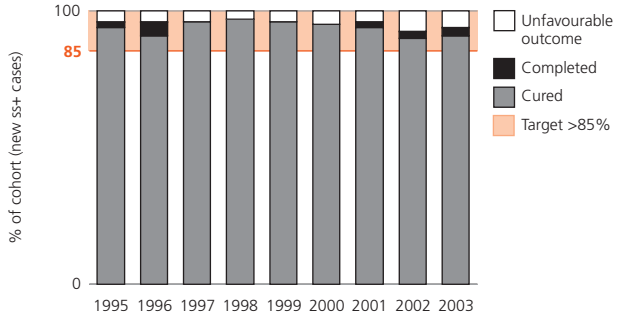
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

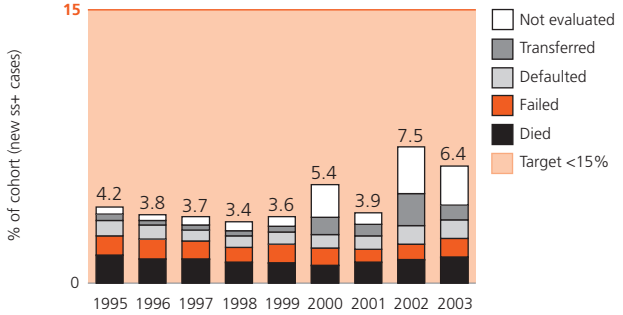
Treatment success, DOTS

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



Unfavourable treatment outcomes, DOTS

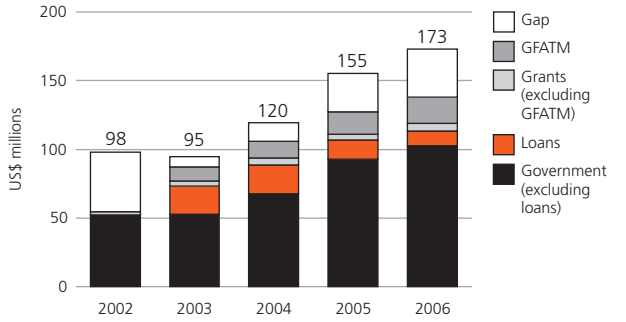
Proportion of cases not evaluated higher since 2000



BUDGET AND FINANCE

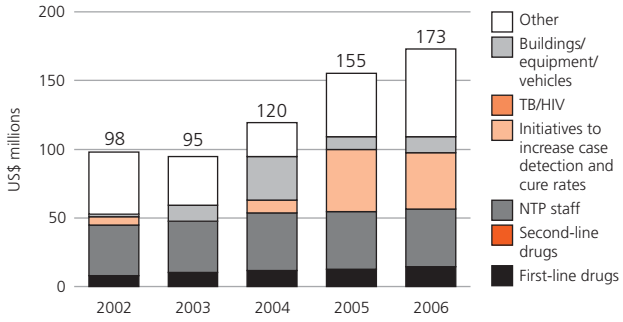
NTP budget by source of funding

Growing budget but funding gaps remain



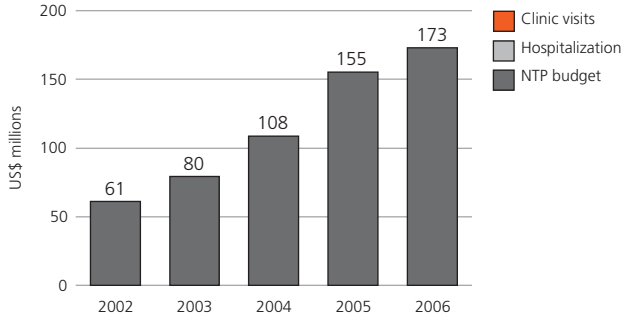
NTP budget by line item

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



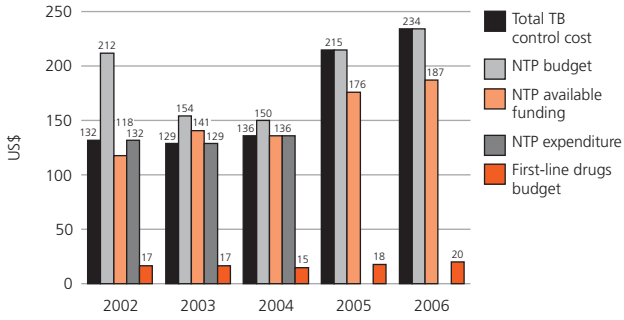
Total TB control costs by line item[a]

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.

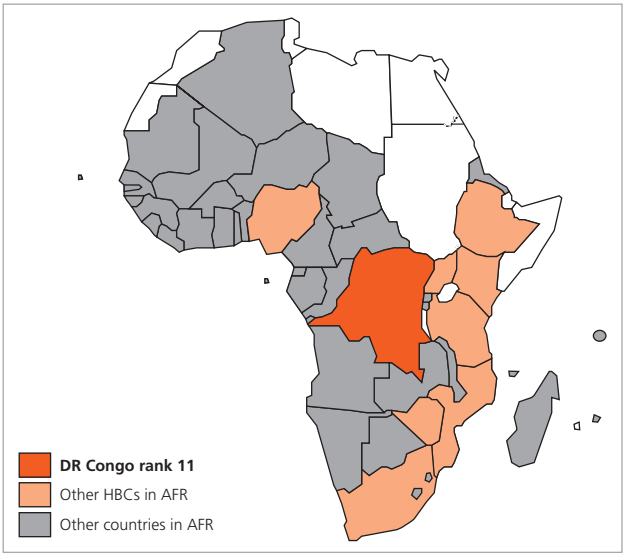
pop indicates population; ss+, smear-positive; yr, year; — not available.

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

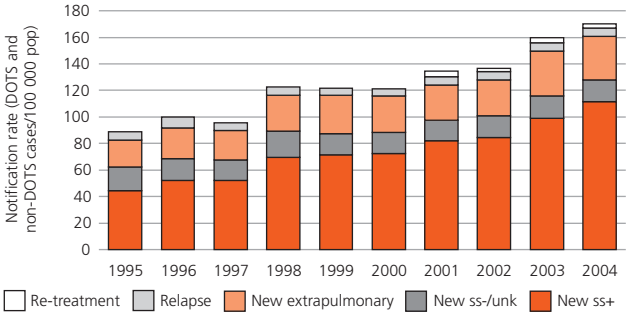


WHO African Region (AFR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

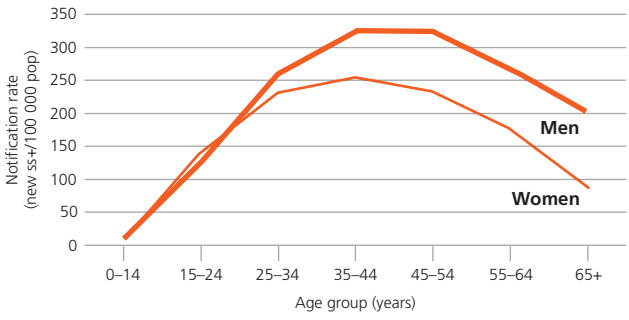
Case notifications

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,[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 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 STRATEGY[1]

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

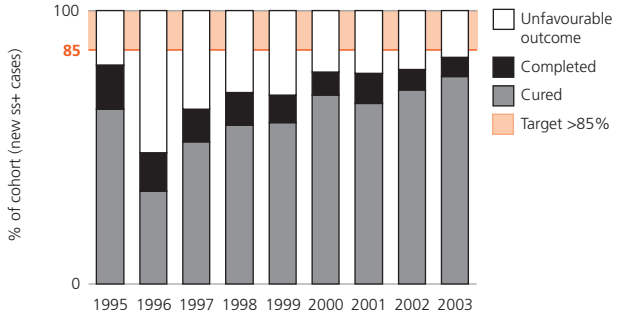
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

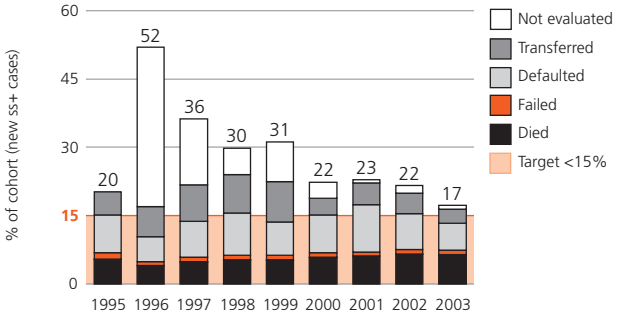
Treatment success, DOTS

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



Unfavourable treatment outcomes, DOTS

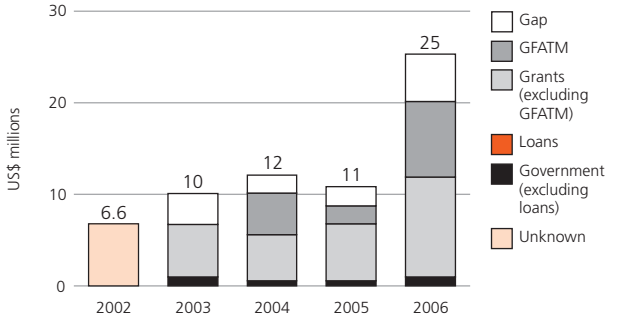
Treatment outcome monitoring is improving; outcomes were recorded for 99% of patients in the 2003 cohort



BUDGET AND FINANCE

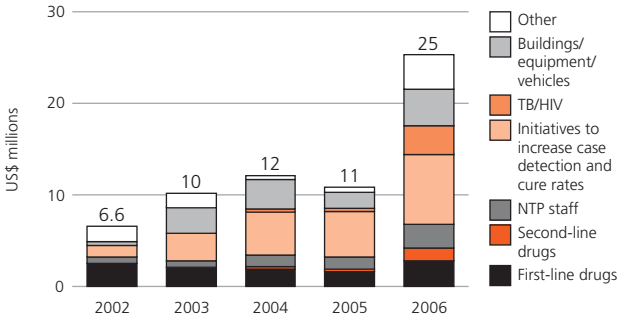
NTP budget by source of funding

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



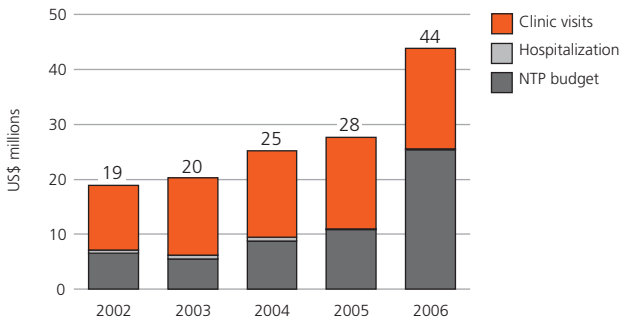
NTP budget by line item

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



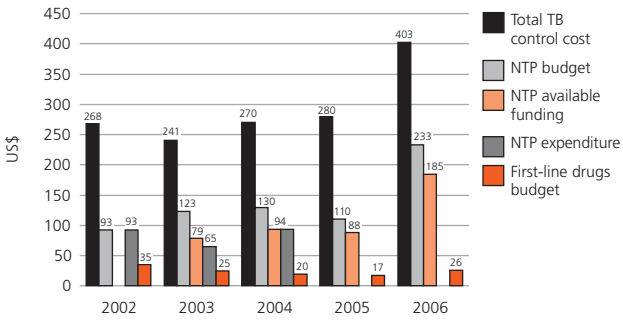
Total TB control costs by line item[a]

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.

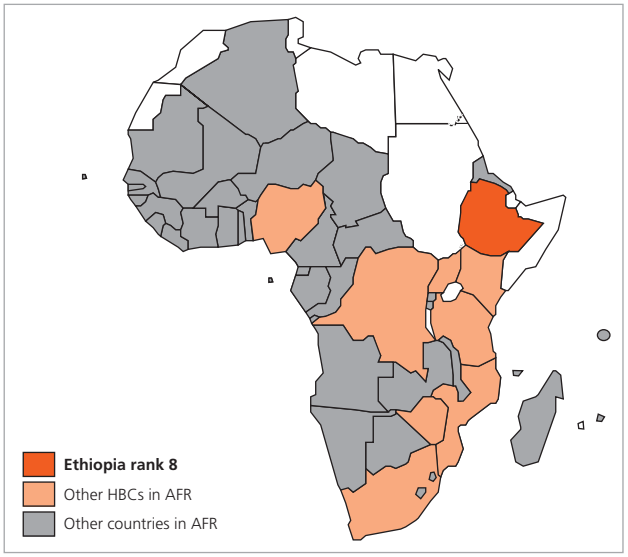
pop indicates population; ss+, smear-positive; yr, year; — not available.

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

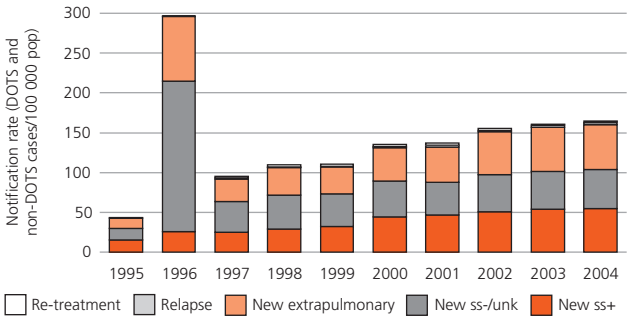


WHO African Region (AFR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

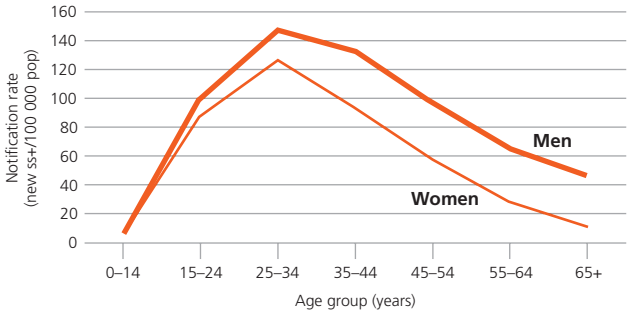
Case notifications

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,[e] 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 STRATEGY[1]

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

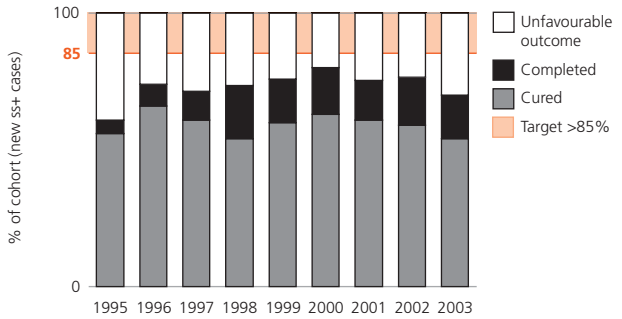
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

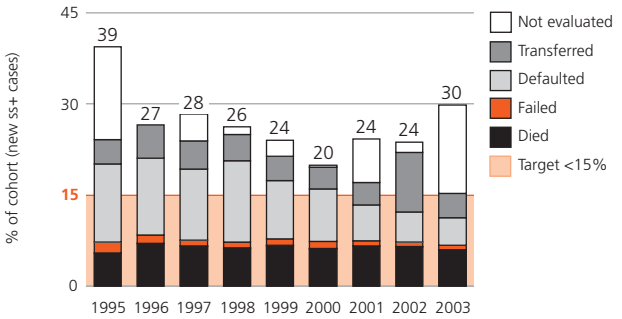
Treatment success, DOTS

Treatment success well below 85% target, about average for AFR but not improving



Unfavourable treatment outcomes, DOTS

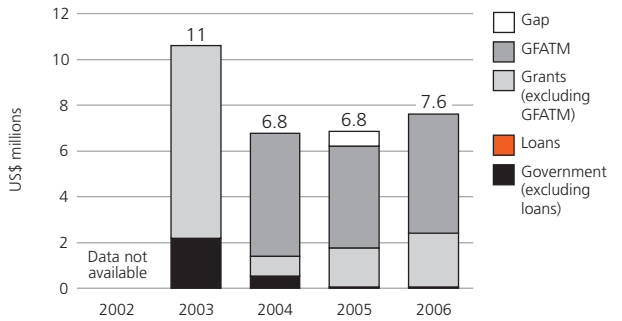
Default rate falling since 1998 but need to evaluate properly outcomes for all patients, including those who transfer



BUDGET AND FINANCE

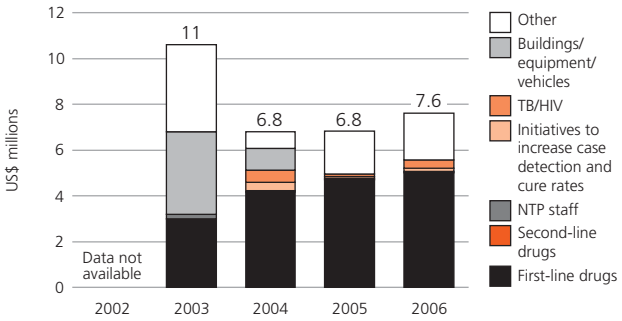
NTP budget by source of funding

NTP funding highly dependent on donor financing, particularly the GFATM since 2004



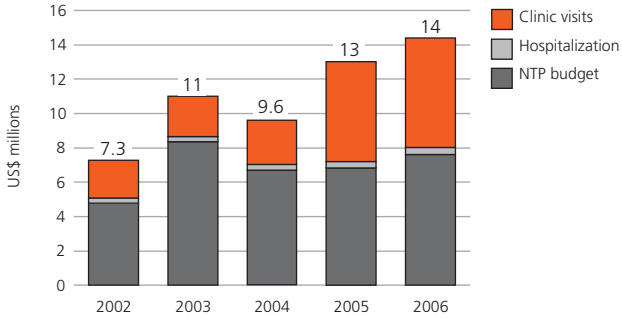
NTP budget by line item

Most of budget since 2004 is for first-line drugs; remainder mostly for routine programme activities, following large capital investments (vehicles, equipment) in 2003



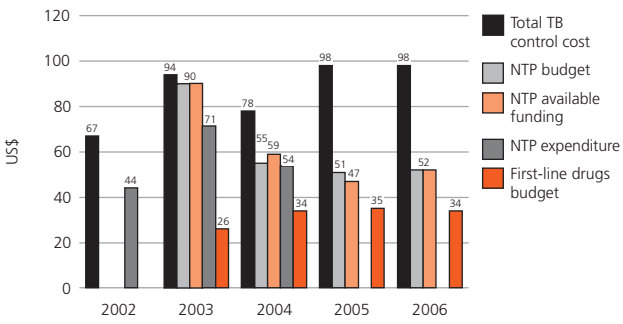
Total TB control costs by line item[a]

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.

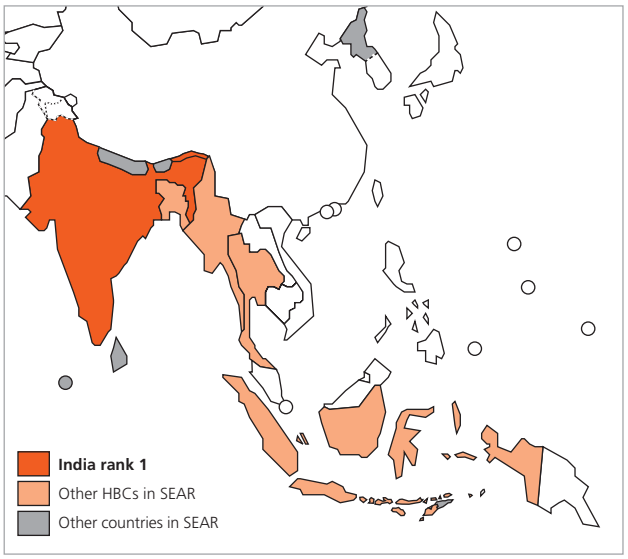
pop indicates population; ss+, smear-positive; yr, year; — not available.

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]	25
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

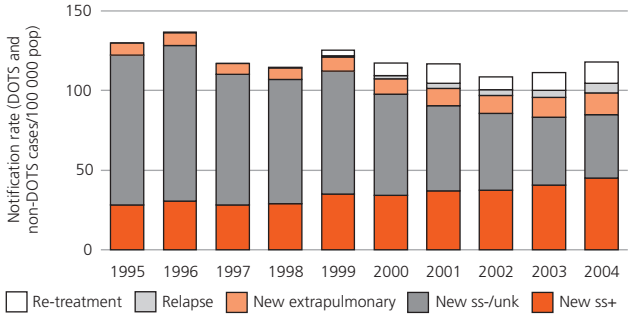


WHO South-East Asia Region (SEAR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

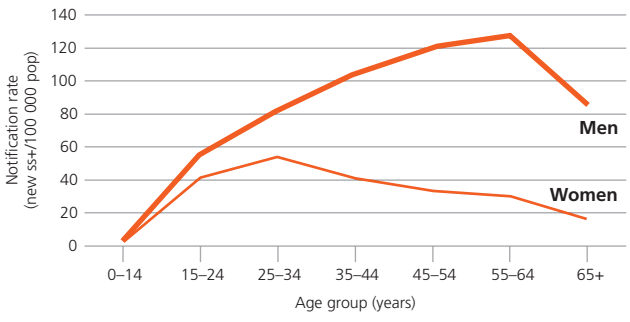
Case notifications

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 [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 STRATEGY[1]

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

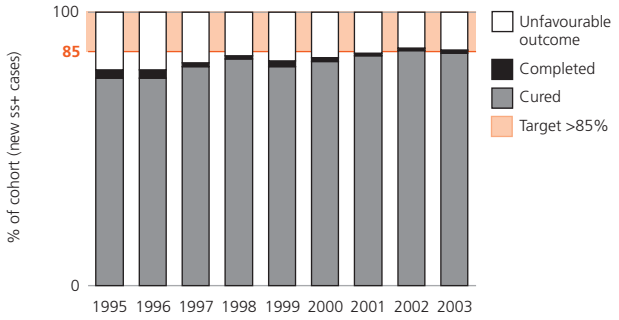
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

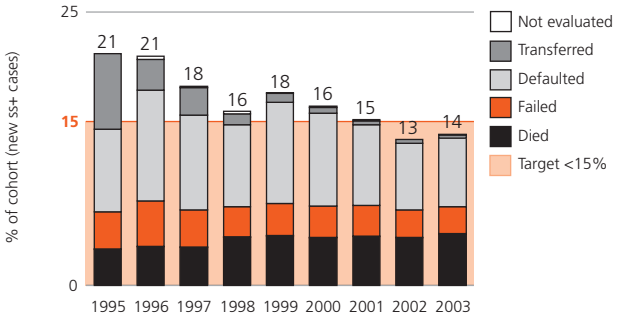
Treatment success, DOTS

Above 85% for third consecutive year



Unfavourable treatment outcomes, DOTS

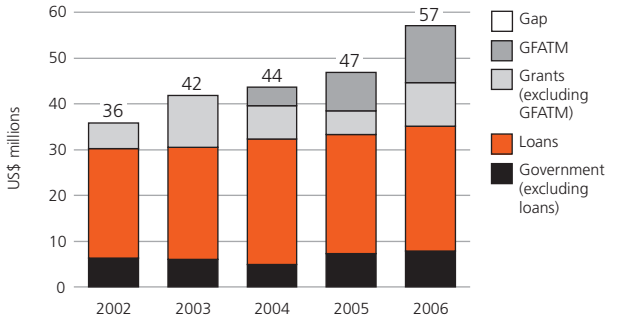
Fewer patients defaulting, better follow-up of patients who transfer



BUDGET AND FINANCE

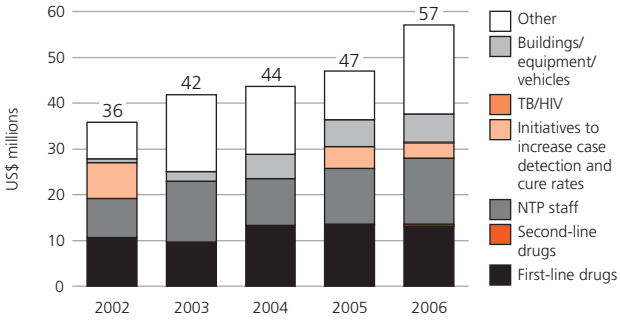
NTP budget by source of funding

Growing budget with full funding



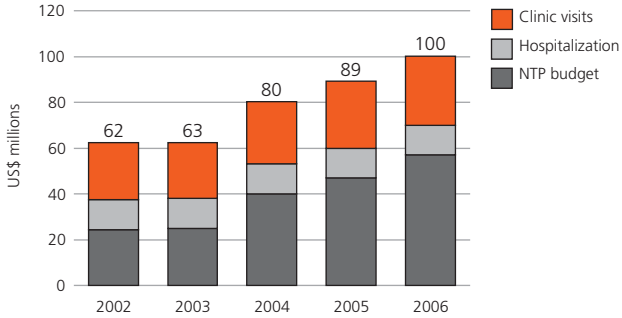
NTP budget by line item

Stable budget breakdown; large budget for staff



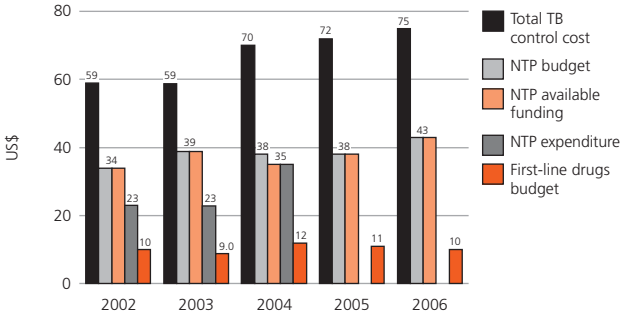
Total TB control costs by line item[b]

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.

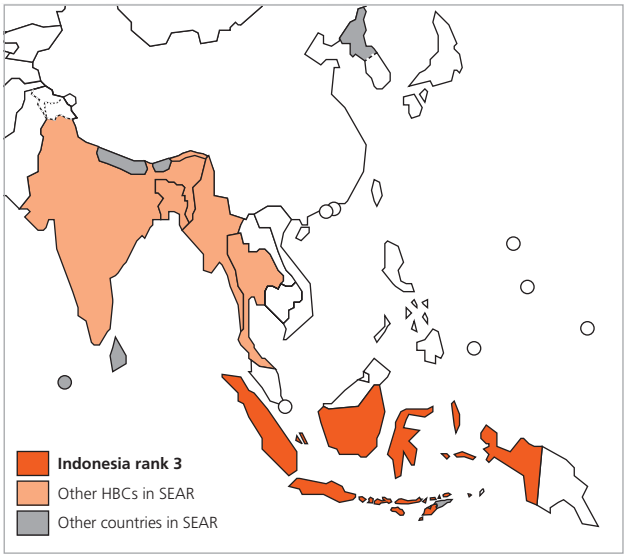
pop indicates population; ss+, smear-positive; yr, year; — not available.

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

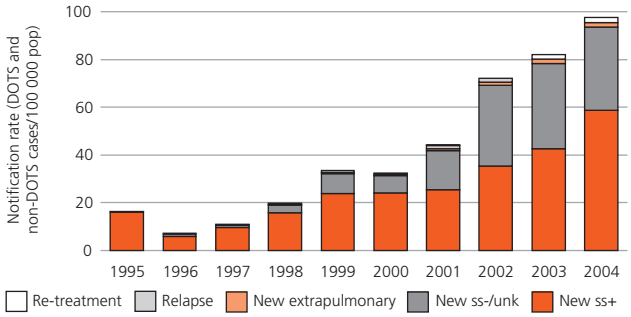


WHO South-East Asia Region (SEAR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

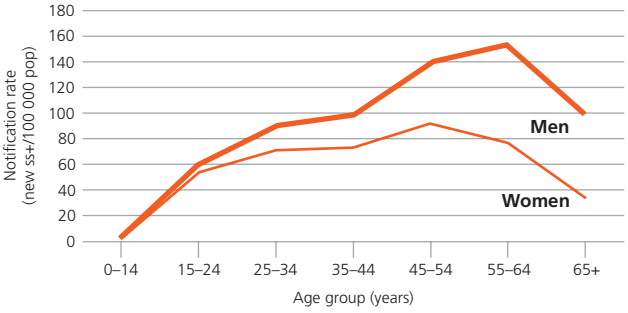
Case notifications

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



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[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 STRATEGY[1]

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 copntrol 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 "ninik 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

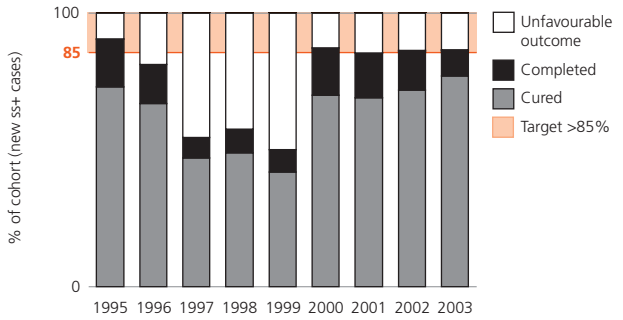
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

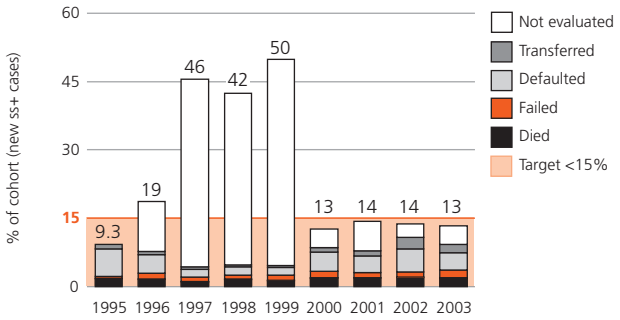
Treatment success, DOTS

Above 85% for 4th consecutive year, proportion of cases with confirmation of cure increasing



Unfavourable treatment outcomes, DOTS

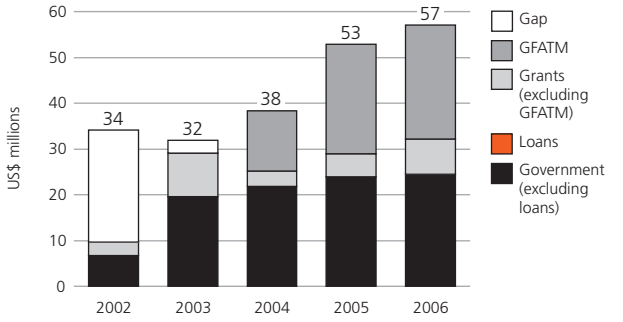
Since 2000, treatment outcomes reported for over 90% of cases



BUDGET AND FINANCE

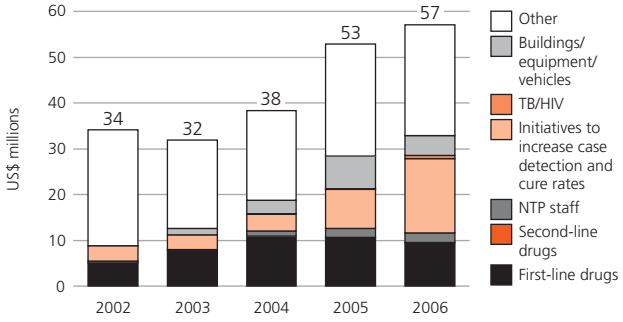
NTP budget by source of funding

Growing budget with full funding for years 2004–2006



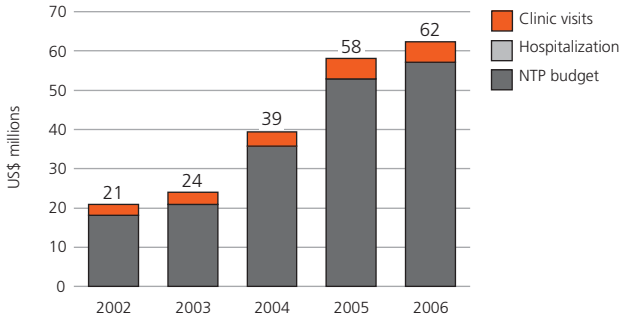
NTP budget by line item

Major increase in budget for initiatives to improve case detection and cure rates



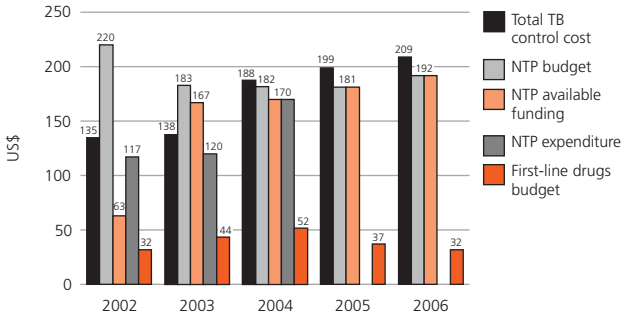
Total TB control costs by line item[a]

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.

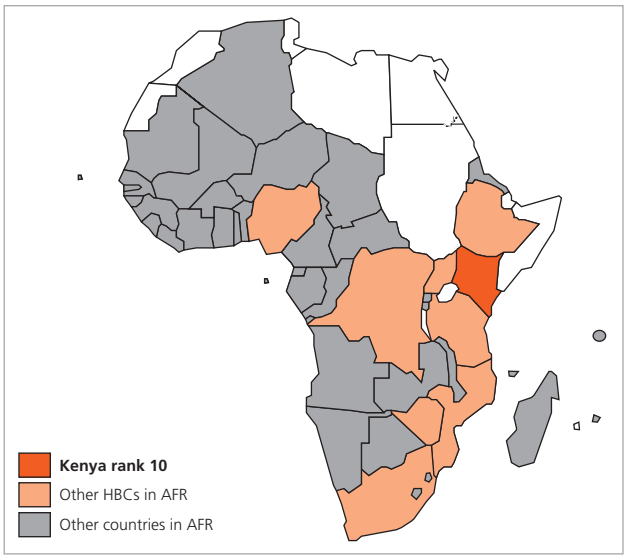
pop indicates population; ss+, smear-positive; yr, year; — not available.

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

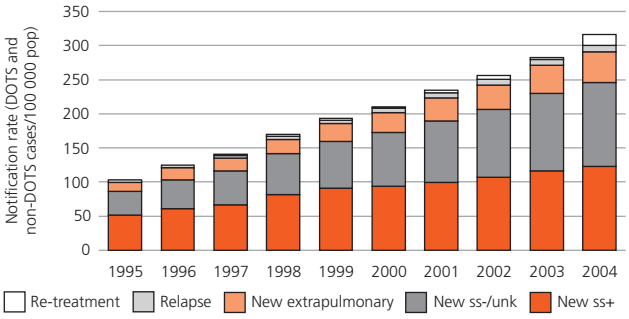


WHO African Region (AFR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

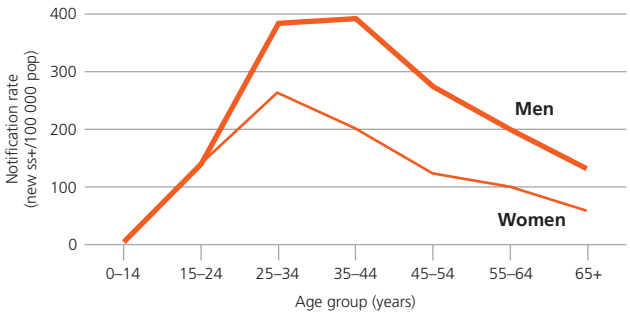
Case notifications

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 STRATEGY[1]

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

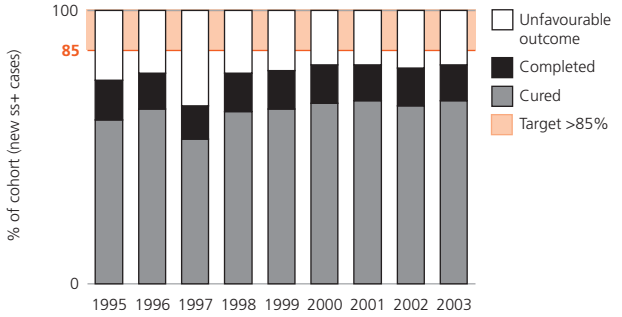
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

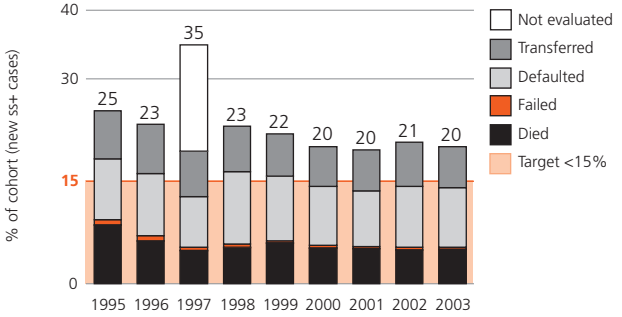
Treatment success, DOTS

Treatment success high compared with other countries in AFR, but below target



Unfavourable treatment outcomes, DOTS

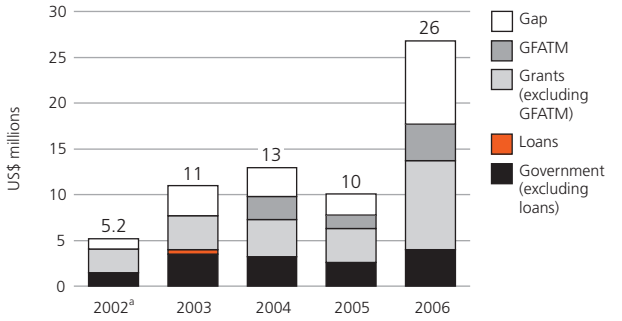
Outcomes recorded for all patients since 1998; default (9%) most common unfavourable outcome



BUDGET AND FINANCE

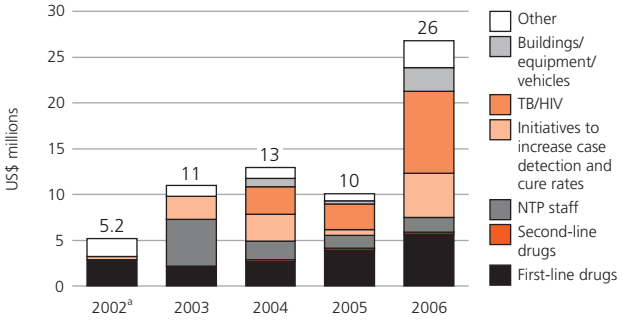
NTP budget by source of funding

Big increase in budget and funding (mostly from donors) in 2006; large funding gap remains



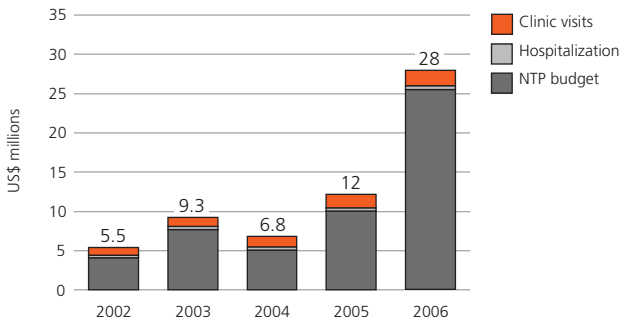
NTP budget by line item

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



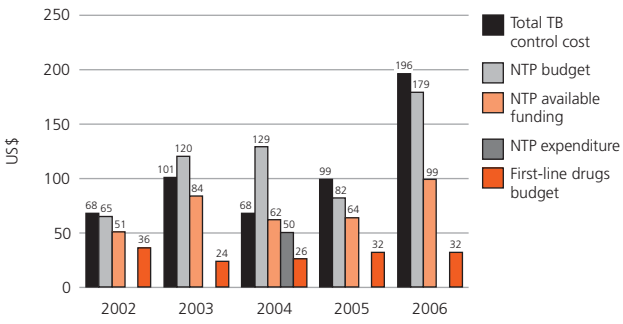
Total TB control costs by line item[b]

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.

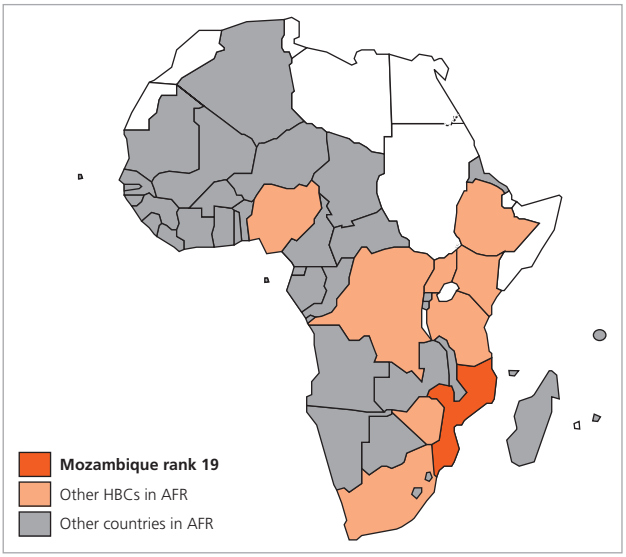
pop indicates population; ss+, smear-positive; yr, year; — not available.

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

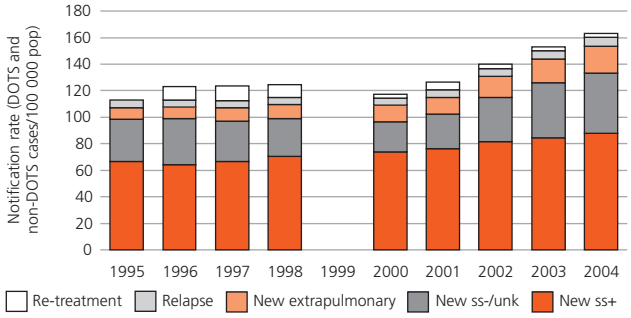


WHO African Region (AFR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

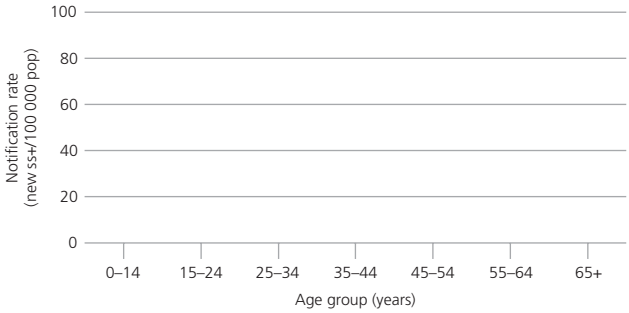
Case notifications

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 STRATEGY[1]

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 skllls 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

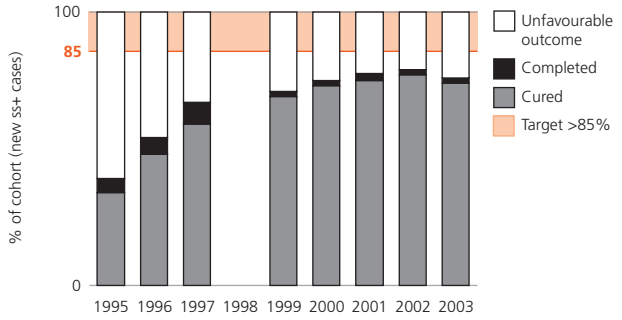
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

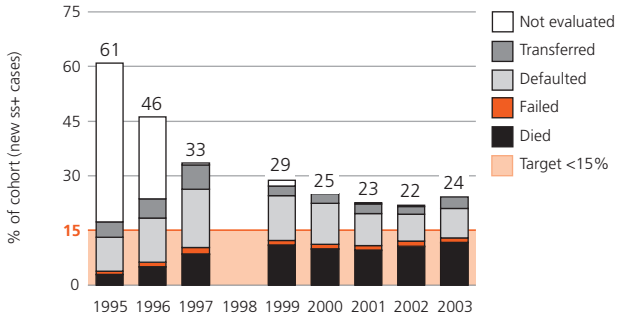
Treatment success, DOTS

Treatment success much improved since 1995 but still below target



Unfavourable treatment outcomes, DOTS

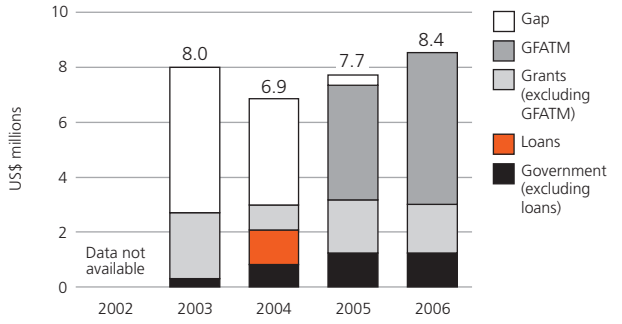
Very high death rates (12% for 2003 cohort); default rate high but falling slowly (8% in 2003)



BUDGET AND FINANCE

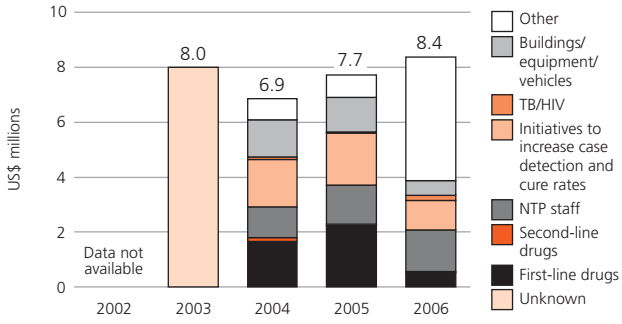
NTP budget by source of funding

Major improvement in funding for 2005–2006 as a result of funding from GFATM



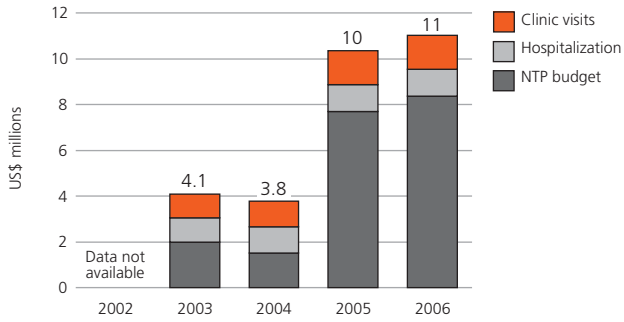
NTP budget by line item

Large "other" category mostly items funded by GFATM; with further analysis, many of these items could probably be allocated to a different category



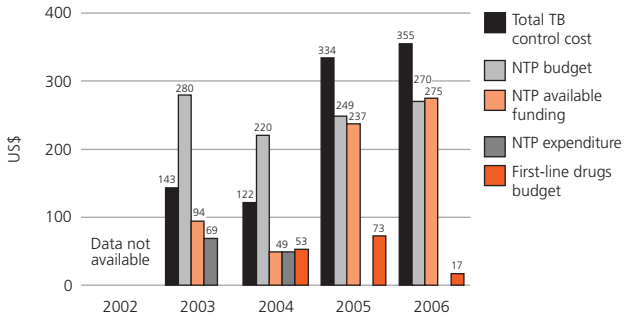
Total TB control costs by line item[a]

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.

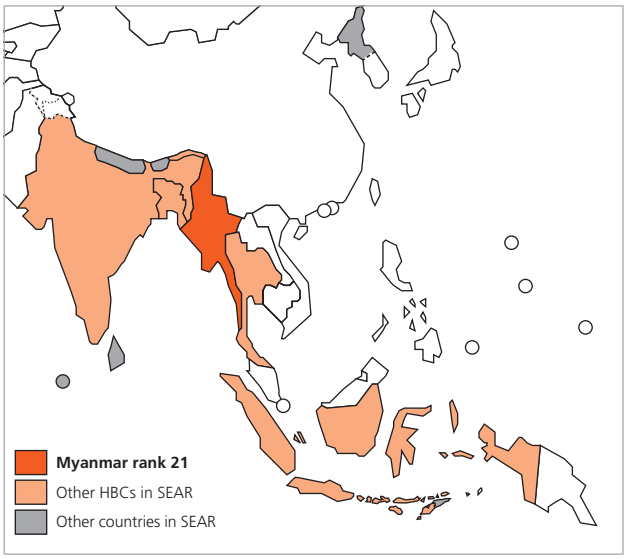
pop indicates population; ss+, smear-positive; yr, year; — not available.

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

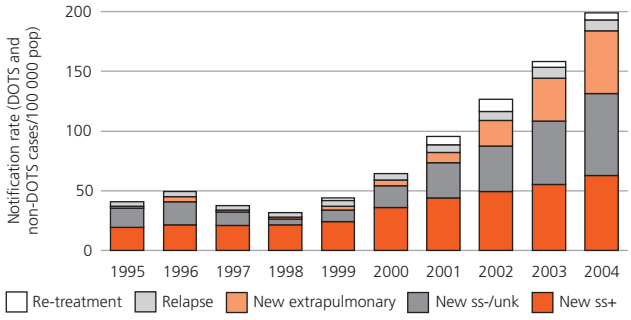


WHO South-East Asia Region (SEAR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

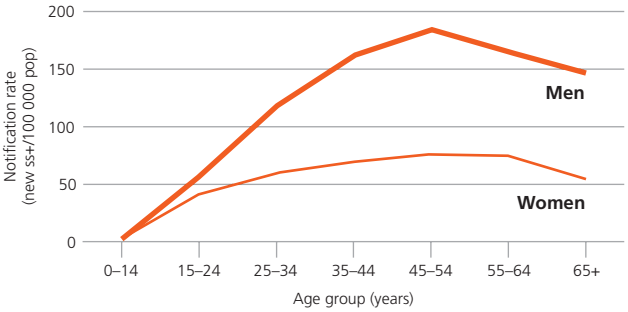
Case notifications

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 STRATEGY[1]

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

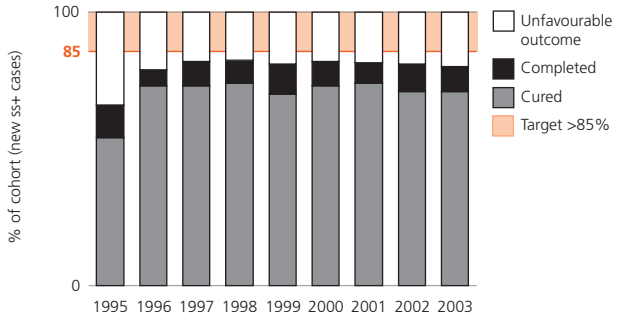
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

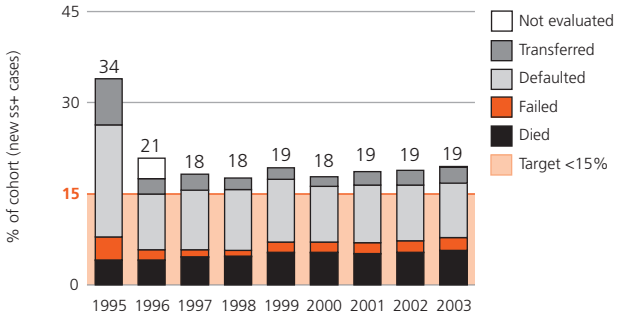
Treatment success, DOTS

Close to target, but no improvement reported since 1996



Unfavourable treatment outcomes, DOTS

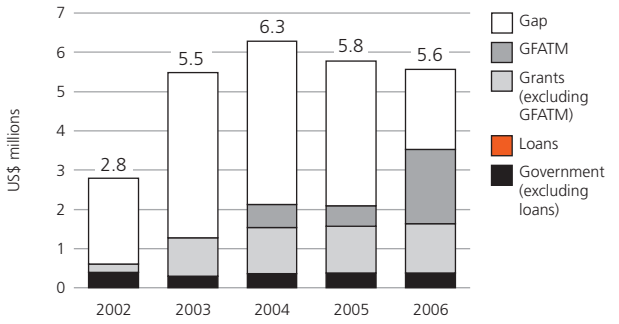
Default is a major barrier to treatment success



BUDGET AND FINANCE

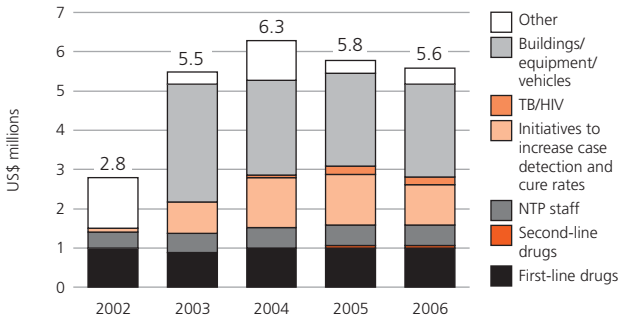
NTP budget by source of funding

Large increase in budget from 2003; funding gaps remain and will increase further in 2007 as a result of termination of GFATM grant



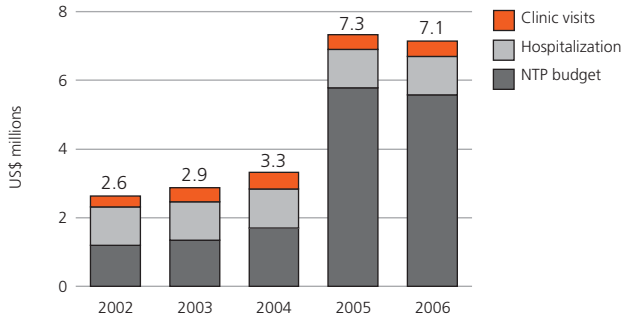
NTP budget by line item

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



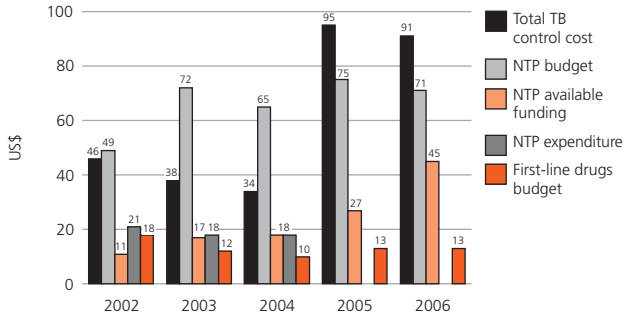
Total TB control costs by line item[a]

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.

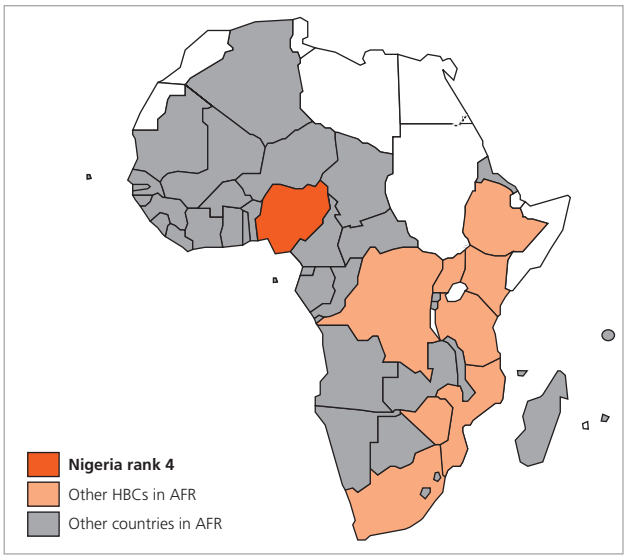
pop indicates population; ss+, smear-positive; yr, year; — not available.

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

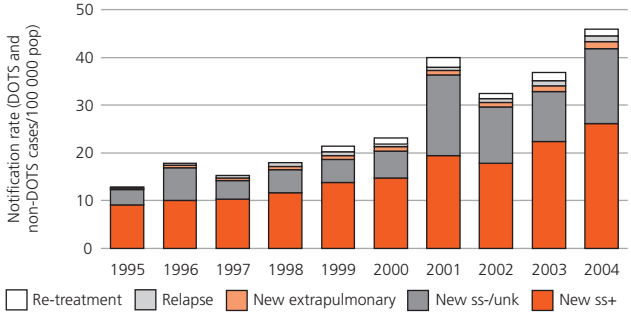


WHO African Region (AFR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

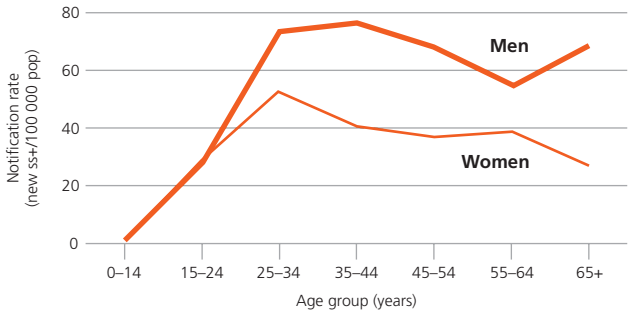
Case notifications

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 STRATEGY[1]

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

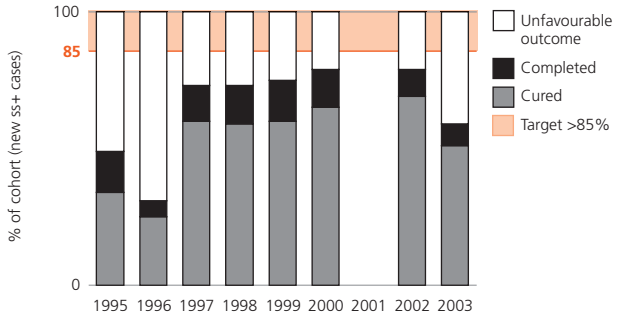
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—	—

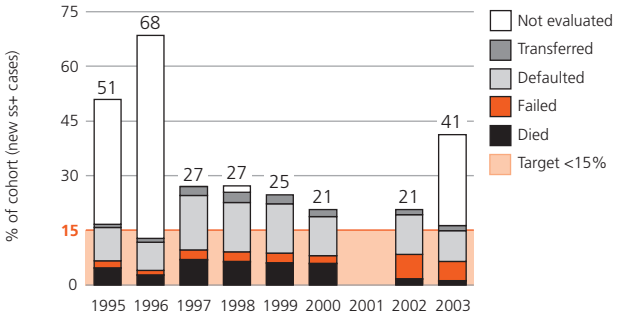
Treatment success, DOTS

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

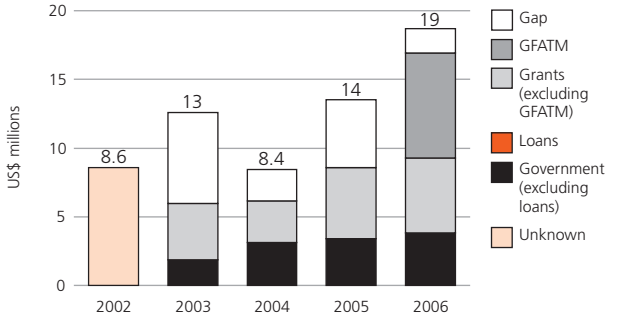
Default rate decreasing since 1997; one quarter of cases not evaluated in 2003 cohort



BUDGET AND FINANCE

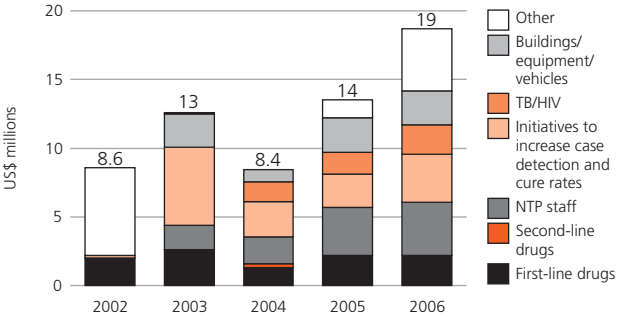
NTP budget by source of funding

Big increase in NTP budget in 2006; budget almost fully funded in 2006 following successful GFATM round 5 application



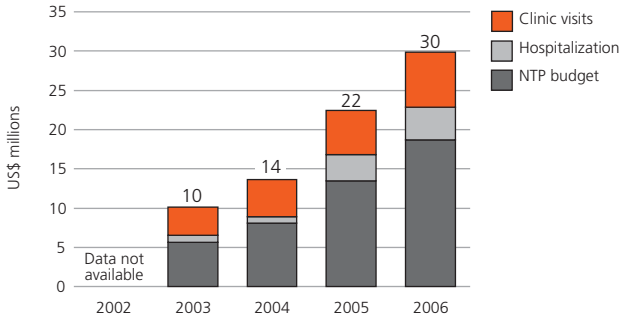
NTP budget by line item

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



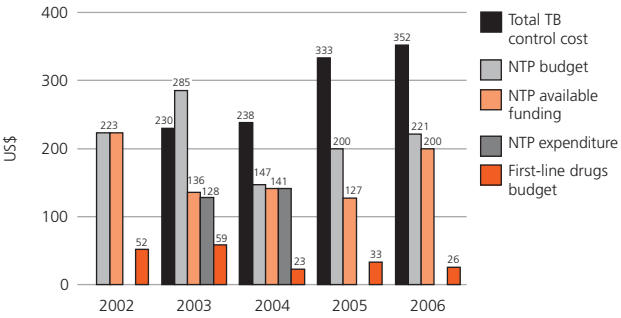
Total TB control costs by line item[a]

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.

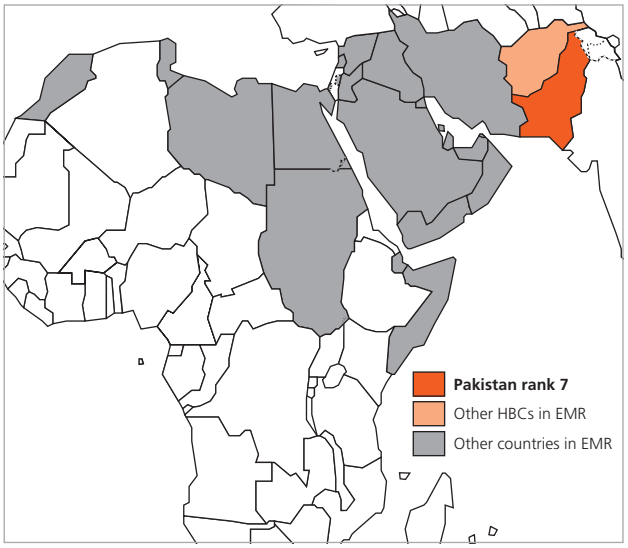
pop indicates population; ss+, smear-positive; yr, year; — not available.

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

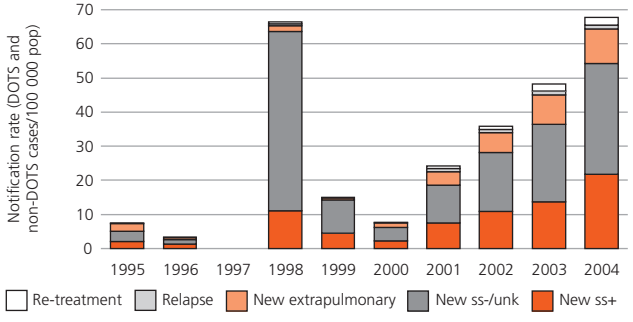


WHO Eastern Mediterranean Region (EMR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

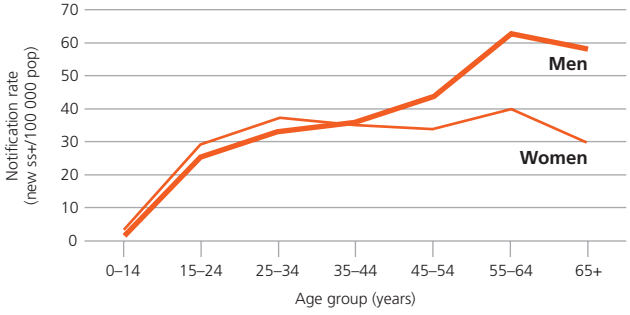
Case notifications

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,[e] 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 STRATEGY[1]

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

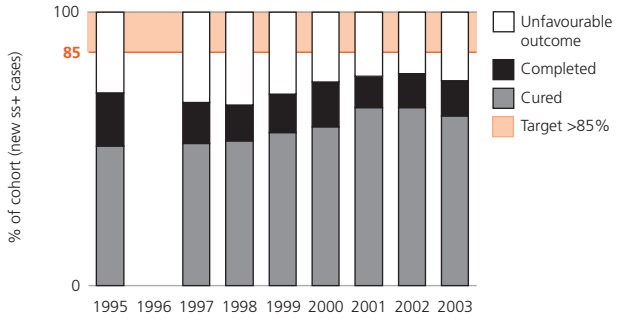
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

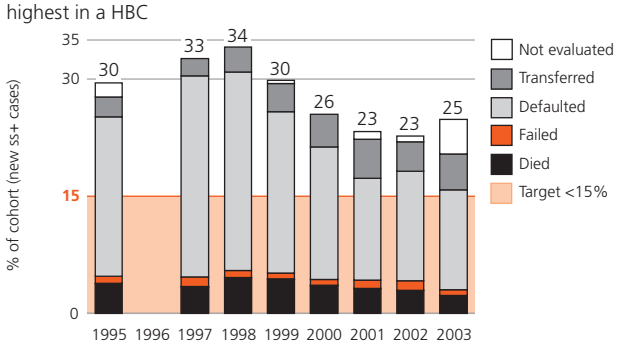
Treatment success, DOTS

Treatment success in recent years higher than in 1990s, but still far from 85% target



Unfavourable treatment outcomes, DOTS

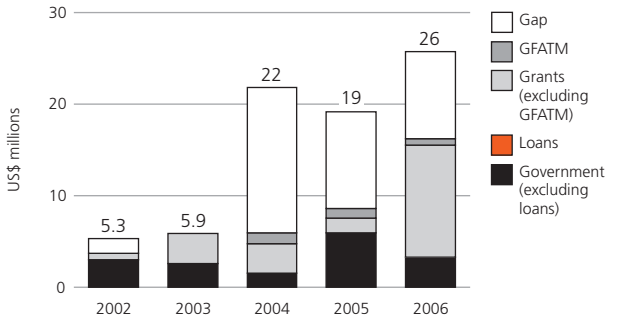
Default rate in 2003 cohort half that of 1997 cohort, but still among highest in a HBC



BUDGET AND FINANCE

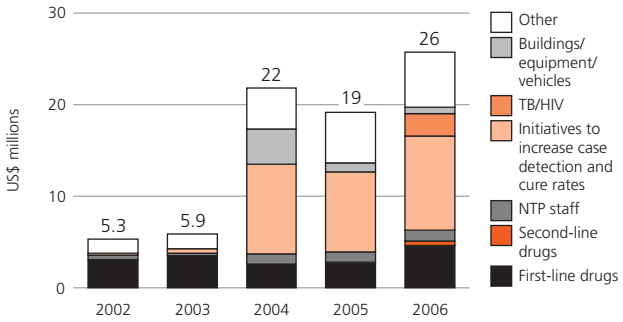
NTP budget by source of funding

Big improvement in funding in 2006 though funding gap remains; funds expected from provincial-level budgets will help to fill this gap



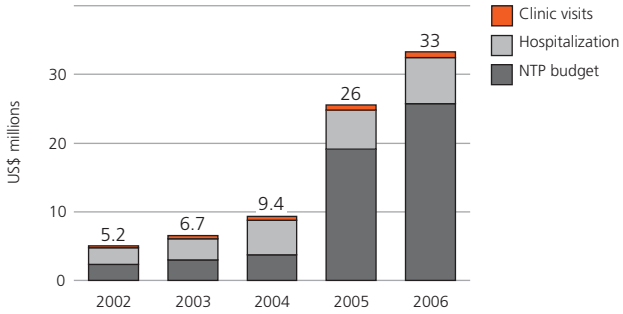
NTP budget by line item

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



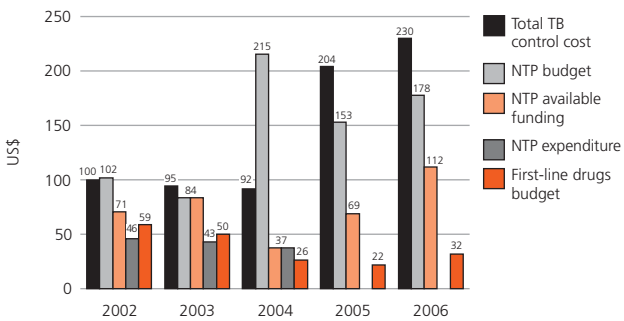
Total TB control costs by line item[a]

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.

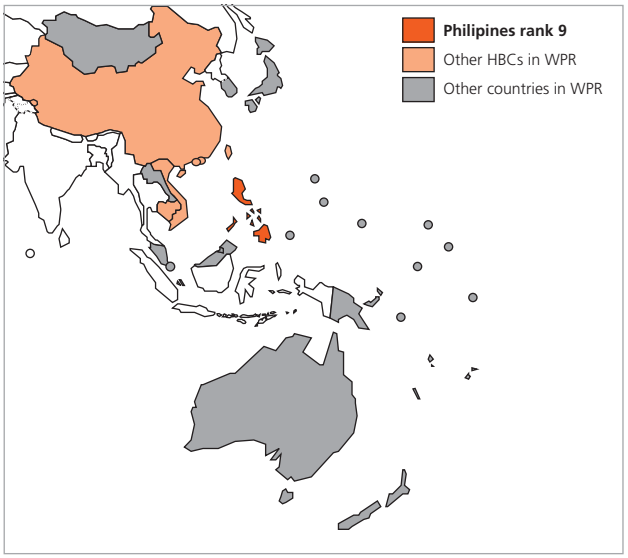
pop indicates population; ss+, smear-positive; yr, year; — not available.

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

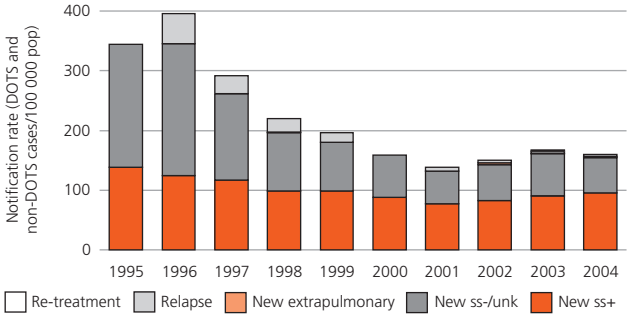


WHO Western Pacific Region (WPR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

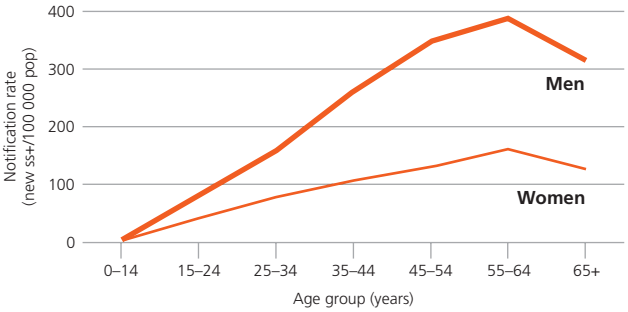
Case notifications

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 STRATEGY[1]

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

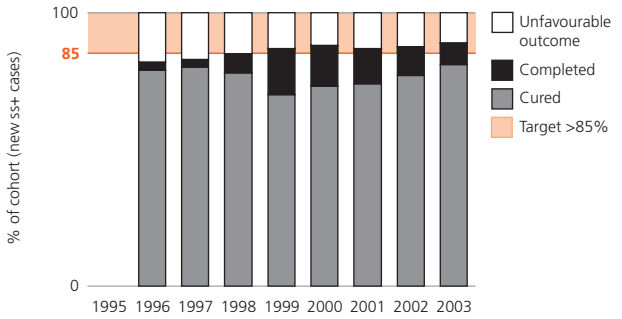
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

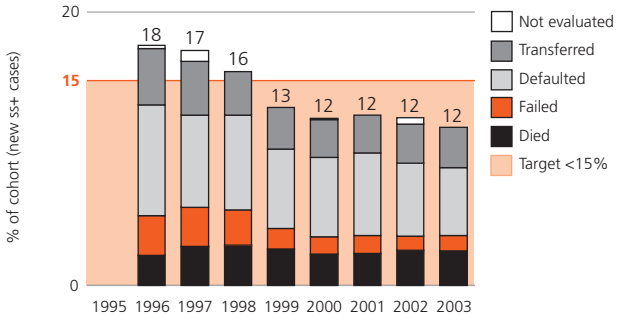
Treatment success, DOTS

Above 85% for 5th consecutive year; proportion of cases with confirmation of cure increasing



Unfavourable treatment outcomes, DOTS

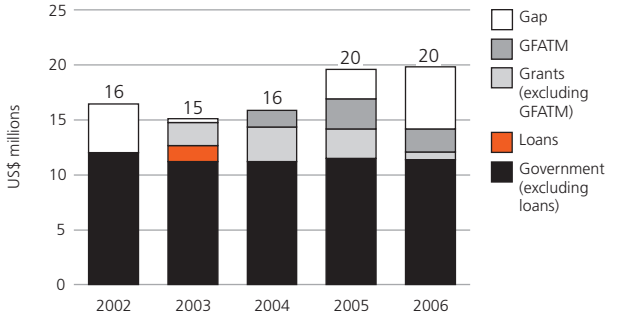
Proportion of cases defaulting has decreased since 1996



BUDGET AND FINANCE

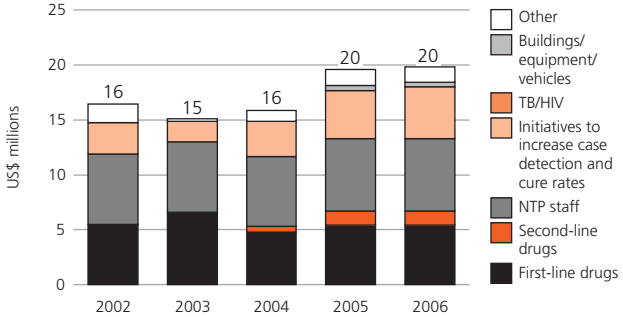
NTP budget by source of funding

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



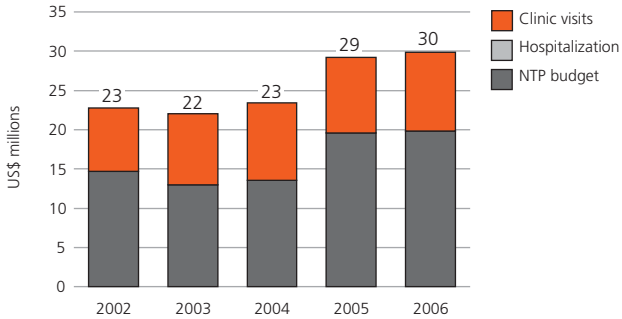
NTP budget by line item

Relatively stable budget breakdown but increased budget for second-line drugs since 2004



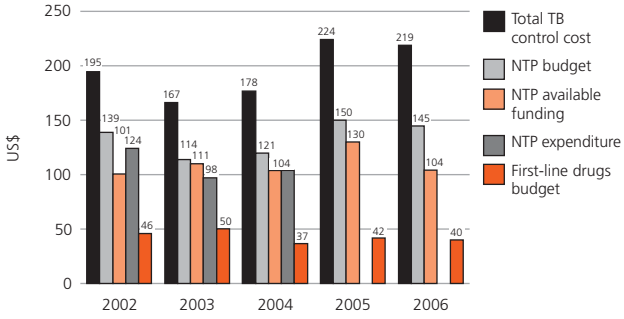
Total TB control costs by line item[a]

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

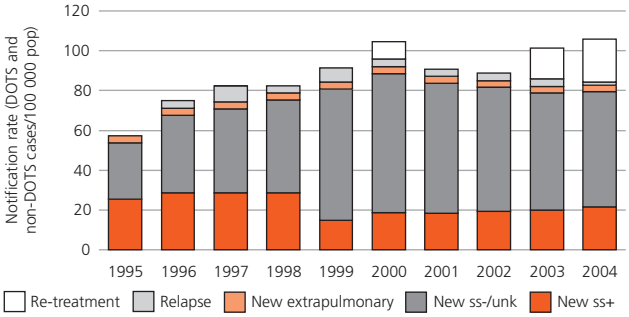
Population (thousands)[a]	143 899
TB burden (2004 estimates)[b]	
Incidence (all cases/100 000 pop/yr)	115
Trend in incidence rate (%/yr)[c]	**-2.5**
Incidence (ss+/100 000 pop/yr)	51
Prevalence (all cases/100 000 pop)[c]	**160**
Mortality (deaths/100 000 pop/yr)[c]	**21**
Prevalence of HIV in adult TB 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

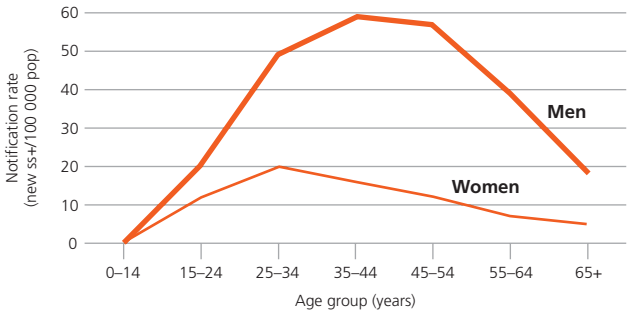
Case notifications

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 STRATEGY[1]

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

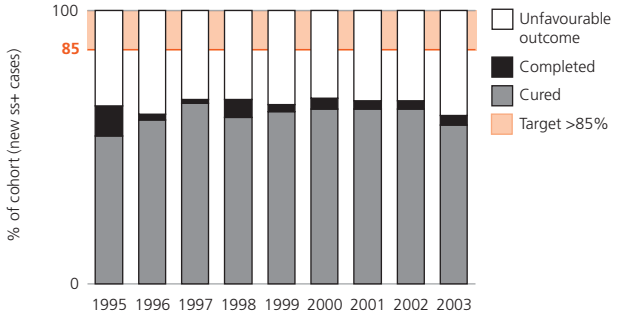
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

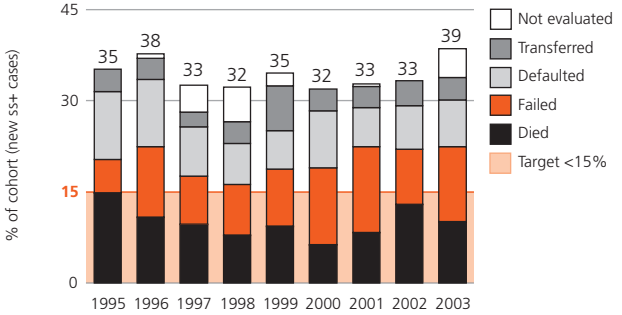
Treatment success, DOTS

Treatment success consistently low



Unfavourable treatment outcomes, DOTS

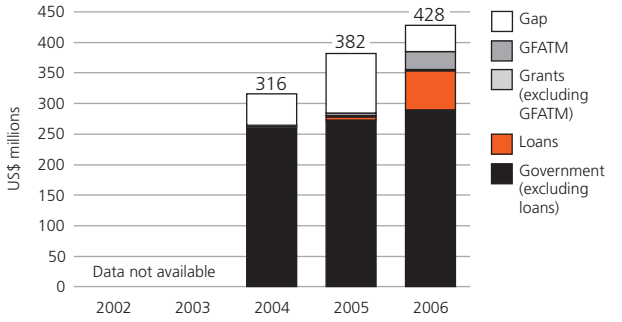
High failure rate principally a consequence of drug resistance; default and death rates also high



BUDGET AND FINANCE[a]

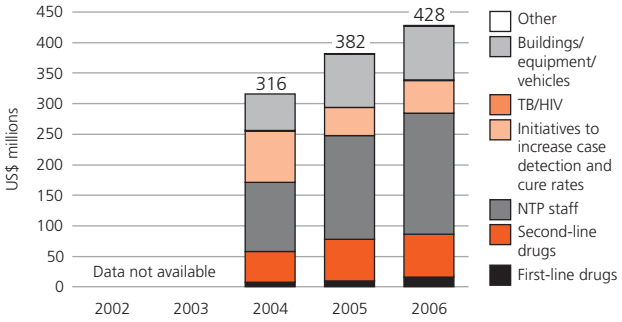
NTP budget by source of funding

Largest budget among HBCs; funding has increased by more than US$100 million between 2005 and 2006



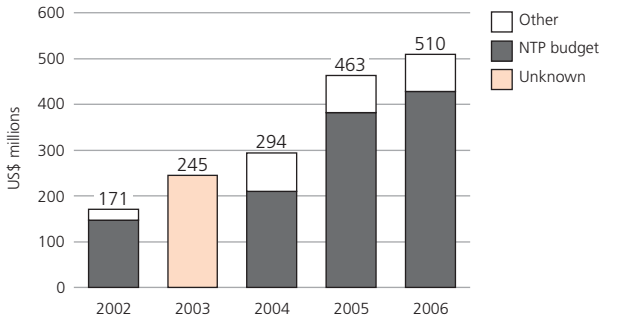
NTP budget by line item

Relatively stable budget breakdown as total budget increases; large budget for staff and second-line drugs



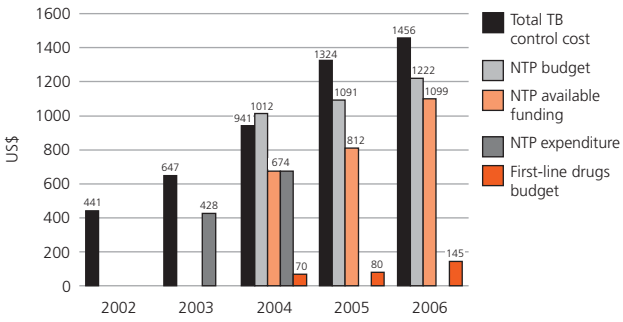
Total TB control costs by line item[b]

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.

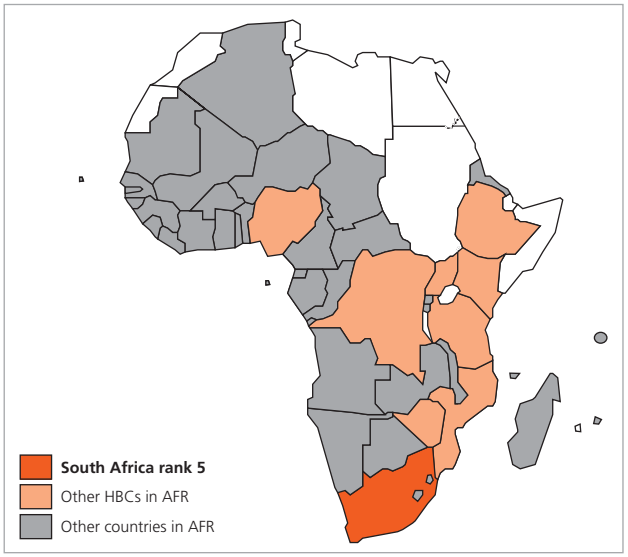
pop indicates population; ss+, smear-positive; yr, year; — not available.

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 (%)	—

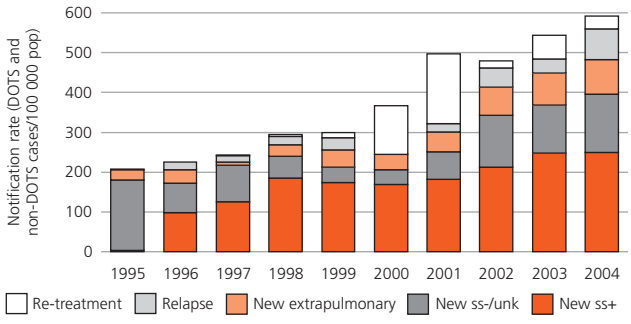


WHO African Region (AFR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

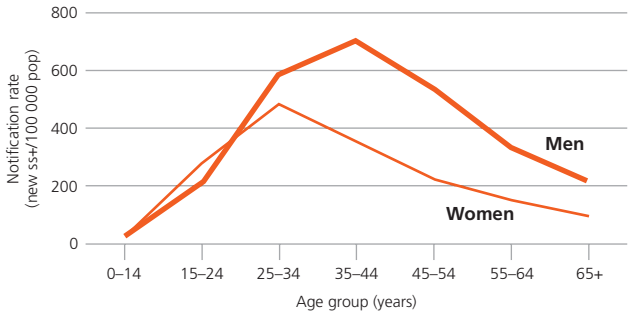
Case notifications

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,[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. 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 STRATEGY[1]

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

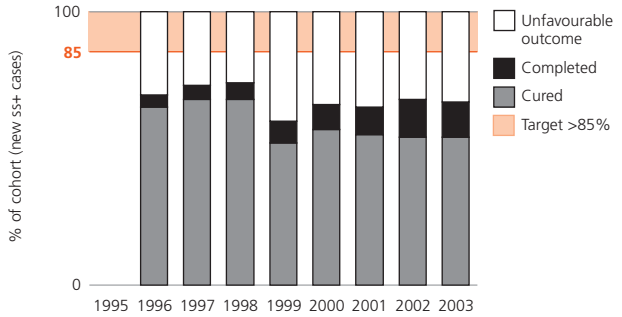
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

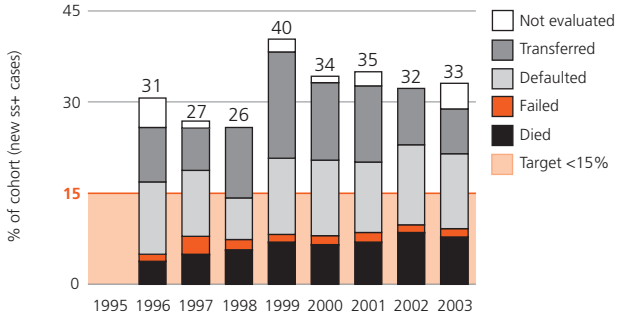
Treatment success, DOTS

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.

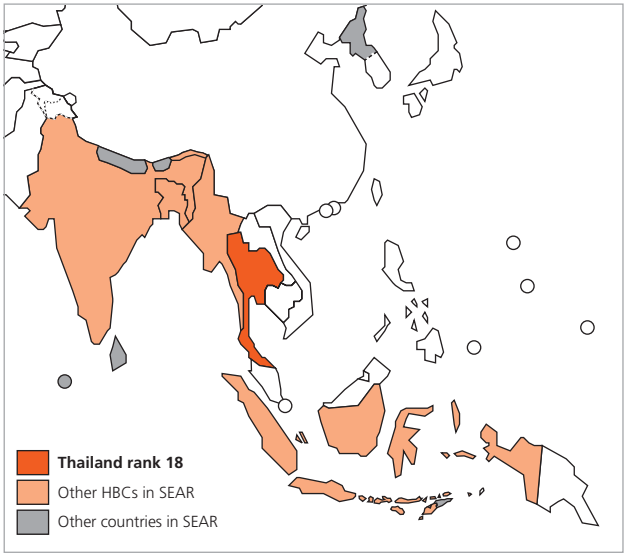
pop indicates population; ss+, smear-positive; yr, year; — not available or not applicable.

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 (%)	—

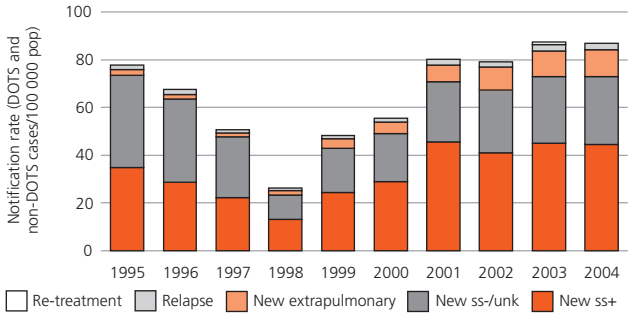


WHO South-East Asia Region (SEAR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

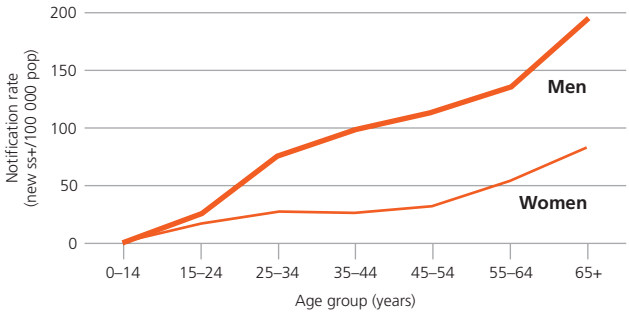
Case notifications

Notifications rose steeply in late 1990s; case detection above 70% target for second consecutive year



Case notifications by age and sex,[e] 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 STRATEGY[1]

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

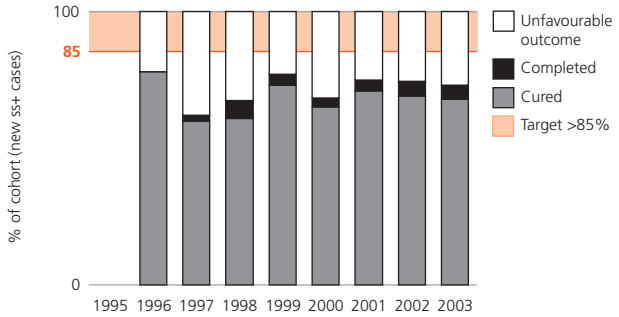
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

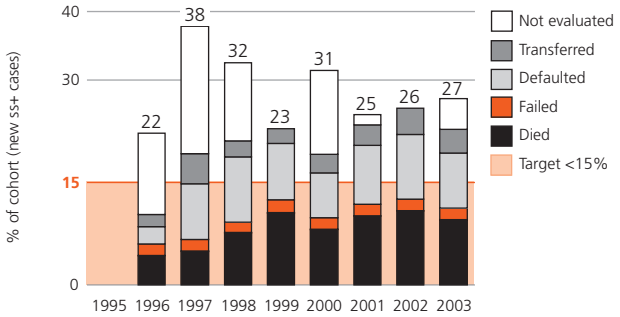
Treatment success, DOTS

Poor treatment outcomes showing no signs of improving



Unfavourable treatment outcomes, DOTS

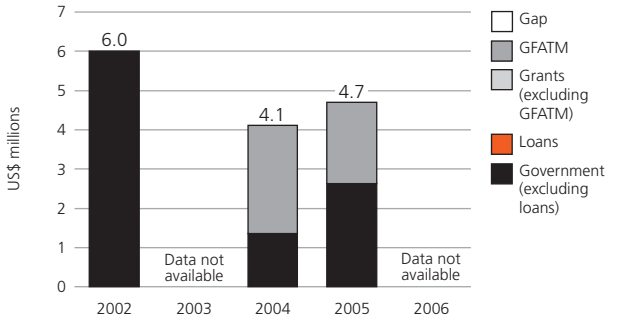
Treatment outcomes not always recorded for all patients; death and default most common unfavourable outcomes



BUDGET AND FINANCE

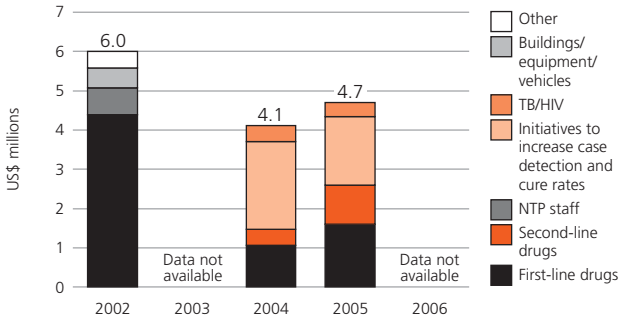
NTP budget by source of funding

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.

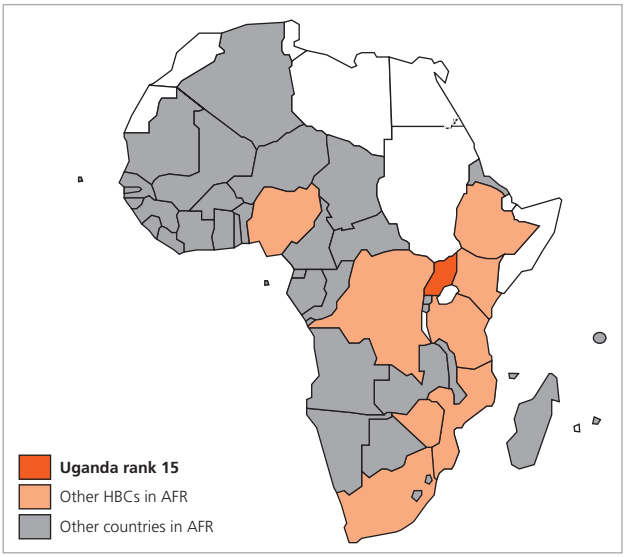
pop indicates population; ss+, smear-positive; yr, year; — not available.

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

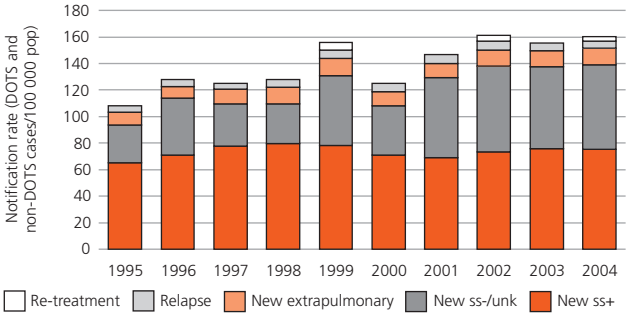


WHO African Region (AFR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

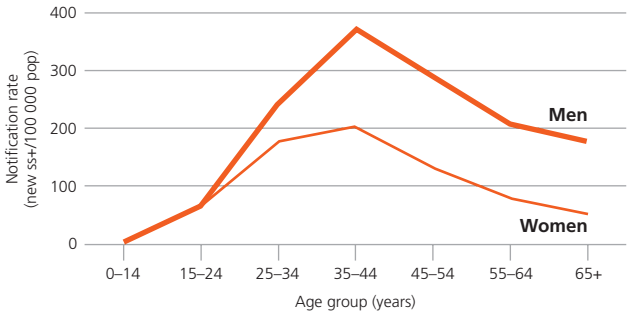
Case notifications

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,[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 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 STRATEGY[1]

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

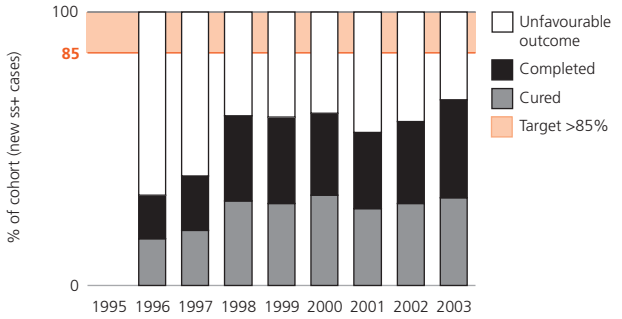
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

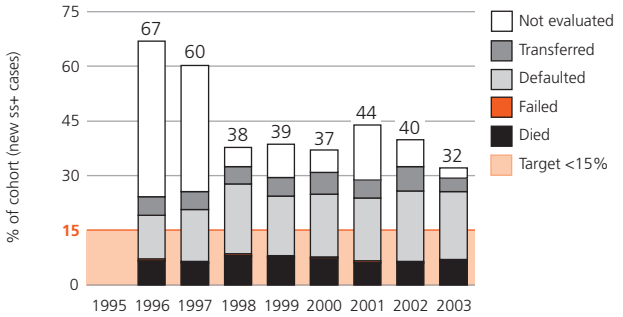
Treatment success, DOTS

Treatment success has improved slightly since 1995 but is still well below target; only half of successfully treated cases confirmed



Unfavourable treatment outcomes, DOTS

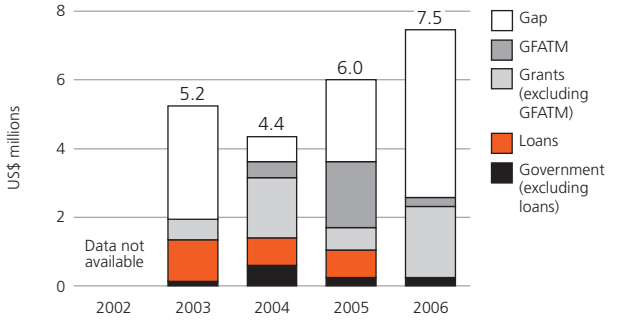
Outcomes recorded for 97% patients; very high default rate (19% for 2003 cohort)



BUDGET AND FINANCE

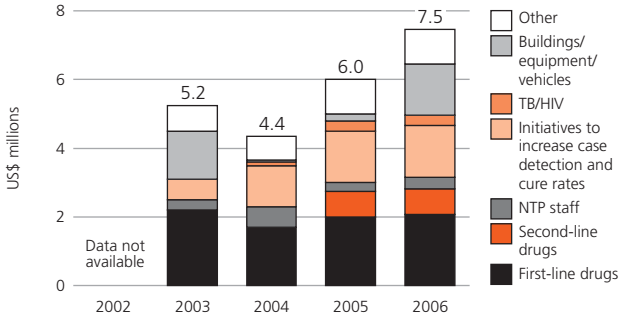
NTP budget by source of funding

Budget has increased in 2005 and 2006 but lack of financing remains a major problem



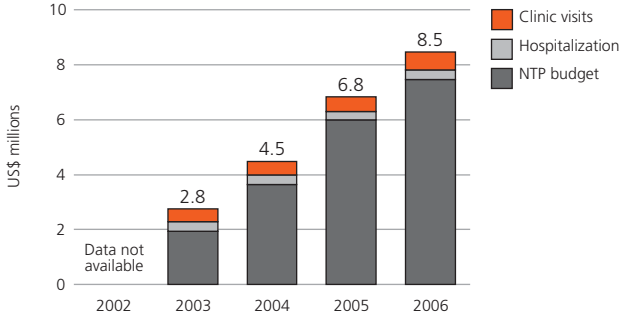
NTP budget by line item

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



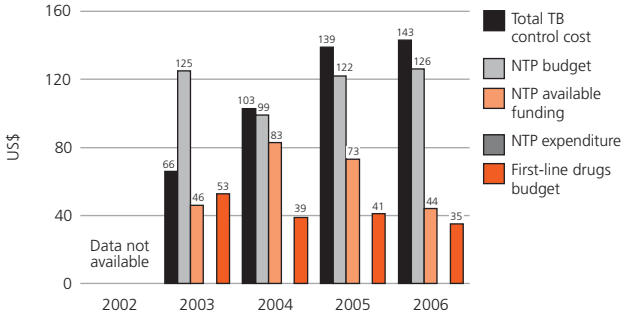
Total TB control costs by line item[a]

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 wiht 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.

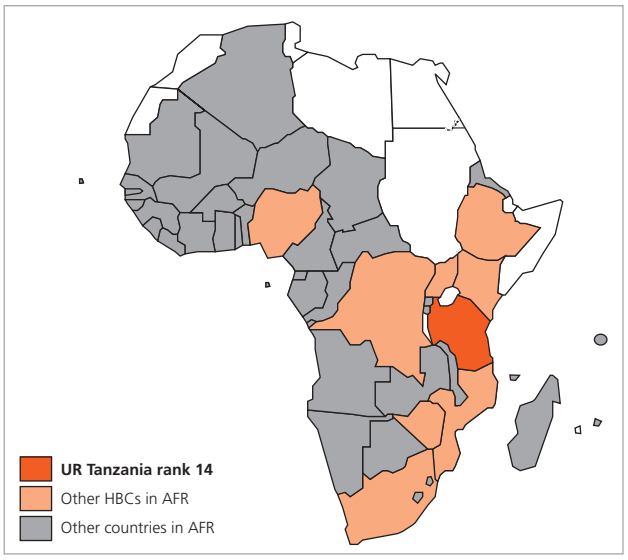
pop indicates population; ss+, smear-positive; yr, year; — not available or not applicable.

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

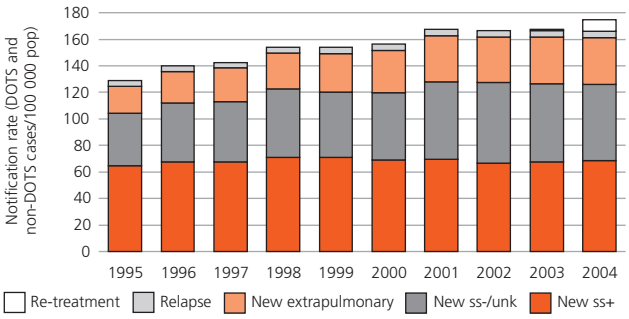


WHO African Region (AFR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

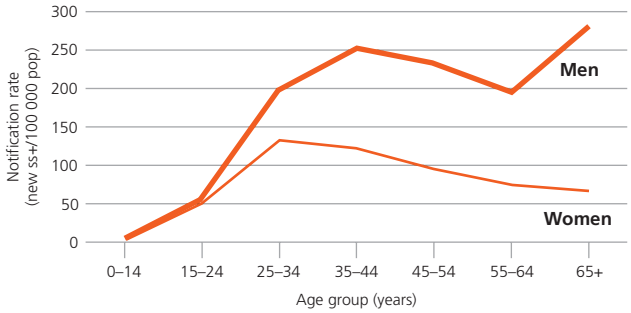
Case notifications

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 STRATEGY[1]

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 diagnositic 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 availablity 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

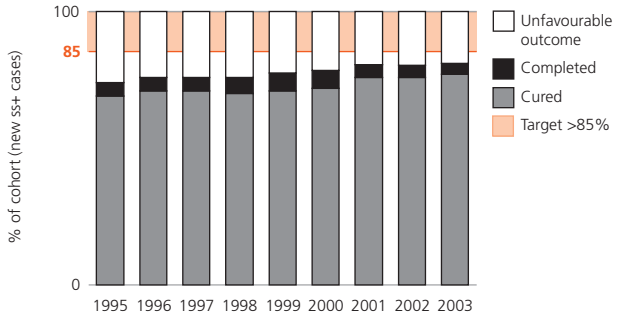
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

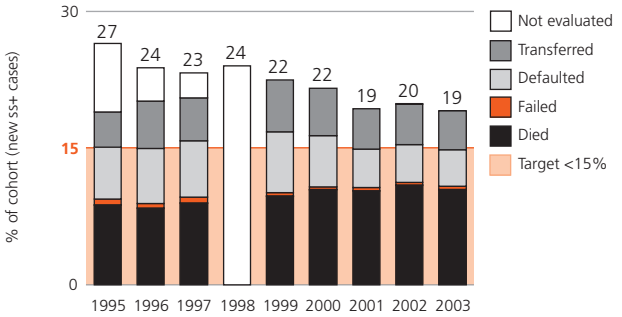
Treatment success, DOTS

Treatment success improving but still below 85% target



Unfavourable treatment outcomes, DOTS

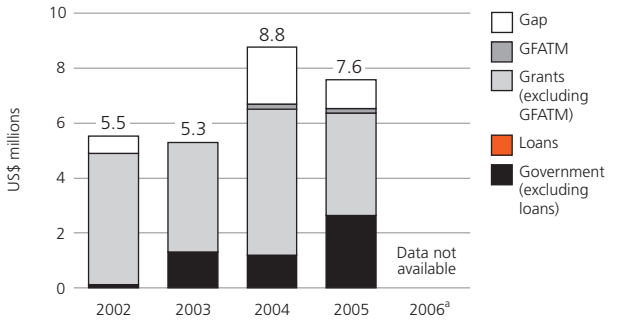
Default rate falling since 1999; high death rate may be linked to HIV; follow-up of all patients who transfer would take treatment success close to target



BUDGET AND FINANCE

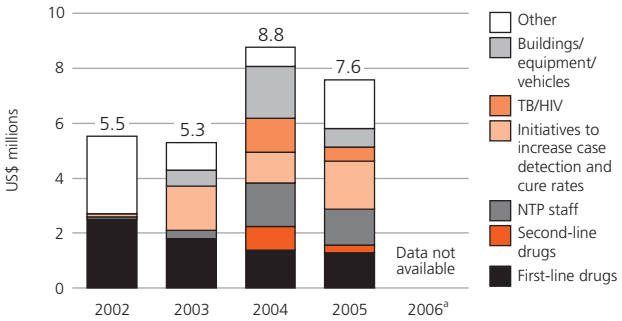
NTP budget by source of funding

NTP funding dependent on donor financing; reduced budget for 2005 reflects revisions to national plan for TB control



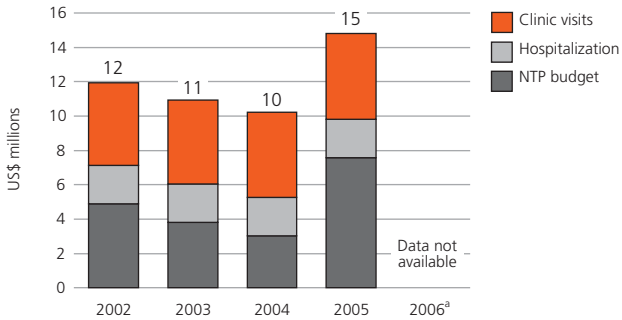
NTP budget by line item

Increased budget for initiatives to increase case detection and cure rates, notably for defaulter-tracing and intensified case-finding



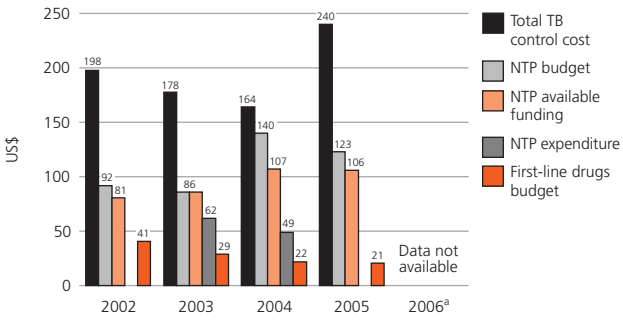
Total TB control costs by line item[b]

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.

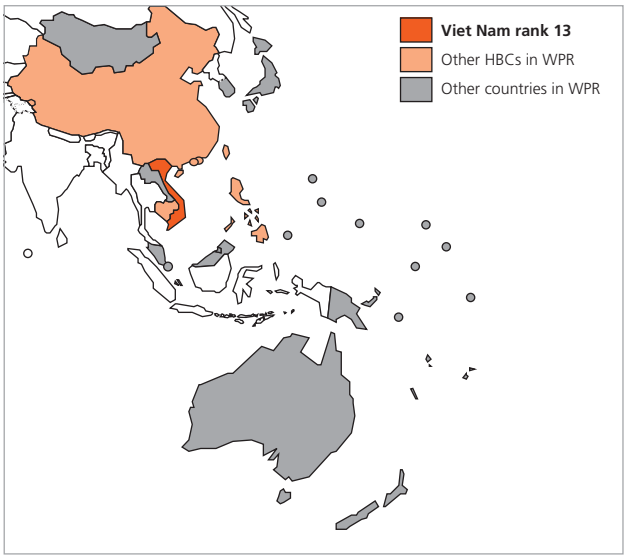
pop indicates population; ss+, smear-positive; yr, year; — not available.

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

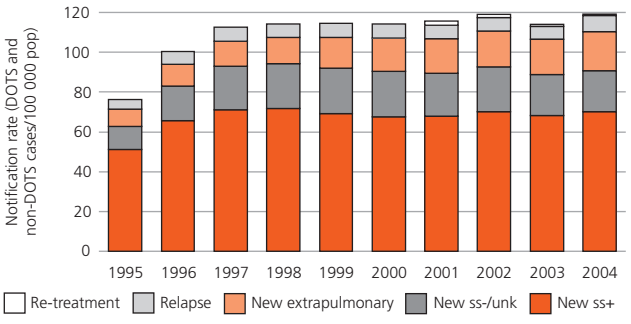


WHO Western Pacific Region (WPR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

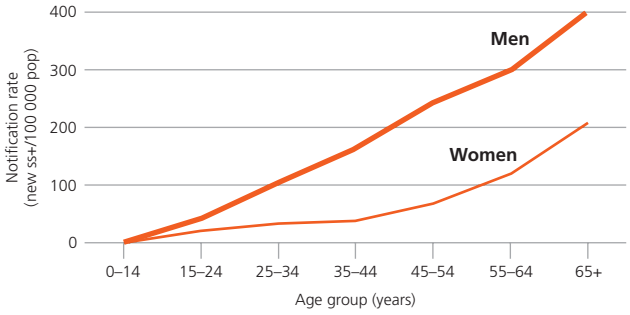
Case notifications

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,[e] 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 STRATEGY[1]

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

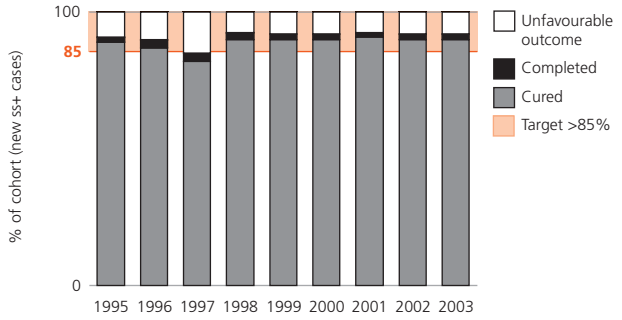
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

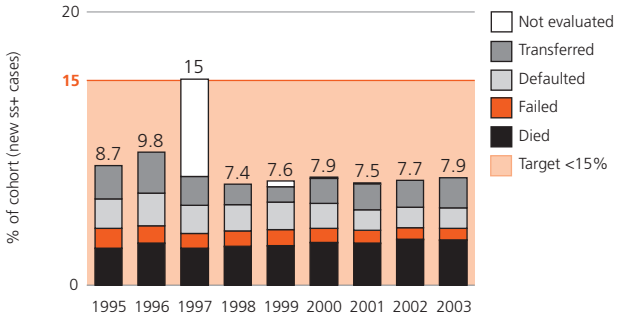
Treatment success, DOTS

Treatment success above target since 1995



Unfavourable treatment outcomes, DOTS

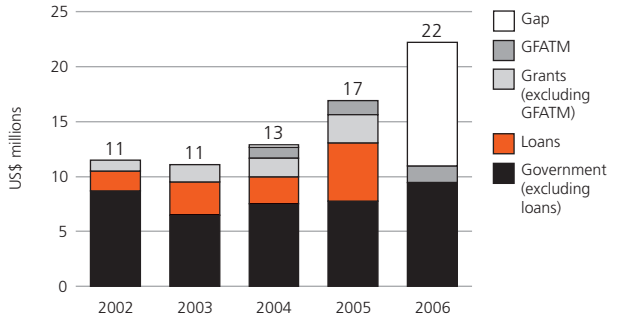
Outcomes recorded for all registered patients for all years except 1997



BUDGET AND FINANCE

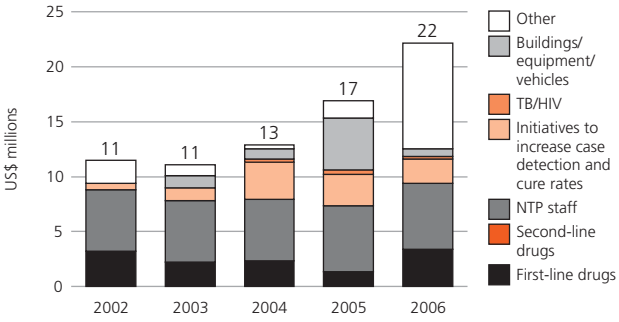
NTP budget by source of funding

Large funding gap reported in 2006 caused by increase in budget and reduction in financing



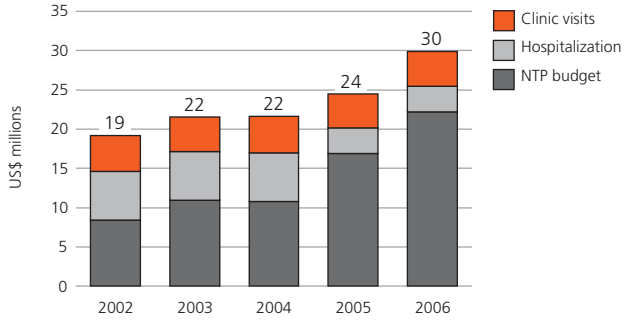
NTP budget by line item

Fairly stable budget breakdown except for increased investment in X-ray equipment in 2005 and large budget for miscellaneous items in 2006



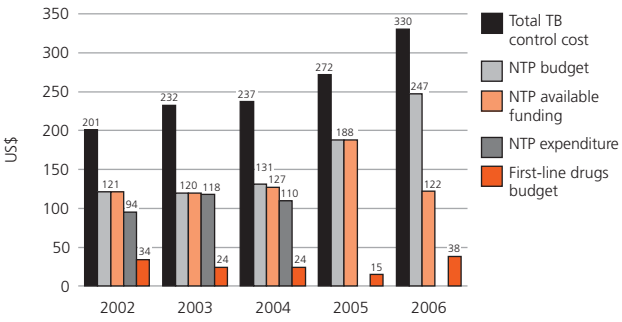
Total TB control costs by line item[a]

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.

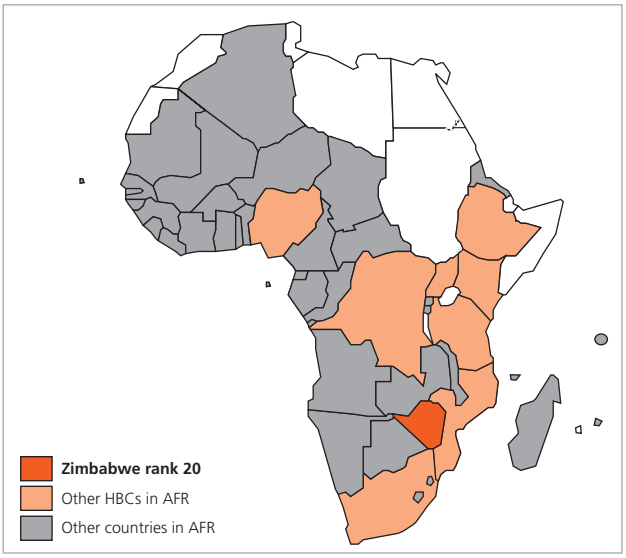
pop indicates population; ss+, smear-positive; yr, year; — not available.

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

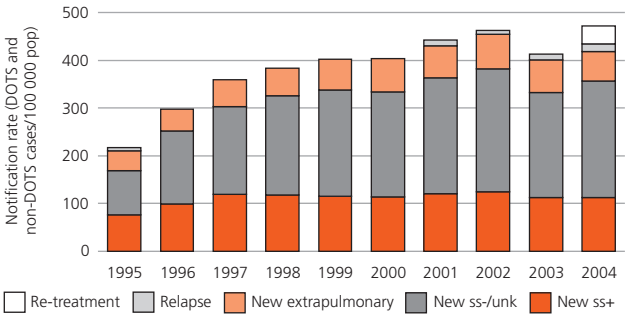


WHO African Region (AFR)
Rank based on estimated number of incident cases (all forms) in 2004.

SURVEILLANCE AND EPIDEMIOLOGY

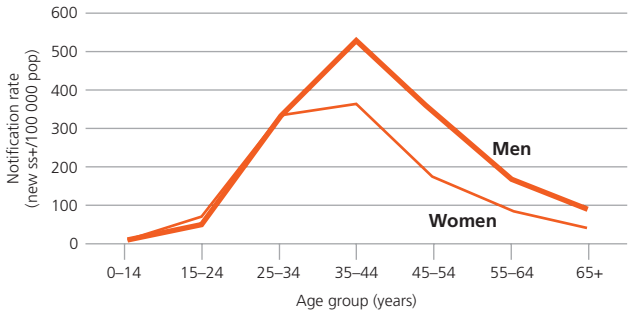
Case notifications

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 STRATEGY[1]

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

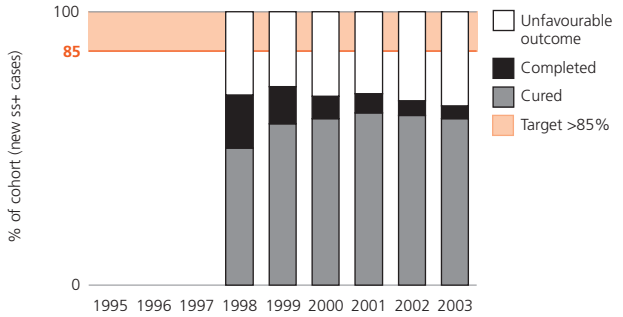
[1] Unless otherwise specified, achievements are for the period 1 July 2004 to 30 June 2005.

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	—

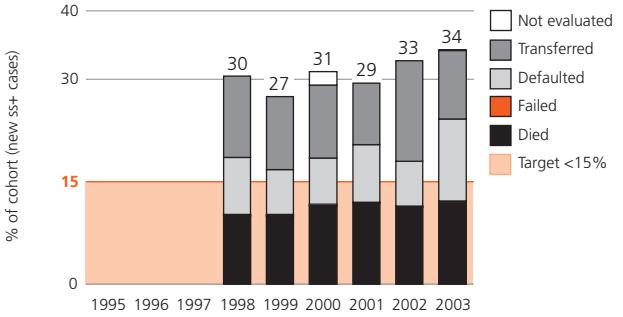
Treatment success, DOTS

Treatment success well below target, and below average for AFR (72% for 2003 cohort)



Unfavourable treatment outcomes, DOTS

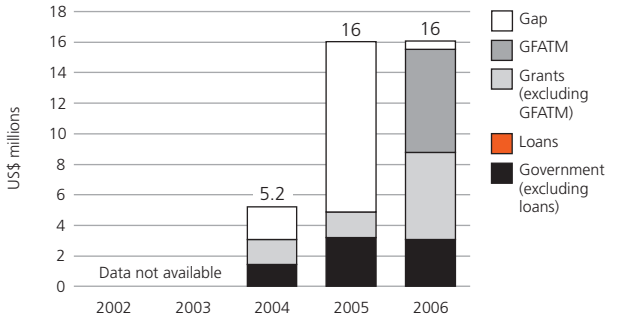
Among 2003 cohort, 12% of patients are known to have died; fate of patients who default or transfer is not known – many may also have died



BUDGET AND FINANCE

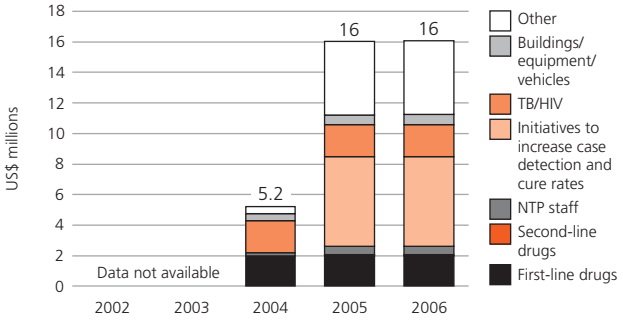
NTP budget by source of funding

Large budget increase for 2005 and 2006; almost fully funded in 2006 following successful GFATM round 5 application and increased funding from other donors



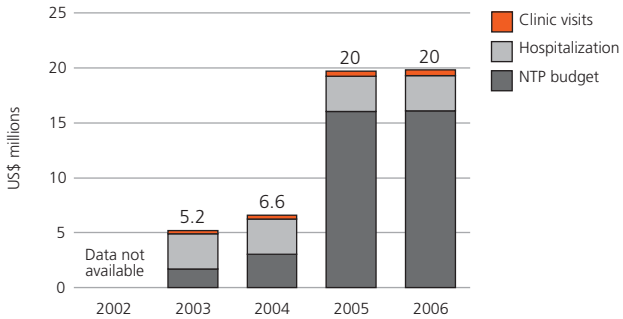
NTP budget by line item

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



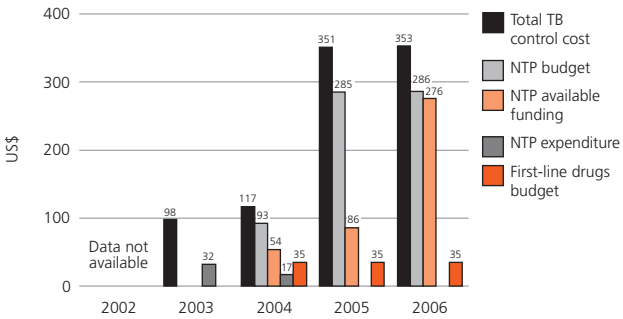
Total TB control costs by line item[a]

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 A2.1 **Estimated burden of TB, 1990 and 2004**

	Incidence, 1990				Prevalence, 1990		TB mortality, 1990		Incidence, 2004								Prevalence, 2004				TB mortality, 2004				HIV prevalence
	All forms*		Smear-positive*		All forms*		All forms*		All forms*		All forms HIV+		Smear-positive*		Smear-positive HIV+		All forms*		All forms HIV+		All forms*		All forms HIV+		in adult incident
	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	TB cases (%)
AFR	777 341	153	335 853	66	1 609 991	317	209 888	41	2 572 988	356	600 394	83	1 097 805	152	210 138	29	3 740 695	518	300 197	42	586 911	81	205 602	28	33
AMR	478 248	66	213 010	29	705 521	97	70 551	10	363 246	41	22 481	3	161 213	18	7 868	≤ 1	466 232	53	11 241	1	52 240	6	5 852	≤ 1	10
EMR	474 499	124	213 212	56	985 810	257	114 191	30	644 531	122	9 814	2	289 058	55	3 435	≤ 1	1 090 434	206	4 907	≤ 1	142 193	27	4 588	≤ 1	2.4
EUR	337 898	40	151 787	18	470 321	55	49 832	6	444 777	50	13 898	2	198 760	23	4 864	≤ 1	575 448	65	6 949	≤ 1	69 018	8	3 714	≤ 1	4.7
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
WPR	1 901 041	125	854 901	56	5 013 011	330	398 415	26	1 925 332	111	16 548	≤ 1	864 745	50	5 792	≤ 1	3 764 564	216	8 274	≤ 1	307 411	18	5 064	≤ 1	1.4
Global	**6 538 288**	**124**	**2 921 098**	**55**	**15 696 151**	**297**	**1 512 690**	**29**	**8 918 203**	**140**	**741 127**	**12**	**3 939 079**	**62**	**259 394**	**4**	**14 602 353**	**229**	**370 563**	**6**	**1 693 051**	**27**	**248 378**	**4**	**13**

* 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)															Estimated incidence and case detection rate				Proportions			
		Country	New and relapse		New pulmonary			New extra-	Other	Re-treatment cases						New pulm.	Estimated incidence		Case detection rate		ss+	ss+	Extrapulm.	Re-treat.
	Population	total	(WHO total)		ss+		ss- / unk.	pulmonary	new	Relapse	After failure	After default	Other re-treat.	Other	lab. confirm.	all forms	ss+	new and	new ss+	(% of	(% of	(% of	(% of
	thousands	number	number	rate	number	rate	number	number	number	number	number	number	number	number	number	number	number	relapse %	%	pulm.)	new+relapse)	new+relapse)	new+re-treat.)
AFR	721 955	1 206 850	1 173 743	163	541 849	75	353 688	208 110	2 305	67 791	7 772	15 704	21 727	2 231	570 177	2 572 988	1 097 805	46	49	61	46	18	9
AMR	880 036	247 387	235 187	27	126 289	14	59 509	33 581	1 979	13 829	1 606	7 108	3 972	1 359	139 388	363 246	161 213	65	78	68	54	14	11
EMR	530 359	237 290	243 232	46	96 971	18	82 848	55 798	0	7 615	408	3 536	48	0	102 751	644 531	289 058	38	34	54	40	23	5
EUR	881 211	415 172	354 954	40	92 233	10	161 595	36 944	0	14 424	4 083	4 168	51 429	498	111 245	444 777	198 760	80	46	36	26	10	20
SEAR	1 632 982	1 842 571	1 686 903	103	779 172	48	618 597	212 089	33	77 003	19 619	71 982	63 713	180	782 228	2 967 328	1 327 498	57	59	56	46	13	13
WPR	1 740 099	1 264 413	1 161 201	67	579 594	33	400 509	81 372	45	99 681	1 134	1 581	89 380	11 272	590 745	1 925 332	864 745	60	67	59	50	7	15
Global	**6 386 642**	**5 213 683**	**4 855 220**	**76**	**2 216 108**	**35**	**1 676 746**	**627 894**	**4 362**	**280 343**	**34 622**	**104 079**	**230 269**	**15 540**	**2 296 534**	**8 918 203**	**3 939 079**	**54**	**56**	**57**	**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**

	TB cases reported from DOTS services													Estimated incidence and case detection rate				Proportions			
	DOTS	New and relapse		New pulmonary			New extra-	Other	Re-treatment cases						New pulm.	Estimated incidence		Case detection rate		ss+	ss+	Extrapulm.	Re-treat.
	coverage	(WHO total)		ss+		ss- / unk.	pulmonary	new	Relapse	After failure	After default	Other re-treat.	Other	lab. confirm.	all forms	ss+	new and	new ss+	(% of	(% of	(% of	(% of
	%	number	rate	number	rate	number	number	number	number	number	number	number	number	number	number	number	relapse %	%	pulm.)	new+relapse)	new+relapse)	new+re-treat.)
AFR	84	1 154 428	160	529 956	73	349 337	205 962	2 305	66 868	7 530	15 111	21 662	2 231	558 024	2 572 988	1 097 805	45	48	60	46	18	9
AMR	83	175 100	20	95 663	11	42 173	25 354	1 970	9 940	1 490	4 233	3 758	1 333	106 444	363 246	161 213	48	59	69	55	14	11
EMR	90	240 146	45	96 776	18	81 131	54 627	0	7 612	408	3 536	48	0	102 556	644 531	289 058	37	33	54	40	23	5
EUR	47	163 167	19	50 690	6	77 982	22 226	0	12 269	3 094	3 104	15 203	221	64 452	444 777	198 760	37	26	39	31	14	18
SEAR	89	1 602 810	98	755 121	46	566 530	205 140	33	75 977	19 401	70 380	62 141	134	758 125	2 967 328	1 327 498	54	57	57	47	13	13
WPR	94	1 097 378	63	560 632	32	370 103	73 346	45	93 252	750	1 153	86 742	9 218	567 793	1 925 332	864 745	57	65	60	51	7	15
Global	**83**	**4 433 029**	**69**	**2 088 838**	**33**	**1 487 256**	**586 655**	**4 353**	**265 918**	**32 673**	**97 517**	**189 554**	**13 137**	**2 157 394**	**8 918 203**	**3 939 079**	**50**	**53**	**58**	**47**	**13**	**12**

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	Institutions notifying to NTP						HIV	HIV	TB pts				Laboratory-	DST			
	for other	Private hospitals	Private	Public				testing for	surveillance	tested	TB pts	TB pts	TB pts	confirmed	in new	MDR in	Re-treatment	Re-treatment
	practitioners	or clinics	practitioners	hospitals	Prisions	Military	Insurance	TB pts	among TB pts	for HIV	HIV-positive	CPT	ART	MDR	cases	new cases	DST	MDR
	%	%	%	%	%	%	%	%	%	number	number	number	number	number	number	number	number	number
AFR	39	59	59	78	57	57	17	59	17	41 120	14 615	7 711	364	3 342	8 485	50	3 005	204
AMR	57	66	68	84	77	50	36	64	39	67 313	11 658	580	8 984	2 777	15 865	234	9 499	499
EMR	28	68	73	95	91	77	32	55	45	3 619	183	28	12	81	841	22	12	4
EUR	38	63	71	88	83	73	31	46	27	52 813	5 812	30	14	10 595	32 911	5 726	15 282	4 713
SEAR	15	15	55	64	55	45	0	9	27	5	5	4	3	79	505	1	445	10
WPR	50	53	50	72	56	47	28	42	31	19 872	1 285	15	11	410	8 196	116	1 009	80
Global	**48**	**62**	**64**	**83**	**71**	**60**	**27**	**51**	**30**	**184 742**	**33 558**	**8 368**	**9 388**	**17 284**	**66 803**	**6 149**	**29 252**	**5 510**

pts indicates patients; CPT, co-trimoxazole preventive therapy; ART, antiretroviral therapy. 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 calculated 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 notif	% of cohort							%	Number of cases		% of notif	% of cohort							%	Number	% of cohort								
	Notified	Regist'd	regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Notified	Regist'd	regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success
AFR	506 102	481 970	95	60	12	7.0	1.4	9.9	5.1	4.8	72	6 927	8 898	128	48	20	8.1	1.8	12	4.8	5.4	68	58 187	48	11	11	2.3	13	6.7	7.5	59
AMR	78 804	77 632	99	65	16	4.9	1.2	6.3	2.7	3.4	82	43 282	33 530	77	28	46	5.4	0.5	12	8.2	0.4	74	9 094	56	9.8	6.0	4.0	13	3.0	8.5	66
EMR	80 783	81 541	101	71	10	2.9	1.4	8.8	3.0	2.3	82	191	191	100	36	38	1.6	2.1	19	3.7	0.0	73	11 801	55	16	3.4	3.7	13	5.2	4.3	70
EUR	46 621	45 474	98	60	15	6.1	7.1	5.7	2.8	3.2	75	56 257	14 269	25	38	35	4.9	2.9	4.8	1.4	13	73	13 749	40	12	11	16	12	2.9	6.3	52
SEAR	596 769	598 293	100	82	3.3	4.5	2.1	5.9	1.3	0.9	85	76 402	62 799	82	12	4.7	0.3	0.5	4.7	2.1	76	17	136 390	66	4.9	7.4	5.7	14	1.2	0.6	71
WPR	431 646	426 675	99	87	4.1	2.3	1.1	2.0	1.7	1.4	91	22 243	12 928	58	51	7.8	1.2	1.3	2.2	14	22	59	94 156	80	6.8	3.0	3.5	2.5	2.0	2.3	87
Global	**1 740 725**	**1 711 585**	**98**	**75**	**7.2**	**4.6**	**1.7**	**6.2**	**2.6**	**2.4**	**82**	**205 302**	**132 615**	**65**	**25**	**20**	**2.7**	**0.9**	**6.7**	**4.9**	**40**	**45**	**323 377**	**65**	**7.4**	**6.7**	**4.7**	**10**	**2.7**	**2.9**	**73**

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases regist'd, 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/tb

Table A2.6 **Re-treatment outcomes, 2003 cohort**

	Relapse, DOTS								After failure, DOTS								After default, DOTS							
		% of cohort						%		% of cohort						%		% of cohort						%
	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success
AFR	29886	51	11	11	1.6	11	7	7.5	61	2 918	38	8.0	12	6.5	11	9.2	15	46	7922	29	7.6	7.7	1.8	19	5.9	29	37
AMR	5 872	63	7.8	5.8	4.0	8.9	2.5	8.2	71	617	20	24	5.7	7.5	12	6.0	25	44	1 745	44	12	7.2	3.2	28	3.6	1.8	56
EMR	7 219	61	15	3.5	3.3	10	3.5	4.4	76	339	55	7.7	5.3	16	9.4	3.8	2.1	63	3 539	44	17	2.1	2.4	20	8.4	5.2	61
EUR	9 206	48	9.3	11	15	9.3	2.6	4.1	58	2 560	27	6.3	12	24	15	2.8	13	33	1 007	22	16	13	10	25	3.7	10	38
SEAR	63 179	70	5.1	6.9	4.9	11	1.4	0.9	75	14 938	56	4.7	9.2	13	15	1.5	1.1	60	57 335	65	4.7	7.6	4.6	17	0.9	0.1	69
WPR	12 152	70	11	5.5	3.6	4.2	5.4	0.3	81	1 110	47	14	6.8	16	10	4.0	1.0	62	605	56	7.6	5.1	1.5	17	10	2.3	64
Global	**127 514**	**63**	**8.0**	**7.8**	**4.6**	**9.9**	**3.4**	**3.2**	**71**	**22 482**	**49**	**6.3**	**9.6**	**14**	**14**	**2.9**	**4.9**	**55**	**72 153**	**59**	**5.9**	**7.4**	**4.2**	**18**	**2.0**	**3.7**	**65**

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases regist'd, 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
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	82	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							All							Male/female
	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+	ratio
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	111 750	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
WPR	2 062	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	83 762	101 215	2.2
Global	**17 399**	**224 943**	**316 677**	**295 853**	**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+	0–14	15–24	25–34	35–44	45–54	55–64	65+
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	1	22	33	32	35	48	48	2	21	26	24	25	30	28	2	21	30	28	30	39	37
EUR	0	11	20	22	24	15	10	0	8	10	7	6	4	4	0	9	15	14	14	9	7
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	89	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**	**52**	**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	373 550	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	238 296	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	229 836	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	324 580	319 220	308 401	298 933	302 602	290 606	277 143	267 232	242 429	231 651	248 519	242 425	243 691	289 949	322 165	353 336	349 800	373 765	373 081	368 433	373 670	358 978	354 954
SEAR	837 901	915 952	1 076 211	1 244 819	1 275 299	1 323 509	1 413 418	1 520 444	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	1 308 981	1 279 041	1 464 312	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	724 290	824 952	873 424	870 918	834 604	820 483	786 293	805 104	811 482	980 908	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	196	197	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	37	34	34	33	34	34	34	32	34	34	22	31	33	32	32	32	29	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	98	111	112	113	119	125	134	137	133	133	99	94	93	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**	**59**	**59**	**61**	**63**	**66**	**70**	**69**	**71**	**69**	**57**	**55**	**57**	**60**	**63**	**60**	**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												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
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	88 885	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
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	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	32	33	36	38	42	48
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**	**1 175 452**	**1 331 852**	**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**	**25**	**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				
ANGOLA	DOTS	YES				
BENIN	DOTS	YES				
BOTSWANA	DOTS	YES				
BURKINA FASO	DOTS	YES				
BURUNDI	DOTS	YES				
CAMEROON	DOTS					
CAPE VERDE	NON-DOTS	YES				
CENTRAL AFRICAN REPUBLIC	DOTS	YES				
CHAD	DOTS	YES				
COMOROS	DOTS	YES				
CONGO	DOTS	YES				
CÔTE D'IVOIRE	DOTS	YES				
DR CONGO	DOTS	YES				
EQUATORIAL GUINEA	DOTS	YES				
ERITREA	DOTS	YES				
ETHIOPIA	DOTS	YES				
GABON	DOTS	YES				
GAMBIA	DOTS	YES				
GHANA	DOTS	YES				
GUINEA	DOTS	YES				
GUINEA-BISSAU	DOTS	YES				
KENYA	DOTS	YES				
LESOTHO	DOTS	YES				
LIBERIA	DOTS	YES				
MADAGASCAR	DOTS	YES				
MALAWI	DOTS	YES				
MALI	DOTS	YES				
MAURITANIA	DOTS	YES				
MAURITIUS	DOTS	NO				
MOZAMBIQUE	DOTS	YES				
NAMIBIA	DOTS	YES				
NIGER	DOTS					
NIGERIA	DOTS	YES				
RWANDA	DOTS	YES				
SAO TOME AND PRINCIPE	NON-DOTS	NO				
SENEGAL	DOTS	YES				
SEYCHELLES	DOTS	YES				
SIERRA LEONE	DOTS	YES				
SOUTH AFRICA	DOTS	YES				
SWAZILAND	DOTS	YES				
TOGO	DOTS	YES				
UGANDA	DOTS	YES				
UR TANZANIA	DOTS	YES				
ZAMBIA	DOTS	YES				
ZIMBABWE	DOTS					

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
	All forms*		Smear-positive*		All forms*		All forms*		All forms*		All forms HIV+		Smear-positive*		Smear-positive HIV+		All forms*		All forms HIV+		All forms*		All forms HIV+		in adult incident
	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	TB cases (%)
Algeria	9 254	37	4 164	16	10 953	43	520	2	17 469	54	72	≤ 1	7 854	24	25	≤ 1	17 432	54	36	≤ 1	634	2	4	≤ 1	0.6
Angola	22 588	214	9 968	95	54 781	520	6 800	65	40 073	259	4 424	29	17 591	114	1 549	10	48 006	310	2 212	14	4 981	32	1 130	7	17
Benin	4 115	79	1 832	35	7 566	146	832	16	7 099	87	426	5	3 152	39	149	2	11 639	142	213	3	1 360	17	178	2	9.3
Botswana	3 374	236	1 352	95	4 325	303	506	35	11 855	670	6 467	366	4 688	265	2 263	128	9 779	553	3 233	183	1 680	95	1 021	58	77
Burkina Faso	13 454	158	5 789	68	27 470	322	4 506	53	24 540	191	4 153	32	10 628	83	1 454	11	46 815	365	2 077	16	7 009	55	2 080	16	24
Burundi	7 060	125	3 010	53	13 323	235	2 095	37	24 971	343	5 393	74	10 697	147	1 887	26	41 049	564	2 696	37	6 698	92	2 368	33	30
Cameroon	7 577	65	3 273	28	19 021	163	2 208	19	28 725	179	6 305	39	12 296	77	2 207	14	36 473	227	3 153	20	4 995	31	1 965	12	31
Cape Verde	561	158	252	71	1 434	404	158	44	851	172	15	3	381	77	5	1	1 556	314	8	2	180	36	6	1	2.8
Central African Republic	3 512	117	1 477	49	7 859	262	1 170	39	12 852	322	4 381	110	5 345	134	1 533	38	21 882	549	2 191	55	4 479	112	2 304	58	48
Chad	6 136	101	2 676	44	12 684	209	1 588	26	26 371	279	4 024	43	11 464	121	1 408	15	53 448	566	2 012	21	7 767	82	2 107	22	22
Comoros	464	88	209	40	1 015	193	79	15	359	46	2	≤ 1	161	21	≤ 1	≤ 1	740	95	≤ 1	≤ 1	56	7	≤ 1	≤ 1	0.7
Congo	3 397	137	1 456	59	5 172	208	839	34	14 626	377	2 377	61	6 344	163	832	21	18 035	464	1 189	31	2 739	71	705	18	23
Côte d'Ivoire	18 057	143	7 799	62	33 129	262	4 836	38	70 220	393	14 798	83	30 119	169	5 179	29	116 349	651	7 399	41	18 741	105	6 686	37	30
DR Congo	50 183	133	21 844	58	85 227	226	12 041	32	204 413	366	30 110	54	88 975	159	10 538	19	307 554	551	15 055	27	44 046	79	11 973	21	21
Equatorial Guinea	306	87	134	38	528	150	63	18	1 177	239	324	66	497	101	113	23	1 585	322	162	33	281	57	131	27	39
Eritrea	6 834	225	2 995	99	17 636	580	1 918	63	11 482	271	1 096	26	5 057	120	384	9	18 498	437	548	13	2 574	61	389	9	15
Ethiopia	65 487	128	28 755	56	130 487	256	16 291	32	267 147	353	39 756	53	116 241	154	13 914	18	403 098	533	19 878	26	59 791	79	14 336	19	21
Gabon	1 383	144	607	63	3 399	355	413	43	3 817	280	898	66	1 628	119	314	23	4 619	339	449	33	748	55	294	22	33
Gambia	1 810	193	810	87	3 413	365	369	39	3 448	233	114	8	1 540	104	40	3	4 858	329	57	4	603	41	36	2	5.1
Ghana	34 453	223	15 209	98	79 942	516	9 476	61	44 733	206	4 603	21	19 670	91	1 611	7	81 480	376	2 302	11	10 853	50	2 084	10	16
Guinea	7 612	122	3 389	55	15 762	254	1 806	29	22 062	240	2 458	27	9 682	105	860	9	37 739	410	1 229	13	5 077	55	1 069	12	17
Guinea-Bissau	1 671	165	743	73	4 303	424	417	41	3 057	199	378	25	1 338	87	132	9	4 713	306	189	12	657	43	145	9	19
Kenya	25 337	108	10 736	46	39 169	167	5 057	22	207 311	619	41 924	125	89 098	266	14 673	44	297 330	888	20 962	63	44 576	133	14 451	43	29
Lesotho	2 856	179	1 148	72	3 955	248	466	29	12 515	696	6 753	376	4 957	276	2 363	131	9 782	544	3 376	188	1 787	99	1 041	58	76
Liberia	2 401	112	1 046	49	5 660	265	756	35	10 034	310	2 245	69	4 291	132	786	24	14 493	447	1 122	35	2 384	74	888	27	32
Madagascar	23 124	192	10 373	86	47 979	398	5 081	42	39 465	218	2 554	14	17 504	97	894	5	63 606	351	1 277	7	7 790	43	1 035	6	10
Malawi	24 327	257	10 165	107	40 103	424	5 797	61	52 042	413	19 171	152	21 502	171	6 710	53	63 159	501	9 586	76	12 210	97	6 219	49	52
Mali	27 005	304	11 976	135	62 825	706	7 462	84	36 914	281	2 901	22	16 321	124	1 015	8	75 845	578	1 450	11	9 644	73	1 449	11	12
Mauritania	4 828	238	2 170	107	12 325	607	1 362	67	8 549	287	244	8	3 822	128	86	3	14 975	502	122	4	1 786	60	98	3	4.4
Mauritius	718	68	323	31	1 663	157	141	13	785	64	3	≤ 1	353	29	1	≤ 1	1 670	135	2	≤ 1	139	11	1	≤ 1	0.6
Mozambique	22 438	167	9 508	71	36 892	275	4 973	37	89 384	460	30 677	158	37 155	191	10 737	55	123 360	635	15 338	79	24 989	129	12 920	67	48
Namibia	3 636	260	1 550	111	8 172	585	897	64	14 396	717	6 228	310	5 856	291	2 180	108	11 767	586	3 114	155	1 716	85	833	41	61
Niger	11 057	131	4 955	58	28 144	332	3 132	37	21 250	157	935	7	9 469	70	327	2	38 850	288	468	3	4 655	34	408	3	6.8
Nigeria	95 461	105	41 580	46	209 370	231	25 534	28	373 682	290	70 612	55	161 096	125	24 714	19	683 847	531	35 306	27	106 162	82	34 390	27	27
Rwanda	9 557	135	4 069	57	17 906	252	2 849	40	32 949	371	6 122	69	14 215	160	2 143	24	58 658	660	3 061	34	9 041	102	2 911	33	26
Sao Tome & Principe	158	135	71	61	403	345	44	38	163	107	≤ 1	≤ 1	73	48	≤ 1	≤ 1	387	253	≤ 1	≤ 1	43	28	≤ 1	≤ 1	0.1
Senegal	16 215	203	7 266	91	32 019	401	3 525	44	27 917	245	839	7	12 479	110	294	3	51 383	451	420	4	5 944	52	370	3	4.7
Seychelles	31	43	14	19	81	113	6	9	27	34	≤ 1	≤ 1	12	15	≤ 1	≤ 1	66	83	≤ 1	≤ 1	5	6	≤ 1	≤ 1	0.1
Sierra Leone	9 123	224	4 032	99	20 870	512	2 329	57	23 652	443	1 517	28	10 492	197	531	10	45 215	847	759	14	5 604	105	702	13	9.9
South Africa	98 944	268	42 204	114	271 070	735	32 711	89	339 078	718	144 857	307	138 099	293	50 700	107	316 260	670	72 428	153	63 529	135	36 884	78	60
Swaziland	2 276	263	927	107	5 365	620	715	83	12 679	1 226	7 272	703	4 978	481	2 545	246	11 580	1 120	3 636	352	2 785	269	1 821	176	81
Togo	13 889	351	6 081	154	33 219	839	3 744	95	21 264	355	2 453	41	9 324	156	859	14	43 012	718	1 227	20	5 839	98	1 245	21	18
Uganda	28 612	161	12 056	68	50 363	284	10 058	57	111 716	402	15 159	54	48 756	175	5 306	19	179 843	646	7 580	27	25 683	92	6 067	22	19
UR Tanzania	46 931	179	19 912	76	70 898	270	9 693	37	130 606	347	33 380	89	55 435	147	11 683	31	180 069	479	16 690	44	29 373	78	11 619	31	36
Zambia	24 859	297	10 201	122	45 935	548	9 806	117	78 049	680	29 929	261	32 129	280	10 475	91	81 187	707	14 965	130	15 761	137	7 751	68	54
Zimbabwe	14 272	135	5 750	54	26 177	248	4 818	46	87 214	674	42 043	325	35 042	271	14 715	114	87 006	673	21 022	163	19 516	151	11 485	89	68
AFR	**777 341**	**153**	**335 853**	**66**	**1 609 991**	**317**	**209 888**	**41**	**2 572 988**	**356**	**600 394**	**83**	**1 097 805**	**152**	**210 138**	**29**	**3 740 695**	**518**	**300 197**	**42**	**586 911**	**81**	**205 602**	**28**	**33**

* 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			
		Country	New and relapse		New pulmonary			New extra-	Other	Re-treatment cases					New pulm.	Estimated incidence		Case detection rate		ss+	ss+	Extrapulm.	Re-treat.
	Population	total	(WHO total)		ss+		ss- / unk.	pulmonary	new	Relapse	After failure	After default	Other re-treat.	Other	lab. confirm.	all forms	ss+	new and	new ss+	(% of	(% of	(% of	(% of
	thousands	number	number	rate	number	rate	number	number	number	number	number	number	number	number	number	number	number	relapse %	%	pulm.)	new+relapse)	new+relapse)	new+re-treat.)
Algeria	32 358	20 150	19 809	61	8 285	26	1 525	9 447		552				120	8 930	17 469	7 854	113	105	84	42	48	3
Angola	15 490	36 480	35 437	229	20 301	131	10 570	2 734	0	1 832	358	685	0	0	20 301	40 073	17 591	88	115	66	57	8	8
Benin	8 177	3 304	3 116	38	2 582	32	140	267		127	85	103			2 722	7 099	3 152	44	82	95	83	9	10
Botswana	1 769	10 290	10 131	573	3 127	177	5 375	1 184		445	32	79			3 127	11 855	4 688	85	67	37	31	12	5
Burkina Faso	12 822	3 101	2 878	22	1 926	15	326	521		105	99	56	68		1 926	24 540	10 628	12	18	86	67	18	11
Burundi	7 282	6 886	6 871	94	3 087	42	1 506	2 217		61	5	10			3 087	24 971	10 697	28	29	67	45	32	1
Cameroon	16 038	18 187	17 655	110	11 218	70	3 640	2 067		730	86		446		11 218	28 725	12 296	61	91	76	64	12	7
Cape Verde	495	301	294	59	169	34	79	21	0	25	2	5	0	0	169	851	381	35	44	68	57	7	11
Central African Republic	3 986	4 091	3 908	98	2 923	73	547	347	0	91	43	140	0	0	3 014	12 852	5 345	30	55	84	75	9	7
Chad	9 448	5 039	4 946	52	2 270	24	1 546	1 010	0	120	30	63	0	0	2 270	26 371	11 464	19	20	59	46	20	4
Comoros	777	91	89	11	63	8	3	20		3	0	2			63	359	161	25	39	95	71	22	5
Congo	3 883	9 856	9 729	251	4 121	106	2 747	2 511		350	100	27			4 121	14 626	6 344	67	65	60	42	26	5
Côte d'Ivoire	17 872	20 544	20 084	112	12 250	69	2 610	4 579	0	645	279	181	0	0	12 250	70 220	30 119	29	41	82	61	23	5
DR Congo	55 853	95 912	93 336	167	62 192	111	9 229	18 359		3 556	925	982		669	62 192	204 413	88 975	46	70	87	67	20	6
Equatorial Guinea	492	541	536	109	406	82	42	73		15	2	3		0	406	1 177	497	46	82	91	76	14	4
Eritrea	4 232	4 367	4 239	100	720	17	2 161	1 311	0	47	66	22	40	0	720	11 482	5 057	37	14	25	17	31	4
Ethiopia	75 600	124 223	123 127	163	41 430	55	37 119	42 477		2 101	424	672			41 430	267 147	116 241	46	36	53	34	34	3
Gabon	1 362	2 702	2 588	190	1 323	97	864	285		116	37	77			1 323	3 817	1 628	68	81	60	51	11	9
Gambia	1 478		2 142	145	1 011	68	969	97		65	14	44			1 011	3 448	1 540	62	66	51	47	5	6
Ghana	21 664	11 827	11 827	55	7 259	34	3 122	904		542					7 259	44 733	19 670	26	37	70	61	8	5
Guinea	9 202	7 610	7 423	81	5 015	55	590	1 581		237	59	128	0		5 015	22 062	9 682	34	52	89	68	21	6
Guinea-Bissau	1 540	1 896	1 835	119	1 186	77	495	48		106	1	60			1 186	3 057	1 338	60	89	71	65	3	9
Kenya	33 467	105 818	100 573	301	41 167	123	41 220	14 949		3 237	72	1 174	3 999		41 167	207 311	89 098	49	46	50	41	15	8
Lesotho	1 798		11 404	634	4 272	238	4 221	2 311		600	77	376	441	5	4 272	12 515	4 957	91	86	50	37	20	12
Liberia	3 241	4 397	4 337	134	2 490	77	919	901	0	27	21	39	0	0	2 490	10 034	4 291	43	58	73	57	21	2
Madagascar	18 113	18 232	17 863	99	12 896	71	1 271	2 707	0	989	122	247	0	0	18 232	39 465	17 504	45	74	91	72	15	7
Malawi	12 608	27 030	27 030	214	8 566	68	9 319	6 007	1 971	1 167					8 566	52 042	21 502	52	40	48	32	22	4
Mali	13 124	4 578	4 525	34	3 069	23	535	587	334		53				3 069	36 914	16 321	12	19	85	68	13	1
Mauritania	2 980	3 326	3 326	112	1 662	56	773	649		242					1 961	8 549	3 822	39	43	68	50	20	7
Mauritius	1 233	139	137	11	117	9	3	13	0	4	0	2	0	0	117	785	353	17	33	98	85	9	4
Mozambique	19 424	31 672	31 150	160	17 058	88	8 830	3 950		1 312	188	334			17 058	89 384	37 155	35	46	66	55	13	6
Namibia	2 009	16 156	15 026	748	5 155	257	7 614	1 506	0	751	0	0	0	1 130	5 155	14 396	5 856	104	88	40	34	10	5
Niger	13 499	7 110	6 822	51	4 311	32	1 039	1 029		443	142	146			4 311	21 250	9 469	32	46	81	63	15	10
Nigeria	128 709	59 493	57 246	44	33 755	26	20 134	1 876		1 481	662	1 278		307	33 755	373 682	161 096	15	21	63	59	3	6
Rwanda	8 882	6 667	6 487	73	4 179	47	683	1 260	0	365	72	51	57		4 179	32 949	14 215	20	29	86	64	19	8
Sao Tome & Principe	153	153	121	79	50	33	58	3	0	10	12	20	0	0	0	163	73	74	68	46	41	2	27
Senegal	11 386	9 508	9 098	80	6 437	57	1 255	929		477	84	326	93		6 437	27 917	12 479	33	52	84	71	10	10
Seychelles	80	18	18	23	13	16	1	4	0	0	0	0	0	0	13	27	12	66	106	93	72	22	
Sierra Leone	5 336	5 863	5 710	107	3 735	70	1 368	484	0	123	54	99			4 011	23 652	10 492	24	36	73	65	8	5
South Africa	47 208	279 260	264 183	560	117 971	250	68 923	40 718	0	36 571	2 879	7 869	4 329	0	117 971	339 078	138 099	78	85	63	45	15	18
Swaziland	1 034	8 375	8 071	780	1 902	184	4 177	1 336		656	75	119	110		1 902	12 679	4 978	64	38	31	24	17	11
Togo	5 988	2 192	2 115	35	1 543	26	164	345	0	63	23	54	0	0	1 543	21 264	9 324	10	17	90	73	16	6
Uganda	27 821	44 612	43 721	157	20 986	75	17 674	3 469		1 592			891		20 986	111 716	48 756	39	43	54	48	8	6
UR Tanzania	37 627	65 665	62 512	166	25 823	69	21 591	13 320		1 778	161	231	2 761		47 414	130 606	55 435	48	47	54	41	21	8
Zambia	11 479	58 070	54 106	471	17 247	150	25 101	9 701		2 057	428	0	3 536		17 247	78 049	32 129	69	54	41	32	18	10
Zimbabwe	12 936	61 118	56 162	434	14 581	113	31 610	7 996		1 975			4 956		14 581	87 214	35 042	64	42	32	26	14	11
AFR	**721 955**	**1 206 850**	**1 173 743**	**163**	**541 849**	**75**	**353 688**	**208110**	**2305**	**67 791**	**7 772**	**15 704**	**21 727**	**2 231**	**570 177**	**2 572 988**	**1 097 805**	**46**	**49**	**61**	**46**	**18**	**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 A2.3 **DOTS coverage, case notifications and case detection rates, 2004**

	TB cases reported from DOTS services														Estimated incidence and case detection rate				Proportions			
	DOTS	New and relapse		New pulmonary			New extra-	Other	Re-treatment cases					New pulm.	Estimated incidence		Case detection rate		ss+	ss+	Extrapulm.	Re-treat.
	coverage	(WHO total)		ss+		ss- / unk.	pulmonary	new	Relapse	After failure	After default	Other re-treat.	Other	lab. confirm.	all forms	ss+	new and	new ss+	(% of	(% of	(% of	(% of
	%	number	rate	number	rate	number	number	number	number	number	number	number	number	number	number	number	relapse %	%	pulm.)	new+relapse)	new+relapse)	new+re-treat.)
Algeria	100	19 809	61	8 285	26	1 525	9 447		552				120	8 930	17 469	7 854	113	105	84	42	48	3
Angola	56	30 120	194	16 489	106	9 722	2 399	0	1 510	281	514	0	0	16 489	40 073	17 591	75	94	63	55	8	7
Benin	100	3 116	38	2 582	32	140	267		127	85	103			2 722	7 099	3 152	44	82	95	83	9	10
Botswana	100	10 131	573	3 127	177	5 375	1 184		445	32	79			3 127	11 855	4 688	85	67	37	31	12	5
Burkina Faso	100	2 878	22	1 926	15	326	521		105	99	56	68		1 926	24 540	10 628	12	18	86	67	18	11
Burundi	100	6 871	94	3 087	42	1 506	2 217		61	5	10			3 087	24 971	10 697	28	29	67	45	32	1
Cameroon	100	17 655	110	11 218	70	3 640	2 067		730	86		446		11 218	28 725	12 296	61	91	76	64	12	7
Cape Verde	0														851	381						
Central African Republic	8	402	10	220	6	102	0	0	80	10	20	0	0	300	12 852	5 345	3	4	68	55		25
Chad	80	3 957	42	1 816	19	1 237	808	0	96	24	50	0	0	1 816	26 371	11 464	15	16	59	46	20	4
Comoros	100	89	11	63	8	3	20		3	0	2			63	359	161	25	39	95	71	22	5
Congo	80	9 729	251	4 121	106	2 747	2 511		350	100	27			4 121	14 626	6 344	67	65	60	42	26	5
Côte d'Ivoire	74	18 743	105	11 467	64	2 405	4 269	0	602	238	105	0	0	11 467	70 220	30 119	27	38	83	61	23	5
DR Congo	75	93 336	167	62 192	111	9 229	18 359		3 556	925	982		669	62 192	204 413	88 975	46	70	87	67	20	6
Equatorial Guinea	100	536	109	406	82	42	73		15	2	3		0	406	1 177	497	46	82	91	76	14	4
Eritrea	84	4 239	100	720	17	2 161	1 311	0	47	66	22	40	0	720	11 482	5 057	37	14	25	17	31	4
Ethiopia	70	123 127	163	41 430	55	37 119	42 477		2 101	424	672			41 430	267 147	116 241	46	36	53	34	34	3
Gabon	24	2 588	190	1 323	97	864	285		116	37	77			1 323	3 817	1 628	68	81	60	51	11	9
Gambia	100	2 142	145	1 011	68	969	97		65	14	44			1 011	3 448	1 540	62	66	51	47	5	6
Ghana	100	11 827	55	7 259	34	3 122	904		542					7 259	44 733	19 670	26	37	70	61	8	5
Guinea	100	7 423	81	5 015	55	590	1 581		237	59	128	0		5 015	22 062	9 682	34	52	89	68	21	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	2	9
Kenya	100	100 573	301	41 167	123	41 220	14 949		3 237	72	1 174	3 999		41 167	207 311	89 098	49	46	50	41	15	8
Lesotho	100	11 404	634	4 272	238	4 221	2 311		600	77	376	441	5	4 272	12 515	4 957	91	86	50	37	20	12
Liberia	68	4 337	134	2 490	77	919	901	0	27	21	39	0	0	2 490	10 034	4 291	43	58	73	57	21	2
Madagascar	100	17 863	99	12 896	71	1 271	2 707		989	122	247			18 232	39 465	17 504	45	74	91	72	15	7
Malawi	100	27 030	214	8 566	68	9 319	6 007	1 971	1 167					8 566	52 042	21 502	52	40	48	32	22	4
Mali	68	4 525	34	3 069	23	535	587	334		53				3 069	36 914	16 321	12	19	85	68	13	1
Mauritania	76	3 326	112	1 662	56	773	649		242					1 662	8 549	3 822	39	43	68	50	20	7
Mauritius	100	137	11	117	9	3	13	0	4	0	2	0	0	117	785	353	17	33	98	85	9	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	13	6
Namibia	100	15 026	748	5 155	257	7 614	1 506	0	751	0	0	0	1 130	5 155	14 396	5 856	104	88	40	34	10	5
Niger	50	6 822	51	4 311	32	1 039	1 029		443	142	146			4 311	21 250	9 469	32	46	81	63	15	10
Nigeria	65	57 246	44	33 755	26	20 134	1 876		1 481	662	1 278		307	33 755	373 682	161 096	15	21	63	59	3	6
Rwanda	100	6 487	73	4 179	47	683	1 260	0	365	72	51	57		4 179	32 949	14 215	20	29	86	64	19	8
Sao Tome & Principe	0														163	73						
Senegal	100	9 098	80	6 437	57	1 255	929		477	84	326	93		6 437	27 917	12 479	33	52	84	71	10	10
Seychelles	100	18	23	13	16	1	4	0	0	0	0	0	0	13	27	12	66	106	93	72	22	
Sierra Leone	100	5 710	107	3 735	70	1 368	484	0	123	54	99			4 011	23 652	10 492	24	36	73	65	8	5
South Africa	93	256 667	544	114 227	242	66 547	39 797	0	36 096	2 808	7 690	4 264	0	114 227	339 078	138 099	76	83	63	45	16	19
Swaziland	100	8 071	780	1 902	184	4 177	1 336		656	75	119	110		1 902	12 679	4 978	64	38	31	24	17	11
Togo	100	2 115	35	1 543	26	164	345	0	63	23	54	0	0	1 543	21 264	9 324	10	17	90	73	16	6
Uganda	100	43 721	157	20 986	75	17 674	3 469		1 592			891		20 986	111 716	48 756	39	43	54	48	8	6
UR Tanzania	100	62 512	166	25 823	69	21 591	13 320		1 778	161	231	2 761		47 414	130 606	55 435	48	47	54	41	21	8
Zambia	100	54 106	471	17 247	150	25 101	9 701		2 057	428	0	3 536		17 247	78 049	32 129	69	54	41	32	18	10
Zimbabwe	100	56 162	434	14 581	113	31 610	7 996		1 975			4 956		14 581	87 214	35 042	64	42	32	26	14	11
AFR	**84**	**1 154 428**	**160**	**529 956**	**73**	**349 337**	**205 962**	**2 305**	**66 868**	**7 530**	**15 111**	**21 662**	**2 231**	**558 024**	**2 572 988**	**1 097 805**	**45**	**48**	**60**	**46**	**18**	**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	Institutions notifying to NTP						HIV testing for TB pts	HIV surveillance among TB pts	TB pts tested for HIV number	TB pts HIV-positive number	TB pts CPT number	TB pts ART number	Laboratory-confirmed MDR number	DST in new cases number	MDR in new cases number	Re-treatment DST number	Re-treatment MDR number
		Private hospitals or clinics	Private practitioners	Public hospitals	Prisions	Military	Insurance											
Algeria																		
Angola	Yes	No	No	All	No	All	Some	No	No									
Benin	Yes	Some	All	Some	Some	Some	No	Partially	No					15	51	13	109	15
Botswana	No	All	All	All	All	All	Some	Yes	No	3 822	3 276							
Burkina Faso								Yes	Yes	260	40	145						
Burundi	Yes	Some	All	All	Some	Some	No	Yes						10	0	0	0	0
Cameroon																		
Cape Verde	No	Some	No	All	No	No	No	Yes	No	88	10	10	0	0	0	0	0	0
Central African Republic	Yes	No	Some	Some	No	Some	No	No	Yes	0	0	0						
Chad	No	No	All	All	No	No	No		No	0	0	0	0	0	0	0	0	0
Comoros								Yes		91								
Congo	No	No	Some		No	All	No	Yes	No									
Côte d'Ivoire	No	Some	All	All	Some	No	No	Yes	No	4 067	1 689			36	0	0	36	36
DR Congo	No	Some	All	All	Some	Some	No	Yes	No	1 742	476	280	2					
Equatorial Guinea		No	All	All	No	No	No	Partially	No	77	24	0	0	2	0	0	2	2
Eritrea	Yes	No	No	All	No	No	No	Partially	Yes									
Ethiopia	No	No	No	All	Some	All	No	Yes	No									
Gabon	No	Some	All	All	Some	All	No	Yes	Yes	520	151	151		0	0	0	0	0
Gambia	Yes							Yes					0					
Ghana	Yes	Some	Some	All	All	All	No	Yes	No	1 129	360	360	360	2	96	0	4	2
Guinea	No		No		No	No	No	No	No	0	0	0	0	1	5 015	4	424	25
Guinea-Bissau	Yes	Some	All	All	Some	Some	Some	No	No									
Kenya	Yes	Some	Some	All	All	All	Some	Yes						36	0	0	1 104	36
Lesotho		Some	Some	All	All	All	No	No	No					4			4	4
Liberia	Yes	Some	No	All	No	No	No		No	7	3			0	0	0	0	0
Madagascar	Yes	Some	All	All	Some	Some	No	No	No					10	44	0	47	7
Malawi	No	Some	No	All	Some	All	No	Yes	Yes	3 983	2 734	2 349						
Mali	Yes	All	All	All				No	No					8				
Mauritania																		
Mauritius	No	All	All	All	All	All	All	Yes	No	115	3	2	2	0	117	0	6	0
Mozambique	Yes	Some	All	All	All	All		No	No					75	329	21	129	54
Namibia	No	No	No	All	All	All	No	Yes	No	1 829	1 234	0	0					
Niger																		
Nigeria	Yes	Some	Some	Some	Some	No	No		No	10 372	95	0						0
Rwanda	No	No	All	All	All	All	No	No	No						0	0	0	0
Sao Tome & Principe	No	No	No	All	No	No	No	Yes	Yes	340	8			0				
Senegal	No	Some	All	All	All	All	No	No	No					20	92	3	29	17
Seychelles	No	All	No	All	No	No	No	Yes	Yes	18	0	0	0	0	0	0	0	0
Sierra Leone	Yes	Some	Some	All	All	Some	No	Yes	Yes									
South Africa	No	Some	No	Some	Some	No	No	Yes	No	12 543	4 414	4 414	0	3 060				
Swaziland	No	All	All	All	All	All	Some	Yes	No	117	98			3	0	0	11	3
Togo	No	All	All	All	All	All	All	Yes	No					2	0	0	0	0
Uganda	Yes	Some	Some	All	All	All	No	Yes	No					17	0	0	0	0
UR Tanzania	Yes	All	All	All	All	All	All	Yes	No					4	2 633	2	1 099	2
Zambia	Yes	Some	Some	All	All	All	No	No	No					37	108	7	1	1
Zimbabwe								No	No									
AFR	**39**	**59**	**59**	**78**	**57**	**57**	**17**	**59**	**17**	**41 120**	**14 615**	**7 711**	**364**	**3 342**	**8 485**	**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 calculated 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 notif	% of cohort							%	Number of cases		% of notif	% of cohort							%	Number	% of cohort							%
	Notified	Regist'd	regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Notified	Regist'd	regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success
Algeria	8 549	8 521	100	77	13	2	0	3	4	1	90												598	63	12	3	2	6	5	9	75
Angola	18 164	12 208	67	44	24	5	2	23	2	0	68	807	3 305	410	60	20	4	3	13	1	0	80									
Benin	2 438	2 455	101	61	20	7	3	8	1	0	81												351	52	25	8	4	11	1	0	76
Botswana	3 050	3 330	109	34	42	7	0	7	9	0	77																				
Burkina Faso	1 703	1 718	101	59	7	13	5	12	5	0	66												221	56	4	14	4	14	9	0	59
Burundi	3 087	3 624	117	36	43	4	0	17	0	0	79												52	31	19	4	4	42	0	0	50
Cameroon	10 692																														
Cape Verde												165	43	26	58	14	5	0	9	14	0	72									
Central African Republic	320	608	190	36	23	9	1	24	7	0	59	2 498											76	46	14	4	13	17	5	0	61
Chad	899	1 601	178	50	28	7	3	8	5	0	78	2 700	424	16	40	23	13	3	13	4	4	63	191	38	37	9	3	10	4	0	74
Comoros	48																														
Congo	3 477	3 200	92	58	11	0	2	27	2	0	69												170	56	16	1	6	20	0	0	72
Côte d'Ivoire	10 987	10 897	99	61	11	6	2	12	7	1	72	443	443	100	48	11	8	2	9	4	17	59	918	34	10	10	9	16	6	15	44
DR Congo	53 578	53 711	100	76	7	6	1	6	3	1	83												4 996	68	4	10	4	7	5	2	72
Equatorial Guinea	0	419		34	17	7	1	27	13	0	51																				
Eritrea	887	887	100	78	7	6	1	6	2	0	85																				
Ethiopia	39 698	39 698	100	54	16	6	1	5	4	15	70												1 716	52	9	7	3	5	2	22	60
Gabon	1 233	1 233	100	26	8	2	1	40	1	21	34												139	10	7	0	0	22	0	60	17
Gambia	1 040	1 042	100	67	8	4	1	14	6	0	75												110	52	5	25	1	4	14	0	56
Ghana	7 714	7 714	100	60	6	8	2	13	5	6	66												558	31	6	5	1	5	2	50	37
Guinea	4 495	4 439	99	68	7	6	1	8	9	0	75												379	46	12	14	5	12	11	0	58
Guinea-Bissau	715	827	116	57	23	8	0	7	4	0	80	248	136	55	27	29	11	0	21	12	0	57	163	58	22	7	0	9	5	0	80
Kenya	38 158	34 068	89	67	13	5	0	9	6	0	80												3 032	67	8	11	1	7	7	0	75
Lesotho	3 652	3 652	100	70		10	1	4	7	8	70												574	77	0	15	1	3	4	0	77
Liberia	1 319	1 423	108	63	11	4	0	16	6	0	73												27	30	7	15	26	19	4	0	37
Madagascar	12 881	12 119	94	63	8	6	2	18	4	0	71																				
Malawi	7 716	7 716	100	72	2	18	2	3	2	1	73												1 050	69	1	22	2	4	2	1	70
Mali	3 015	2 734	91	54	11	9	2	16	8	0	65												553	48	11	14	9	14	4	0	59
Mauritania	0	1 819		40	19	2	1	21	11	6	58												300	38	13	1	2	23	9	14	51
Mauritius	99	99	100	85	2	3	1	3	6	0	87												6	50	0	0	0	50	0	0	50
Mozambique	16 138	16 140	100	74	2	12	1	8	3	0	76												1 682	65	2	13	2	9	7	0	68
Namibia	5 487	5 487	100	48	15	8	1	12	7	10	63												937	37	22	15	4	17	7	0	58
Niger	4 505	4 902	109	51	19	4	5	17	4	0	70																				
Nigeria	28 173	28 173	100	51	8	1	5	8	1	25	59																				
Rwanda	4 627	4 627	100	58	9	6	1	5	16	4	67												428	48	7	14	7	7	13	3	55
Sao Tome & Principe												33	35	106	57	14	6	9	11	3	0	71									
Senegal	6 587	6 587	100	63	7	4	1	11	6	9	70												837	55	6	7	3	16	6	7	61
Seychelles	5	5	100	100	0	0	0	0	0	0	100																				
Sierra Leone	3 113	3 113	100	75	8	6	1	9	1	0	83												225	69	8	7	4	12	1	0	77
South Africa	116 331	109 652	94	54	13	8	1	12	7	4	67	33	4 512	13 673	41	21	11	1	11	7	9	62	29 582	39	13	11	2	18	8	10	52
Swaziland	1 585	1 585	100	17	26	9	2	9	7	30	42																				
Togo	1 306	1 306	100	63	1	14	3	18	2	0	63												103	50	0	15	8	27	1	0	50
Uganda	20 310	20 310	100	32	36	7	0	19	4	3	68												2 439	28	32	10	1	16	4	10	60
UR Tanzania	24 899	24 899	100	77	4	10	0	4	4	0	81												2 196	71	4	13	1	5	5	0	75
Zambia	18 934	18 934	100	67	8	8	1	2	5	8	75												2 248	69	8	12	2	3	5	0	78
Zimbabwe	14 488	14 488	100	61	4	12	0	12	10	0	66												1 330	56	5	18	1	10	9	0	62
AFR	**506 102**	**481 970**	**95**	**60**	**12**	**7**	**1**	**10**	**5**	**5**	**72**	**6 927**	**8 898**	**128**	**48**	**20**	**8**	**2**	**12**	**5**	**5**	**68**	**58 187**	**48**	**11**	**11**	**2**	**13**	**7**	**7**	**59**

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases regist'd, 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 downlaoded from www.who.int/tb

Table A2.6 **Re-treatment outcomes, 2003 cohort**

	Relapse, DOTS									After failure, DOTS									After default, DOTS								
		% of cohort							%		% of cohort							%		% of cohort							%
	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success
Algeria	561	64	12	3	1	6	4	9	77	37	41	11	5	8	3	16	16	51									
Angola																											
Benin																											
Botswana																											
Burkina Faso	103	62	4	15	4	7	9	0	66	77	56	0	6	5	22	10	0	56	41	39	10	24	2	17	7	0	49
Burundi																											
Cameroon																											
Cape Verde																											
Central African Republic	66	38	17	5	15	20	6	0	55	10	100	0	0	0	0	0	0	100	0								
Chad	98	42	23	12	4	14	4	0	65	30	57	30	13	0	0	0	0	87	63	22	60	2	2	10	5	0	83
Comoros																											
Congo	99	55	16	1	7	21	0	0	71										71	58	17	1	6	18	0	0	75
Côte d'Ivoire																											
DR Congo	3 320	74	5	9	3	4	4	1	79	694	51	3	13	13	8	7	4	54	982	60	4	10	3	14	7	2	64
Equatorial Guinea																											
Eritrea																											
Ethiopia																											
Gabon	109	6	7	0	0	14	0	73	13										30	27	7	0	0	53	0	13	33
Gambia	46	59	4	22	0	0	15	0	63	14	71	0	29	0	0	0	0	71	50	40	6	28	2	8	16	0	46
Ghana	558	31	6	5	1	5	2	50	37																		
Guinea	213	52	8	15	5	12	10	0	59	43	33	14	21	7	14	12	0	47	123	42	18	11	5	12	11	0	60
Guinea-Bissau	119	57	24	8	0	6	6	0	81										44	59	18	5	0	16	2	0	77
Kenya																											
Lesotho																											
Liberia	7	14	0	0	43	29	14	0	14	12	33	8	17	25	17	0	0	42	3	0	0	33	33	33	0	0	0
Madagascar										228							100		2 136							100	
Malawi	1 050	69	1	22	2	4	2	1	70																		
Mali	251	67	4	6	4	16	4	0	71	84	49	10	11	7	18	6	0	58	218	26	20	25	17	11	2	0	46
Mauritania																											
Mauritius	4	75				25	0	0	75	1					100		0		1					100		0	
Mozambique	1 176	69	2	13	2	7	6	0	72	183	61	0	18	5	7	8	0	61	323	54	4	10	2	20	11	0	58
Namibia	937	37	22	15	4	17	7	0	58																		
Niger																											
Nigeria																											
Rwanda																											
Sao Tome & Principe																											
Senegal																											
Seychelles	0									0									0								
Sierra Leone	93	73	6	6	6	8	0	0	80	33	70	6	9	3	12	0	0	76	99	66	10	6	1	15	2	0	76
South Africa	16 203	44	12	11	1	14	9	10	56	1 342	28	13	12	5	15	13	14	42	3 488	32	11	10	2	33	9	4	43
Swaziland																											
Togo	103	50	0	15	8	27	1	0	50																		
Uganda	1 624	26	32	9	1	13	4	15	58																		
UR Tanzania	1 816	74	3	13	1	5	4	0	77	130	66	2	15	4	8	5	0	68	250	53	14	13	0	11	7	1	67
Zambia																											
Zimbabwe	1 330	56	5	18	1	10	9	0	62																		
AFR	**29 886**	**51**	**11**	**11**	**2**	**11**	**7**	**8**	**61**	**2 918**	**38**	**8**	**12**	**7**	**11**	**9**	**15**	**46**	**7 922**	**29**	**8**	**8**	**2**	**19**	**6**	**29**	**37**

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases regist'd, 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
Algeria			86			87	87	84	89	90			133			126	115	114	114	105
Angola				15	68		68	66	74	68			61	39	51		77	107	108	94
Benin	76	73	72	73	77	77		79	80	81	81	80	80	79	84	85		83	80	82
Botswana	72	67	70	70	47	71	77	78	71	77	72	84	84	85	69	73	69	73	66	67
Burkina Faso		25	29	61	59	61	60	65	64	66	12	21	16	18	17	18	17	17	17	18
Burundi	44	45		67	74		80	80	79	79	20	25	30	19	38		34	29	31	29
Cameroon				80	75	75	77	62	70			5		11	22	36	44	66	91	91
Cape Verde																	40			
Central African Republic		37					57	61		59		62					9	54	6	4
Chad	63	47			64				72	78	37	14			37			34	8	16
Comoros	94	90		85		93	93	92	96		54	57		55		50	54	43	29	39
Congo	69					61	69	66	71	69	67			50		87	82	89	58	65
Côte d'Ivoire	17	68	56	61	62	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						51	83	72	71	82						82
Eritrea				83	73	44	76	80	82	85			3	4	14	15	17	14	19	14
Ethiopia	74	61	73	72	74	76	80	76	76	70	15	20	22	24	25	33	34	35	36	36
Gabon								49	47	34							91	77	83	81
Gambia	74	76	80	70				71	74	75	75	69	72	76				73	70	66
Ghana		54	51	48	59	55	50	56	60	66	16	14	32	32	31	38	41	41	40	37
Guinea	78	78	75	74	73	74	68	74	72	75	43	51	49	52	52	53	52	51	50	52
Guinea-Bissau						35		51	48	80						47		43	56	75
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		69		71	52	70	63	73	85	77		76		70	77	86
Liberia		79		75		74	80	76	76	73		32		42		29	24	49	32	58
Madagascar	51	55		64			70	69	74	71	51	65		68			70	70	76	74
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	65	14	16	18	17	16	15		18	19	19
Mauritania										58										43
Mauritius	96				91	87	93	93	92	87	34			32	35	33	24	25	28	33
Mozambique	67	39	54	67		71	75	77	78	76	54	49	47	47		45	44	45	45	46
Namibia			66	58	61	51	56	63	66	63	22	82	84	86	84	84	89	87	97	88
Niger			57	66		60				70			19	16		34			50	46
Nigeria	65	49	32	73	73	75	79	79	79	59	11	12	11	12	13	14	14	13	18	21
Rwanda			61	68	72	67	61		58	67	34	33	39	52	44	33	27	30	34	29
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		90	82	67	45	100		83	99	69		87	95	72	40	106
Sierra Leone	75	69	74	79		75	77	80	81	83	28	40	39	36		34	34	34	33	36
South Africa			69	73	74	60	66	65	68	67			6	21	63	65	68	86	92	83
Swaziland								36	47	42								34	35	38
Togo	45	60	65	66	69	76		55	68	63	13	13		12	11	12		5	14	17
Uganda			33	40	62	61	63	56	60	68			57	57	56	49	44	44	44	43
UR Tanzania	80	73	76	77	76	78	78	81	80	81	56	55	52	53	51	48	47	44	45	47
Zambia								75	83	75								40	62	54
Zimbabwe					70	73	69	71	67	66				49	47	44	44	45	41	42
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 A2.8 **New smear-positive case notification by age and sex, absolute numbers, DOTS and non-DOTS, 2004**

	Male							Female							All							Male/female
	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+	ratio
Algeria	63	1 326	1 694	758	434	271	373	92	1 011	798	320	253	227	359	155	2 337	2 492	1 078	687	498	732	1.6
Angola	554	2 684	2 659	1 998	1 196	561	321	733	3 198	2 772	1 854	1 029	505	269	1 287	5 882	5 431	3 852	2 225	1 066	590	1.0
Benin	16	308	529	344	229	125	82	43	263	354	147	73	45	24	59	571	883	491	302	170	106	1.7
Botswana	29	245	490	436	271	122	96	49	358	544	290	110	52	36	78	603	1 034	726	381	174	132	1.2
Burkina Faso	10	155	375	308	204	138	102	22	109	196	148	72	54	33	32	264	571	456	276	192	135	2.0
Burundi	24	352	674	468	292	78	48	51	325	370	232	114	40	19	75	677	1 044	700	406	118	67	1.7
Cameroon	127	1 312	2 147	1 575	928	408	259	181	1 310	1 449	756	412	214	140	308	2 622	3 596	2 331	1 340	622	399	1.5
Cape Verde	1	8	33	17	20	2	7	2	17	34	11	7	6	4	3	25	67	28	27	8	11	1.1
Central African Republic	12	58	694	575	241	30	14	14	60	430	559	181	46	9	26	118	1 124	1 134	422	76	23	1.3
Chad	72	141	466	415	207	61	29	41	89	317	262	129	25	16	113	230	783	677	336	86	45	1.6
Comoros																						
Congo	9	602	887	451	251	78	32	38	310	800	373	156	88	44	47	912	1 687	824	407	166	76	1.3
Côte d'Ivoire	114	1 418	2 323	1 530	875	474	387	160	1 266	1 734	916	472	273	194	274	2 684	4 057	2 446	1 347	747	581	1.4
DR Congo	1 195	7 007	9 467	7 114	4 442	2 376	1 229	1 679	7 630	8 540	5 529	3 413	1 850	721	2 874	14 637	18 007	12 643	7 855	4 226	1 950	1.1
Equatorial Guinea	5	50	63	54	41	17	15	9	45	48	30	15	10	4	14	95	111	84	56	27	19	1.5
Eritrea	14	67	61	45	45	39	29	13	95	118	67	43	23	20	27	162	179	112	88	62	49	0.8
Ethiopia	1 160	7 167	7 002	4 060	1 988	911	456	1 367	6 422	6 091	2 984	1 284	414	124	2 527	13 589	13 093	7 044	3 272	1 325	580	1.2
Gabon	17	197	289	143	83	47	50	15	173	141	80	37	24	27	32	370	430	223	120	71	77	1.7
Gambia	5	145	260	151	103	46	23	7	55	81	59	38	21	18	12	200	341	210	141	67	41	2.6
Ghana	54	532	1 246	1 250	854	472	413	69	454	701	518	303	202	191	123	986	1 947	1 768	1 157	674	604	2.0
Guinea	38	728	1 091	726	389	199	135	62	470	521	334	159	100	63	100	1 198	1 612	1 060	548	299	198	1.9
Guinea-Bissau	16	86	175	147	130	84	51	11	87	115	103	98	54	29	27	173	290	250	228	138	80	1.4
Kenya	391	5 388	9 016	5 142	2 404	973	576	519	5 458	6 326	2 850	1 236	558	312	910	10 846	15 342	7 992	3 640	1 531	888	1.4
Lesotho	29	286	728	696	448	206	78	22	459	691	364	161	68	36	51	745	1 419	1 060	609	274	114	1.4
Liberia	32	333	427	285	198	71	51	39	268	397	183	123	41	42	71	601	824	468	321	112	93	1.3
Madagascar	118	1 025	1 593	1 482	1 026	495	300	130	950	1 130	841	513	220	95	248	1 975	2 723	2 323	1 539	715	395	1.6
Malawi	47	647	1 505	1 081	508	264	124	78	1 009	1 694	910	412	191	96	125	1 656	3 199	1 991	920	455	220	1.0
Mali	28	302	584	473	316	219	147	29	191	284	183	151	105	57	57	493	868	656	467	324	204	2.1
Mauritania	15	204	343	235	154	129	108	14	102	114	114	58	44	28	29	306	457	349	212	173	136	2.5
Mauritius	1	13	13	24	20	4	5	0	6	8	10	4	4	5	1	19	21	34	24	8	10	2.2
Mozambique																						
Namibia	31	319	1 092	866	371	159	131	30	400	819	554	203	106	74	61	719	1 911	1 420	574	265	205	1.4
Niger																						
Nigeria	408	3 679	6 252	4 262	2 614	1 310	1 267	469	3 768	4 463	2 220	1 495	981	567	877	7 447	10 715	6 482	4 109	2 291	1 834	1.4
Rwanda	52	561	722	595	353	171	64	73	460	469	293	150	53	25	125	1 021	1 191	888	503	224	89	1.7
Sao Tome & Principe	3	5	7	6	5	2	3	1	4	5	5	2	1	1	4	9	12	11	7	3	4	1.6
Senegal	60	1 085	1 464	915	506	264	213	73	620	485	324	211	139	78	133	1 705	1 949	1 239	717	403	291	2.3
Seychelles	0	0	2	0	3	2	0	0	0	1	2	2	1	0	0	0	3	2	5	3	0	1.2
Sierra Leone	19	417	659	581	364	153	130	40	304	440	319	170	89	50	59	721	1 099	900	534	242	180	1.6
South Africa	1 677	10 304	20 673	18 641	10 172	3 704	1 515	2 234	13 293	17 819	10 196	4 583	2 066	1 094	3 911	23 597	38 492	28 837	14 755	5 770	2 609	1.3
Swaziland	6	152	316	245	140	53	21	17	271	381	182	74	19	14	23	423	697	427	214	72	35	1.0
Togo	9	145	286	233	143	69	66	12	150	205	103	55	37	28	21	295	491	336	198	106	94	1.6
Uganda	284	1 803	4 222	3 269	1 599	810	525	371	1 803	3 110	1 780	812	358	193	655	3 606	7 332	5 049	2 411	1 168	718	1.5
UR Tanzania	208	2 216	5 203	3 884	2 254	1 272	1 129	280	1 996	3 537	1 960	1 011	544	329	488	4 212	8 740	5 844	3 265	1 816	1 458	1.7
Zambia	209	1 498	3 963	2 262	968	313	324	247	1 811	2 961	1 646	608	245	192	456	3 309	6 924	3 908	1 576	558	516	1.2
Zimbabwe	187	833	2 908	2 298	1 056	366	198	225	1 140	2 858	1 565	622	214	111	412	1 973	5 766	3 863	1 678	580	309	1.2
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**

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+
Algeria	1	37	61	37	33	39	60	2	29	30	16	20	32	47	2	33	45	26	27	36	53
Angola	17	199	302	353	314	229	192	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	58
Botswana	8	118	374	541	490	431	455	14	174	413	335	173	123	113	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	39
Burundi	1	44	154	180	160	84	64	3	40	80	85	54	30	15	2	42	116	132	103	52	34
Cameroon	4	76	191	220	191	122	94	5	76	128	101	79	58	42	5	76	160	160	133	88	66
Cape Verde	1	15	100	67	192	41	91	2	31	98	40	40	70	29	2	23	99	53	97	60	51
Central African Republic	1	15	271	368	209	39	21	2	15	162	334	134	48	10	2	15	216	351	169	44	15
Chad	3	17	82	115	85	39	24	2	10	55	70	49	14	11	3	14	68	92	66	26	17
Comoros																					
Congo	1	159	355	308	260	120	67	4	82	318	241	143	117	70	3	120	337	274	198	118	68
Côte d'Ivoire	3	74	195	203	148	119	134	5	66	152	138	92	80	71	4	70	174	172	122	101	103
DR Congo	9	127	261	325	324	269	202	13	139	233	253	233	176	88	11	133	247	289	277	219	136
Equatorial Guinea	4	105	194	236	242	162	173	8	94	145	126	83	84	37	6	100	169	180	160	121	98
Eritrea	1	15	21	23	37	54	81	1	22	40	34	33	28	37	1	18	30	28	35	40	54
Ethiopia	7	99	147	132	96	66	47	8	89	127	94	58	28	11	8	94	137	113	76	46	27
Gabon	6	143	305	217	179	168	193	6	126	141	122	80	86	83	6	135	221	169	129	127	132
Gambia	2	105	257	200	199	131	92	2	40	78	74	69	55	62	2	72	166	136	132	91	76
Ghana	1	23	78	122	124	108	123	2	20	44	49	42	42	48	1	21	61	85	82	74	82
Guinea	2	83	183	179	141	125	118	3	55	89	84	57	58	47	3	70	137	132	99	90	80
Guinea-Bissau	4	60	178	235	309	304	240	3	60	114	157	215	176	111	4	60	145	195	260	237	169
Kenya	6	138	382	392	275	201	132	8	139	264	202	124	101	61	7	138	323	293	195	148	93
Lesotho	8	133	751	1445	1019	580	204	6	205	522	431	228	129	75	7	170	619	799	532	311	132
Liberia	4	94	183	191	205	128	149	5	76	174	123	121	68	98	4	85	179	157	162	97	120
Madagascar	3	59	131	175	179	155	121	3	55	93	99	88	63	32	3	57	112	137	133	107	73
Malawi	2	54	191	231	160	113	60	3	83	209	177	113	76	42	2	69	200	203	135	94	51
Mali	1	22	69	98	111	123	109	1	14	33	35	45	46	31	1	18	51	65	75	80	64
Mauritania	2	71	162	169	180	218	236	2	36	53	78	61	64	50	2	53	107	122	117	135	134
Mauritius	1	13	13	24	25	10	15	0	6	8	10	5	9	11	0	9	10	17	15	9	13
Mozambique																					
Namibia	7	160	805	976	680	440	390	7	199	590	558	302	223	167	7	179	696	755	472	317	263
Niger																					
Nigeria	1	28	73	76	68	55	69	2	29	53	40	37	39	27	2	29	63	58	52	47	46
Rwanda	3	66	140	183	166	123	67	4	47	73	79	60	33	20	3	56	103	128	109	75	41
Sao Tome & Principe	9	27	57	83	127	83	85	3	22	41	65	41	35	25	6	25	49	74	80	57	53
Senegal	3	100	201	189	158	144	206	3	58	65	65	62	66	53	3	79	133	126	108	102	117
Seychelles																					
Sierra Leone	2	84	190	249	230	153	200	3	60	123	130	98	77	60	3	72	156	188	161	113	121
South Africa	23	216	582	702	536	336	217	31	277	488	358	227	154	94	27	247	534	524	377	236	140
Swaziland	3	121	497	770	561	260	126	7	211	512	385	202	81	67	5	166	505	540	348	164	93
Togo	1	28	83	107	96	74	92	1	29	59	45	34	35	32	1	29	71	75	64	54	59
Uganda	4	67	243	373	290	209	177	6	67	178	203	131	80	53	5	67	210	288	206	140	109
UR Tanzania	2	55	199	253	233	194	281	3	49	132	123	95	74	66	3	52	165	186	161	130	161
Zambia	8	126	528	647	388	168	219	10	152	406	481	216	112	103	9	139	468	565	297	138	154
Zimbabwe	7	52	325	528	337	169	93	8	70	333	363	174	87	44	8	61	329	446	250	125	67
AFR	**5**	**76**	**195**	**228**	**189**	**137**	**116**	**6**	**80**	**152**	**133**	**96**	**72**	**48**	**6**	**78**	**174**	**180**	**141**	**102**	**78**

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
Algeria	2 702		13 916	13 681	13 133	13 832	12 917	11 212	11 325	11 039	11 607	11 332	11 428	13 345	13 345	13 507	15 329	16 522	15 324	16 647	18 572	18 250	18 934	19 730	19 809
Angola	10 117	7 501	7 911	6 625	10 153	8 653	9 363	8 510	8 184	9 587	10 271	11 134	11 272	8 269	7 157	5 143	15 424	15 066	14 296	14 235	16 062	21 713	29 996	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	2 316	2 552	2 706		2 830	2 932	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	5 665	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	4 547	1 018	1 407	949	1 616	1 497	1 488		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	4 464	4 677	3 840	3 326	3 796	5 335	6 546	6 365		6 478	6 371	6 871	6 871
Cameroon	2 434	2 236	3 765	3 445	3 338	3 393	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	7 660	5 251	11 307	11 057	15 964	17 655
Cape Verde	516	344	393	230	285	259		285	276	210	221					303	179	196	205			291	195	316	294
Central African Republic	651	758	1 475	1 686	468	520	779	499	814	64	2 124	2 045				3 339	3 623	4 459	4 875	5 003		2 550	4 837	3 932	3 908
Chad	220	286	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			5 077	4 679	4 946
Comoros									212	139	140	119	108	129	115	123	138	134	132	153	120	138	111	73	89
Congo	742	1 214	3 716	4 156	2 776	2 648	3 120	3 473	3 878	4 363	591	618	1 179	1 976	2 992	3 615	4 469	3 417	3 863	5 023	9 239	9 735	9 888	7 782	9 729
Côte d'Ivoire	4 197	4 418	5 000	6 000	6 062	5 729	6 072	6 422	6 556	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	37 660	36 647	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	11	20	157	260	331	262	309	356	306	319	366	416						536
Eritrea											3 699		4 386	11 664	15 505	21 453	5 220	8 321	7 789	6 037	6 652	2 743	2 805	4 708	4 239
Ethiopia	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		99 329	26 034	41 889	59 105	69 472	72 095	91 101	94 957	110 289	117 600	123 127
Gabon	865	796	761	752	654	855	769	864	721	912	917	906	926	972	1 034	1 115	951	1 434	1 380	1 598		2 504	2 086	2 208	2 588
Gambia	239	58														1 023	1 242	1 357	1 558	1 514			1 859	1 945	2 142
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	11 723	11 891	11 827
Guinea		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	1 558	1 647	1 613	1 678	1 445	846	1 164	1 273		1 566	1 647	1 835
Kenya	11 049	10 027		11 966		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
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
Liberia	774	1 002	835	885		425	232	384	894				1 948	1 766	1 764	1 393	840		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	9 855	10 671	21 616	12 718		14 661			16 447	16 718	19 309	17 863
Malawi	4 758	5 033	4 411	4 707	4 404	5 335	6 260	7 581	8 359	9 431	12 395	14 743	14 237	17 105	19 496	19 155	20 630	20 676	22 674	24 396	23 604	26 094	24 595	25 841	27 030
Mali	839	933	187	532	1 872	1 621	1 851	2 534	2 578	1 626	2 933	2 631	3 113	3 204	3 075	3 087	3 655	5 022	4 142	4 466	4 216		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	3 837	3 788	3 617	3 649	3 067				3 326
Mauritius	132	157	121	152	118	111	119	117	114	129	119	134	130	159	149	131	116	121	120	154	160	123	139	137	137
Mozambique	7 457	6 984	5 787	5 937	5 204	5 645	8 263	10 996	13 863	15 958	15 899	16 609	15 085	16 588	17 158	17 882	18 443	18 842	19 672	21 329	21 158	22 094	25 544	28 602	31 150
Namibia						4 840	4 427	3 640	2 815	3 703	2 671	2 500	1 756	5 500		1 540	9 625	9 947	11 147	10 035	10 799	13 064	13 282	14 490	15 026
Niger	717	2 871	754	673	665	698	570	556	631	608	5 200			626	3 784	1 980		3 311	3 419	4 054	4 292			7 078	6 822
Nigeria	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
Rwanda	1 495	1 386		1 364	1 419	1 327	2 460	3 287	4 145	4 741	6 387	3 200				3 054	3 535	4 710	6 112	6 483	6 093	5 473	6 011	6 812	6 487
Sao Tome & Principe	131	37	40	59	49	40	8	55	13		17	120		97	41				106	96	97	97	94	457	121
Senegal	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	7 561	8 525	8 322	8 475	7 488	8 508	8 554	8 366	9 380	9 098
Seychelles	16	0	16	16	10	10	24	14	10	6	41			5		8	15	18	11	21	20	19	29	10	18
Sierra Leone	750	847	889	293	816	865	358	130	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
South Africa	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	89 786	90 292	73 917	109 328	125 913	142 281	148 164	151 239	148 257	215 120	227 320	264 183
Swaziland		143	3 059	1 955				1 098	1 352	1 394		1 531		1 458		2 050	2 364	3 022	3 653	4 167	5 877	6 118	6 748	7 749	8 071
Togo	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
Uganda	1 058	1 170	497	2 029			1 392	1 464	3 066	1 045	14 740	19 016	20 662	21 579	26 994	25 316	27 196	28 349	29 228	31 597	30 372	36 829	40 695	41 795	43 721
UR Tanzania	11 483	12 122	11 748	11 753	12 092	13 698	15 452	16 920	18 206	19 262	22 249	25 210	28 462	31 460	34 799	39 847	44 416	46 433	51 231	52 437	54 442	61 603	60 306	61 579	62 512
Zambia	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	35 958	40 417			45 240	49 806	46 259	54 220	53 932	54 106
Zimbabwe	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
AFR	**219 802**	**224 102**	**240 263**	**258 842**	**264 928**	**296 627**	**301 683**	**333 842**	**373 550**	**365 432**	**418 530**	**412 414**	**432 997**	**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**
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	80	89	83	98	96	91	98	89	83	78	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	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	48	41	42	39	40	40	43	40	35	38	36	34	34	37	38		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	9	26	18	16	19	21	20	21	20	21	22
Burundi	19	15	22	23	40	47	51	53	70	83	81	84	76	78	63	54	61	85	104	100		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
Cape Verde	178	117	131	75	91	81		86	81	60	62					76	44	47	48			63	41	65	59
Central African Republic	28	32	60	66	18	19	28	18	28	2	71	66				98	104	125	134	135		66	124	100	98
Chad	5	6	3	40	28	28	24	20	52	44	43	47	42	43	48	45	27	29	36	59			58	51	52
Comoros									43	27	27	22	19	22	19	20	22	21	20	22	17	19	15	10	11
Congo	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
Côte d'Ivoire	50	50	54	62	60	55	56	56	56	57	62	61	67	69	98	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	92	77	78	88	97						109
Eritrea											122		143	381	505	693	166	258	235	176	187	74	72	116	100
Ethiopia	108	112	134	140	155	165	180	186	200	164	174	114	110		171	43	68	93	107	108	133	135	153	159	163
Gabon	124	111	103	98	83	105	92	100	80	98	96	92	91	92	95	100	83	121	114	128		193	158	165	190
Gambia	37	9														92	108	114	126	119			133	135	145
Ghana	46	35	36	21	15	24	28	41	36	40	41	45	43	51	98	49	58	58	60	53	55	59	56	56	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
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
Kenya	68	59		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
Liberia	41	52	42	43		20	11	18	41				94	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		96			99	98	110	99
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	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						433	380	298	220	276	191	172	117	354		93	565	567	617	542	570	677	678	730	748
Niger	12	45	11	10	9	10	8	7	8	7	61			7	39	20		31	31	36	36			54	51
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	22	39	49	60	67	90	47				56	62	76	89	86	76	65	70	78	73
Sao Tome & Principe	139	38	41	59	48	39	8	51	12		15	101		79	33				79	70	69	68	64	306	79
Senegal	34	42	26	37		16	13	84	75	77	62	83	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	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		83	100	98	103	107
South Africa	189	200	208	198	194	179	162	166	174	189	218	205	213	225	221	176	256	289	321	329	332	321	462	484	560
Swaziland		23	469	291				141	167	166		172		158		215	244	307	365	411	574	594	653	749	780
Togo	7	4	7	6	11	22	17	33	29	24	33	31	29	24	26	34	35	34	25	24	26		29	31	35
Uganda	8	9	4	15			9	9	19	6	83	103	109	110	133	121	126	128	128	134	125	147	157	156	157
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	167	166
Zambia	88	98	101	103	105	115	118	131	163	175	201	271	287	335	378	376	413			431	465	424	488	478	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**	**153**	**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/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**
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	26	27	26
Angola	4 874	4 337	3 804	8 016	8 246	7 333	7 379	9 053	11 923	18 087	18 971	20 301	42	36	31	64	64	56	55	65	84	124	126	131
Benin	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	32
Botswana	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		561	1 028	1 381	1 126	1 331	1 411	1 560	1 522	1 544	1 703	1 926		6	10	14	11	12	13	14	13	13	14	15
Burundi	1 861	1 527	1 121	1 533	2 022	2 782	2 924		3 040	2 791	3 087	3 087	31	25	18	25	32	44	46		46	41	44	42
Cameroon	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			111	117	103	104			140	111	165	169			28	28	25	24			30	23	34	34
Central African Republic			1 794	1 992	2 267	2 637	2 725		1 382	2 758	2 818	2 923			53	57	63	72	73		36	71	72	73
Chad			2 002	870			2 920			3 519	3 599	2 270			28	12			37			40	39	24
Comoros			103	107	100	99	112	87	92	72	48	63			17	17	16	15	16	12	13	10	6	8
Congo		1 691	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
Côte d'Ivoire	7 012		8 254	8 927	9 093	9 850	10 047	8 497	10 920	9 667	11 430	12 250	50		56	59	58	62	61	51	64	56	65	69
DR Congo	14 924		20 914	24 125	24 609	33 442	34 923	36 123	42 054	44 518	53 578	62 192	35		46	52	52	70	71	72	82	84	99	111
Equatorial Guinea			219	209	226	284						406			55	51	54	66						82
Eritrea					120	135	527	590	702	646	887	720					4	4	15	17	19	17	22	17
Ethiopia		5 752	9 040	13 160	15 957	18 864	21 597	30 510	33 028	36 541	39 698	41 430		10	15	21	25	29	32	45	47	51	54	55
Gabon		395	486	263	577	889	916		1 137	1 033	1 233	1 323		36	43	23	49	73	74		88	78	92	97
Gambia			778	743	820	900	861			1 035	1 040	1 011			70	64	69	73	68			74	72	68
Ghana		5 778	2 638	6 474	7 254	7 757	6 877	7 316	7 712	7 732	7 714	7 259		33	15	36	39	41	35	37	38	37	36	34
Guinea	2 082	2 158	2 263	2 844	2 981	3 362	3 563	3 920	4 092	4 300	4 495	5 015	30	30	30	37	38	42	43	46	47	49	50	55
Guinea-Bissau			956	922	855	541	704	526		899	963	1 186			80	75	68	42	53	39		62	64	77
Kenya	10 149	11 324	13 934	16 978	19 040	24 029	27 197	28 773	31 307	34 337	38 158	41 167	39	43	51	61	66	82	91	94	100	107	117	123
Lesotho	1 405	1 330	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
Liberia	1 547		1 154	668		1 190		1 021	934	1 974	1 319	2 490	76		54	29		44		33	30	62	41	77
Madagascar	6 881	7 366	8 026	8 456		9 639			11 092	11 387	12 881	12 896	52	54	58	59		63			67	66	73	71
Malawi	5 692	5 988	6 285	6 703	7 587	8 765	8 132	8 260	8 309	7 686	7 716	8 566	58	60	62	65	72	80	73	72	70	64	63	68
Mali		1 740	1 866	2 173	3 178	2 558	2 690	2 527		2 757	3 015	3 069		18	18	21	30	23	24	22		22	24	23
Mauritania			2 074		2 519	1 172	2 051	1 583				1 662			90		104	47	80	60				56
Mauritius			113	99	112	109	122	115	85	86	99	117			10	9	10	9	10	10	7	7	8	9
Mozambique	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
Namibia			697	2 849	3 220	3 598	3 760	4 012	4 535	4 689	5 487	5 155			42	167	183	199	203	212	235	239	276	257
Niger	463	1 865	1 492		1 970	2 189	2 631	2 693			4 505	4 311	5	19	15		19	20	23	23			35	32
Nigeria	1 723		9 476	10 662	11 235	13 161	15 903	17 423	23 410	21 936	28 173	33 755	2		9	10	10	12	14	15	19	18	22	26
Rwanda			1 840	2 034	2 820	4 417	4 298	3 681	3 252	3 956	4 627	4 179			34	36	46	65	57	46	39	46	53	47
Sao Tome & Principe							30	30	41	42	33	50							22	21	29	29	22	33
Senegal		4 599	5 421	5 949	5 430	5 454	5 011	5 823	6 094	5 796	6 587	6 437		52	59	64	57	55	50	56	58	53	59	57
Seychelles	2		6	11	13	9	10	11	12	9	5	13	3		8	15	17	12	13	14	15	11	6	16
Sierra Leone		1 408	1 454	2 234	2 296	2 262		2 472	2 692	2 938	3 113	3 735		34	35	54	55	53		55	57	60	61	70
South Africa			23 112	42 163	54 073	66 047	72 098	75 967	83 808	98 799	116 364	117 971			55	99	124	149	160	167	182	212	248	250
Swaziland			660	2 226			1 781	1 823	1 279	1 410	1 585	1 902			69	230			176	178	124	136	153	184
Togo	545		887	913	935	904	904	984		1 203	1 306	1 543	13		20	20	19	18	17	18		21	22	26
Uganda	11 949	14 763	13 631	15 312	17 254	18 222	18 463	17 246	17 291	19 088	20 310	20 986	61	73	65	71	78	80	78	71	69	74	76	75
UR Tanzania	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
Zambia		9 620	10 038	12 072			11 645	12 927	13 024	16 351	18 934	17 247		103	105	123			111	121	119	147	168	150
Zimbabwe	5 331		8 965	11 965	14 512	14 492	14 414	14 392	15 370	15 941	14 488	14 581	47		76	100	119	117	116	114	121	125	113	113
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**

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				
ANTIGUA AND BARBUDA						
ARGENTINA	DOTS	YES				
BAHAMAS	DOTS	YES				
BARBADOS	DOTS	YES				
BELIZE	DOTS	YES				
BERMUDA	NON-DOTS	NO				
BOLIVIA	DOTS	YES				
BRAZIL	DOTS	YES				
BRITISH VIRGIN ISLANDS	NON-DOTS	YES				
CANADA	DOTS	YES				
CAYMAN ISLANDS	DOTS	NO				
CHILE	DOTS	YES				
COLOMBIA	DOTS	YES				
COSTA RICA	DOTS	YES				
CUBA	DOTS	YES				
DOMINICA						
DOMINICAN REPUBLIC	DOTS	YES				
ECUADOR	DOTS	YES				
EL SALVADOR	DOTS	YES				
GRENADA	NON-DOTS	YES				
GUATEMALA	DOTS	YES				
GUYANA	DOTS	YES				
HAITI	DOTS	YES				
HONDURAS	DOTS	YES				
JAMAICA	DOTS	NO				
MEXICO	DOTS	YES				
MONTSERRAT	DOTS	YES				
NETHERLANDS ANTILLES	NON-DOTS	NO				
NICARAGUA	DOTS	YES				
PANAMA	DOTS	YES				
PARAGUAY	DOTS	YES				
PERU	DOTS					
PUERTO RICO	DOTS	YES				
SAINT KITTS AND NEVIS	DOTS	YES				
SAINT LUCIA	DOTS	YES				
ST VINCENT & GRENADINES	DOTS					
SURINAME	NON-DOTS	NO				
TRINIDAD AND TOBAGO	NON-DOTS	YES				
TURKS & CAICOS ISLANDS						
URUGUAY	DOTS	YES				
USA	DOTS	YES				
US VIRGIN ISLANDS						
VENEZUELA	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
	All forms*		Smear-positive*		All forms*		All forms*		All forms*		All forms HIV+		Smear-positive*		Smear-positive HIV+		All forms*		All forms HIV+		All forms*		All forms HIV+		in adult incident
	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	TB cases (%)
Anguilla	3	31	1	14	5	50	≤ 1	5	3	25	≤ 1	≤ 1	1	11	≤ 1	≤ 1	5	39	≤ 1	≤ 1	≤ 1	4	≤ 1	≤ 1	0.1
Antigua & Barbuda	5	8	2	4	9	14	≤ 1	2	5	7	≤ 1	≤ 1	2	3	≤ 1	≤ 1	8	10	≤ 1	≤ 1	≤ 1	1	≤ 1	≤ 1	0.1
Argentina	23 374	72	10 437	32	38 299	118	3 165	10	16 537	43	821	2	7 360	19	287	≤ 1	20 334	53	410	1	2 224	6	189	≤ 1	8.1
Bahamas	156	61	69	27	240	94	32	12	124	39	12	4	54	17	4	1	158	50	6	2	19	6	4	1	16
Barbados	47	18	21	8	76	29	9	3	31	11	2	≤ 1	14	5	≤ 1	≤ 1	33	12	≤ 1	≤ 1	4	1	≤ 1	≤ 1	9.0
Belize	90	49	40	22	144	77	18	10	128	49	12	4	57	21	4	2	157	59	6	2	22	8	3	1	14.7
Bermuda	3	6	1	3	5	9	≤ 1	≤ 1	3	4	≤ 1	≤ 1	1	2	≤ 1	≤ 1	4	7	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	0.1
Bolivia	19 674	295	8 849	133	30 233	453	3 385	51	19 568	217	88	≤ 1	8 797	98	31	≤ 1	26 112	290	44	≤ 1	2 925	32	26	≤ 1	0.7
Brazil	140 920	94	62 280	42	221 034	148	19 204	13	109 672	60	11 366	6	48 216	26	3 978	2	141 115	77	5 683	3	14 355	8	2 669	1	17
British Virgin Islands	3	19	1	8	5	31	≤ 1	3	3	15	≤ 1	≤ 1	1	7	≤ 1	≤ 1	5	23	≤ 1	≤ 1	≤ 1	2	≤ 1	≤ 1	0.1
Canada	2 505	9	1 123	4	2 035	7	260	≤ 1	1 663	5	67	≤ 1	742	2	24	≤ 1	1 330	4	34	≤ 1	174	≤ 1	8	≤ 1	8.7
Cayman Islands	1	6	≤ 1	3	2	9	≤ 1	≤ 1	2	4	≤ 1	≤ 1	≤ 1	2	≤ 1	≤ 1	3	6	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	0.1
Chile	6 948	53	3 101	24	8 156	62	752	6	2 567	16	148	≤ 1	1 140	7	52	≤ 1	2 549	16	74	≤ 1	199	1	15	≤ 1	9.4
Colombia	20 973	60	9 418	27	34 702	99	3 429	10	22 357	50	716	2	9 989	22	251	≤ 1	33 533	75	358	≤ 1	3 579	8	225	≤ 1	5.2
Costa Rica	700	23	314	10	1 170	38	126	4	612	14	12	≤ 1	274	6	4	≤ 1	649	15	6	≤ 1	52	1	2	≤ 1	3.1
Cuba	3 290	31	1 480	14	4 199	40	365	3	1 119	10	2	≤ 1	503	4	≤ 1	≤ 1	1 342	12	1	≤ 1	120	1	≤ 1	≤ 1	0.3
Dominica	14	19	6	9	23	32	3	4	12	15	≤ 1	≤ 1	5	7	≤ 1	≤ 1	18	23	≤ 1	≤ 1	2	2	≤ 1	≤ 1	0.1
Dominican Republic	10 164	143	4 515	64	16 823	237	2 160	30	7 946	91	470	5	3 529	40	165	2	10 315	118	235	3	1 353	15	148	2	9.6
Ecuador	21 309	207	9 567	93	36 275	353	4 736	46	17 101	131	191	1	7 677	59	67	≤ 1	25 598	196	95	≤ 1	3 375	26	75	≤ 1	1.8
El Salvador	5 183	101	2 319	45	8 341	163	864	17	3 624	54	117	2	1 619	24	41	≤ 1	5 035	74	59	≤ 1	595	9	37	≤ 1	5.3
Grenada	6	6	3	3	10	10	1	1	5	5	≤ 1	≤ 1	2	2	≤ 1	≤ 1	8	8	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 0.05
Guatemala	8 379	94	3 744	42	12 837	144	1 424	16	9 469	77	450	4	4 216	34	157	1	13 193	107	225	2	1 590	13	143	1	7.7
Guyana	322	44	141	19	491	67	70	10	1 050	140	89	12	463	62	31	4	1 391	185	44	6	186	25	27	4	14
Haiti	33 216	484	14 383	209	49 352	719	8 802	128	25 707	306	4 541	54	11 114	132	1 589	19	32 495	387	2 271	27	5 534	66	1 605	19	29
Honduras	5 819	120	2 602	53	9 464	194	874	18	5 451	77	341	5	2 419	34	119	2	6 836	97	171	2	827	12	95	1	10
Jamaica	197	8	88	4	320	13	31	1	197	7	12	≤ 1	87	3	4	≤ 1	243	9	6	≤ 1	28	1	3	≤ 1	10
Mexico	42 297	50	19 005	23	70 036	83	6 907	8	33 529	32	345	≤ 1	15 054	14	121	≤ 1	45 710	43	173	≤ 1	4 769	5	98	≤ 1	1.7
Montserrat	1	11	≤ 1	5	2	19	≤ 1	2	≤ 1	9	≤ 1	≤ 1	≤ 1	4	≤ 1	≤ 1	≤ 1	12	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	0.1
Netherlands Antilles	22	11	10	5	45	24	4	2	16	9	≤ 1	≤ 1	7	4	≤ 1	≤ 1	32	18	≤ 1	≤ 1	3	2	≤ 1	≤ 1	0.1
Nicaragua	5 670	143	2 549	64	7 857	198	883	22	3 390	63	35	≤ 1	1 522	28	12	≤ 1	4 314	80	18	≤ 1	467	9	9	≤ 1	1.7
Panama	1 733	72	779	32	2 814	117	218	9	1 443	45	53	2	644	20	18	≤ 1	1 420	45	26	≤ 1	106	3	5	≤ 1	6.0
Paraguay	3 128	74	1 406	33	4 951	117	569	13	4 269	71	86	1	1 912	32	30	≤ 1	6 429	107	43	≤ 1	779	13	32	≤ 1	3.3
Peru	85 649	394	38 455	177	110 464	508	8 198	38	49 174	178	1 118	4	22 016	80	391	1	59 525	216	559	2	5 899	21	246	≤ 1	3.7
Puerto Rico	773	22	347	10	1 263	36	138	4	191	5	3	≤ 1	86	2	1	≤ 1	235	6	1	≤ 1	24	≤ 1	≤ 1	≤ 1	2.5
Saint Kitts & Nevis	6	14	2	6	9	22	≤ 1	2	5	11	≤ 1	≤ 1	2	5	≤ 1	≤ 1	6	15	≤ 1	≤ 1	≤ 1	2	≤ 1	≤ 1	0.1
Saint Lucia	29	21	13	9	47	34	5	4	26	16	≤ 1	≤ 1	12	7	≤ 1	≤ 1	34	21	≤ 1	≤ 1	3	2	≤ 1	≤ 1	0.1
St Vincent & Grenadines	40	36	18	16	65	60	7	7	34	28	≤ 1	≤ 1	15	13	≤ 1	≤ 1	46	39	≤ 1	≤ 1	5	4	≤ 1	≤ 1	0.1
Suriname	413	103	184	46	671	167	83	21	290	65	23	5	128	29	8	2	436	98	11	3	60	13	9	2	13
Trinidad & Tobago	172	14	76	6	269	22	30	2	116	9	14	1	51	4	5	≤ 1	161	12	7	≤ 1	19	1	4	≤ 1	19
Turks & Caicos Islands	3	25	1	11	5	41	≤ 1	5	5	20	≤ 1	≤ 1	2	9	≤ 1	≤ 1	8	31	≤ 1	≤ 1	≤ 1	3	≤ 1	≤ 1	≤ 0.05
Uruguay	1 044	34	469	15	1 364	44	117	4	967	28	12	≤ 1	434	13	4	≤ 1	1 127	33	6	≤ 1	105	3	2	≤ 1	2.1
US Virgin Islands	18	17	8	8	29	28	3	3	12	11	≤ 1	≤ 1	5	5	≤ 1	≤ 1	19	17	≤ 1	≤ 1	2	2	≤ 1	≤ 1	0.1
USA	25 449	10	11 358	4	19 803	8	2 546	≤ 1	13 877	5	1 036	≤ 1	6 141	2	363	≤ 1	10 510	4	518	≤ 1	1 384	≤ 1	100	≤ 1	16
Venezuela	8 501	43	3 821	19	11 577	59	1 128	6	10 946	42	299	1	4 896	19	105	≤ 1	13 750	52	149	≤ 1	1 449	6	70	≤ 1	4.4
AMR	**478 248**	**66**	**213 010**	**29**	**705 521**	**97**	**70 551**	**10**	**363 246**	**41**	**22 481**	**3**	**161 213**	**18**	**7 868**	**≤ 1**	**466 232**	**53**	**11 241**	**1**	**52 240**	**6**	**5 852**	**≤ 1**	**10**

* 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			
		Country	New and relapse		New pulmonary			New extra-	Other	Re-treatment cases					New pulm.	Estimated incidence		Case detection rate		ss+	ss+	Extrapulm.	Re-treat.
	Population	total	(WHO total)		ss+		ss- / unk.	pulmonary	new	Relapse	After failure	After default	Other re-treat.	Other	lab. confirm.	all forms	ss+	new and	new ss+	(% of	(% of	(% of	(% of
	thousands	number	number	rate	number	rate	number	number	number	number	number	number	number	number	number	number	number	relapse %	%	pulm.)	new+relapse)	new+relapse)	new+re-treat.)
Anguilla	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	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		246	794	5 318	16 537	7 360	64	65	56	45	16	7
Bahamas	319	53	53	17	37	12	10	6		0	0	0	0	0	37	124	54	43	68	79	70	11	
Barbados	269	19	19	7	19	7									19	31	14	62	139	100	100		
Belize	264	83	83	31	34	13	37	2	0	10	0	0	0	0	41	128	57	65	60	48	41	2	12
Bermuda	64	6	6	9	0	0	6	0	0	0	0	0	0	0	0	3	1	214	0				
Bolivia	9 009	10 004	9 801	109	6 213	69	1 380	1 657	0	551	33	170	0	0	6 213	19 568	8 797	50	71	82	63	17	8
Brazil	183 913	91 855	86 881	47	42 881	23	26 186	11 781		6 033	159	4 815			46 120	109 672	48 216	79	89	62	49	14	12
British Virgin Islands	22	2	2	9	2	9	0	0	0	0	0	0	0	0	0	3	1	62	138	100	100		
Canada	31 958	1 572	1 517	5	428	1	391	611	2	85			20	35	761	1 663	742	91	58	52	28	40	7
Cayman Islands	44	1	1	2	1	2	0	0	0	0	0	0	0	0	1	2	1	52	115	100	100		
Chile	16 124	2 756	2 664	17	1 297	8	169	620	435	143	19	67	6		424	2 567	1 140	104	114	88	49	23	9
Colombia	44 915	11 242	11 242	25	7 640	17	1 498	1 667		437					8 156	22 357	9 989	50	76	84	68	15	4
Costa Rica	4 253	739	712	17	419	10	148	118	0	27	3	24	0	0	492	612	274	116	153	74	59	17	7
Cuba	11 245	736	782	7	454	4	172	110		46	7	7			561	1 119	503	70	90	73	58	14	8
Dominica	79															12	5						
Dominican Republic	8 768	4 820	4 549	52	2 720	31	863	581	38	347	43	228	0	0	3 103	7 946	3 529	57	77	76	60	13	13
Ecuador	13 040	6 634	6 122	47	4 340	33	777	440		565	99	275	90	198	4 340	17 101	7 677	36	57	85	71	7	16
El Salvador	6 762	1 406	1 406	21	926	14	220	184	1	75	21	39	0	0	926	3 624	1 619	39	57	81	66	13	9
Grenada	102	2	2	2	2	2									2	5	2	41	90	100	100		
Guatemala	12 295	3 370	3 313	27	2 339	19	351	233	264	126	17	40			3 370	9 469	4 216	35	55	87	71	7	5
Guyana	750	571	603	80	164	22	346	59		34	6				381	1 050	463	57	35	32	27	10	7
Haiti	8 407	14 579	14 533	173	7 044	84	5 873	1 345	0	271	0	46	0	0	7 044	25 707	11 114	57	63	55	48	9	2
Honduras	7 048	3 297	3 282	47	2 012	29	823	282	0	165	0	0	0	0	2 047	5 451	2 419	60	83	71	61	9	5
Jamaica	2 639	117	116	4	69	3	28	8	6	5	1	1			80	197	87	59	79	71	59	7	6
Mexico	105 699	18 401	15 101	14	11 214	11	807	2 345		735	64	478	2 761		11 411	33 529	15 054	45	74	93	74	16	22
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	0	0	8	16	7	68	110	80	73	9	
Nicaragua	5 376	2 220	2 220	41	1 327	25	450	327	0	116	27	107	0	0	1 470	3 390	1 522	65	87	75	60	15	11
Panama	3 175	1 691	1 691	53	882	28	518	239		52	24	78	149		891	1 443	644	117	137	63	52	14	16
Paraguay	6 017	2 236	2 300	38	1 201	20	829	203		67	7	62	172	0	1 204	4 269	1 912	54	63	59	52	9	12
Peru	27 562	34 276	33 082	120	18 289	66	5 541	4 966	883	3 403	642	552	523	332	19 172	49 174	22 016	67	83	77	55	15	15
Puerto Rico	3 932	123	123	3	65	2	44	14							117	191	86	64	76	60	53	11	
Saint Kitts & Nevis	42	2	2	5	0	0	1			1						5	2	44	0				50
Saint Lucia	159	15	15	9	11	7	1	1	0	2	0	0	0	0	12	26	12	57	93	92	73	7	13
St Vincent & Grenadines	118	15	8	7	5	4	0	2		1	0	0			7	34	15	24	33	100	63	25	13
Suriname	446	101	97	22	37	8	40	12	5	3	1	2	0	0	91	290	128	33	29	48	38	12	6
Trinidad & Tobago	1 301	177	177	14	81	6	63	16		17	3	38			160	116	51	152	159	56	46	9	27
Turks & Caicos Islands	25															5	2						
Uruguay	3 439	727	727	21	373	11	208	89	2	55					479	967	434	75	86	64	51	12	8
US Virgin Islands	112															12	5						
USA	295 410	14 517	14 517	5	5 219	2	6 325	2 970	3						11 544	13 877	6 141	105	85	45	36	20	
Venezuela	26 282	6 932	6 808	26	3 776	14	1 618	1 015	110	289	10	79	5	0	3 386	10 946	4 896	62	77	70	55	15	6
AMR	**880 036**	**247 387**	**235 187**	**27**	**126 289**	**14**	**59 509**	**33581**	**1979**	**13 829**	**1 606**	**7 108**	**3 972**	**1 359**	**139 388**	**363 246**	**161 213**	**65**	**78**	**68**	**54**	**14**	**11**

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**

	TB cases reported from DOTS services														Estimated incidence and case detection rate				Proportions			
	DOTS	New and relapse		New pulmonary			New extra-	Other	Re-treatment cases					New pulm.	Estimated incidence		Case detection rate		ss+	ss+	Extrapulm.	Re-treat.
	coverage	(WHO total)		ss+		ss- / unk.	pulmonary	new	Relapse	After failure	After default	Other re-treat.	Other	lab. confirm.	all forms	ss+	new and	new ss+	(% of	(% of	(% of	(% of
	%	number	rate	number	rate	number	number	number	number	number	number	number	number	number	number	number	relapse %	%	pulm.)	new+relapse)	new+relapse)	new+re-treat.)
Anguilla	0														3	1						
Antigua & Barbuda															5	2						
Argentina	100	10 619	28	4 760	12	3 784	1 677	230	168	420		246	794	5 318	16 537	7 360	64	65	56	45	16	7
Bahamas	100	53	17	37	12	10	6		0	0	0	0	0	37	124	54	43	68	79	70	11	
Barbados	100	19	7	19	7									19	31	14	62	139	100	100		
Belize	100	83	31	34	13	37	2	0	10	0	0	0	0	41	128	57	65	60	48	41	2	12
Bermuda	0														3	1						
Bolivia	60	9 801	109	6 213	69	1 380	1 657	0	551	33	170	0	0	6 213	19 568	8 797	50	71	82	63	17	8
Brazil	52	44 230	24	22 532	12	13 349	5 619		2 730	104	2 195			24 028	109 672	48 216	40	47	63	51	13	11
British Virgin Islands	0														3	1						
Canada	100	1 517	5	428	1	391	611	2	85			20	35	761	1 663	742	91	58	52	28	40	7
Cayman Islands	100	1	2	1	2	0	0	0	0	0	0	0	0	1	2	1	52	115	100	100		
Chile	95	2 664	17	1 297	8	169	620	435	143	19	67	6		424	2 567	1 140	104	114	88	49	23	9
Colombia	25	2 486	6	1 663	4	328	360		135					1 750	22 357	9 989	11	17	84	67	14	5
Costa Rica	100	712	17	419	10	148	118	0	27	3	24	0	0	492	612	274	116	153	74	59	17	7
Cuba	100	782	7	454	4	172	110		46	7	7			561	1 119	503	70	90	73	58	14	8
Dominica															12	5						
Dominican Republic	79	4 203	48	2 521	29	813	510	34	325	35	201	0	0	2 882	7 946	3 529	53	71	76	60	12	13
Ecuador	64	4 463	34	3 259	25	401	342		461	57	168	40	172	3 259	17 101	7 677	26	42	89	73	8	15
El Salvador	100	1 406	21	926	14	220	184	1	75	21	39	0	0	926	3 624	1 619	39	57	81	66	13	9
Grenada	0	0													5	2						
Guatemala	100	3 313	27	2 339	19	351	233	264	126	17	40			3 370	9 469	4 216	35	55	87	71	7	5
Guyana	42	395	53	123	16	179	59		34	6				381	1 050	463	38	27	41	31	15	10
Haiti	55	10 775	128	5 470	65	4 033	1 086	0	186	0	27	0	0	5 470	25 707	11 114	42	49	58	51	10	2
Honduras	100	3 282	47	2 012	29	823	282	0	165	0	0	0	0	2 047	5 451	2 419	60	83	71	61	9	5
Jamaica	100	116	4	69	3	28	8	6	5	1	1			80	197	87	59	79	71	59	7	6
Mexico	92	14 498	14	10 754	10	791	2 233		720	63	467	2 761		10 917	33 529	15 054	43	71	93	74	15	23
Montserrat	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Netherlands Antilles	0														16	7						
Nicaragua	100	2 220	41	1 327	25	450	327	0	116	27	107	0	0	1 470	3 390	1 522	65	87	75	60	15	11
Panama	92	1 651	52	859	27	504	236		52	24	75	145		868	1 443	644	114	133	63	52	14	16
Paraguay	27	529	9	409	7	74	17		29	1	14	12	0	412	4 269	1 912	12	21	85	77	3	10
Peru	100	33 082	120	18 289	66	5 541	4 966	883	3 403	642	552	523	332	19 172	49 174	22 016	67	83	77	55	15	15
Puerto Rico	100	123	3	65	2	44	14							117	191	86	64	76	60	53	11	
Saint Kitts & Nevis	100	2	5		0	1			1						5	2	44	0				50
Saint Lucia	100	15	9	11	7	1	1	0	2	0	0	0	0	12	26	12	57	93	92	73	7	13
St Vincent & Grenadines	100	8	7	5	4	0	2		1	0	0			7	34	15	24	33	100	63	25	13
Suriname	0														290	128						
Trinidad & Tobago	0	0													116	51						
Turks & Caicos Islands															5	2						
Uruguay	100	727	21	373	11	208	89	2	55					479	967	434	75	86	64	51	12	8
US Virgin Islands															12	5						
USA	100	14 517	5	5 219	2	6 325	2 970	3						11 544	13 877	6 141	105	85	45	36	20	
Venezuela	98	6 808	26	3 776	14	1 618	1 015	110	289	10	79	5	0	3 386	10 946	4 896	62	77	70	55	15	6
AMR	**83**	**175 100**	**20**	**95 663**	**11**	**42 173**	**25 354**	**1 970**	**9 940**	**1 490**	**4 233**	**3 758**	**1 333**	**106 444**	**363 246**	**161 213**	**48**	**59**	**69**	**55**	**14**	**11**

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	Institutions notifying to NTP						HIV testing for TB pts	HIV surveillance among TB pts	TB pts tested for HIV number	TB pts HIV-positive number	TB pts CPT number	TB pts ART number	Laboratory-confirmed MDR number	DST in new cases number	MDR in new cases number	Re-treatment DST number	Re-treatment MDR number
		Private hospitals or clinics	Private practitioners	Public hospitals	Prisions	Military	Insurance											
Anguilla	No		Some							0	0	0	0	0	0	0	0	0
Antigua & Barbuda																		
Argentina	Yes	No	No	All	Some	No	No	No	No					100		6		60
Bahamas	Yes	All	All	All	All			Yes	Yes	34	12	12	12	0	47	0	0	0
Barbados	No	All	All	All	All	All	All							1	19	1	0	1
Belize	Yes	All	All	All	All	All	All	Yes	Yes	88	11	4	3	1	0	0	0	0
Bermuda	Yes	All	All	All	All		No	Yes	Yes	0	0	0	0	0	0	0	0	0
Bolivia	No	No	No	All	No	Some	No	Partially	No	0				74	14	2	10	3
Brazil	Yes	All	All	All	All	All	All	Yes	Yes	45 083	8 330		8 330	325	0	0	8 439	312
British Virgin Islands		All	All	All	All		No		No	0	0	0	0	0	0	0	0	0
Canada	Yes	All	All	All	All	All	All	Yes	Yes	313	38			7	1 155	5	80	2
Cayman Islands	No	All	All	All	All			Yes	Yes	1	0	0	0	0	0	0	0	0
Chile	Yes	All	Some	All	All	All	All							56				
Colombia	Yes	All	All	All	All	All	All	No	No	0	0	0		27	0	0	23	11
Costa Rica	Yes	All	All	All	All			Yes	Yes	485	22		15	1	0	0	67	1
Cuba	Yes			All	All			Yes	Yes	807	0	0	14	4	193	2	11	2
Dominica																		
Dominican Republic	No	Some	Some	All	Some	Some	No	Partially	No			0	0					
Ecuador	Yes	Some	Some	All	Some	Some	No	Partially						62	62	62	62	62
El Salvador	Yes	All	All	All	All	All	All	Yes	Yes	1 041	98		19	5	5	5	2	2
Grenada	Yes	All	Some	All	All	No	No	Yes	Yes	0	0	0	0	0	0	0	0	
Guatemala	No	Some	No	All	No	No	No	Partially	No	548	140	95	140	51	169	46	18	5
Guyana	No	All	All	All	All	All	No	Partially	Yes	197	42			0	0	0	0	0
Haiti	Yes	All	Some	Some	No	No	No								0	0		
Honduras	No	No	No	All	All	No	No		No	2 473	113	0	0	1	0	0	0	0
Jamaica	Yes	All	All	All	All	All	No	Yes	Yes	100	40	12	3	0	70	0	3	0
Mexico	Yes	Some	Some	All	Some	All	No	Yes	No	3 779	412	0	412					
Montserrat	Yes							No	No	0				0	0	0	0	0
Netherlands Antilles	No		All	Some	All			Partially	No		0			0	11	0	0	0
Nicaragua	Yes	No	No	All	All	All	No	Yes	No	956	9	0	0	3			0	5
Panama	Yes	All	Some	All	All	All	All	Partially	Yes					3	0	0	25	7
Paraguay	No	Some	Some	All	All	Some	Some	No	No		28			8	1	0	4	2
Peru		All		All	All	All	All	Partially	No		565	452	15	1 911				
Puerto Rico	Yes	Some	Some	Some	Some	No	No	No	Yes					0	110	0	0	0
Saint Kitts & Nevis	Yes	All	All	All	All	All	All	Yes					0	0		0	0	0
Saint Lucia	No			All	All	No	No	Yes	Yes	15	0	0	0	0	0	0	0	0
St Vincent & Grenadines																		
Suriname	Yes	All	All	All	All	All	All	Yes	No	67	17	5	3	0	77	0	10	0
Trinidad & Tobago		All	Some	All	All	No	All	Yes		107	44	0	18	0	0	0	0	0
Turks & Caicos Islands																		
Uruguay	Yes	No	All	All	All	All	All	Yes	Yes	580	73			1	248	0	35	1
US Virgin Islands																		
USA	Yes	All	All	All	All	All	All	Yes	Yes	8 276	1 317			129	13 684	105	710	23
Venezuela	Yes	All	All	All	All	All	All	Partially	No	2 363	347			7				
AMR	**57**	**66**	**68**	**84**	**77**	**50**	**36**	**64**	**39**	**67 313**	**11 658**	**580**	**8 984**	**2 777**	**15 865**	**234**	**9 499**	**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 calculated 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 notif	% of cohort							%	Number of cases		% of notif	% of cohort							%	Number	% of cohort							
	Notified	Regist'd	regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Notified	Regist'd	regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success
Anguilla																							1	0	0	100	0	0	0	0	0
Antigua & Barbuda	1																														
Argentina	4 961	4 961	100	28	37	6	0	9	4	16	66												506	17	29	6	0	12	5	31	46
Bahamas	29	29	100		62	24	0	10	3	0	62																				
Barbados	0	4		100						0	100												2	100	0	0	0	0	0	0	100
Belize	62	62	100	89	0	5	0	5	2	0	89												7	57	14	0	0	29	0	0	71
Bermuda												0	0																		
Bolivia	6 344	6 344	100	78	3	3	1	6	4	6	81												786	65	5	6	3	6	3	13	70
Brazil	9 061	9 043	100	47	36	7	0	9	1	0	83	30 877	29 041	94	24	51	5	0	11	9	0	75	1 498	32	32	11	2	18	5	0	64
British Virgin Islands																															
Canada	592	731	123	5	31	6		1	1	57	35																				
Cayman Islands	0	0																					0							0	
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	7 217	810	11	66	9	7	1	10	8	0	74									
Costa Rica	332	325	98	90	3	4	1	1	1	0	94	14	84	600	44	36	1	4	12	4	0	80	49	63	14	12	2	6	0	2	78
Cuba	507	507	100	91	3	5	1	1		0	93												68	68	15	6	6	6	0	0	82
Dominica																															
Dominican Republic	2 413	1 883	78	75	7	4	2	10	3	0	81	393	386	98	63	10	5	2	14	5	0	74	534	52	7	9	4	22	6	0	59
Ecuador	2 981	1 777	60	79	6	3	3	9	2	0	84	1 507																			
El Salvador	870	870	100	86	2	4	2	6	0	0	88												106	75	0	1	4	20	0	0	75
Grenada												2	2	100	50		50				0	50									
Guatemala	1 795	1 795	100	81	10	4	1	3	1	0	91												249	60	11	8	4	15	2	0	71
Guyana	136	136	100	57		7	4	26	4	0	57	108	108	100	51		3		44	2	0	51	66	70	0	3	5	21	2	0	70
Haiti	5 345	5 346	100	69	9	5	1	6	8	2	78	1 670	1 670	100	51	15	5	1	23	4	1	67	233	60	9	6	4	12	9	0	69
Honduras	1 956	1 974	101	78	8	6	1	4	2	0	87												175	77	6	5	2	8	2	0	83
Jamaica	81	85	105	5	48	15	1	27	4	0	53												11	0	73	0	0	27	0	0	73
Mexico	12 577	10 964	87	70	13	5	1	7	3	0	83	356	267	75	56	6	4	1	8	3	22	61	1 126	29	4	4	4	11	2	45	33
Montserrat	1	1	100						100	0																					
Netherlands Antilles												4																			
Nicaragua	1 404	1 486	106	72	12	4	1	8	3	0	84												213	62	5	2	7	16	7	0	68
Panama	591	591	100	59	15	10	2	12	3	0	74	187	187	100	16	16	7	1	52	9	0	32	123	46	8	9	6	29	2	0	54
Paraguay	337	363	108	36	49	6	0	6	2	1	85	829	803	97	15	56	5	0	14	1	7	71	74	32	49	3	9	4	3	0	81
Peru	18 504	15 770	85	89	0	2	3	4	1	0	89												2 999	80	0	4	6	9	1	0	80
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												5	40	40	20	0	0	0	0	80
St Vincent & Grenadines	6																														
Suriname												35	37	106	62	11	14	0	8	0	5	73									
Trinidad & Tobago												77	77	100	68	5	21	3	4	0	0	73									
Turks & Caicos Islands												6																			
Uruguay	479	428	89	75	11	11	1	2	0	0	86												33	52	21	18	3	6	0	0	73
US Virgin Islands																															
USA	5 338	5 338	100		70	8		2	2	17	70																				
Venezuela	0	3 742		82	0	4	0	9	4	0	82	0	58		88	0	2		5	0	5	88	230	70	0	8	2	17	3	0	70
AMR	**78 804**	**77 632**	**99**	**65**	**16**	**5**	**1**	**6**	**3**	**3**	**82**	**43 282**	**33 530**	**77**	**28**	**46**	**5**	**0**	**12**	**8**	**0**	**74**	**9 094**	**56**	**10**	**6**	**4**	**13**	**3**	**8**	**66**

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases regist'd, 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 downlaoded from www.who.int/tb

Table A2.6 **Re-treatment outcomes, 2003 cohort**

	Relapse, DOTS									After failure, DOTS									After default, DOTS								
		% of cohort							%		% of cohort							%		% of cohort							%
	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success
Anguilla	1			100				0																			
Antigua & Barbuda																											
Argentina	102	19	49	8	0	15	3	7	68	404	16	24	5	0	12	6	37	41									
Bahamas																											
Barbados	1	100						0	100										1	100						0	100
Belize	7	57	14	0	0	29	0	0	71	0									0								
Bermuda																											
Bolivia																											
Brazil	819	38	32	12	1	12	5	0	70	96	13	39	7	20	13	9	0	51	583	27	30	10	1	29	4	0	57
British Virgin Islands																											
Canada																											
Cayman Islands	0	0	0	0	0	0	0		0	0									0								
Chile																											
Colombia																											
Costa Rica	27	70	7	11	4	7		0	78	6	50	33					17	83	16	56	19	19	0	6	0	0	75
Cuba	57	70	18	5	4	4		0	88	3	33			33	33		0	33	8	63		13	13	13		0	63
Dominica																											
Dominican Republic	325	57	8	11	3	15	5	0	65	42	48	2	5	21	19	5	0	50	167	44	6	7	1	35	7	0	50
Ecuador																											
El Salvador	84	79			4	18		0	79	8	75			13	13		0	75	14	57		7		36		0	57
Grenada																											
Guatemala	249	60	11	8	4	15	2	0	71																		
Guyana	27	74		4	11	11		0	74	5	60		20			20	0	60	34	68				32		0	68
Haiti	182	60	10	5	4	12	8	1	70	0									51	61	2	8	6	12	12	0	63
Honduras	175	77	6	5	2	8	2	0	83																		
Jamaica	1		100					0	100	4		100					0	100	6		50			50		0	50
Mexico	763	24	3	3	2	4	2	62	27	22	23	5	5	32	14	5	18	27	341	43	5	7	6	28	2	9	48
Montserrat																											
Netherlands Antilles																											
Nicaragua	115	76	5	0	6	9	4	0	81	14	36	0	29	14	21	0	0	36	84	49	6	1	7	26	11	0	55
Panama	51	63	12	10	2	12	2	0	75	13	23	15		46	15		0	38	59	36	3	10		47	3	0	39
Paraguay																											
Peru	2 618	82	0	4	6	7	1	0	82										381	64	0	4	4	25	1	0	64
Puerto Rico																											
Saint Kitts & Nevis																											
Saint Lucia	5	40	40	20	0	0	0	0	80	0									0								
St Vincent & Grenadines																											
Suriname																											
Trinidad & Tobago																											
Turks & Caicos Islands																											
Uruguay	33	52	21	18	3	6	0	0	73																		
US Virgin Islands																											
USA																											
Venezuela	230	70		8	2	17	3	0	70																		
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**	**56**

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases regist'd, 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					50	50	100	100	100						41	124	41	83	42	
Argentina					55	59	54	64	58	66			4	7	20	30	38	71	66	65
Bahamas					72	66		64	59	62					62	95		57	52	68
Barbados										100							40	34		139
Belize						88	78	66	85	89		97	66			84	99	131	112	60
Bermuda																				
Bolivia	66	62	71	77	62	74	79	82	84	81	39	78	73	76	75	73	75	77	72	71
Brazil					91	89	73	67	75	83				4	4	8	8	10	18	47
British Virgin Islands																				
Canada					35	79	80	67	81	35					46	61	62	57	78	58
Cayman Islands								100									118			115
Chile	83	79	80	77	83	83	82	83	86	85	71	76	83	88	90	84	95	106	104	114
Colombia					74	82	80	85	84	83					29	84		8	8	17
Costa Rica						81	76	72	85	94					31	121	88	77	119	153
Cuba	86	90	92	90	94	91	93	93	92	93	82	89	88	93	96	98	88	92	93	90
Dominica			100					100					84	51				36		
Dominican Republic						81	79	85	78	81					9	6	9	42	67	71
Ecuador								82	84	84							5	31	38	42
El Salvador					77	78	79	88	88	88			45	52	55	56	57	57	52	57
Grenada																				
Guatemala	62	61	81	73	79	81	86	85	84	91	42	57	56	56	56	51	41	45	43	55
Guyana						91	91	90	85	57						10	20	10	32	27
Haiti				73	79	70	73	75	78	78			2	12	24	22	30	41	47	49
Honduras					93	88	89	86	87	87				2	15	63	108	120	80	83
Jamaica		67	72	79	89	74	45	78	49	53		91	94	90	101	101	85	68	92	79
Mexico			75	65	78	80	76	83	84	83			15	29	39	68	91	71	82	71
Montserrat																			639	
Netherlands Antilles																				
Nicaragua	81	80	79	81	82	81	82	83	82	84	73	83	84	86	85	83	88	80	89	87
Panama				51	51	80	67	65	73	74				13	8	35	80	94	90	133
Paraguay	46	51					77	86	92	85	14	55				4	8	8	18	21
Peru	81	83	89	90	92	93	90	90	92	89	101	88	94	98	90	87	87	86	81	83
Puerto Rico		65	68	68	68	77	72	80	62	66		57	72	67	75	64	61	72	65	76
Saint Kitts & Nevis					25	50								186	94			49		
Saint Lucia				67	82	89	100	50	25	89			111	80	73	57	50	67	67	93
St Vincent & Grenadines				86		100	100	80						18		57	19		39	33
Suriname																				
Trinidad & Tobago																				
Turks & Caicos Islands					71										113					
Uruguay	83	68	80	77	84	83	85	85	82	86	77	94	94	83	88	78	77	70	85	86
US Virgin Islands		50										73								
USA		76	79	79	81	82	83	83	83	70	88	85	83	83	82	80	81	81	83	85
Venezuela	68	74	80	72	81	82	76	80	82	82	72	74	74	77	81	77	67	64		77
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 A2.8 **New smear-positive case notification by age and sex, absolute numbers, DOTS and non-DOTS, 2004**

	Male							Female							All							Male/female
	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+	ratio
Anguilla	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Antigua & Barbuda																						
Argentina	64	588	543	399	387	332	345	98	519	477	271	237	169	237	162	1 107	1 020	670	624	501	582	1.3
Bahamas	3	3	6	14	9	0	1	0	3	4	1	0	3	0	3	6	10	15	9	3	1	3.3
Barbados			2	2	6		4	1		2	1	1		1	1		4	3	7		5	2.3
Belize	0	4	6	8	6	3	2	1	0	1	1	2	0	0	1	4	7	9	8	3	2	5.8
Bermuda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bolivia	161	1 205	750	505	431	319	399	151	793	555	272	205	186	281	312	1 998	1 305	777	636	505	680	1.5
Brazil	337	5 041	6 321	6 481	5 157	2 716	2 169	375	3 684	3 763	2 742	1 865	1 041	1 189	712	8 725	10 084	9 223	7 022	3 757	3 358	1.9
British Virgin Islands					1					1							1		1			1.0
Canada	0	22	36	33	30	31	62	0	36	51	33	21	23	50	0	58	87	66	51	54	112	1.0
Cayman Islands	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	
Chile	3	87	148	179	187	124	168	5	58	74	76	57	57	74	8	145	222	255	244	181	242	2.2
Colombia	208	732	824	743	725	564	737	205	624	647	513	361	331	426	413	1 356	1 471	1 256	1 086	895	1 163	1.5
Costa Rica	1	49	62	45	36	29	43	5	35	29	34	11	18	22	6	84	91	79	47	47	65	1.7
Cuba	0	17	68	95	63	45	50	0	16	20	15	16	20	29	0	33	88	110	79	65	79	2.9
Dominica																						
Dominican Republic	45	391	502	363	180	122	104	39	301	288	177	104	60	44	84	692	790	540	284	182	148	1.7
Ecuador	84	732	537	563	265	315	153	108	522	342	268	170	161	120	192	1 254	879	831	435	476	273	1.6
El Salvador	5	92	121	90	84	77	91	15	64	73	55	44	48	67	20	156	194	145	128	125	158	1.5
Grenada														1							1	
Guatemala	43	282	291	209	210	144	129	31	278	201	227	144	72	78	74	560	492	436	354	216	207	1.3
Guyana	9	45	113	97	87		4	15	35	38	29	23		15	24	80	151	126	110		19	2.3
Haiti	94	918	964	606	376	207	176	137	1 146	1 045	688	386	176	125	231	2 064	2 009	1 294	762	383	301	0.9
Honduras	54	20	379	259	247	189	18	40	13	218	211	220	121	23	94	33	597	470	467	310	41	1.4
Jamaica	0	9	7	4	13	8	10	0	4	6	4	1	2	1	0	13	13	8	14	10	11	2.8
Mexico	86	1 053	1 276	1 181	1 201	958	1 209	102	760	649	693	695	626	725	188	1 813	1 925	1 874	1 896	1 584	1 934	1.6
Montserrat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Netherlands Antilles	1	1	0	4	3	0	1	0	0		1	0	0	0	1	1	0	5	3	0	1	10.0
Nicaragua	24	161	179	105	104	87	72	23	159	154	90	75	44	50	47	320	333	195	179	131	122	1.2
Panama	19	89	123	121	91	68	50	11	96	65	53	33	31	32	30	185	188	174	124	99	82	1.7
Paraguay	18	160	132	120	107	103	121	21	106	87	69	63	50	43	39	266	219	189	170	153	164	1.7
Peru	385	3 860	2 085	1 357	894	747	675	410	3 258	1 935	1 094	678	440	471	795	7 118	4 020	2 451	1 572	1 187	1 146	1.2
Puerto Rico	0	2	7	8	8	11	7	0	3	2	4	6	2	5	0	5	9	12	14	13	12	2.0
Saint Kitts & Nevis																						
Saint Lucia	0	0	0	1	2	2	2	0	2	3	0	0	0	3	0	2	3	1	2	2	5	0.9
St Vincent & Grenadines																						
Suriname	0	3	8	8	4	2	3	0	4	2	1	3	0	0	0	7	10	9	7	2	3	2.8
Trinidad & Tobago		3	10	24	7	10	7	2	3	8	1	5	1		2	6	18	25	12	11	7	3.1
Turks & Caicos Islands																						
Uruguay	1	38	59	53	48	26	40	2	34	25	12	17	11	7	3	72	84	65	65	37	47	2.5
US Virgin Islands																						
USA	13	356	548	714	825	504	577	20	265	338	303	249	165	342	33	621	886	1 017	1 074	669	919	2.1
Venezuela	24	373	454	459	407	272	316	36	311	324	239	184	135	242	60	684	778	698	591	407	558	1.6
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**

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+
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			9	8	32		40	4		9	4	5		6	2		9	6	19		18
Belize	0	14	29	57	65	57	36	2	0	5	7	23	0	0	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	165	201	277		24	13	47	54	52	61		67	11	53	108	121	159		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	58	94	87	16	3	2	56	64	100	114	15
Jamaica	0	3	3	2	12	11	12	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	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	80
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	1	2	8	1	6	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	2	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	0	1	0	0	0	0	0	0	0			2		0				0	0	0	0
Antigua & Barbuda	8	3	0	1	3	2	7	0	3	3	1	0	6			0	3	4	4	3	4	1	4	1	
Argentina	16 406	16 693	17 292	17 305	16 359	15 987	14 681	13 368	13 267	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
Bahamas	70	67	54	58	53	63	52	43	51	52	46	53	63	60	78	57	59	88	75	76	82		44	38	53
Barbados	64	3	30	17	14	12	7	3	4	5	5	5	6			3	3	5	7	2	3	6	5		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
Bermuda	1	2	5	10	3	3	6	2	1	2	0	3	4			4	0	4	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	9 836	9 801
Brazil	72 608	86 411	87 822	86 617	88 365	84 310	83 731	81 826	82 395	80 048	74 570	84 990	85 955		75 759	91 013	87 254	83 309	95 009	78 870	77 899	74 466	81 436	80 114	86 881
British Virgin Islands																		3			1	1	1	1	2
Canada	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
Cayman Islands	0	2	0	1	1	4	1	0	0	2	2	3	3	2		2	0	0	3	2	5	1	0	0	1
Chile	8 523	7 337	6 941	6 989	6 561	6 644	6 854	6 280	6 324	6 728	6 151	5 498	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
Colombia	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	10 999	11 630	11 480	11 376	11 640	11 242
Costa Rica	396	521	459	479	393	376	418	434	442	311	230	201	118	313	325	586	636	692	730	851	585	630	543	527	712
Cuba	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
Dominica	20	26	18	16	5	8	35	27	7	13	6	14	13	7	12	8	10	6	5				2		
Dominican Republic	2 174	1 778	2 457	2 959	3 100	2 335	2 634	2 459	3 081	3 145	2 597	1 837	3 490	4 033	4 337	4 053	6 302	5 381	5 114	5 767	5 291	4 766	4 040	4 696	4 549
Ecuador	3 950	3 966	3 880	3 985	4 301	4 798	5 687	5 867	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
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	1 686	1 662	1 700	1 623	1 485	1 458	1 550	1 383	1 406
Grenada	17	1	1	6	4	2	1	2	0	4	0	1	3	0	3	4	0	2	2	5	0		1	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
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
Haiti	8 306	6 550	3 337	6 839	5 803	4 959	8 583	8 514	8 054	8 100		10 237				6 212	6 632	10 116	9 770	9 124	10 420	10 224	12 066	14 004	14 533
Honduras	1 674	1 696	1 714	1 935	2 120	3 377	4 213	4 227	3 962	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
Jamaica	176	178	153	157	160	130	88	133	65	86	123	121	111	115	109	109	121	118	121	115	127	121	106	120	116
Mexico	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
Montserrat	1	0	0	1	7	9	5	13	6	5	1	1	0		0				1	2	0	0	0	1	0
Netherlands Antilles																	5	14	7	4	5	9	15	9	11
Nicaragua	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
Panama	643	580	580	429	413	614	709	765	770	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
Paraguay	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	2 107	2 175	2 300
Peru	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
Puerto Rico	686	521	473	452	418	338	363	303	275	314	159	241		257	274	263	110	257	201	200	174	121	129	115	123
Saint Kitts & Nevis	7	4	6	2	3	0	0	0	0	0	0	1	4	6	2	5	3	12	5	3	0	2	3	1	2
Saint Lucia	41	39	37	48	55	21	34	25	32	28	13	25	26		24	11	35	22	20	16	9	15	17	14	15
St Vincent & Grenadines	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
Suriname	78	81	56	78	76	50	60	77	77	70	82	47	58	45	53		53	76	85	95	89	75	97	95	97
Trinidad & Tobago	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
Turks & Caicos Islands	2	0	2	5	0	4	2	12			0	0	0	0						17		3	3	6	
Uruguay	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
US Virgin Islands	0	1	1	2	3	1	1	2	6	4	4	4			10	4	8								
USA	27 749	27 373	25 520	23 846	22 255	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
Venezuela	4 233	4 093	4 159	4 266	4 737	4 822	4 974	4 954	4 557	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
AMR	**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**	**229 836**	**233 727**	**227 583**	**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	43	40	40
% reporting	95	95	95	95	95	95	95	95	93	93	93	95	89	75	80	89	91	93	91	91	91	91	98	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			19		0				0	0	0	0
Antigua & Barbuda	13	5	0	2	5	3	11	0	5	5	2	0	9			0	4	6	5	4	5	1	5	1	
Argentina	58	59	60	59	55	53	48	43	42	39	38	37	38	41	40	39	38	35	34	33	32	31	31	28	28
Bahamas	33	31	25	26	23	27	22	18	21	21	18	20	24	22	28	20	21	31	26	26	27		14	12	17
Barbados	26	1	12	7	6	5	3	1	2	2	2	2	2			1	1	2	3	1	1	2	2		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
Bermuda	2	4	9	18	5	5	10	3	2	3	0	5	7			7	0	6	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	121	122	124	118	111	109
Brazil	60	69	69	66	66	62	60	58	57	55	50	56	56		48	56	53	50	56	46	45	42	46	44	47
British Virgin Islands																		16			5	5	5	5	9
Canada	12	10	10	9	9	8	8	7	7	7	7	7	7	7	7	7	6	7	6	6	6	5	5	5	5
Cayman Islands	0	11	0	5	5	19	5	0	0	8	8	11	10	7		6	0	0	8	5	13	2	0	0	2
Chile	76	65	60	60	55	55	56	50	50	52	47	41	39	33	29	29	29	26	24	23	20	19	16	14	17
Colombia	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
Costa Rica	17	22	18	19	15	14	15	15	15	10	7	6	4	9	10	17	18	19	19	22	15	16	13	13	17
Cuba	12	9	8	8	7	7	6	6	6	6	5	5	4	7	16	14	13	12	11	10	11	8	8	7	7
Dominica	27	35	24	22	7	11	48	37	10	18	8	19	18	10	16	11	13	8	6				3		
Dominican Republic	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
Ecuador	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
El Salvador	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
Grenada	19	1	1	7	4	2	1	2	0	4	0	1	3	0	3	4	0	2	2	5	0		1	2	2
Guatemala	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
Guyana	16	15	18	20	22	29	25	16	20	16	23	18	25	12	36	40	43	55	43	55	57	57	79	84	80
Haiti	152	117	58	117	97	81	137	132	122	120		147				84	88	133	127	117	131	127	148	169	173
Honduras	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
Jamaica	8	8	7	7	7	6	4	6	3	4	5	5	5	5	4	4	5	5	5	4	5	5	4	5	4
Mexico	46	47	35	31	20	20	17	18	19	19	17	18	16	17	18	12	22	25	22	20	18	19	17	16	14
Montserrat	8	0	0	9	61	80	45	118	55	46	9	9	0		0				16	41	0	0	0	26	0
Netherlands Antilles																	3	8	4	2	3	5	8	5	6
Nicaragua	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
Panama	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
Paraguay	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
Peru	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
Puerto Rico	21	16	14	14	12	10	11	9	8	9	5	7		7	7	7	3	7	5	5	5	3	3	3	3
Saint Kitts & Nevis	16	9	14	5	7	0	0	0	0	0	0	2	10	15	5	12	7	30	12	7	0	5	7	2	5
Saint Lucia	35	33	30	39	44	17	26	19	24	21	9	18	18		16	7	23	15	13	10	6	10	11	9	9
St Vincent & Grenadines	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
Suriname	22	23	15	21	20	13	15	20	19	18	20	12	14	11	13		13	18	20	22	21	17	22	21	22
Trinidad & Tobago	7	7	6	10	9	10	10	10	9	10	10	12	12	9	10	13	16	20	16	12	15	16	10	11	14
Turks & Caicos Islands	27	0	24	58	0	42	20	117			0	0	0	0						93		14	14	25	
Uruguay	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
US Virgin Islands	0	1	1	2	3	1	1	2	6	4	4	4			9	4	7								
USA	12	12	11	10	9	9	9	9	9	9	10	10	10	10	9	8	8	7	7	6	6	6	5	5	5
Venezuela	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
AMR	**37**	**40**	**37**	**37**	**34**	**34**	**33**	**34**	**34**	**34**	**32**	**34**	**34**	**22**	**31**	**33**	**32**	**32**	**32**	**29**	**28**	**27**	**27**	**26**	**27**

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
Anguilla			0		0				0	0		0			0		0				0	0		0
Antigua & Barbuda				2			1	3	1	2	1					3			1	4	1	3	1	
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	15	13	12
Bahamas	41	41	38	25	57	30	37	56		32	29	37	15	15	14	9	20	10	12	19		10	9	12
Barbados			3	3	5	4	2	3	6	5		19			1	1	2	2	1	1	2	2		7
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			2	0		0	0	0	0	0		0			3	0		0	0	0	0	0		0
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		25	28	27	26	26	24	24	22	23	22	23
British Virgin Islands					0			1	0	1	0	2					0			5	0	5	0	9
Canada	542		404	156	487	471	395	506	502	445	592	428	2		1	1	2	2	1	2	2	1	2	1
Cayman Islands	2		0	0	0	2	2	5	1	0	0	1	7		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		230	245	302	320	353	458	349	385	328	346	419		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				2			8	11	7	9	7	6				3		
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	6 426	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		965	882	1 071	1 023	1 008	1 003	980	870	926	46	39		17	15	18	17	16	16	15	13	14
Grenada	0	3	2	0	1	2	3	0		0	2	2	0	3	2	0	1	2	3	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	14	12	24	16	23	18	33	22
Haiti				3 524	5 497	6 442	6 828	5 887	5 607	6 188	7 015	7 044				47	72	84	87	74	70	76	85	84
Honduras	2 016	2 385	2 306	1 808	1 928	2 311	2 415	2 415	2 839	2 956	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	3	3	2	3	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				1	2	0	0	0	1	0		0				16	41	0	0	0	26	0
Netherlands Antilles				3	5	6	2	2	7	9	4	8				2	3	3	1	1	4	5	2	4
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	904	592	1 393	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	3		3	3	3	3	3	2	2	2	2	2
Saint Kitts & Nevis	2	2	4	2		4	2	0	0	1		0	5	5	10	5		10	5	0	0	2		0
Saint Lucia		17	11	22	14	10	9	7	6	8	8	11		12	7	15	9	7	6	5	4	5	5	7
St Vincent & Grenadines	11	0	5	3	2	3	4	9	3	0	6	5	10	0	4	3	2	3	3	8	3	0	5	4
Suriname				39	31	32	36	37	36	42	35	37				9	7	8	8	9	8	10	8	8
Trinidad & Tobago		55	7	58	52	82	87	115	152	60	77	81		4	1	5	4	6	7	9	12	5	6	6
Turks & Caicos Islands							2		1	2	6								11		5	9	25	
Uruguay	388	381	349	426	423	374	392	348	340	308	373	373	12	12	11	13	13	11	12	10	10	9	11	11
US Virgin Islands			2	5											2	5								
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	3 882	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 infomation; 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 A2.1 **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*		All forms*		All forms*		All forms HIV+		Smear-positive*		Smear-positive HIV+		All forms*		All forms HIV+		All forms*		All forms HIV+		
	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	
Afghanistan	48 688	333	21 909	150	120 662	826	15 731	108	95 248	333	3	≤ 1	42 861	150	≤ 1	≤ 1	188 840	661	1	≤ 1	26 217	92	1	≤ 1	≤ 0.05
Bahrain	336	68	151	31	531	108	39	8	314	44	2	≤ 1	141	20	≤ 1	≤ 1	356	50	≤ 1	≤ 1	31	4	≤ 1	≤ 1	0.9
Djibouti	3 394	608	1 511	271	8 667	1 553	727	130	5 716	734	460	59	2 526	324	161	21	8 858	1 137	230	30	939	121	128	16	12
Egypt	23 558	42	10 600	19	29 749	53	2 344	4	19 780	27	38	≤ 1	8 897	12	13	≤ 1	25 364	35	19	≤ 1	2 299	3	8	≤ 1	0.3
Iran	24 603	43	11 071	20	32 326	57	2 408	4	18 655	27	95	≤ 1	8 385	12	33	≤ 1	24 256	35	48	≤ 1	2 174	3	21	≤ 1	0.8
Iraq	25 042	135	11 268	61	41 319	223	5 735	31	37 113	132	12	≤ 1	16 700	60	4	≤ 1	55 976	200	6	≤ 1	7 807	28	5	≤ 1	0.1
Jordan	389	12	175	5	389	12	28	≤ 1	257	5	≤ 1	≤ 1	116	2	≤ 1	≤ 1	275	5	≤ 1	≤ 1	26	≤ 1	≤ 1	≤ 1	0.1
Kuwait	854	40	384	18	1 708	80	99	5	668	26	3	≤ 1	300	12	1	≤ 1	777	30	1	≤ 1	75	3	≤ 1	≤ 1	0.7
Lebanon	1 115	41	502	18	1 256	46	111	4	398	11	2	≤ 1	179	5	≤ 1	≤ 1	422	12	≤ 1	≤ 1	40	1	≤ 1	≤ 1	0.8
Libyan Arab Jamahiriya	1 351	31	607	14	2 056	47	226	5	1 151	20	10	≤ 1	517	9	3	≤ 1	1 146	20	5	≤ 1	84	1	≤ 1	≤ 1	1.4
Morocco	33 319	135	14 988	61	28 816	117	3 003	12	34 176	110	102	≤ 1	15 369	50	36	≤ 1	32 640	105	51	≤ 1	3 086	10	15	≤ 1	0.5
Oman	287	16	129	7	444	24	25	1	289	11	1	≤ 1	130	5	≤ 1	≤ 1	315	12	≤ 1	≤ 1	25	≤ 1	≤ 1	≤ 1	0.7
Pakistan	202 477	181	91 070	82	480 605	430	55 017	49	280 597	181	1 131	≤ 1	126 155	81	396	≤ 1	508 754	329	566	≤ 1	62 645	40	457	≤ 1	0.6
Qatar	301	64	135	29	348	74	30	6	464	60	1	≤ 1	209	27	≤ 1	≤ 1	595	77	≤ 1	≤ 1	54	7	≤ 1	≤ 1	0.4
Saudi Arabia	8 919	54	4 013	25	14 069	86	1 035	6	9 471	40	4	≤ 1	4 262	18	1	≤ 1	13 267	55	2	≤ 1	1 099	5	≤ 1	≤ 1	0.1
Somalia	22 746	341	10 123	152	53 929	808	7 964	119	32 743	411	1 304	16	14 604	183	457	6	53 576	673	652	8	9 557	120	689	9	6.2
Sudan	47 466	182	21 234	81	115 395	443	16 036	62	78 030	220	6 558	18	34 458	97	2 295	6	131 543	370	3 279	9	22 479	63	3 240	9	13
Syrian Arab Republic	8 920	69	4 014	31	13 826	108	961	7	7 577	41	3	≤ 1	3 409	18	≤ 1	≤ 1	9 449	51	1	≤ 1	817	4	≤ 1	≤ 1	0.1
Tunisia	2 721	33	1 224	15	4 225	51	241	3	2 197	22	2	≤ 1	989	10	≤ 1	≤ 1	2 396	24	≤ 1	≤ 1	209	2	≤ 1	≤ 1	0.1
United Arab Emirates	497	27	224	12	784	42	58	3	734	17	3	≤ 1	330	8	1	≤ 1	1 108	26	2	≤ 1	86	2	≤ 1	≤ 1	0.7
West Bank and Gaza Strip	776	36	349	16	1 224	57	138	6	831	23	≤ 1	≤ 1	374	10	≤ 1	≤ 1	1 300	36	≤ 1	≤ 1	147	4	≤ 1	≤ 1	≤ 0.05
Yemen	16 740	139	7 529	62	33 480	277	2 235	18	18 120	89	78	≤ 1	8 146	40	27	≤ 1	29 222	144	39	≤ 1	2 298	11	18	≤ 1	0.7
EMR	**474 499**	**124**	**213 212**	**56**	**985 810**	**257**	**114 191**	**30**	**644 531**	**122**	**9 814**	**2**	**289 058**	**55**	**3 435**	**≤ 1**	**1 090 434**	**206**	**4 907**	**≤ 1**	**142 193**	**27**	**4 588**	**≤ 1**	**2.4**

* 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 A2.2 **Whole country case notifications and case detection rates, 2004**

	TB cases notified from whole country (DOTS + non-DOTS)															Incidence and case detection rates				Proportions			
		Country	New and relapse		New pulmonary			New extra-	Other	Re-treatment cases					New pulm.	Estimated incidence		Case detection rate		ss+	ss+	Extrapulm.	Re-treat.
	Population	total	(WHO total)		ss+		ss- / unk.	pulmonary	new	Relapse	After failure	After default	Other re-treat.	Other	lab. confirm.	all forms	ss+	new and	new ss+	(% of	(% of	(% of	(% of
	thousands	number	number	rate	number	rate	number	number	number	number	number	number	number	number	number	number	number	relapse %	%	pulm.)	new+relapse)	new+relapse)	new+re-treat.)
Afghanistan	28 574	18 404	18 404	64	8 273	29	5 437	3 800		894					8 273	95 248	42 861	19	19	60	45	21	5
Bahrain	716	244	244	34	69	10	58	117	0	0	0	0	0	0	222	314	141	78	49	54	28	48	
Djibouti	779	3 082	2 940	377	1 086	139	763	924	0	167	42	30	0	0	1 086	5 716	2 526	51	43	59	37	31	8
Egypt	72 642	11 935	11 620	16	5 383	7	2 339	3 308		590	156	159			5 383	19 780	8 897	59	61	70	46	28	8
Iran	68 803		10 191	15	4 897	7	2 155	2 827		312	125				10 191	18 655	8 385	55	58	69	48	28	4
Iraq	28 057	10 498	10 498	37	3 381	12	3 153	3 107		857	0	0			3 381	37 113	16 700	28	20	52	32	30	8
Jordan	5 561	335	324	6	91	2	55	176	0	2	3	3	5	0	112	257	116	126	79	62	28	54	4
Kuwait	2 606	558	558	21	248	10	65	242	0	3				0	248	668	300	84	83	79	44	43	1
Lebanon	3 540	393	393	11	146	4	85	155	0	7	0	0	0	0	146	398	179	99	82	63	37	39	2
Libyan Arab Jamahiriya	5 740	1 652	1 653	29	872	15		780		1	1	2			872	1 151	517	144	169	100	53	47	0
Morocco	31 020	26 132	25 909	84	12 280	40	1 990	11 639							12 530	34 176	15 369	76	80	86	47	45	
Oman	2 534	285	292	12	160	6	39	86	0	7	0	0	0	0	160	289	130	101	123	80	55	29	2
Pakistan	154 794	104 842	101 562	66	33 746	22	50 311	15 476	0	2 029	0	3 280	0	0	33 746	280 597	126 155	36	27	40	33	15	5
Qatar	777	272	272	35	73	9	58	141	0	0	0	0	0	0	131	464	209	59	35	56	27	52	
Saudi Arabia	23 950	3 441	3 341	14	1 692	7	587	933	0	129				0	1 692	9 471	4 262	35	40	74	51	28	4
Somalia	7 964	11 776	11 747	147	6 479	81	3 005	1 822	0	441	19	10			6 479	32 743	14 604	36	44	68	55	16	4
Sudan	35 523	26 603	26 567	75	12 095	34	8 205	4 603	0	1 664	12	24	0	0	12 095	78 030	34 458	34	35	60	46	17	6
Syrian Arab Republic	18 582	4 708	4 588	25	1 561	8	819	2 125	0	83	50	27	43	0	1 561	7 577	3 409	61	46	66	34	46	4
Tunisia	9 995	1 998	1 998	20	944	9	227	779	0	48					944	2 197	989	91	95	81	47	39	2
United Arab Emirates	4 284	92	92	2	57	1	5	26		4					57	734	330	13	17	92	62	28	4
West Bank and Gaza Strip	3 587	24	23	1	4	0	19					1			8	831	374	3	1	17	17		4
Yemen	20 329	10 016	10 016	49	3 434	17	3 473	2 732	0	377					3 434	18 120	8 146	55	42	50	34	27	4
EMR	**530 359**	**237 290**	**243 232**	**46**	**96 971**	**18**	**82 848**	**55798**	**0**	**7 615**	**408**	**3 536**	**48**		**102 751**	**644 531**	**289 058**	**38**	**34**	**54**	**40**	**23**	**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 A2.3 **DOTS coverage, case notifications and case detection rates, 2004**

	TB cases reported from DOTS services														Estimated incidence and case detection rate				Proportions			
	DOTS	New and relapse		New pulmonary		New extra-	Other	Re-treatment cases						New pulm.	Estimated incidence		Case detection rate		ss+	ss+	Extrapulm.	Re-treat.
	coverage	(WHO total)		ss+		ss- / unk.	pulmonary	new	Relapse	After failure	After default	Other re-treat.	Other	lab. confirm.	all forms	ss+	new and	new ss+	(% of	(% of	(% of	(% of
	%	number	rate	number	rate	number	number	number	number	number	number	number	number	number	number	number	relapse %	%	pulm.)	new+relapse)	new+relapse)	new+re-treat.)
Afghanistan	68	18 404	64	8 273	29	5 437	3 800		894					8 273	95 248	42 861	19	19	60	45	21	5
Bahrain	100	244	34	69	10	58	117	0	0	0	0	0	0	222	314	141	78	49	54	28	48	
Djibouti	100	2 940	377	1 086	139	763	924	0	167	42	30	0	0	1 086	5 716	2 526	51	43	59	37	31	8
Egypt	100	11 620	16	5 383	7	2 339	3 308		590	156	159			5 383	19 780	8 897	59	61	70	46	28	8
Iran	100	10 191	15	4 897	7	2 155	2 827		312	125				10 191	18 655	8 385	55	58	69	48	28	4
Iraq	100	10 498	37	3 381	12	3 153	3 107		857	0	0			3 381	37 113	16 700	28	20	52	32	30	8
Jordan	100	324	6	91	2	55	176	0	2	3	3	5	0	112	257	116	126	79	62	28	54	4
Kuwait	100	558	21	248	10	65	242	0	3				0	248	668	300	84	83	79	44	43	1
Lebanon	100	393	11	146	4	85	155	0	7	0	0	0	0	146	398	179	99	82	63	37	39	2
Libyan Arab Jamahiriya	100	1 653	29	872	15		780		1	1	2			872	1 151	517	144	169	100	53	47	0
Morocco	100	25 909	84	12 280	40	1 990	11 639							12 530	34 176	15 369	76	80	86	47	45	
Oman	100	292	12	160	6	39	86	0	7	0	0	0	0	160	289	130	101	123	80	55	29	2
Pakistan	79	101 562	66	33 746	22	50 311	15 476	0	2 029	0	3 280	0	0	33 746	280 597	126 155	36	27	40	33	15	5
Qatar	100	272	35	73	9	58	141	0	0	0	0	0	0	131	464	209	59	35	56	27	52	
Saudi Arabia	100	3 341	14	1 692	7	587	933	0	129				0	1 692	9 471	4 262	35	40	74	51	28	4
Somalia	100	11 747	147	6 479	81	3 005	1 822	0	441	19	10			6 479	32 743	14 604	36	44	68	55	16	4
Sudan	82	26 567	75	12 095	34	8 205	4 603	0	1 664	12	24	0	0	12 095	78 030	34 458	34	35	60	46	17	6
Syrian Arab Republic	100	4 588	25	1 561	8	819	2 125	0	83	50	27	43	0	1 561	7 577	3 409	61	46	66	34	46	4
Tunisia	100	1 998	20	944	9	227	779	0	48					944	2 197	989	91	95	81	47	39	2
United Arab Emirates	20	92	2	57	1	5	26		4					57	734	330	13	17	92	62	28	4
West Bank and Gaza Strip	100	23	1	4	0	19					1			8	831	374	3	1	17	17		4
Yemen	98	6 930	34	3 239	16	1 756	1 561	0	374					3 239	18 120	8 146	38	40	65	47	23	5
EMR	**90**	**240 146**	**45**	**96 776**	**18**	**81 131**	**54 627**	**0**	**7 612**	**408**	**3 536**	**48**	**0**	**102 556**	**644 531**	**289 058**	**37**	**33**	**54**	**40**	**23**	**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							Collaborative TB/HIV activities, 2003 or 2004						Multidrug-resistant TB, 2004				
	Guidelines	Institutions notifying to NTP						HIV	HIV	TB pts								
	for other practitioners	Private hospitals or clinics	Private practitioners	Public hospitals	Prisions	Military	Insurance	testing for TB pts	surveillance among TB pts	tested for HIV number	TB pts HIV-positive number	TB pts CPT number	TB pts ART number	Laboratory-confirmed MDR number	DST in new cases number	MDR in new cases number	Re-treatment DST number	Re-treatment MDR number
Afghanistan	No	No	No	Some	Some	Some	No	No	No	0								
Bahrain	Yes	All	All	All	All	All	All	Yes	Yes		3	0	0	0		0	0	
Djibouti	No	No	All	All	No	Some	No	Yes	No	0				51	0	0	0	0
Egypt	No	No	No	No	All	No	All											
Iran	Yes	Some	Some	All	All	Some	Some	No	No	1 480	94	13	7					
Iraq	Yes	No	Some	All	Some	No	No	No	No	0				1				
Jordan	Yes	All	All	All	All	All	No	Yes	Yes	110	0	0	0	8	60	7	1	1
Kuwait	No	All	All	All	All	All	No	Yes	Yes	566	4	4	4	8	558	8	0	0
Lebanon	Yes	Some	Some	All	All	All	No	No	No	0				4	105	1	7	3
Libyan Arab Jamahiriya	Yes	Some	Some	All	All	Some	No	Yes	No	400	55							
Morocco	Yes	No	All	All	All	No	No	No	Yes									
Oman	Yes	All	Some	All	All	All	All	Yes	Yes	212	14	0	0	2	114	2	4	0
Pakistan	Yes	No	No	Some	No	No	No	No	No	0								
Qatar	No	All	All	All	All	All		Yes	Yes	275	0			4	4	4	0	0
Saudi Arabia	No	Some	No	All	All	Some	No	Partially	No									
Somalia	Yes	Some	Some	All	All	No		Partially	No	230	12	10						
Sudan	Yes	Some	No	Some	Some	Some	No	No	No									
Syrian Arab Republic	No	Some	Some	All	All	All		Partially	Yes	236	0	0	0	1	0	0	0	0
Tunisia	Yes	All	All	All	All	All	All	No	Yes	94	1	1	1					
United Arab Emirates	Yes	Some	Some	All	All	All	Some	Yes	Yes					1				
West Bank and Gaza Strip	No	All	All	All	All	All	All	Yes	Yes	16	0	0	0					
Yemen	No	No	No	All	All	All	No	No	No					1	0	0	0	0
EMR	**28**	**68**	**73**	**95**	**91**	**77**	**32**	**55**	**45**	**3 619**	**183**	**28**	**12**	**81**	**841**	**22**	**12**	**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 calculated 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 notif	% of cohort							%	Number of cases		% of notif	% of cohort							%	Number	% of cohort							
	Notified	Regist'd	regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Notified	Regist'd	regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success
Afghanistan	6 510	6 793	104	81	5	3	2	5	4	0	86																				
Bahrain	16	31	194	48	48	3	0	0	0	0	97																				
Djibouti	1 202	1 202	100	60	13	1	1	14	9	1	73												241	42	7	3	7	34	5	2	49
Egypt	5 118	5 118	100	69	11	3	2	3	3	10	80												623	53	12	9	9	10	8	0	65
Iran	5 188	5 188	100	79	5	6	3	4	3	0	84												523	62	15	5	6	7	3	1	77
Iraq	3 577	3 577	100	78	7	2	3	8	2	0	85												898	67	13	3	7	8	2	0	80
Jordan	108	108	100	75	12	3	2	7	1	0	87												4	75	0	0	25	0	0	0	75
Kuwait	201	201	100	37	25	1	1	16	20	0	62												4	100	0	0	0	0	0	0	100
Lebanon	134	138	103	86	6	1	1	4	2	0	92												9	78	0	11	0	0	11	0	78
Libyan Arab Jamahiriya	764	764	100	49	12	2	1	30	2	4	62																				
Morocco	12 842	12 840	100	81	5	2	1	9	0	1	86												1 701	65	5	4	6	13	5	2	70
Oman	110	88	80	90	0	9	0	1	0	0	90												4	100	0	0	0	0	0	0	100
Pakistan	20 962	20 962	100	62	13	2	1	13	5	4	75												4 836	49	16	2	2	17	7	6	65
Qatar	95	95	100	67	5	3	1	0	23	0	73												1	0	0	0	0	0	100	0	0
Saudi Arabia	1 646	1 337	81	73	6	8	1	11	2	0	79												108	54	15	11	1	9	1	9	69
Somalia	5 190	5 141	99	88	2	4	1	3	2	0	90												443	84	2	4	3	5	2	0	85
Sudan	11 003	11 841	108	63	19	3	1	9	3	2	82												1 777	48	33	3	1	8	3	4	81
Syrian Arab Republic	1 545	1 545	100	74	14	2	3	6	1	0	88												167	49	15	5	14	11	5	0	64
Tunisia	878	878	100	87	3	3	1	2	3	0	91												38	71	3	11	13	0	3	0	74
United Arab Emirates	77	77	100	52	12	1	12	22	1	0	64												1	0	0	0	0	100	0	0	0
West Bank and Gaza Strip	15	15	100	67	13	13	7			0	80																				
Yemen	3 602	3 602	100	71	11	3	1	9	3	1	82	191	191	100	36	38	2	2	19	4	0	73	423	58	4	3	4	9	4	17	62
EMR	**80 783**	**81 541**	**101**	**71**	**10**	**3**	**1**	**9**	**3**	**2**	**82**	**191**	**191**	**100**	**36**	**38**	**2**	**2**	**19**	**4**	**0**	**73**	**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 regist'd, 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 downlaoded from www.who.int/tb

Table A2.6 **Re-treatment outcomes, 2003 cohort**

	Relapse, DOTS									After failure, DOTS									After default, DOTS								
		% of cohort							%		% of cohort							%		% of cohort							%
	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success
Afghanistan																											
Bahrain																											
Djibouti	180	50	4	3	4	32	6	0	54	39	13	10	8	26	33	0	10	23	22	27	18	0	0	50	5	0	45
Egypt																											
Iran	318	70	10	6	5	6	3	0	80	124	72	8	2	8	6	2	2	80									
Iraq	898	67	13	3	7	8	2	0	80																		
Jordan	2	100	0	0	0	0	0	0	100	2	50	0	0	50	0	0	0	50	0								
Kuwait	4	100	0	0	0	0	0	0	100																		
Lebanon	9	78	0	11	0	0	11	0	78																		
Libyan Arab Jamahiriya																											
Morocco	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
Oman	4	100	0	0	0	0		0	100																		
Pakistan	1640	60	12	3	2	12	4	8	72										3196	43	18	2	2	20	9	6	62
Qatar	1						100	0																			
Saudi Arabia	108	54	15	11	1	9	1	9	69																		
Somalia	397	84	1	4	3	5	3	0	85	20	75	10	10	5	0	0	0	85	26	77	8	8	4	4	0	0	85
Sudan	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	0	96
Syrian Arab Republic	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	0	66
Tunisia	38	71	3	11	13	0	3	0	74																		
United Arab Emirates	1					100		0																			
West Bank and Gaza Strip																											
Yemen	423	58	4	3	4	9	4	17	62	0									0								
EMR	**7 219**	**61**	**15**	**4**	**3**	**10**	**3**	**4**	**76**	**339**	**55**	**8**	**5**	**16**	**9**	**4**	**2**	**63**	**3 539**	**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 regist'd, 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			2	5	5	8	13	17	16	19
Bahrain					13	95	73	87	88	97					14	15	15	12	11	49
Djibouti		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		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	90	86	89	87	114			75	72	66	72	73	90	79
Kuwait									55	62									67	83
Lebanon	89				73	96	92	91	91	92	54				93	81	75	70	69	82
Libyan Arab Jamahiriya					68	67			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		119	120	113	87	120	115	113	84	123
Pakistan	74	70		67	66	70	74	77	77	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	38	40	40	39	40
Somalia		86	84	90	88	88	83	86	89	90		22	29	28	30	31	36	36	37	44
Sudan				70	65	81	79	80	78	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	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									100	80						10	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	65+	
Afghanistan	139	537	568	360	358	386	310	256	1 360	1 561	1 096	645	413	256	395	1897	2129	1456	1003	799	566	0.5
Bahrain	0	0	0	2	2	0	1	0	1	1	1	0	1	2	0	1	1	3	2	1	3	0.8
Djibouti	19	217	225	142	68	38	28	16	111	115	49	23	25	10	35	328	340	191	91	63	38	2.1
Egypt	14	563	763	588	502	502	204	44	491	317	233	233	111	54	58	1054	1080	821	735	613	258	2.1
Iran	16	360	542	357	305	298	640	65	419	301	213	293	378	710	81	779	843	570	598	676	1350	1.1
Iraq	28	615	770	288	244	183	125	57	334	243	139	162	113	80	85	949	1013	427	406	296	205	2.0
Jordan	0	8	12	14	6	17	0	0	10	4	3	5	12	0	0	18	16	17	11	29	0	1.7
Kuwait	0	20	63	38	22	9	7	0	14	44	12	7	5	7	0	34	107	50	29	14	14	1.8
Lebanon	1	11	25	18	18	8	6	0	18	21	10	5	1	4	1	29	46	28	23	9	10	1.5
Libyan Arab Jamahiriya	5	113	310	173	53	24	20	1	44	50	20	23	13	23	6	157	360	193	76	37	43	4.0
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	2.2
Oman	1	15	12	23	30	12	14	0	0	9	1	0	0	0	1	15	21	24	30	12	14	10.7
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	1397	8473	7362	5549	4476	3636	2569	1.1
Qatar	0	9	13	13	8	10	1	0	6	5	4	2	2	0	0	15	18	17	10	12	1	2.8
Saudi Arabia	4	202	289	217	163	89	85	24	204	171	80	53	47	64	28	406	460	297	216	136	149	1.6
Somalia	175	1 228	1 059	610	419	326	278	129	676	618	428	266	157	110	304	1904	1677	1038	685	483	388	1.7
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	1.6
Syrian Arab Republic	13	318	308	115	113	77	50	20	230	121	46	56	59	35	33	548	429	161	169	136	85	1.8
Tunisia	9	100	181	128	123	62	91	7	44	55	39	47	19	39	16	144	236	167	170	81	130	2.8
United Arab Emirates	1	7	6	7	3	1	7	3	6	2	7	2	2	3	4	13	8	14	5	3	10	1.3
West Bank and Gaza Strip		1	1		1						1					1	1	1	1			3.0
Yemen	49	571	559	377	214	139	76	72	442	376	269	160	86	44	121	1013	935	646	374	225	120	1.4
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**

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
Djibouti	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	18	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		1						1					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
Afghanistan	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	1 978	2 030	2 040	2 100	2 900	2 884	3 489	3 311		3 332	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	3 426	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	856	672	769	592	537	553	484	439	390	504	427	443	498	468	397	380	373	306	342	312	310	324
Kuwait	847	819	880	855	812	717	611	540	480	468	277	330	282	217	237	336	400	528	564					566	558
Lebanon		67	75	284	410	1 943	2 257	2 478				884	884		940	983	836	701	640	679	571	516	437	380	393
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	27 658	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	194 323		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		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	3 507	3 452	3 327	3 374	3 317	3 341
Somalia				2 838	2 719	2 722	3 079	7 322	2 728	1 323					2 023	2 504	3 920	4 450	4 320	4 802	5 686	6 852	7 391	9 278	11 747
Sudan	32 971	47 431				1 509	2 460	800	693	701	212	16 423	19 503	37 516	23 178	14 320	20 230	20 894	22 318	26 875	24 807	23 997	24 554	25 105	26 567
Syrian Arab Republic	1 689	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	818	339	308	285	234	227		426		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			77	40		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						6	14	14	30	41	53	51	64
Bahrain	63	73	42	60	52	47	36	27	31	26	24	28	26	21		7	8	7	13	22	31	27	27	37	34
Djibouti		639	184		388	562	434	427	407	383	376	504	493	591	554		533	592	565	596	556	573	426	422	377
Egypt	4	3	4	4	3	3	2	42	3	3	4	6	15	6	7	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			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					22	21
Lebanon		2	3	10	15	70	81	90				32	31		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			30	26		31	31	25		33	34	29
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	158	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		10	3		66	15	8	23	35	46	66
Qatar	112	85	62	68	61	69	57	61	52	42	39	40		40		58	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			16	16	17	16	15	15	14	14
Somalia				43	42	42	47	112	41	20					32	40	62	69	65	71	81	95	99	120	147
Sudan	165	230				6	10	3	3	3	1	62	71	134	81	49	67	68	71	83	75	71	72	72	75
Syrian Arab Republic	19	20	19	19	20	20	35	37	41	44	47	43	40		36	30	34	32	34	33	30	29	27	27	25
Tunisia	39	35	38	44	35	34	33	30	29	30	25	25	25	29	27	27	26		24	23	21	20	19	20	20
United Arab Emirates	51	58	51	40	40	40	31	52	20	17	15	12	11		18		20		27	2	4	2	2	3	2
West Bank and Gaza Strip	13	9	9	8	7	6	3	4	4	7	3	4	4			3	1		1		3			1	1
Yemen									31	42	38	54	76	79	79	95	91	74	73	75	76	70	61	53	49
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/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**
Afghanistan					618	1 833	1 669	2 892	4 639	6 509	6 510	8 273					3	8	7	12	19	25	24	29
Bahrain	82		17	31	22	25	21	23	23	17	16	69	15		3	5	4	4	3	3	3	2	2	10
Djibouti	1 668	1 743		1 744	1 904	1 690	1 564	1 391	1 312	1 253	1 202	1 086	282	292		279	294	252	226	195	179	167	157	139
Egypt		1 811	4 229	5 084	5 469	4 915	5 094	4 606	4 514	4 889	5 118	5 383		3	7	8	9	8	8	7	7	7	7	7
Iran		4 615	5 347	5 373	5 253	5 105	5 426	5 866	5 529	5 366	5 188	4 897		8	9	8	8	8	8	9	8	8	8	7
Iraq	5 240	5 781	3 194	10 320	8 164	8 933	9 908	3 194	3 559	3 895	3 577	3 381	26	28	15	46	36	38	41	13	14	15	13	12
Jordan	173	161	187	170	136	110	102	89	94	91	108	91	4	4	4	4	3	2	2	2	2	2	2	2
Kuwait	148	155	175	153	201	185					201	248	8	9	10	9	11	9					8	10
Lebanon		148	197	198	206	224	249	202	171	148	134	146		5	6	6	6	7	7	6	5	4	4	4
Libyan Arab Jamahiriya				515			803	607			764	872				11			15	11			14	15
Morocco			14 171	14 278	14 134	13 426	13 420	12 872	12 804	12 914	12 842	12 280			52	52	51	47	47	44	43	43	42	40
Oman	123	135	135	164	165	156	120	164	156	151	110	160	6	6	6	7	7	7	5	7	6	6	4	6
Pakistan	11 020		2 578	1 849		14 974	6 248	3 285	10 935	16 265	20 962	33 746	9		2	1		11	4	2	8	11	14	22
Qatar			60	46	39	69	58	53	77	64	95	73			11	9	7	12	10	9	12	9	13	9
Saudi Arabia	800				1 568	1 644	1 680	1 595	1 686	1 674	1 646	1 692	4				8	8	8	7	8	7	7	7
Somalia		1 168	1 572	2 894	3 093	3 121	3 461	3 776	4 640	4 729	5 190	6 479		18	25	46	48	47	51	54	64	63	67	81
Sudan		3 728	8 761	8 978	10 835	10 820	11 047	12 311	11 136	10 338	11 003	12 095		13	30	30	35	34	34	37	33	30	32	34
Syrian Arab Republic			1 295	1 523	1 423	1 593	1 577	1 584	1 507	1 447	1 545	1 561			9	10	9	10	10	9	9	8	9	8
Tunisia	1 006	983	1 243	1 005		1 196	1 066	1 099	1 077	927	878	944	12	11	14	11		13	11	11	11	9	9	9
United Arab Emirates							31	73	69	57	77	57							1	2	2	2	2	1
West Bank and Gaza Strip			9	24		8		37	49		15	4			0	1		0		1	2		0	0
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	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**	**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 governate 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				
TAJIKISTAN	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
	All forms*		Smear-positive*		All forms*		All forms*		All forms*		All forms HIV+		Smear-positive*		Smear-positive HIV+		All forms*		All forms HIV+		All forms*		All forms HIV+		in adult incident
	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	TB cases (%)
Albania	815	25	367	11	1 360	41	138	4	689	22	≤ 1	≤ 1	310	10	≤ 1	≤ 1	954	31	≤ 1	≤ 1	122	4	≤ 1	≤ 1	0.1
Andorra	19	36	8	16	17	32	2	4	12	18	≤ 1	≤ 1	5	8	≤ 1	≤ 1	12	17	≤ 1	≤ 1	1	2	≤ 1	≤ 1	0.3
Armenia	961	27	432	12	1 526	43	166	5	2 371	78	15	≤ 1	1 065	35	5	≤ 1	2 973	98	8	≤ 1	374	12	4	≤ 1	0.9
Austria	1 546	20	693	9	1 212	16	140	2	1 144	14	37	≤ 1	511	6	13	≤ 1	880	11	18	≤ 1	114	1	4	≤ 1	6.9
Azerbaijan	2 514	35	1 131	16	4 143	57	379	5	6 293	75	3	≤ 1	2 832	34	≤ 1	≤ 1	7 485	90	1	≤ 1	840	10	≤ 1	≤ 1	0.1
Belarus	3 940	38	1 768	17	6 436	63	560	5	5 868	60	120	1	2 628	27	42	≤ 1	6 684	68	60	≤ 1	789	8	22	≤ 1	2.9
Belgium	1 973	20	886	9	1 536	15	197	2	1 353	13	36	≤ 1	605	6	13	≤ 1	1 088	10	18	≤ 1	141	1	4	≤ 1	5.7
Bosnia & Herzegovina	4 042	94	1 818	42	6 880	160	642	15	2 055	53	3	≤ 1	924	24	≤ 1	≤ 1	2 089	53	1	≤ 1	243	6	≤ 1	≤ 1	0.2
Bulgaria	2 343	27	1 054	12	3 826	44	329	4	2 812	36	≤ 1	≤ 1	1 265	16	≤ 1	≤ 1	2 812	36	≤ 1	≤ 1	306	4	≤ 1	≤ 1	≤ 0.05
Croatia	3 336	74	1 501	33	5 670	126	520	12	1 878	41	≤ 1	≤ 1	845	19	≤ 1	≤ 1	2 951	65	≤ 1	≤ 1	292	6	≤ 1	≤ 1	0.1
Cyprus	41	6	18	3	67	10	4	≤ 1	32	4	≤ 1	≤ 1	15	2	≤ 1	≤ 1	35	4	≤ 1	≤ 1	3	≤ 1	≤ 1	≤ 1	1.4
Czech Republic	3 722	36	1 675	16	3 889	38	421	4	1 105	11	10	≤ 1	496	5	4	≤ 1	1 149	11	5	≤ 1	125	1	1	≤ 1	2.0
Denmark	790	15	355	7	642	12	82	2	418	8	11	≤ 1	187	3	4	≤ 1	336	6	5	≤ 1	44	≤ 1	1	≤ 1	5.6
Estonia	497	31	224	14	841	53	68	4	612	46	29	2	273	20	10	≤ 1	656	49	14	1	91	7	6	≤ 1	6.6
Finland	897	18	403	8	698	14	90	2	455	9	4	≤ 1	204	4	1	≤ 1	364	7	2	≤ 1	47	≤ 1	≤ 1	≤ 1	1.8
France	16 204	29	7 254	13	13 166	23	1 684	3	7 411	12	388	≤ 1	3 296	5	136	≤ 1	5 901	10	194	≤ 1	775	1	45	≤ 1	11
Georgia	2 078	38	935	17	2 856	52	381	7	3 717	82	51	1	1 667	37	18	≤ 1	4 033	89	25	≤ 1	591	13	10	≤ 1	1.9
Germany	20 453	26	9 191	12	15 915	20	2 046	3	6 773	8	98	≤ 1	3 038	4	34	≤ 1	5 243	6	49	≤ 1	677	≤ 1	9	≤ 1	3.1
Greece	3 123	31	1 402	14	2 840	28	389	4	2 089	19	45	≤ 1	936	8	16	≤ 1	1 881	17	22	≤ 1	263	2	8	≤ 1	4.6
Hungary	4 258	41	1 916	18	6 966	67	565	5	2 633	26	5	≤ 1	1 184	12	2	≤ 1	3 003	30	2	≤ 1	352	3	≤ 1	≤ 1	0.3
Iceland	16	6	7	3	13	5	2	≤ 1	8	3	≤ 1	≤ 1	4	1	≤ 1	≤ 1	6	2	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	4.3
Ireland	856	24	385	11	696	20	89	3	467	11	8	≤ 1	210	5	3	≤ 1	377	9	4	≤ 1	49	1	≤ 1	≤ 1	3.5
Israel	817	18	367	8	663	15	85	2	599	9	8	≤ 1	269	4	3	≤ 1	464	7	4	≤ 1	60	≤ 1	≤ 1	≤ 1	2.9
Italy	7 969	14	3 565	6	6 425	11	901	2	4 093	7	245	≤ 1	1 817	3	86	≤ 1	3 225	6	122	≤ 1	462	≤ 1	27	≤ 1	13
Kazakhstan	9 697	59	4 364	26	15 835	96	1 361	8	22 427	151	375	3	10 055	68	131	≤ 1	23 786	160	188	1	3 010	20	66	≤ 1	2.4
Kyrgyzstan	2 412	55	1 085	25	3 966	90	368	8	6 353	122	44	≤ 1	2 855	55	15	≤ 1	7 111	137	22	≤ 1	929	18	8	≤ 1	1.0
Latvia	915	34	412	15	1 505	55	140	5	1 569	68	44	2	702	30	15	≤ 1	1 657	71	22	≤ 1	231	10	8	≤ 1	3.9
Lithuania	1 471	40	662	18	2 397	65	200	5	2 160	63	8	≤ 1	971	28	3	≤ 1	2 291	67	4	≤ 1	292	8	1	≤ 1	0.5
Luxembourg	88	23	39	10	71	19	9	2	54	12	1	≤ 1	24	5	≤ 1	≤ 1	43	9	≤ 1	≤ 1	6	1	≤ 1	≤ 1	5.5
Malta	41	11	18	5	36	10	5	1	23	6	≤ 1	≤ 1	10	3	≤ 1	≤ 1	18	5	≤ 1	≤ 1	3	≤ 1	≤ 1	≤ 1	4.4
Monaco	1	4	≤ 1	2	1	4	≤ 1	≤ 1	≤ 1	2	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	2	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	12
Netherlands	1 883	13	845	6	1 465	10	188	1	1 330	8	41	≤ 1	594	4	15	≤ 1	1 023	6	21	≤ 1	133	≤ 1	4	≤ 1	6.7
Norway	447	11	201	5	363	9	46	1	243	5	3	≤ 1	109	2	1	≤ 1	189	4	2	≤ 1	24	≤ 1	≤ 1	≤ 1	2.7
Poland	19 897	52	8 951	23	33 373	88	2 845	7	10 999	29	35	≤ 1	4 946	13	12	≤ 1	12 312	32	18	≤ 1	1 470	4	6	≤ 1	0.6
Portugal	7 276	73	3 256	33	5 662	57	728	7	4 378	42	227	2	1 947	19	79	≤ 1	3 629	35	113	1	479	5	31	≤ 1	11
Republic of Moldova	2 780	64	1 250	29	4 540	104	390	9	5 807	138	58	1	2 608	62	20	≤ 1	9 020	214	29	≤ 1	844	20	17	≤ 1	1.4
Romania	17 057	73	7 675	33	28 152	121	2 404	10	31 814	146	24	≤ 1	14 314	66	9	≤ 1	40 947	188	12	≤ 1	4 249	20	5	≤ 1	0.1
Russian Federation	75 116	51	33 784	23	120 994	82	14 584	10	166 196	115	7 992	6	73 989	51	2 797	2	230 728	160	3 996	3	29 783	21	2 421	2	6.8
San Marino	3	12	1	5	2	10	≤ 1	1	2	6	≤ 1	≤ 1	≤ 1	3	≤ 1	≤ 1	1	5	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	0.3
Serbia & Montenegro	6 029	59	2 711	27	10 262	101	957	9	3 495	33	21	≤ 1	1 571	15	7	≤ 1	5 238	50	11	≤ 1	549	5	6	≤ 1	1.1
Slovakia	2 087	40	939	18	2 821	54	339	6	1 015	19	≤ 1	≤ 1	457	8	≤ 1	≤ 1	1 265	23	≤ 1	≤ 1	168	3	≤ 1	≤ 1	0.1
Slovenia	822	43	370	19	1 360	71	97	5	298	15	≤ 1	≤ 1	134	7	≤ 1	≤ 1	331	17	≤ 1	≤ 1	40	2	≤ 1	≤ 1	0.2
Spain	25 129	64	11 217	29	20 418	52	2 611	7	10 672	25	753	2	4 727	11	263	≤ 1	8 436	20	376	≤ 1	1 119	3	88	≤ 1	15
Sweden	680	8	306	4	529	6	68	≤ 1	390	4	5	≤ 1	175	2	2	≤ 1	302	3	2	≤ 1	39	≤ 1	≤ 1	≤ 1	2.5
Switzerland	1 161	17	520	8	904	13	116	2	535	7	25	≤ 1	238	3	9	≤ 1	409	6	12	≤ 1	53	≤ 1	2	≤ 1	10
Tajikistan	5 921	112	2 664	50	10 357	195	1 173	22	11 386	177	1	≤ 1	5 124	80	≤ 1	≤ 1	17 797	277	≤ 1	≤ 1	2 178	34	≤ 1	≤ 1	≤ 0.05
TFYR Macedonia	1 026	54	462	24	1 743	91	212	11	611	30	≤ 1	≤ 1	275	14	≤ 1	≤ 1	683	34	≤ 1	≤ 1	105	5	≤ 1	≤ 1	≤ 0.05
Turkey	28 301	49	12 735	22	47 256	82	4 805	8	19 944	28	4	≤ 1	8 974	12	2	≤ 1	32 371	45	2	≤ 1	3 815	5	2	≤ 1	≤ 0.05
Turkmenistan	2 356	64	1 060	29	3 874	106	360	10	3 116	65	≤ 1	≤ 1	1 402	29	≤ 1	≤ 1	3 940	83	≤ 1	≤ 1	455	10	≤ 1	≤ 1	≤ 0.05
Ukraine	21 520	41	9 648	19	35 576	69	3 177	6	47 227	101	2 795	6	20 973	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	655	1	7 101	12	104	≤ 1	3 185	5	36	≤ 1	5 497	9	52	≤ 1	710	1	10	≤ 1	3.1
Uzbekistan	14 026	68	6 312	31	23 482	114	2 113	10	30 743	117	220	≤ 1	13 813	53	77	≤ 1	40 947	156	110	≤ 1	4 347	17	54	≤ 1	1.0
EUR	**337 898**	**40**	**151 787**	**18**	**470 321**	**55**	**49 832**	**6**	**444 777**	**50**	**13 898**	**2**	**198 760**	**23**	**4 864**	**≤ 1**	**575 448**	**65**	**6 949**	**≤ 1**	**69 018**	**8**	**3 714**	**≤ 1**	**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			
		Country	New and relapse		New pulmonary			New extra-	Other	Re-treatment cases					New pulm.	Estimated incidence		Case detection rate		ss+	ss+	Extrapulm.	Re-treat.
	Population	total	(WHO total)		ss+		ss- / unk.	pulmonary	new	Relapse	After failure	After default	Other re-treat.	Other	lab. confirm.	all forms	ss+	new and	new ss+	(% of	(% of	(% of	(% of
	thousands	number	number	rate	number	rate	number	number	number	number	number	number	number	number	number	number	number	relapse %	%	pulm.)	new+relapse)	new+relapse)	new+re-treat.)
Albania	3 112	581	547	18	201	6	132	211		3	1	3	30	0	224	689	310	79	65	60	37	39	6
Andorra	67	7	7	10	3	4	2	2		0	0	0	0	0	4	12	5	58	55	60	43	29	
Armenia	3 026	1 701	1 660	55	602	20	659	297		102	27	14	0	0	602	2 371	1 065	70	57	48	36	18	8
Austria	8 171	915	895	11	216	3	532	147		0	0	0	20	0	519	1 144	511	78	42	29	24	16	2
Azerbaijan	8 355	6 501	5 404	65	1 472	18	2 201	640		1 091	245	852	0	0	1 472	6 293	2 832	86	52	40	27	12	34
Belarus	9 811	6 490	5 443	55	1 109	11	3 969	365					1 047	0	2 287	5 868	2 628	93	42	22	20	7	16
Belgium	10 400	1 226	1 128	11	391	4	434	303		0	0	0	98	0	689	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	29	0	1 553	2 055	924	115	96	43	38	8	6
Bulgaria	7 780	3 232	3 025	39	1 315	17	1 263	345		102	0	0	207	0	1 315	2 812	1 265	108	104	51	43	11	10
Croatia	4 540	1 297	1 170	26	416	9	606	148		0	0	0	127	0	647	1 878	845	62	49	41	36	13	10
Cyprus	826	30	30	4	10	1	16	3		1	0	0	0	0	18	32	15	93	69	38	33	10	3
Czech Republic	10 229	1 057	1 027	10	302	3	492	233		0	0	0	30	0	543	1 105	496	93	61	38	29	23	3
Denmark	5 414	385	356	7	146	3	121	89		0	0	0	29	0	203	418	187	85	78	55	41	25	8
Estonia	1 335	594	537	40	203	15	225	50		59	9	24	24	0	336	612	273	88	74	47	38	9	20
Finland	5 235	333	319	6	124	2	98	97		0	0	0	14	0	217	455	204	70	61	56	39	30	4
France	60 257	5 514	5 004	8	1 923	3	1 701	1 380		0	0	0	387	123	2 790	7 411	3 296	68	58	53	38	28	7
Georgia	4 518	5 967	4 011	89	1 311	29	1 497	1 055		148	224	488	1 244	0	1 311	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	3 436	6 773	3 038	89	51	34	26	21	9
Greece	11 098	774	668	6	176	2	409	83	0	0	0	0	40	66	293	2 089	936	32	19	30	26	12	6
Hungary	10 124	2 476	2 251	22	560	6	1 389	134		168	0	0	225	0	923	2 633	1 184	86	47	29	25	6	16
Iceland	292	12	11	4	2	1	3	6		0	0	0	1	0	4	8	4	140	57	40	18	55	8
Ireland	4 080	437	380	9	127	3	148	102		3	0	0	29	28	199	467	210	81	61	46	33	27	8
Israel	6 601	519	497	8	91	1	279	119		8	0	3	19	0	208	599	269	83	34	25	18	24	6
Italy	58 033	4 220	3 968	7	1 058	2	1 770	1 140		0	0	0	251	1	1 829	4 093	1 817	97	58	37	27	29	6
Kazakhstan	14 839	32 131	26 493	179	7 927	53	14 314	922		3 330	1 168	1 590	2 880	0	8 854	22 427	10 055	118	79	36	30	3	28
Kyrgyzstan	5 204	6 641	6 104	117	1 761	34	2 069	1 876		398	0	0	487	0	1 761	6 353	2 855	96	62	46	29	31	13
Latvia	2 318	1 610	1 579	68	582	25	586	205		206	1	30	0	0	869	1 569	702	101	83	50	37	13	15
Lithuania	3 443	2 514	2 036	59	863	25	793	380		0	0	0	478	0	1 147	2 160	971	94	89	52	42	19	19
Luxembourg	459	31	31	7	20	4	9	2		0	0	0	0	0	29	54	24	58	83	69	65	6	
Malta	400	19	18	5	2	1	12	4		0	0	0	1	0	5	23	10	78	19	14	11	22	5
Monaco	35															1	0						
Netherlands	16 226	1 344	1 316	8	360	2	418	530		8	0	10	18	0	577	1 330	594	99	61	46	27	40	3
Norway	4 598	302	278	6	50	1	132	96		0	0	0	18	6	151	243	109	114	46	27	18	35	6
Poland	38 559	9 493	8 698	23	2 777	7	4 812	764		345	0	0	795	0	4 450	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	2 044	4 378	1 947	82	78	60	42	26	10
Republic of Moldova	4 218	6 008	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
Romania	21 790	31 814	28 570	131	10 888	50	10 180	3 958		3 544	1 808	495	941	0	13 174	31 814	14 314	90	76	52	38	14	21
Russian Federation	143 899	152 438	121 426	84	30 890	21	83 614	4 420		2 502			31 012	0	32 935	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	2	1	0	0				
Serbia & Montenegro	10 510	3 833	3 600	34	1 244	12	1 709	459		188	11	9	152	61	1 592	3 495	1 571	103	79	42	35	13	10
- Kosovo		1 009	965		272		498	195					44		272					35	28	20	4
- Serbia & Montenegro		2 824	2 635		972		1 211	264		188	11	9	108		1 320					45	37	10	11
Slovakia	5 401	705	664	12	157	3	330	133		44	2	2	37	0	276	1 015	457	65	34	32	24	20	12
Slovenia	1 967	263	249	13	89	5	94	46		20	1	6	7	0	170	298	134	84	66	49	36	18	13
Spain	42 646	6 392	6 015	14	2 082	5	3 081	852		0	0	0	377	0	3 191	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	240	390	175	107	69	43	29	33	7
Switzerland	7 240	593	528	7	119	2	270	139		0	0	0	65	0	321	535	238	99	50	31	23	26	11
Tajikistan	6 430	5 122	4 529	70	1 058	16	2 012	1 398		61	3	10	580	0	1 058	11 386	5 124	40	21	34	23	31	13
TFYR Macedonia	2 030	680	644	32	200	10	240	167		37	4	12	20	0	231	611	275	105	73	45	31	26	11
Turkey	72 220	19 799	17 543	24	5 870	8	124	161		33	0	161	2 095	0	5 904	19 944	8 974	88	65	98	33	1	27
Turkmenistan	4 766	4 172	3 382	71	1 103	23	1 482	743		54	0	0	800	0	1 103	3 116	1 402	109	79	43	33	22	20
Ukraine	46 989	38 403	38 403	82	0	0										47 227	20 973	81	0				
United Kingdom	59 479	7 584	7 039	12	1 693	3	2 198	3 148		0	0	0	545	0	2 886	7 101	3 185	99	53	44	24	45	7
Uzbekistan	26 209	25 714	20 289	77	5 119	20	7 956	6 432		782	150	79	5 196	0	5 119	30 743	13 813	66	37	39	25	32	24
EUR	**881 211**	**415 172**	**354 954**	**40**	**92 233**	**10**	**161 595**	**36944**	**0**	**14 424**	**4 083**	**4 168**	**51 429**	**498**	**111 245**	**444 777**	**198 760**	**80**	**46**	**36**	**26**	**10**	**20**

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**

	TB cases reported from DOTS services														Estimated incidence and case detection rate				Proportions			
	DOTS	New and relapse		New pulmonary			New extra-	Other	Re-treatment cases					New pulm.	Estimated incidence		Case detection rate		ss+	ss+	Extrapulm.	Re-treat.
	coverage	(WHO total)		ss+		ss- / unk.	pulmonary	new	Relapse	After failure	After default	Other re-treat.	Other	lab. confirm.	all forms	ss+	new and	new ss+	(% of	(% of	(% of	(% of
	%	number	rate	number	rate	number	number	number	number	number	number	number	number	number	number	number	relapse %	%	pulm.)	new+relapse)	new+relapse)	new+re-treat.)
Albania	33	270	9	104	3	66	99		1	0	2	15	0	117	689	310	39	34	61	39	37	6
Andorra	100	7	10	3	4	2	2		0	0	0	0	0	4	12	5	58	55	60	43	29	0
Armenia	100	1 497	49	464	15	634	297		102	27	14	0	0	464	2 371	1 065	63	44	42	31	20	9
Austria	100	895	11	216	3	532	147		0	0	0	20	0	519	1 144	511	78	42	29	24	16	2
Azerbaijan	88	4 188	50	1 333	16	1 655	401		799	140	208	0	0	1 333	6 293	2 832	67	47	45	32	10	25
Belarus	70	5 443	55	1 109	11	3 969	365					1 047	0	2 287	5 868	2 628	93	42	22	20	7	16
Belgium	100	1 128	11	391	4	434	303		0	0	0	98	0	689	1 353	605	83	65	47	35	27	8
Bosnia & Herzegovina	100	2 353	60	889	23	1 156	192		116	0	0	29	0	1 553	2 055	924	115	96	43	38	8	6
Bulgaria	100	3 025	39	1 315	17	1 263	345		102	0	0	207	0	1 315	2 812	1 265	108	104	51	43	11	10
Croatia	0														1 878	845						
Cyprus	100	30	4	10	1	16	3		1	0	0	0	0	18	32	15	93	69	38	33	10	3
Czech Republic	100	1 027	10	302	3	492	233		0	0	0	30	0	543	1 105	496	93	61	38	29	23	3
Denmark	100	356	7	146	3	121	89		0	0	0	29	0	203	418	187	85	78	55	41	25	8
Estonia	100	537	40	203	15	225	50		59	9	24	24	0	336	612	273	88	74	47	38	9	20
Finland	0														455	204						
France	0														7 411	3 296						
Georgia	100	4 011	89	1 311	29	1 497	1 055		148	224	488	1 244	0	1 311	3 717	1 667	108	79	47	33	26	35
Germany	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	9
Greece	0														2 089	936						
Hungary	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
Iceland	100	11	4	2	1	3	6		0	0	0	1	0	4	8	4	140	57	40	18	55	8
Ireland	0														467	210						
Israel	100	497	8	91	1	279	119		8	0	3	19	0	208	599	269	83	34	25	18	24	6
Italy	21	3 968	7	1 058	2	1 770	1 140		0	0	0	251	1	1 829	4 093	1 817	97	58	37	27	29	6
Kazakhstan	100	26 493	179	7 927	53	14 314	922		3 330	1 168	1 590	2 880	0	8 854	22 427	10 055	118	79	36	30	3	28
Kyrgyzstan	100	6 104	117	1 761	34	2 069	1 876		398	0	0	487	0	1 761	6 353	2 855	96	62	46	29	31	13
Latvia	100	1 579	68	582	25	586	205		206	1	30	0	0	869	1 569	702	101	83	50	37	13	15
Lithuania	98	2 036	59	863	25	793	380		0	0	0	478	0	1 147	2 160	971	94	89	52	42	19	19
Luxembourg	100	31	7	20	4	9	2		0		0	0	0	29	54	24	58	83	69	65	6	
Malta	100	18	5	2	1	12	4		0	0	0	1	0	5	23	10	78	19	14	11	22	5
Monaco															1	0						
Netherlands	100	1 316	8	360	2	418	530		8	0	10	18	0	577	1 330	594	99	61	46	27	40	3
Norway	100	278	6	50	1	132	96		0	0	0	18	6	151	243	109	114	46	27	18	35	6
Poland	100	8 698	23	2 777	7	4 812	764		345	0	0	795	0	4 450	10 999	4 946	79	56	37	32	9	12
Portugal	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
Republic of Moldova	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
Romania	54	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
Russian Federation	45	35 204	24	9 926	7	20 002	2 774		2 502			2 374	0	11 971	166 196	73 989	21	13	33	28	8	13
San Marino	100	0	0	0	0	0	0		0	0	0	0	0	0	2	1	0	0				
Serbia & Montenegro	48	1 456	14	497	5	684	238		37	0	0	59	1	577	3 495	1 571	42	32	42	34	16	6
- Kosovo	100	965		272		498	195					44							35	28	20	4
- Serbia & Montenegro	35	491		225		186	43		37			15	1						55	46	9	10
Slovakia	100	664	12	157	3	330	133		44	2	2	37	0	276	1 015	457	65	34	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
Spain	0														10 672	4 727						
Sweden	100	416	5	120	1	158	137		1	0	1	31	13	240	390	175	107	69	43	29	33	7
Switzerland	0														535	238						
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
TFYR Macedonia	100	644	32	200	10	240	167		37	4	12	20	0	231	611	275	105	73	45	31	26	11
Turkey	3	616	1	298	0	124	161		33	0	7	13	0	332	19 944	8 974	3	3	71	48	26	8
Turkmenistan	37	1 678	35	532	11	602	493		51	0	0	787	0	532	3 116	1 402	54	38	47	32	29	34
Ukraine	15		0		0										47 227	20 973	0	0				
United Kingdom	0														7 101	3 185						
Uzbekistan	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
EUR	**47**	**163 167**	**19**	**50 690**	**6**	**77 982**	**22 226**	**0**	**12 269**	**3 094**	**3 104**	**15 203**	**221**	**64 452**	**444 777**	**198 760**	**37**	**26**	**39**	**31**	**14**	**18**

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	Institutions notifying to NTP						HIV testing for TB pts	HIV surveillance among TB pts	TB pts tested for HIV number	TB pts HIV-positive number	TB pts CPT number	TB pts ART number	Laboratory-confirmed MDR number	DST in new cases number	MDR in new cases number	Re-treatment DST number	Re-treatment MDR number
		Private hospitals or clinics	Private practitioners	Public hospitals	Prisions	Military	Insurance											
Albania		No	No	Some	All	Some	No	Partially	No	145				0	167	0	11	0
Andorra		All	All	All	All		All	Partially	Yes			0	0	0	5	0	0	0
Armenia	No	No	No	All	All	All	No	No	No	269	8			157	464	79	168	78
Austria														17	515	16	26	1
Azerbaijan	No							Yes	Yes	3 295		25		17				
Belarus		All	All	All	All	All	All	Yes	No					340	1 815	110	1 281	206
Belgium	Yes	All	All	All	All	All	All	No	Yes	1 226	55			12	629	3	68	5
Bosnia & Herzegovina	Yes	Some	All	All	All	All	All	No	No					12	1 460	5	141	7
Bulgaria	No	No	No	All	All	All	No							47	480	11	342	
Croatia	No	All	All	All	Some	Some	No							3	671	3	86	0
Cyprus	No	All	All	All	All	All	No	No	No			0	0	0	15	0	0	0
Czech Republic		All	All	All	All	All		No						6	480	4	10	2
Denmark	Yes	No	Some	Some	Some	No	No	Yes	No					0	268	0	21	0
Estonia	Yes	All	All	All	All	All	No	Yes		477	26	0		90	358	51	94	39
Finland		All	All	All	Some	All	All	No	Yes									
France	Yes	All	All	All	All	All	Some	Yes	No					26	1 431	14	137	11
Georgia	No	No	No	All	Some	All	No	Partially	No	1 079		0	0					
Germany	Yes	All	All	All	All	All	No	No	No					98	3 111	41	264	38
Greece																		
Hungary		No	No	All	All	All	All	No	No					9	469	5	88	4
Iceland	No	All	All	All	All			Yes	Yes	12	1	1	1	0	7	0	1	0
Ireland	Yes	All	All	All	All	No	No	No	No					0	121	0	4	0
Israel		All	Some	All	All	All	All	Yes	No		13			12	207	11	15	1
Italy		All	All	All	Some	All	No	Partially	Yes	404	11			24	510	6	88	15
Kazakhstan								No	No			0	0	4 828	8 446	1 339	8 774	3 489
Kyrgyzstan	No	No	No	All	All	No	No	No	No					259	768	169	173	90
Latvia	Yes	All	All	All	All	All	No	Yes		1 610	40			196	896	112	209	84
Lithuania	Yes	All	All	All	All	All	All	Partially	No	2 514	8			318	1 128	104	458	212
Luxembourg		All	All	All	All	All	All	Partially	Yes					1	31	1	0	0
Malta	Yes	All	All	All	All	All	All	Yes	Yes	19	1	1	1	0	8	0	0	0
Monaco																		
Netherlands	Yes	All	All	All	No	No	No	No	No	1 344	46			3	636	1	17	0
Norway	Yes	All	All	All				Partially	No					4	223	4	11	0
Poland		All	All	All	All	Some	No	No	No		15			51	2 716	8	522	43
Portugal		All	Some	Some	Some	Some	No	Yes	Yes	3 873	607			22	1 099	12	151	10
Republic of Moldova		No	No	No	All	No	No	Yes	No				0					
Romania	Yes	All	All	All	All	All			Yes	1 710	5			459	1 769	104	1 292	355
Russian Federation	No	Some	Some	All	All	All	No	Yes	Yes		4 506			3 500		3 500		
San Marino	No	All	All	All	All	All	No	No	No					0	0	0	0	0
Serbia & Montenegro	Yes	No	Some	All	Some	Some	No	No	No				10	2	264	1	33	1
Slovakia	Yes	All	All	All	All	All	All	Yes	Yes	705	0	0	1	1	292	1	46	0
Slovenia	Yes	No	All	All	All	All	No	Yes	Yes	89	3	3	1	0	199	0	28	0
Spain		All	All	All	All	All	All	Yes		2 453	328			59	307	3	75	9
Sweden		All	All	All	All	All	All	No	No					6	347	5	22	1
Switzerland	Yes	All	All	All	All	All	No	Yes	No					5	340	3	29	1
Tajikistan				All	Some	Some		No	No									
TFYR Macedonia	Yes	No	Some	All	All	No	No	Yes	Yes	10	1	0	0	2	127	0	15	2
Turkey		All	All	All	All	All	No	No	No									
Turkmenistan	Yes			All	No	All	No	No	No									
Ukraine	No	All	All	All	All	All	All											
United Kingdom	Yes	All	All	All	All	All	Some	No										
Uzbekistan	No	No	No	All	No	All	No	No	No	31 579	138	0	0	9	132	0	582	9
EUR	**38**	**63**	**71**	**88**	**83**	**73**	**31**	**46**	**27**	**52 813**	**5 812**	**30**	**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 calculated 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 notif	% of cohort							%	Number of cases		% of notif	% of cohort							%	Number	% of cohort							%
	Notified	Regist'd	regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Notified	Regist'd	regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success
Albania	96	95	99	64	26	3	0	6	0	0	91	115	117	102	37	49	3	0	8	1	3	85	5	80	20	0	0	0	0	0	100
Andorra	7	6	86	100	0	0	0	0	0	0	100	0											0							0	
Armenia	418	406	97	67	10	2	4	7	5	5	77	157	0										180	23	24	4	11	12	6	21	47
Austria	269	251	93	0	68	10	0	7	0	14	68	0	0										5	0	60	0	0	0	0	40	60
Azerbaijan	808	1 889	234	53	17	2	3	5	17	3	70	353											401	31	20	9	17	13	3	6	51
Belarus	2 239	2 236	100	0	73	8	10	3	6	0	73	0											0							0	
Belgium	362	262	72	26	47	5	0	1	0	21	73	0											40	23	40	13	0	0	0	25	63
Bosnia & Herzegovina	493	272	55	55	39	1	2	2	1	0	94	0											49	65	29	2	0	4	0	0	94
Bulgaria	1 254	1 254	100	91	0	3	2	3	1	0	91	0											117	68	0	1	6	15	9	0	68
Croatia	0											438	438	100	31	7	5	0	2	1	54	38	0							0	
Cyprus	14	14	100	79	0	0	0	14	7	0	79	0											0							0	
Czech Republic	338	340	101	63	16	5	0	1	1	14	79	0											13	46	38	0	0	0	0	15	85
Denmark	143	141	99	50	35	11	0	1	2	1	84	0											9	67	11	22	0	0	0	0	78
Estonia	201	201	100	67	2	13	0	4	0	12	70	0											62	26	3	26	10	16	0	19	29
Finland	0											138											0							0	
France	0											2 219											0							0	
Georgia	989	989	100	49	18	2	4	15	8	4	66	0											751	28	14	6	10	23	11	8	42
Germany	1 679	1 236	74	40	31	10	0	2	0	17	71	0											160	29	23	17	0	5	0	26	52
Greece	0											234											0							0	
Hungary	526	522	99	37	11	9	12	7	4	19	48	0											121	26	12	11	21	7	2	21	39
Iceland	1	1	100	100	0	0	0	0	0	0	100												0							0	
Ireland	0											141	105	74	3	68	9	1	3	0	17	70	0							0	
Israel	150	159	106	70	10	8	1	1	7	3	80	0											9	78	0	0	0	22	0	0	78
Italy	1 481	118	8	11	84	2	0	3	1	0	95	0											11	0	100	0	0	0	0	0	100
Kazakhstan	8 665	8 660	100	73	1	5	14	4	2	0	75	0											3 976	49	1	12	26	9	3	0	51
Kyrgyzstan	1 643	1 634	99	79	5	4	6	4	1	0	84	0											434	20	54	8	11	6	1	0	74
Latvia	641	641	100	72	2	12	1	6	0	7	74	0											174	41	3	14	1	8	0	33	45
Lithuania	912	897	98	74	0	9	3	9	1	4	74	0											422	32	0	21	5	19	0	22	32
Luxembourg	31											0											0							0	
Malta	2	2	100	0	100	0	0	0	0	0	100	0											0							0	
Monaco																							0							0	
Netherlands	282	248	88	13	73	5	0	2	1	6	86	0											17	0	65	6	0	6	0	24	65
Norway	52	38	73	63	34	0	0	0	3	0	97	0											4	50	0	0	0	0	0	50	50
Poland	2 983	2 981	100	69	9	5	2	7	2	6	78	0											520	61	9	5	4	13	2	6	70
Portugal	1 742	1 613	93	10	74	4	0	5	3	4	84	0											231	11	63	6	1	9	3	7	74
Republic of Moldova	1 029	1 025	100	60	5	8	12	11	3	1	65	185											970	28	9	16	20	19	5	3	37
Romania	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
Russian Federation	6 322	6 311	100	58	3	10	12	8	4	5	61	22 546											946	40	4	14	29	7	5	1	45
San Marino	0	0										0											1	100	0	0	0	0	0	0	100
Serbia & Montenegro	611	532	87	68	21	3	0	6	1	1	89												103	48	29	4	4	8	4	4	77
Slovakia	200	199	100	7	80	13	0	0	0	0	87	0											27	15	70	15	0	0	0	0	85
Slovenia	116	116	100	34	51	9	0	5	0	1	85	0											14	50	43	0	0	7	0	0	93
Spain	0											2 876											0							0	
Sweden	109	109	100	0	83	8	0	1	0	7	83	0											12	0	83	8	0	0	0	8	83
Switzerland	0											107											0							0	
Tajikistan	0	342		86	0	4	5	4	0	0	86	0	585		8	14	13	9	7	2	48	22	57	60	7	9	19	4	2	0	67
TFYR Macedonia	141	200	142	60	24	2	0	13	1	2	84	59											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	494	36	27	11	14	11	1	0	63
Ukraine												12 785											0							0	
United Kingdom												1 455											0							0	
Uzbekistan	2 742	2 726	99	70	11	5	6	7	0	0	81	1 948	1 948	100	91	0	9	0	0	0	0	91	805	52	17	11	8	13	0	0	68
EUR	**46 621**	**45 474**	**98**	**60**	**15**	**6**	**7**	**6**	**3**	**3**	**75**	**56 257**	**14 269**	**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 regist'd, 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 downlaoded from www.who.int/tb

Table A2.6 **Re-treatment outcomes, 2003 cohort**

	Relapse, DOTS									After failure, DOTS									After default, DOTS								
		% of cohort							%		% of cohort							%		% of cohort							%
	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success
Albania	2	100	0	0	0	0	0	0	100	0									0								
Andorra	0									0									0								
Armenia	128	27	27	4	9	11	6	16	55	29	21	17	3	21	10	3	24	38	19	0	16	5	11	11	0	58	16
Austria	0									0									0								
Azerbaijan	211	33	19	9	17	10	4	7	52	64	23	22	14	28	5	3	5	45	126	33	20	7	13	23	1	4	52
Belarus																											
Belgium	0									0									0								
Bosnia & Herzegovina	49	65	29	2	0	4	0	0	94	0									0								
Bulgaria	117	68	0	1	6	15	9	0	68	0									0								
Croatia																											
Cyprus	0									0									0								
Czech Republic	0									0									0								
Denmark	0									0									0								
Estonia	31	39	3	26	0	6	0	26	42	6	0	0	17	17	50	0	17	0	25	16	4	28	20	20	0	12	20
Finland																											
France																											
Georgia	142	32	16	6	11	20	7	7	49	106	23	8	7	20	21	16	7	30	173	23	17	8	8	27	9	8	39
Germany	86	30	23	17	0	6	0	23	53	12	8	8	0	0	8	0	75	17	23	26	39	22	0	0	0	13	65
Greece																											
Hungary	100	27	14	12	20	5	3	19	41	0									1	0	0	0	0	100	0	0	0
Iceland	0									0									0								
Ireland	0									0									0								
Israel	4	75	0	0	0	25	0	0	75	2	50	0	0	0	50	0	0	50	3	100	0	0	0	0	0	0	100
Italy	8	0	100	0	0	0	0	0	100	3	0	100	0	0	0	0	0	100									
Kazakhstan	2 883	55	1	12	23	5	3	0	57	1 093	33	2	10	35	17	2	0	35									
Kyrgyzstan	415	67	8	7	12	6	1	0	75																		
Latvia	141	42	4	13	1	4	0	36	46	3	33	0	33	0	0	0	33	33	30	40	0	17	0	27	0	17	40
Lithuania	247	40	0	19	4	15	0	21	40	65	29	0	26	5	14	0	26	29	110	16	0	22	6	32	1	23	16
Luxembourg																											
Malta	0									0									0								
Monaco																											
Netherlands	11	0	64	0	0	9	0	27	64	0									6	0	67	17	0	0	0	17	67
Norway	0									0									0								
Poland	520	61	9	5	4	13	2	6	70	0									0								
Portugal	133	11	73	4	0	5	4	5	83	2	50	50	0	0	0	0	0	100	44	9	27	16	5	20	7	16	36
Republic of Moldova	524	34	5	16	20	17	4	3	39	221	24	9	19	25	14	7	1	33	225	17	20	13	15	28	5	2	37
Romania	1 483	47	13	9	10	13	1	7	59	877	21	9	12	14	12	1	31	30	147	23	10	12	10	27	1	16	33
Russian Federation	946	40	4	14	29	7	5	1	45																		
San Marino	1	100	0	0	0	0	0	0	100	0									0								
Serbia & Montenegro	103	48	29	4	4	8	4	4	77																		
Slovakia	26	15	69	15	0	0	0	0	85	0									0								
Slovenia	9	67	33	0	0	0	0	0	100	0									5	20	60	0	0	20	0	0	80
Spain																											
Sweden	5	0	80	0	0	0	0	20	80	0									0								
Switzerland																											
Tajikistan	21	90	0	0	10	0	0	0	90	13	31	15	8	46	0	0	0	46	23	48	9	17	13	9	4	0	57
TFYR Macedonia	51	35	35	2	0	27	0	0	71	0									0								
Turkey	41	44	32	2	2	7	5	7	76	1	0	0	0	0	0	100	0	0	9	22	0	22	11	33	11	0	22
Turkmenistan	64	27	28	16	20	9	0	0	55	0									0								
Ukraine																											
United Kingdom																											
Uzbekistan	704	54	16	10	7	13	0	0	70	63	41	13	21	8	17	0	0	54	38	29	37	11	11	13	0	0	66
EUR	**9 206**	**48**	**9**	**11**	**15**	**9**	**3**	**4**	**58**	**2 560**	**27**	**6**	**12**	**24**	**15**	**3**	**13**	**33**	**1 007**	**22**	**16**	**13**	**10**	**25**	**4**	**10**	**38**

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases regist'd, 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
Albania								98	90	91							25	30	31	34
Andorra					100	67	50	100	100	100			224	14	58	15	48	34	123	55
Armenia		83	77	82	81	88	87	90	79	77	13	28	48	45	41	50	31	31	42	44
Austria						77	73	64	78	68						58	48	41	51	42
Azerbaijan			86	87	86	88	91	66	84	70	5	9	7	7	7	6	0	46	29	47
Belarus										73									39	42
Belgium								64	69	73							72	65	58	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				78	39			43	85	69
Czech Republic	73	60	66	69	65	78	70	73	73	79	45	59	52	65	58	60	61	56	62	61
Denmark									77	84									73	78
Estonia						63	70	64	67	70						64	57	61	67	74
Finland																				
France																				
Georgia		58		65	78	61	63	67	65	66	18	35		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
Iceland								67	100	100							73	51	27	57
Ireland																				
Israel							78	79	81	80						6	59	57	54	34
Italy		80	82	69	72	71	74	40	79	95		14	9	13	55	31	10	64	78	58
Kazakhstan					79	79	79	78	78	75				4	79	93	92	94	86	79
Kyrgyzstan			88	76	82	83	82	81	82	84		3	4	31	58	42		48	56	62
Latvia		61	64	65	71	74	72	73	76	74		72	70	73	64	72	76	77	84	83
Lithuania					79	84	92	75	72	74					3	2	30	56	86	89
Luxembourg																	41	66	125	83
Malta		100	100	100	100	75	100	100	60	100		34	21	45	70	41	26	44	19	19
Monaco																				
Netherlands	81	72	81	80	65	79	76		68	86	77	49	44	37	46	44	48	53	46	61
Norway		77	80	44	69	77	70	87	80	97		67	67	35	15	28	47	26	46	46
Poland					75	69	72	77	86	78				2	3	4	3	56	57	56
Portugal	48	69	74	78	74	85	79	78	82	84	75	75	65	84	78	83	95	95	86	78
Republic of Moldova							83	66	61	65							40	21	39	59
Romania				72	85	78	80	78	76	80				87	4	9	10	43	40	41
Russian Federation		65	62	67	68	65	68	67	67	61		0	1	1	2	4	5	7	8	13
San Marino				100									100			113				
Serbia & Montenegro								88	91	89							27	24	38	32
Slovakia	96	64	73	67	85	79	82	87	85	87	80	85	34	40	35	37	37	34	38	34
Slovenia		90	87	82	78	88	84	82	85	85		79	59	65	75	71	73	75	75	66
Spain																				
Sweden							79	62	73	83							53	58	60	69
Switzerland																				
Tajikistan									79	86								2		12
TFYR Macedonia							86	88	79	84							54	49	50	73
Turkey										93									5	3
Turkmenistan							69	75	77	82						17	36	42	45	38
Ukraine																				
United Kingdom																				
Uzbekistan					78	79	80	76	80	81				0	2	4	7	22	21	28
EUR	**68**	**69**	**72**	**72**	**76**	**77**	**77**	**75**	**76**	**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+	
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	0	0	0	0	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	24	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	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	50	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	84	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	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	
* 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	85	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	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	2	0	0	1.0
Monaco																						
* Netherlands	6	36	54	37	26	22	31	4	20	33	15	4	4	12	10	56	87	52	30	26	43	2.3
* Norway	1	5	6	6	1	1	2	0	3	8	4	2	1	6	1	8	14	10	3	2	8	0.9
* Poland	1	85	225	425	664	243	292	2	92	136	126	118	79	285	3	177	361	551	782	322	577	2.3
* Portugal	4	97	258	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	1 695	1 415	528	736	63	3 754	7 130	7 860	7 468	2 695	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	
* Serbia & Montenegro	4	61	106	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	298	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	7	6	4	5	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																						
* United Kingdom	10	118	203	148	103	85	94	13	126	176	85	47	33	65	23	244	379	233	150	118	159	1.4
Uzbekistan	23	512	835	607	502	275	252	31	430	600	341	274	211	226	54	942	1 435	948	776	486	478	1.4
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	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+
Albania	1	4	7	8	14	20	21	0	4	5	3	7	9	19	1	4	6	6	10	15	20
Andorra																					
Armenia	1	43	31	32	31	29	19	0	8	8	5	4	3	2	1	26	20	18	17	15	9
Austria	0	4	3	5	5	5	4	0	3	3	1	1	1	2	0	3	3	3	3	3	3
Azerbaijan	1	31	55	32	40	58	34	1	15	10	8	8	18	8	1	23	31	19	24	36	19
Belarus		10	25	35	34	22	12	0	4	6	5	4	2	7	0	7	15	20	18	11	8
Belgium	0	4	8	4	5	4	6	1	3	2	3	0	1	1	0	4	5	3	3	3	3
Bosnia & Herzegovina	1	20	25	26	25	44	57	1	14	22	12	16	29	36	1	17	24	19	20	36	45
Bulgaria	2	17	26	31	37	34	21	1	16	19	12	8	7	9	1	17	22	21	22	20	14
Croatia	0	6	11	22	25	17	19	1	6	6	4	4	3	12	1	6	8	13	14	10	15
Cyprus	0	5	5	0	2	2	2	0	2	0	0	0	0	0	0	3	3	0	1	1	1
Czech Republic	0	1	3	5	9	5	6	0	2	2	1	2	2	3	0	2	3	3	6	3	4
Denmark	0	2	3	4	7	4	3	0	4	4	3	2	2	0	0	3	4	3	5	3	2
Estonia	0	6	26	49	64	23	15	0	4	13	11	13	7	5	0	5	20	29	37	14	8
Finland	0	0	2	2	4	4	10	0	0	0	1	1	1	3	0	0	1	1	3	2	6
France	0	3	5	5	5	4	5	0	3	3	2	1	1	3	0	3	4	3	3	3	4
Georgia	1	38	78	61	56	41	23	1	22	23	13	9	11	6	1	30	51	36	31	24	13
Germany	0	1	3	2	3	2	3	0	2	2	1	1	1	1	0	1	2	2	2	1	2
Greece	0	1	2	3	2	2	4	0	0	1	1	0	0	1	0	1	1	2	1	1	2
Hungary	0	1	5	16	20	12	12	0	1	3	4	4	2	4	0	1	4	10	12	7	7
Iceland	0	0	0	0	5	7	0	0	0	0	0	0	0	0	0	0	0	0	3	4	0
Ireland	0	1	5	4	5	4	5	0	3	3	1	1	2	2	0	2	4	2	3	3	4
Israel	0	0	1	3	3	1	6	0	1	2	2	1	0	3	0	1	2	3	2	1	4
Italy	1	2	3	2	2	1	3	0	2	2	1	1	1	1	1	2	2	2	1	1	2
Kazakhstan	1	66	109	111	103	81	43	3	58	76	45	30	33	23	2	62	92	77	64	54	30
Kyrgyzstan	0	41	69	81	69	56	53	1	37	57	31	23	29	35	1	39	63	56	45	41	42
Latvia	0	16	47	75	76	49	31	1	17	20	22	17	8	7	1	16	34	48	44	25	15
Lithuania	0	15	44	64	84	62	40	0	8	20	18	20	12	9	0	11	32	41	50	33	20
Luxembourg	0	4	0	10	9	4	4	0	0	15	13	0	0	0	0	2	7	11	5	2	2
Malta	0	0	0	0	3	0	0	0	0	0	0	3	0	0	0	0	0	0	3	0	0
Monaco																					
Netherlands	0	4	5	3	2	2	3	0	2	3	1	0	0	1	0	3	4	2	1	1	2
Norway	0	2	2	2	0	0	1	0	1	3	1	1	0	1	0	1	2	1	0	0	1
Poland	0	3	8	17	22	14	16	0	3	5	5	4	4	9	0	3	6	11	13	9	12
Portugal	0	15	31	47	34	19	17	0	14	15	9	3	3	5	0	15	23	28	18	10	10
Republic of Moldova	2	52	87	100	92	58	26	3	23	30	19	16	14	8	2	38	58	58	52	33	15
Romania	2	41	83	119	132	89	48	3	40	43	36	29	20	23	3	41	63	78	79	52	33
Russian Federation	0	20	49	59	57	39	18	0	12	20	16	12	7	5	0	16	35	37	33	21	10
San Marino																					
Serbia & Montenegro	0	7	13	17	24	25	25	0	9	12	11	6	7	17	0	8	13	14	15	16	21
Slovakia	0	0	4	8	8	5	9	0	0	0	1	1	1	7	0	0	2	4	4	3	7
Slovenia	0	4	5	7	6	7	11	0	3	4	3	2	2	9	0	3	4	5	4	4	10
Spain	0	5	8	10	9	7	8	0	6	6	4	2	1	2	0	6	7	7	5	4	4
Sweden	0	2	3	1	1	2	2	0	2	2	2	0	1	1	0	2	3	2	1	1	1
Switzerland	0	2	3	1	2	1	2	0	2	3	1	1	1	1	0	2	3	1	2	1	1
Tajikistan	1	21	19	16	15	11	8	1	11	13	11	10	16	9	1	16	16	13	12	14	8
TFYR Macedonia	1	7	11	13	24	23	16	0	9	13	13	4	3	14	0	8	12	13	14	12	14
Turkey	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	1	1	1	1
Turkmenistan	0	25	64	55	60	41	13	0	17	33	21	20	26	14	0	21	48	37	39	33	13
Ukraine																					
United Kingdom	0	3	5	3	3	3	2	0	3	4	2	1	1	1	0	3	5	3	2	2	2
Uzbekistan	1	18	40	36	46	57	45	1	15	29	20	24	41	28	1	17	34	28	34	48	35
EUR	**0**	**11**	**20**	**22**	**24**	**15**	**10**	**0**	**8**	**10**	**7**	**6**	**4**	**4**	**0**	**9**	**15**	**14**	**14**	**9**	**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			707	641	738	655	694	733	604	555	594	543	547
Andorra										12	23	24	21	15	24		17	19	8	10	12	10	5	10	7
Armenia	756	924	759	702	774	768	832	766	651	649	590	741	235	590	753	1 157	928	1 026	1 455	1 488	1 333	1 389	1 433	1 538	1 660
Austria	2 191	2 061	1 942	1 825	1 765	1 442	1 377	1 390	1 402	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	895
Azerbaijan	3 080	3 180	3 217	3 176	3 506	3 772	3 804	3 677	3 340	2 989	2 620	2 771	2 821	3 036	2 839	1 630	2 480	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	2 414	4 134	4 348	4 854	5 598	5 985	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	1 956	1 893	1 772	1 588	1 648	1 577	1 462	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	4 678	4 468	4 691	4 666	4 605	4 522	4 093	4 176	4 073	3 546	600	680	1 595	2 132	2 220	2 869	2 711	2 923	2 476	2 469	1 691	1 740	2 353
Bulgaria	3 280	3 007	2 999	2 892	2 856	2 555	2 530	2 352	2 387	2 301	2 256	2 606	3 096	3 213	5 296	3 245	3 109	3 437	4 117	3 530	3 349	3 862	3 335	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	1 765	1 630	1 376	1 443	1 356	1 170
Cyprus	69	69	86	73	39	61	48	35	39	23	29	43	39	37	37	36	24	47	45	39	33	40	20	35	30
Czech Republic	4 962	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	334	359	411	495	448	484	554	529	587	587	494	403	378	356
Estonia	614	560	563	587	546	541	522	446	471	422	423	406	403	532	623	624	683	744	820	754	791	708	620	557	537
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	2 098	2 124	2 168	1 881	1 855	1 822	1 833	1 810	1 598	1 609	1 537		2 130	3 741		1 625	3 522	8 446	6 302	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	9 974	9 064	6 959	6 931	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			939	945	767	1 152	936	703	503	570	571	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	604	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	419	395	398	369	422	656	490	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	5 816	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	13 286	13 501	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	943	955	994	1 131	1 541	1 761	2 003	2 182	1 891	1 982	2 000	1 803	1 686	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	2 586	2 036
Luxembourg	71	45	41	41	46	42	45	48	16	45	48	48	25	35	33	32	41	38	44	37	44	31	31	54	31
Malta	24	26	13	24	15	11	14	14	12	16	13	26	30	26	25	11	28	11	16	22	16	16	24	6	18
Monaco	1	0	0	0	0	1	2	2	1	1	1	0	1		1	1	0	0	0	3	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	16 551	16 828	16 653	15 958	15 358	13 967	13 302	12 168	10 931	10 153	10 069	9 677	8 698
Portugal	6 873	7 249	7 309	7 052	6 908	6 889	6 624	7 099	6 363	6 664	6 214	5 980	5 927	5 447	5 619	5 577	5 248	5 110	5 260	4 599	4 227	4 320	4 381	3 861	3 600
Republic of Moldova	2 781	2 852	3 197	2 858	2 554	2 732	3 022	2 810	2 510	2 281	1 728	1 910	1 835	2 426	2 626	2 925	2 922	2 908	2 625	2 711	2 935	3 608	3 769	3 619	4 806
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	24 189	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	84 980	111 075	119 123	110 935	134 360	140 677	132 477	128 873	124 041	121 426
San Marino											1	1		3	2	2	0	1	0	0	1	0	1	1	0
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	4 062	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	1 501	1 448	1 620	1 733	1 799	1 760	1 540	1 503	1 298	1 282	1 100	1 010	986	975	904	664
Slovenia	1 085	939	982	925	896	923	816	792	760	768	722	583	640	646	526	525	563	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	7 993	6 851	7 283	7 343	6 015
Sweden	926	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	1 097	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	652	892	2 029	1 647	2 143	2 448	2 553	2 779	3 508	4 052	4 260	4 529
TFYR Macedonia													1 602	1 712	728	786	724	693	620	557	641	648	686	653	644
Turkey	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			22 981	20 212	25 685	25 501	22 088	18 038	17 263	18 043	17 923	17 543
Turkmenistan	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
Ukraine	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
United Kingdom	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
Uzbekistan	9 163	9 682	8 697	8 817	8 544	8 717	9 427	9 794	10 134	10 632	9 414		9 370	9 774	14 890	9 866	11 919	13 352	14 558	15 080	15 750	17 391	20 588	20 700	20 289
EUR	**348 921**	**346 104**	**324 580**	**319 220**	**308 401**	**298 933**	**302 602**	**290 606**	**277 143**	**267 232**	**242 429**	**231 651**	**248 519**	**242 425**	**243 691**	**289 949**	**322 165**	**353 336**	**349 800**	**373 765**	**373 081**	**368 433**	**373 670**	**358 978**	**354 954**
Number reporting	48	48	48	48	48	48	48	48	48	49	50	49	49	47	46	50	51	51	51	51	51	51	51	51	51
% reporting	94	94	94	94	94	94	94	94	94	96	98	96	96	92	90	98	100	100	100	100	100	100	100	98	98

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
Albania	39	35	35	31	34	31	33	29	24	21	20	19			22	20	24	21	23	24	20	18	19	18	18
Andorra										24	44	44	37	25	38		26	29	12	15	18	15	8	15	10
Armenia	24	29	24	22	24	23	24	22	19	18	17	21	7	17	23	36	29	33	47	48	43	45	47	51	55
Austria	29	27	26	24	23	19	18	18	18	17	20	18	17	16	16	17	17	17	16	13	15	12	13	12	11
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	23	40	42	47	55	59	61	73	68	55	52	52	55
Belgium	27	29	27	22	22	20	19	18	16	17	16	15	13	15	15	14	13	12	12	11	12	13	12	10	11
Bosnia & Herzegovina	113	111	117	111	115	113	110	106	94	96	95	85	15	18	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	63	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	46	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	5	4	5	2	4	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	10
Denmark	8	8	7	7	6	6	6	6	6	6	7	6	7	8	10	9	9	11	10	11	11	9	7	7	7
Estonia	42	38	38	39	36	35	34	29	30	27	27	26	26	35	42	43	48	53	59	55	58	52	46	42	40
Finland	47	46	45	39	37	37	31	29	22	20	15	15	14	11	11	13	13	11	12	11	10	9	9	8	6
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		40	72		32	71	173	131	100	93	86	97	92	89
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	7	11	9	6	5	5	5	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	6	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	9	6	4	5	4	5	11	7	8	8	7	7	7	11	8	9	9	8	8	8
Italy	6	6	7	8	6	7	7	6	6	7	7	7	8	8	10	10	7	8	10	8	6	7	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	50	51	49	52	57	58	54	60	74	88	110	119	131	125	133	130	120	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	85	79	76	75	70	75	59
Luxembourg	20	12	11	11	13	11	12	13	4	12	13	13	6	9	8	8	10	9	10	9	10	7	7	12	7
Malta	7	8	4	7	4	3	4	4	3	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	3	3	3	0	3		3	3	0	0	0	9	0	0	0		
Netherlands	12	12	11	10	10	9	8	8	9	9	9	9	10	10	12	10	11	10	9	9	8	9	8	8	8
Norway	12	11	11	10	9	9	8	7	7	6	7	7	7	6	6	5	5	5	5	5	5	6	5	7	6
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	56	60	67	68	67	61	63	69	85	89	86	114
Romania	61	61	61	60	57	56	56	58	61	63	70	67	78	89	94	103	107	107	115	118	124	130	136	130	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											4	4		12	8	8	0	4	0	0	4	0	4	4	0
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	20	19	18	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	18	17	14	13
Spain	13	15	21	24	26	28	36	24	22	21	19	23	25	24		22	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	8	7	8	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													83	88	37	40	37	35	31	28	32	32	34	32	32
Turkey	79	84	54	57	54	59	58	56	50	47	43	43	43			37	32	40	39	33	26	25	26	25	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
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	10	12	11	12
Uzbekistan	57	59	52	51	48	48	51	51	52	53	46		44	44	66	43	51	56	61	62	64	69	81	80	77
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**

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	225	211	201		8	4	6	8	7	5	6	6	7	7	6
Andorra	15	24		8	17	1	4	1	3	2	7	3	25	38		12	26	2	6	2	5	3	11	4
Armenia		319	436	327	400	475	576	621	572	511	575	602		10	14	10	13	15	19	20	19	17	19	20
Austria			662	580	370		323	324	262	220	269	216			8	7	5		4	4	3	3	3	3
Azerbaijan	499	513	669	990	981	727	763	890	927	1 661	1 161	1 472	7	7	9	13	12	9	9	11	11	20	14	18
Belarus	1 493	1 775	1 845	2 117	2 273	5 047	2 769	2 547	2 341		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	4
Bosnia & Herzegovina			865	927	803	640	786	759	800	526	493	889			25	27	23	18	21	20	21	13	13	23
Bulgaria		3 096	1 087	903	1 037	1 325	1 697	2 524	897	1 007	1 254	1 315		37	13	11	13	16	21	32	11	13	16	17
Croatia			1 204	1 228	1 073	1 129	748	0	421	437	438	416			26	26	23	25	17	0	9	10	10	9
Cyprus			6	3	19	20	9	4	0	8	14	10			1	0	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	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	3
Estonia	303	347	369	240	269	299	274	255	212	203	201	203	20	24	26	17	19	22	20	19	16	15	15	15
Finland			244	240	186	188	179	205	150	130	138	124			5	5	4	4	3	4	3	2	3	2
France	4 455	3 196	3 449	3 002	2 430		2 325	1 815	2 398	2 276	2 219	1 923	8	6	6	5	4		4	3	4	4	4	3
Georgia			221	482	595	547	746	601	1 014	987	989	1 311			4	10	12	11	16	13	22	21	22	29
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	2
Greece					285	313	143	235	213	212	234	176					3	3	1	2	2	2	2	2
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	5	6
Iceland		6	2	1	4	2	2	1	3	2	1	2		2	1	0	1	1	1	0	1	1	0	1
Ireland				339	123	116	117	138	123	100	141	127				9	3	3	3	4	3	3	4	3
Israel	150	129		147	207	221	170	17	172	164	150	91	3	2		3	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		3	2	3	3	4	2	1	2	2	3	2
Kazakhstan			3 022	4 290	4 332	6 180	6 977	8 903	9 079	9 452	8 665	7 927			19	27	28	40	46	59	61	63	58	53
Kyrgyzstan		681	832	991	1 536	830	1 642	1 296	0	1 587	1 643	1 761		15	18	21	33	17	34	26	0	31	32	34
Latvia	470		504	575	634	668	588	637	661	636	641	582	18		20	23	26	28	25	27	28	27	28	25
Lithuania	688		979	1 121	1 200	787	787	776	935	822	912	863	19		27	31	34	22	22	22	27	24	26	25
Luxembourg				29	31	24		21	11	17	31	20				7	7	6		5	2	4	7	4
Malta	13	6	5	5	3	6	9	5	3	5	2	2	4	2	1	1	1	2	2	1	1	1	1	1
Monaco				0	0	0	2	0	0	0						0	0	0	6	0	0	0		
Netherlands	1 063		575	358	312	254	308	289	307	330	282	360	7		4	2	2	2	2	2	2	2	2	2
Norway		86	62	103	100	49	21	37	59	31	52	50		2	1	2	2	1	0	1	1	1	1	1
Poland	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	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		21	20	19	16	20	18	18	20	19	17	14
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	36
Romania	9 339	10 385	10 469	10 359	11 666	10 841	10 317	10 202	11 184	10 703	10 418	10 888	41	46	46	46	52	49	46	46	51	49	48	50
Russian Federation		30 389	37 512	42 534	42 094	42 219	21 744	27 467	26 605	27 865	28 868	30 890		20	25	29	29	29	15	19	18	19	20	21
San Marino				0	1	0	0	1	0	0	0	0				0	4	0	0	4	0	0	0	0
Serbia & Montenegro			1 497	1 783	1 702	1 873	2 517	0	461	402	611	1 244			14	17	16	18	24	0	4	4	6	12
Slovakia	882	409	788	760	283	303	246	236	226	202	200	157	17	8	15	14	5	6	5	4	4	4	4	3
Slovenia	361	294	303	221	156	157	165	145	139	130	116	89	18	15	15	11	8	8	8	7	7	7	6	5
Spain			2 605			1 906		3 423	2 456	3 317	2 876	2 082			7			5		8	6	8	7	5
Sweden	312	106	102	90	94	97	117	118	105	109	109	120	4	1	1	1	1	1	1	1	1	1	1	1
Switzerland	528	507	185	172	144	165	98	118	116	123	107	119	8	7	3	2	2	2	1	2	2	2	1	2
Tajikistan			1 042	232	373	435	0	434	719	687	0	1 058			18	4	6	7	0	7	12	11	0	16
TFYR Macedonia			319	209	192	179	122	167	164	200	200	200			16	11	10	9	6	8	8	10	10	10
Turkey			4 383	2 816	3 439	3 692	4 124	4 315	4 444	0	5 816	5 870			7	4	5	6	6	6	6	0	8	8
Turkmenistan	472		544	557	764	790	964	1 017	1 243	1 254	1 197	1 103	12		13	13	18	18	22	23	27	27	25	23
Ukraine	8 314	8 471	8 263	7 827	9 533	10 586	10 412	10 738	0	0	12 785	0	16	16	16	15	19	21	21	22	0	0	27	0
United Kingdom	283	270		4 147	844	1 342	797	1 204	946	1 365	1 455	1 693	0	0		7	1	2	1	2	2	2	2	3
Uzbekistan		7 487	2 735	3 350	3 388	3 504	3 977	3 825	4 608	4 783	4 690	5 119		33	12	14	14	15	16	15	18	19	18	20
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**

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
	All forms*		Smear-positive*		All forms*		All forms*		All forms*		All forms HIV+		Smear-positive*		Smear-positive HIV+		All forms*		All forms HIV+		All forms*		All forms HIV+		in adult incident
	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	TB cases (%)
Bangladesh	274 460	264	123 507	119	665 709	640	80 680	78	319 252	229	263	≤ 1	143 637	103	92	≤ 1	606 106	435	132	≤ 1	70 422	51	118	≤ 1	0.1
Bhutan	3 351	204	1 508	92	6 085	371	653	40	2 265	107	≤ 1	≤ 1	1 019	48	≤ 1	≤ 1	3 896	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	≤ 1	17 907	80	≤ 1	≤ 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	≤ 1	71	22	≤ 1	≤ 1	184	57	≤ 1	≤ 1	11	4	≤ 1	≤ 1	0.3
Myanmar	69 653	171	31 221	77	170 701	419	20 407	50	85 464	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	196 530	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**

	TB cases notified from whole country (DOTS + non-DOTS)															Incidence and case detection rates				Proportions			
		Country	New and relapse		New pulmonary			New extra-	Other	Re-treatment cases					New pulm.	Estimated incidence		Case detection rate		ss+	ss+	Extrapulm.	Re-treat.
	Population	total	(WHO total)		ss+		ss- / unk.	pulmonary	new	Relapse	After failure	After default	Other re-treat.	Other	lab. confirm.	all forms	ss+	new and	new ss+	(% of	(% of	(% of	(% of
	thousands	number	number	rate	number	rate	number	number	number	number	number	number	number	number	number	number	number	relapse %	%	pulm.)	new+relapse)	new+relapse)	new+re-treat.)
Bangladesh	139 215	98 234	98 234	71	62 500	45	23 871	8 630		3 233					62 500	319 252	143 637	31	44	72	64	9	3
Bhutan	2 116	1 002	988	47	356	17	242	354		36	5	9			356	2 265	1 019	44	35	60	36	36	5
DPR Korea	22 384	52 455	44 602	199	18 479	83	18 720	5 707	33	1 663	1 170	957	5 552		18 479	39 793	17 907	112	103	50	41	13	18
India	1 087 124	1 275 998	1 136 506	105	489 031	45	432 862	151 263	0	63 350	16 537	69 223	53 732	0	489 031	1 824 395	814 570	62	60	53	43	13	16
Indonesia	220 077	214 658	210 229	96	128 981	59	76 981	4 267					4 429		128 981	539 189	242 315	39	53	63	61	2	2
Maldives	321	119	119	37	66	21	18	30	0	5	0	0	0	0	66	157	71	76	94	79	55	25	4
Myanmar	50 004	99 431	96 662	193	31 408	63	34 332	26 216	0	4 706	1 522	1 247	0	0	31 408	85 464	38 050	113	83	48	32	27	8
Nepal	26 591	32 678	31 979	120	14 614	55	9 008	6 287	0	2 070	337	362	0	0	17 383	48 834	21 868	65	67	62	46	20	8
Sri Lanka	20 570	8 952	8 562	42	4 302	21	2 309	1 735		216	40	170		180	4 589	12 445	5 597	69	77	65	50	20	5
Thailand	63 694	55 306	55 306	87	28 421	45	18 088	7 093		1 704					28 421	90 607	40 249	61	71	61	51	13	3
Timor-Leste	887	3 738	3 716	419	1 014	114	2 166	507	0	20	8	14	0	0	1 014	4 927	2 215	75	46	32	27	14	1
SEAR	**1 632 982**	**1 842 571**	**1 686 903**	**103**	**779 172**	**48**	**618 597**	**212089**	**33**	**77 003**	**19 619**	**71 982**	**63 713**	**180**	**782 228**	**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**

	TB cases reported from DOTS services														Estimated incidence and case detection rate				Proportions			
	DOTS coverage %	New and relapse (WHO total)		New pulmonary ss+		New pulmonary ss- / unk.	New extra-pulmonary	Other new	Re-treatment cases: Relapse	After failure	After default	Other re-treat.	Other	New pulm. lab. confirm.	Estimated incidence all forms	Estimated incidence ss+	Case detection rate new and relapse %	Case detection rate new ss+ %	ss+ (% of pulm.)	ss+ (% of new+relapse)	Extrapulm. (% of new+relapse)	Re-treat. (% of new+re-treat.)
		number	rate	number	rate	number	number	number	number	number	number	number	number	number	number	number						
Bangladesh	99	98 234	71	62 500	45	23 871	8 630		3 233					62 500	319 252	143 637	31	44	72	64	9	3
Bhutan	90	988	47	356	17	242	354		36	5	9			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	957	5 552		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	67 630	52 160	0	465 354	1 824 395	814 570	58	57	55	44	14	17
Indonesia	98	210 229	96	128 981	59	76 981	4 267					4 429		128 981	539 189	242 315	39	53	63	61	2	2
Maldives	100	119	37	66	21	18	30	0	5	0	0	0	0	66	157	71	76	94	79	55	25	4
Myanmar	95	96 662	193	31 408	63	34 332	26 216	0	4 706	1 522	1 247	0	0	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	362	0	0	17 383	48 834	21 868	65	67	62	46	20	8
Sri Lanka	88	7 611	37	3 928	19	1 906	1 578		199	37	161		134	4 163	12 445	5 597	61	70	67	52	21	5
Thailand	100	55 306	87	28 421	45	18 088	7 093		1 704					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	14	0	0	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**	**62 141**	**134**	**758 125**	**2 967 328**	**1 327 498**	**54**	**57**	**57**	**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	Institutions notifying to NTP						HIV testing for TB pts	HIV surveillance among TB pts	TB pts tested for HIV number	TB pts HIV-positive number	TB pts CPT number	TB pts ART number	Laboratory-confirmed MDR number	DST in new cases number	MDR in new cases number	Re-treatment DST number	Re-treatment MDR number
		Private hospitals or clinics	Private practitioners	Public hospitals	Prisions	Military	Insurance											
Bangladesh		No	All					No					0					
Bhutan	No	No	No	All	All	All	No	Yes	Yes			0	0	0				
DPR Korea				All				No	No	0	0	0	0	0	0	0	0	0
India	Yes	Some	Some	All	Some	Some	No	No										
Indonesia	No	Some	Some	Some	Some	Some	No	No										
Maldives	Yes	All	All	All				Yes	Yes		0	0		1	0	0	1	1
Myanmar	Yes	Some	Some	Some	No	Some	No	No	No					70			3	2
Nepal	Yes	Some	Some	All	All	All	No	No	Yes	0	0	0	0					
Sri Lanka	Yes	No	No	No	All	No	No	No	Yes		4	3	2	8	505	1	441	7
Thailand	Yes	Some	No	All	All	Some	No	No										
Timor-Leste	Yes	All	All	All	All		No	No	No	5	1	1	1					
SEAR	**15**	**15**	**55**	**64**	**55**	**45**	**0**	**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 calculated 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 notif	% of cohort							%	Number of cases		% of notif	% of cohort							%	Number	% of cohort								%
	Notified	Regist'd	regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Notified	Regist'd	regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success
Bangladesh	53 618	53 618	100	83	2	5	1	5	4	0	85												4 328	69	4	4	3	10	5	5	73
Bhutan	360	384	107	79	11	4	2	1	3	0	90												48	60	19	4	10	2	4	0	79
DPR Korea	16 445	17 945	109	85	4	3	4	3	2	0	88	947	947	100	70	6	4	6	7	7	0	76	4 664	76	5	4	6	4	5	0	81
India	358 778	358 778	100	85	1	5	2	6	0	0	86	74 786	61 183	82	11	5	0	0	5	2	78	15	112 458	66	4	8	6	15	1	0	70
Indonesia	92 566	92 566	100	77	10	2	2	4	2	4	87												4 086	59	19	2	2	5	3	9	78
Maldives	68	68	100	91	0	3	0	1	4	0	91												3	100	0	0	0	0	0	0	100
Myanmar	27 448	27 448	100	71	9	6	2	9	3	0	81												5 585	57	13	8	5	10	4	3	70
Nepal	14 348	14 348	100	86	1	5	1	3	3	0	87												2 740	78	2	8	4	3	4	0	80
Sri Lanka	3 652	3 652	100	79	2	5	0	11	3	0	81	669	669	100	69	9	7	0	8	7	0	78	381	58	6	6	2	23	5	1	64
Thailand	28 459	28 459	100	68	5	10	2	8	3	5	73												2 051	56	7	16	7	9	6	0	62
Timor-Leste	1 027	1 027	100	68	13	5	1	10	4	0	81												46	59	7	13	2	20	0	0	65
SEAR	**596 769**	**598 293**	**100**	**82**	**3**	**5**	**2**	**6**	**1**	**1**	**85**	**76 402**	**62 799**	**82**	**12**	**5**	**0**	**0**	**5**	**2**	**76**	**17**	**136 390**	**66**	**5**	**7**	**6**	**14**	**1**	**1**	**71**

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases regist'd, 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 downlaoded from www.who.int/tb

Table A2.6 **Re-treatment outcomes, 2003 cohort**

	Relapse, DOTS									After failure, DOTS									After default, DOTS								
		% of cohort							%		% of cohort							%		% of cohort							%
	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success
Bangladesh	2505	69	5	4	2	7	5	9	74	291	70	3	4	4	13	6	0	73	1532	70	3	5	4	13	6	0	72
Bhutan	37	65	14	5	11	0	5	0	78	11	45	36	0	9	9	0	0	82	9							100	
DPR Korea	1 732	80	4	3	5	3	5	0	84	1 107	76	4	5	7	4	4	0	80	878	77	5	4	7	4	3	0	82
India	46 471	71	3	7	5	12	0	0	75	11 638	56	4	9	14	16	1	0	60	54 349	64	5	8	5	18	1	0	69
Indonesia	4 086	59	19	2	2	5	3	9	78																		
Maldives	3	100	0	0	0	0	0	0	100	0									0								
Myanmar	4 621	62	13	9	4	9	4	0	75	964	31	15	7	12	16	4	16	46									
Nepal	2 052	81	2	8	3	3	3	0	83	293	65	1	9	16	5	4	0	67	395	74	4	9	2	3	9	0	78
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	2	54
Thailand	1 471	61	6	15	6	8	5	0	67	580	43	8	19	10	11	9	0	52									
Timor-Leste	20	75	5	15	0	5	0	0	80	8	50	0	25	0	25	0	0	50	18	44	11	6	6	33	0	0	56
SEAR	**63 179**	**70**	**5**	**7**	**5**	**11**	**1**	**1**	**75**	**14 938**	**56**	**5**	**9**	**13**	**15**	**2**	**1**	**60**	**57 335**	**65**	**5**	**8**	**5**	**17**	**1**	**0**	**69**

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases regist'd, 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
Bangladesh	73	71	72	78	80	81	83	84	84	85	7	15	19	24	25	26	28	32	38	44
Bhutan	71	97	96	85	90	85	90	93	86	90	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	58	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	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	86	87		5	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	77	69	75	74	73		0	5	21	39	46	73	65	71	71
Timor-Leste								73	81	81								56	50	46
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
	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+	ratio
Bangladesh	420	6 171	8 281	8 914	8 327	6 276	5 144	589	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	26 993	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	4 966	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	3 393	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	263	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	98	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	42 644	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	1 582	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	17 681	16 750		97 505	105 516	74 470	60 808	98 458	62 966	49 647	35 529	24 647	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	11 986	9 348	10 940	12 416	14 905	17 000	19 009	15 583	18 229	22 201	17 122	14 756	19 626	30 840	42 838	57 012	75 744	96 662
Nepal	1 020	337	1 459	700	190	52	252	1 012	1 603	11 003	10 142	8 983		13 161	15 572	19 804	22 970	24 158	24 135	27 356	29 519	29 519	30 359	30 925	31 979
Sri Lanka	6 212	6 288	7 334	6 666	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	7 499	8 939	8 998	8 562
Thailand	45 704	49 452	48 553	65 413	69 240	77 611	52 152	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**	**1 323 509**	**1 413 418**	**1 520 444**	**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**	**1 308 981**	**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		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		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																							356	334	419
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/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**
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	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	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*		Smear-positive*		All forms*		All forms*		All forms*		All forms HIV+		Smear-positive*		Smear-positive HIV+		All forms*		All forms HIV+		All forms*		All forms HIV+		
	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	number	rate	
American Samoa	24	52	11	23	55	117	5	12	18	28	≤ 1	≤ 1	8	13	≤ 1	≤ 1	31	49	≤ 1	≤ 1	3	5	≤ 1	≤ 1	0.1
Australia	1 060	6	476	3	1 113	7	110	≤ 1	1 132	6	20	≤ 1	507	3	7	≤ 1	1 147	6	10	≤ 1	113	≤ 1	2	≤ 1	3.9
Brunei Darussalam	159	62	72	28	292	114	31	12	197	54	≤ 1	≤ 1	89	24	≤ 1	≤ 1	230	63	≤ 1	≤ 1	19	5	≤ 1	≤ 1	0.1
Cambodia	56 894	584	25 218	259	92 259	947	11 207	115	70 370	510	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	≤ 1	595 381	46	2 463	≤ 1	2 892 422	221	3 518	≤ 1	217 130	17	2 176	≤ 1	0.9
China, Hong Kong SAR	6 327	111	2 846	50	8 468	148	706	12	5 223	75	12	≤ 1	2 349	34	4	≤ 1	5 334	77	6	≤ 1	450	6	1	≤ 1	0.4
China, Macao SAR	347	93	156	42	461	124	45	12	373	82	2	≤ 1	167	37	≤ 1	≤ 1	414	90	1	≤ 1	45	10	≤ 1	≤ 1	1.0
Cook Islands	10	52	4	23	22	117	2	12	5	28	≤ 1	≤ 1	2	13	≤ 1	≤ 1	9	51	≤ 1	≤ 1	≤ 1	5	≤ 1	≤ 1	0.1
Fiji	376	52	169	23	612	85	67	9	239	28	1	≤ 1	107	13	≤ 1	≤ 1	343	41	≤ 1	≤ 1	40	5	≤ 1	≤ 1	1.0
French Polynesia	101	52	46	23	229	117	23	12	72	28	≤ 1	≤ 1	32	13	≤ 1	≤ 1	142	56	≤ 1	≤ 1	12	5	≤ 1	≤ 1	2.3
Guam	180	134	81	60	406	303	40	30	98	59	2	≤ 1	44	26	≤ 1	≤ 1	152	91	≤ 1	≤ 1	17	10	≤ 1	≤ 1	2.6
Japan	66 354	54	29 841	24	88 294	71	8 227	7	37 814	30	105	≤ 1	17 006	13	37	≤ 1	50 394	39	53	≤ 1	4 709	4	12	≤ 1	0.6
Kiribati	96	134	43	60	218	303	22	30	57	59	≤ 1	≤ 1	26	27	≤ 1	≤ 1	57	59	≤ 1	≤ 1	4	4	≤ 1	≤ 1	≤ 0.05
Lao PDR	7 372	178	3 317	80	19 601	474	1 546	37	9 019	156	27	≤ 1	4 056	70	9	≤ 1	18 407	318	13	≤ 1	1 470	25	9	≤ 1	0.5
Malaysia	21 798	122	9 803	55	35 074	197	3 898	22	25 527	103	383	2	11 449	46	134	≤ 1	33 037	133	192	≤ 1	4 037	16	109	≤ 1	2.5
Marshall Islands	63	134	29	60	143	303	14	30	35	59	≤ 1	≤ 1	16	27	≤ 1	≤ 1	35	59	≤ 1	≤ 1	3	4	≤ 1	≤ 1	≤ 0.05
Micronesia	129	134	58	60	210	218	22	23	65	59	≤ 1	≤ 1	29	27	≤ 1	≤ 1	65	59	≤ 1	≤ 1	5	4	≤ 1	≤ 1	≤ 0.05
Mongolia	4 872	220	2 193	99	12 725	574	1 113	50	5 018	192	11	≤ 1	2 257	86	4	≤ 1	5 460	209	5	≤ 1	633	24	2	≤ 1	0.4
Nauru	5	52	2	23	11	117	1	12	4	28	≤ 1	≤ 1	2	13	≤ 1	≤ 1	5	35	≤ 1	≤ 1	≤ 1	4	≤ 1	≤ 1	0.1
New Caledonia	229	134	103	60	415	243	45	26	137	59	1	≤ 1	62	26	≤ 1	≤ 1	272	117	≤ 1	≤ 1	28	12	≤ 1	≤ 1	1.5
New Zealand	362	11	163	5	370	11	36	1	424	11	4	≤ 1	191	5	1	≤ 1	432	11	2	≤ 1	42	1	≤ 1	≤ 1	2.1
Niue	1	52	≤ 1	23	2	117	≤ 1	12	≤ 1	28	≤ 1	≤ 1	≤ 1	13	≤ 1	≤ 1	≤ 1	57	≤ 1	≤ 1	≤ 1	6	≤ 1	≤ 1	0.1
Northern Mariana Is	60	134	27	60	135	303	12	28	46	59	≤ 1	≤ 1	21	27	≤ 1	≤ 1	53	68	≤ 1	≤ 1	6	8	≤ 1	≤ 1	0.1
Palau	20	134	9	60	26	169	2	12	12	59	≤ 1	≤ 1	5	27	≤ 1	≤ 1	18	91	≤ 1	≤ 1	1	7	≤ 1	≤ 1	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	106	2	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	≤ 1	107 738	132	66	≤ 1	378 094	463	95	≤ 1	39 357	48	66	≤ 1	0.1
Rep. Korea	35 605	83	16 022	37	55 846	130	4 642	11	43 029	90	239	≤ 1	19 339	41	84	≤ 1	59 383	125	119	≤ 1	4 940	10	28	≤ 1	0.9
Samoa	84	52	38	23	136	84	15	9	52	28	≤ 1	≤ 1	24	13	≤ 1	≤ 1	78	43	≤ 1	≤ 1	9	5	≤ 1	≤ 1	0.4
Singapore	1 784	59	801	27	1 859	62	202	7	1 691	40	41	≤ 1	757	18	14	≤ 1	1 744	41	20	≤ 1	191	4	4	≤ 1	5.2
Solomon Islands	425	134	191	60	961	303	88	28	274	59	≤ 1	≤ 1	123	27	≤ 1	≤ 1	274	59	≤ 1	≤ 1	20	4	≤ 1	≤ 1	0.1
Tokelau	≤ 1	52	≤ 1	23	2	117	≤ 1	8	≤ 1	28	≤ 1	≤ 1	≤ 1	13	≤ 1	≤ 1	≤ 1	57	≤ 1	≤ 1	≤ 1	6	≤ 1	≤ 1	0.1
Tonga	49	52	22	23	87	92	9	10	29	28	≤ 1	≤ 1	13	13	≤ 1	≤ 1	43	42	≤ 1	≤ 1	5	5	≤ 1	≤ 1	0.1
Tuvalu	5	52	2	23	11	117	≤ 1	8	3	28	≤ 1	≤ 1	1	13	≤ 1	≤ 1	6	57	≤ 1	≤ 1	≤ 1	5	≤ 1	≤ 1	0.1
Vanuatu	200	134	90	60	453	303	45	30	122	59	≤ 1	≤ 1	55	27	≤ 1	≤ 1	133	64	≤ 1	≤ 1	11	5	≤ 1	≤ 1	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	938	1	192 674	232	1 340	2	18 680	22	686	≤ 1	3.0
Wallis & Futuna Is	7	52	3	23	16	117	1	9	4	28	≤ 1	≤ 1	2	13	≤ 1	≤ 1	4	28	≤ 1	≤ 1	≤ 1	2	≤ 1	≤ 1	0.1
WPR	**1 901 041**	**125**	**854 901**	**56**	**5 013 011**	**330**	**398 415**	**26**	**1 925 332**	**111**	**16 548**	**≤ 1**	**864 745**	**50**	**5 792**	**≤ 1**	**3 764 564**	**216**	**8 274**	**≤ 1**	**307 411**	**18**	**5 064**	**≤ 1**	**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 A2.2 **Whole country case notifications and case detection rates, 2004**

	TB cases notified from whole country (DOTS + non-DOTS)															Incidence and case detection rates				Proportions			
		Country	New and relapse		New pulmonary			New extra-	Other	Re-treatment cases					New pulm.	Estimated incidence		Case detection rate		ss+	ss+	Extrapulm.	Re-treat.
	Population	total	(WHO total)		ss+		ss- / unk.	pulmonary	new	Relapse	After failure	After default	Other re-treat.	Other	lab. confirm.	all forms	ss+	new and	new ss+	(% of	(% of	(% of	(% of
	thousands	number	number	rate	number	rate	number	number	number	number	number	number	number	number	number	number	number	relapse %	%	pulm.)	new+relapse)	new+relapse)	new+re-treat.)
American Samoa	63	5	5	8	2	3	1	2	0	0	0	0	0	0	2	18	8	28	25	67	40	40	
Australia	19 942	1 082	1 059	5	285	1	337	414		23		4	7	12	541	1 132	507	94	56	46	27	39	3
Brunei Darussalam	366	186	176	48	115	31	15	38		8	0	1		9	120	197	89	89	129	88	65	22	5
Cambodia	13 798	31 105	30 838	223	18 978	138	5 800	5 415		645	41	29	197		18 978	70 370	31 118	44	61	77	62	18	3
China	1 307 989	884 892	790 603	60	384 886	29	284 433	39 395		81 889			86 459	7 830	384 886	1 324 633	595 381	60	65	58	49	5	19
China, Hong Kong SAR	6 963	6 260	6 143	88	1 694	24	3 073	677	0	699	4	48	65	0	3 545	5 223	2 349	118	72	36	28	11	13
China, Macao SAR	457	360	323	71	128	28	129	38	0	28	0	3	3	31	207	373	167	87	76	50	40	12	10
Cook Islands	18	1	1	6	1	6	0	0	0	0	0	0	0	0	1	5	2	19	43	100	100		
Fiji	841	134	134	16	62	7	38	31	0	3	0	0	0	0	62	239	107	56	58	62	46	23	2
French Polynesia	253	62	60	24	30	12	12	9		9				2	30	72	32	84	93	71	50	15	15
Guam	167	51	51	31	22	13	9	10	8	2	0	0	0		30	98	44	52	50	71	43	20	4
Japan	127 923	29 736	29 736	23	10 471	8	12 384	5 907		974					15 747	37 814	17 006	79	62	46	35	20	3
Kiribati	97	311	310	318	142	146	59	107	0	2	1	0	0	0	142	57	26	540	550	71	46	35	1
Lao PDR	5 792	3 216	3 173	55	2 241	39	472	343	0	117	15	52	0	43	2 241	9 019	4 056	35	55	83	71	11	6
Malaysia	24 894	15 429	14 986	60	7 843	32	5 136	1 543	0	464	27	357	59	0	7 843	25 527	11 449	59	69	60	52	10	6
Marshall Islands	60	122	119	199	39	65	38	37		5		2	1		39	35	16	338	246	51	33	31	7
Micronesia	110	112	118	108	35	32	51	26	0	6	0	16	3	0	69	65	29	183	120	41	30	22	18
Mongolia	2 614	4 656	4 570	175	1 808	69	866	1 718		178	53	33			1 808	5 018	2 257	91	80	68	40	38	6
Nauru	13															4	2						
New Caledonia	233	61	61	26	15	6	14	30		2					24	137	62	45	24	52	25	49	3
New Zealand	3 989	376	373	9	112	3	86	129	37	9			5		176	424	191	88	59	57	30	35	4
Niue	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Northern Mariana Is	79	53	53	67	14	18	34	5	0	0	0	0	0	0	24	46	21	114	67	29	26	9	
Palau	20	5	5	25	5	25	0	0	0	0	0	0	0	0	5	12	5	43	95	100	100		
Papua New Guinea	5 772	12 743	12 743	221	1 896	33	5 234	4 176		1 437					1 896	13 455	6 025	95	31	27	15	33	11
Philippines	81 617	130 609	130 530	160	78 163	96	47 937	1 275	0	3 155	79				78 163	239 459	107 738	55	73	62	60	1	2
Rep. Korea	47 645	41 735	34 671	73	11 501	24	16 446	3 556	0	3 168	387	763	2 581	3 333	14 674	43 029	19 339	81	59	41	33	10	18
Samoa	184															52	24						
Singapore	4 273	1 528	1 516	35	506	12	660	182		168	3	22		12	892	1 691	757	90	67	43	33	12	13
Solomon Islands	466	340	340	73	152	33	107	68		13	0	0	0	0	152	274	123	124	123	59	45	20	4
Tokelau	1															0	0						
Tonga	102															29	13						
Tuvalu	10															3	1						
Vanuatu	207	117	115	55	59	28	32	23	0	1	2	0	0		59	122	55	94	107	65	51	20	3
Viet Nam	83 123	99 126	98 389	118	58 389	70	17 106	16 218		6 676	522	251			58 389	146 695	65 745	67	89	77	59	16	8
Wallis & Futuna Is	15															4	2						
WPR	**1 740 099**	**1 264 413**	**1 161 201**	**67**	**579 594**	**33**	**400 509**	**81372**	**45**	**99 681**	**1 134**	**1 581**	**89 380**	**11 272**	**590 745**	**1 925 332**	**864 745**	**60**	**67**	**59**	**50**	**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 A2.3 **DOTS coverage, case notifications and case detection rates, 2004**

	TB cases reported from DOTS services														Estimated incidence and case detection rate				Proportions			
	DOTS	New and relapse		New pulmonary		New extra-	Other	Re-treatment cases					New pulm.	Estimated incidence		Case detection rate		ss+	ss+	Extrapulm.	Re-treat.
	coverage	(WHO total)		ss+		ss- / unk.	pulmonary	new	Relapse	After failure	After default	Other re-treat.	Other	lab. confirm.	all forms	ss+	new and	new ss+	(% of	(% of	(% of	(% of
	%	number	rate	number	rate	number	number	number	number	number	number	number	number	number	number	number	relapse %	%	pulm.)	new+relapse)	new+relapse)	new+re-treat.)
American Samoa	100	5	8	2	3	1	2	0	0	0	0	0	0	2	18	8	28	25	67	40	40	
Australia	63	655	3	168	1	236	231		20			6	5	351	1 132	507	58	33	42	26	35	4
Brunei Darussalam	100	176	48	115	31	15	38		8	0	1		9	120	197	89	89	129	88	65	22	5
Cambodia	100	30 838	223	18 978	138	5 800	5 415		645	41	29	197		18 978	70 370	31 118	44	61	77	62	18	3
China	96	763 035	58	377 546	29	269 226	37 566		78 697			85 409	7 592	377 546	1 324 633	595 381	58	63	58	49	5	19
China, Hong Kong SAR	100	4 579	66	1 290	19	2 271	501	0	517	3	43	49	0	2 636	5 223	2 349	88	55	36	28	11	13
China, Macao SAR	100	323	71	128	28	129	38	0	28	0	3	3	5	207	373	167	87	76	50	40	12	10
Cook Islands	98	1	6	1	6	0	0	0	0	0	0	0	0	1	5	2	19	43	100	100		
Fiji	100	134	16	62	7	38	31	0	3	0	0	0	0	62	239	107	56	58	62	46	23	2
French Polynesia	100	60	24	30	12	12	9		9				2	30	72	32	84	93	71	50	15	15
Guam	100	51	31	22	13	9	10	8	2	0	0	0		30	98	44	52	50	71	43	20	4
Japan	71	21 755	17	7 572	6	9 129	4 278		776					11 527	37 814	17 006	58	45	45	35	20	4
Kiribati	100	310	318	142	146	59	107	0	2	1	0	0	0	142	57	26	540	550	71	46	35	1
Lao PDR	98	3 173	55	2 241	39	472	343	0	117	15	52	0	43	2 241	9 019	4 056	35	55	83	71	11	6
Malaysia	100	14 986	60	7 843	32	5 136	1 543	0	464	27	357	59	0	7 843	25 527	11 449	59	69	60	52	10	6
Marshall Islands	100	119	199	39	65	38	37		5		2	1		39	35	16	338	246	51	33	31	7
Micronesia	90	118	108	35	32	51	26	0	6	0	16	3	0	69	65	29	183	120	41	30	22	18
Mongolia	100	4 570	175	1 808	69	866	1 718		178	53	33			1 808	5 018	2 257	91	80	68	40	38	6
Nauru															4	2						
New Caledonia	100	61	26	15	6	14	30		2					24	137	62	45	24	52	25	49	3
New Zealand	100	373	9	112	3	86	129	37	9			5		176	424	191	88	59	57	30	35	4
Niue	100	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	0	0	0	24	46	21	114	67	29	26	9	
Palau	95	5	25	5	25	0	0	0	0	0	0	0	0	5	12	5	43	95	100	100		
Papua New Guinea	47	8 751	152	1 151	20	3 959	3 396		245					1 151	13 455	6 025	65	19	23	13	39	3
Philippines	100	130 530	160	78 163	96	47 937	1 275	0	3 155	79				78 163	239 459	107 738	55	73	62	60	1	2
Rep. Korea	100	12 357	26	4 044	8	6 680	127	0	1 506	4	344	1 010	1 550	5 126	43 029	19 339	29	21	38	33	1	21
Samoa															52	24						
Singapore	100	1 516	35	506	12	660	182		168		22		12	892	1 691	757	90	67	43	33	12	12
Solomon Islands	100	340	73	152	33	107	68		13	0	0	0	0	152	274	123	124	123	59	45	20	4
Tokelau															0	0						
Tonga															29	13						
Tuvalu															3	1						
Vanuatu	100	115	55	59	28	32	23	0	1	2	0	0		59	122	55	94	107	65	51	20	3
Viet Nam	100	98 389	118	58 389	70	17 106	16 218		6 676	522	251			58 389	146 695	65 745	67	89	77	59	16	8
Wallis & Futuna Is															4	2						
WPR	**94**	**1 097 378**	**63**	**560 632**	**32**	**370 103**	**73 346**	**45**	**93 252**	**750**	**1 153**	**86 742**	**9 218**	**567 793**	**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	Institutions notifying to NTP						HIV	HIV	TB pts				Laboratory-	DST			
	for other	Private hospitals	Private	Public				testing for	surveillance	tested	TB pts	TB pts	TB pts	confirmed	in new	MDR in	Re-treatment	Re-treatment
	practitioners	or clinics	practitioners	hospitals	Prisions	Military	Insurance	TB pts	among TB pts	for HIV	HIV-positive	CPT	ART	MDR	cases	new cases	DST	MDR
										number	number	number	number	number	number	number	number	number
American Samoa	Yes	No	No	No	No			No	No	0				0	0	0	0	0
Australia	No	All	All	All	All	Some	Some	Partially	No	190	12			12	12	5	5	2
Brunei Darussalam	Yes	All	All	All	All	All	All	Yes	Yes		1	0	1	0	181	0	0	0
Cambodia	No	Some	No	All	No	Some	No	No	No									
China	Yes	Some	Some	Some	Some	Some	Some	No	No									
China, Hong Kong SAR	Yes	All	All	All	All	All	All	Yes	Yes	3 122	2	15	9	35	3 566	16	513	19
China, Macao SAR	Yes	Some	Some	All	No	No	No	Yes	Yes	361	1	0	1	8	207	5	22	2
Cook Islands	Yes			All				No	No	0	0	0	0	0	0	0	0	0
Fiji		All	All	All	All	All	All	Partially	No	122	4	0	0	5	59	4	1	1
French Polynesia	Yes	All	All	All				Yes	Yes	17	0			0	51	0	11	0
Guam	Yes	All	All	All	All	All	All	Yes	Yes	12	0	0	0	0	29	0	0	0
Japan	Yes	All	All	All	All	All	No	No	No									
Kiribati	Yes	No	No	All	Some	No	No	Yes	No	0	0	0	0	0	0	0	0	0
Lao PDR	No	No	No	Some	Some	All	No	Partially	Yes					0	0	0	0	0
Malaysia	Yes	Some	Some	All	All	All	No	Yes	Yes	15 316	1 263			0	0	0	0	0
Marshall Islands	No			All	Some		No	Partially	No	0	0	0	0	2	26	2	8	2
Micronesia	Yes	No	No	All	No	No	No	Partially	No	8	0	0	0	1	28	1	4	1
Mongolia	Yes	No	No	Some	Some	Some	No	No	No	510	0	0	0	1	8	4	40	14
Nauru																		
New Caledonia	Yes	All	All	All	All	All	All	Yes	Yes	16	0	0	0	0	2	0		0
New Zealand	Yes	All	All	All	All	All	All	No	No	141	2			3	278	3	10	0
Niue									Yes					0	0	0	0	0
Northern Mariana Is	Yes	All	All	All	All			Yes	Yes	53	0			1	5	1	0	0
Palau	No	All	All	All	All	No	No	Yes	Yes	4	0	0	0	0	1	0	0	0
Papua New Guinea	No	No	No	All	All	All	No	No	No					0	0	0	0	0
Philippines	Yes	Some	Some	Some	Some	Some	Some	No	No				0	230	269	2		
Rep. Korea	No	All	All	All	Some	Some	No	No	No					110	2 636	71	278	39
Samoa																		
Singapore	Yes	All	All	All	All	All	All	No	No					2	838	2	117	0
Solomon Islands								No	No									
Tokelau																		
Tonga																		
Tuvalu																		
Vanuatu	No	Some	Some	All	No	No	No	No	No									
Viet Nam	No	No	No	No	No	No	No	No	No									
Wallis & Futuna Is																		
WPR	**50**	**53**	**50**	**72**	**56**	**47**	**28**	**42**	**31**	**19 872**	**1 285**	**15**	**11**	**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 calculated 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 notif	% of cohort							%	Number of cases		% of notif	% of cohort							%	Number	% of cohort								
	Notified	Regist'd	regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Notified	Regist'd	regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success
American Samoa	2	2	100	100						0	100												1	0	100	0	0	0	0	0	100
Australia	48	272	567	17	65	9	0	1	7	1	82	65	166	255	5	72	10		2	6	5	77	14	29	57	7	0	7	0	0	86
Brunei Darussalam	121	121	100	45	15	6	0	2	33	0	60												8	25	13	0	0	0	13	50	38
Cambodia	18 923	19 098	101	90	3	3	0	2	1	0	93												833	80	7	6	3	2	1	0	87
China	257 287	257 287	100	91	3	1	1	1	1	2	94	10 127	10 127	100	61	5	1	1	3	1	29	66	78 265	82	6	3	3	2	1	3	89
China, Hong Kong SAR	1 470	1 470	100	73	5	5	9	4	4	0	78	324	324	100	2	2	6	0	0	90	0	4	255	67	11	5	11	3	4	0	78
China, Macao SAR	130	130	100	85	2	5	0	2	3	2	88	8	8	100			75				25		35	74	11	6	0	0	6	3	86
Cook Islands	0	0										0	0										0							0	
Fiji	78	78	100	86	0	8		6	0	0	86												6	50	0	17	0	33	0	0	50
French Polynesia	21	36	171		83	11		6		0	83												6	0	83	17	0	0	0	0	83
Guam	0	25		96	0	4	0	0	0	0	96																				
Japan	7 212	7 278	101	50	26	13	4	2	6	0	76	3 631	2 303	63	17	16	1	3	0	63	0	33	734	49	23	14	5	3	7	0	72
Kiribati	99	99	100	74	14	10				2	88												2	100	0	0	0	0	0	0	100
Lao PDR	1 868	1 868	100	70	9	8	1	9	4	0	79												136	46	7	14	3	8	4	17	54
Malaysia	7 989	6 716	84	69	3	9	1	9	5	4	72												453	37	25	13	0	12	4	8	63
Marshall Islands	20	20	100	90	0	5	0	5	0	0	90												4	50	25	0	0	25	0	0	75
Micronesia	26	26	100	27	65	4	0	4	0	0	92												8	0	50	38	0	13	0	0	50
Mongolia	1 541	1 541	100	84	4	3	4	4	2	0	87												235	51	20	6	11	7	3	0	72
Nauru	1																														
New Caledonia	12	12	100	75		25				0	75												2	100	0	0	0	0	0	0	100
New Zealand	181	185	102		36	5		1	4	55	36												5	0	60	20	0	0	0	20	60
Niue	0	0																					0							0	
Northern Mariana Is	16	16	100	75	0	6	0	0	13	6	75												0							0	
Palau	5	5	100	80	0	0	0	20	0	0	80												0							0	
Papua New Guinea	1 061	1 067	101	41	17	4	1	19	6	11	58	1 249											75	23	24	11	4	29	7	3	47
Philippines	72 670	68 377	94	81	8	3	1	5	3	0	88												2 963	57	19	5	6	9	3	0	76
Rep. Korea	4 379	4 342	99	81	2	1	1	4	11	0	82	6 597											3 890	67	2	2	2	7	20	0	69
Samoa	12																														
Singapore	341	583	171		77	17		6	1	0	77	242											208	0	70	20	0	7	1	1	70
Solomon Islands	138	139	101	68	19	7	0	4	2	0	87												5	80	20	0	0	0	0	0	100
Tokelau	0																														
Tonga	11																														
Tuvalu												0																			
Vanuatu	40	40	100	70	5	18	5	0	3	0	75												2	100	0	0	0	0	0	0	100
Viet Nam	55 937	55 842	100	90	2	3	1	2	2	0	92												6 011	80	6	5	5	2	3	0	85
Wallis & Futuna Is	7																														
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**	**3**	**2**	**2**	**87**

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases regist'd, 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 downlaoded from www.who.int/tb

Table A2.6 **Re-treatment outcomes, 2003 cohort**

	Relapse, DOTS									After failure, DOTS									After default, DOTS								
		% of cohort							%		% of cohort							%		% of cohort							%
	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success	Number regist'd	Cured	Compl-eted	Died	Failed	Default	Trans-ferred	Not eval.	Success
American Samoa	1		100					0	100																		
Australia	14	29	57	7		7		0	86																		
Brunei Darussalam	8	25	13	0	0	0	13	50	38	0									0								
Cambodia	754	84	6	5	2	2	1	0	89																		
China																											
China, Hong Kong SAR	233	69	11	4	11	1	4	0	80	1	0	100	0	0	0	0	0	100	21	52	0	14	14	19	0	0	52
China, Macao SAR	29	76	10	7	0	0	3	3	86	0									6	67	17				17	0	83
Cook Islands	0									0									0								
Fiji	6	50	0	17	0	33	0	0	50																		
French Polynesia	6		83	17				0	83																		
Guam																											
Japan	734	49	23	14	5	3	7	0	72																		
Kiribati	2	100						0	100																		
Lao PDR	86	53	7	12	1	6	3	17	60	7	29	0	29	29	0	0	14	29	43	35	9	16	2	14	7	16	44
Malaysia	351	40	30	13	1	8	3	5	71	28	18	14	11	0	21	4	32	32	74	30	7	12	0	31	11	9	36
Marshall Islands	3	67	33					0	100										1					100		0	
Micronesia	4	0	50	25	0	25	0	0	50	0									4	0	50	50	0	0	0	0	50
Mongolia	146	55	19	7	10	6	3	0	75	58	45	26	3	17	5	3	0	71	31	45	16	10	10	16	3	0	61
Nauru																											
New Caledonia	2	100						0	100																		
New Zealand	5		60	20				20	60																		
Niue	0									0									0								
Northern Mariana Is	0									0									0								
Palau	0									0									0								
Papua New Guinea	75	23	24	11	4	29	7	3	47																		
Philippines	2 454	61	19	5	4	8	3	0	80	509	39	19	7	16	16	4	0	58									
Rep. Korea	1 608	68	2	2	2	5	21	0	70	7	71					29	0	71	330	62	4	1	1	18	15	0	66
Samoa																											
Singapore	180		70	22		6	2	1	70	12		83			8		8	83	16		63	19		19		0	63
Solomon Islands	5	80	20	0	0	0	0	0	100	0									0								
Tokelau																											
Tonga																											
Tuvalu																											
Vanuatu	2	100	0	0	0	0	0	0	100																		
Viet Nam	5 444	81	6	5	4	2	2	0	87	488	60	7	7	17	5	4	0	66	79	87	8	1	0	4	0	0	95
Wallis & Futuna Is																											
WPR	**12 152**	**70**	**11**	**5**	**4**	**4**	**5**	**0**	**81**	**1 110**	**47**	**14**	**7**	**16**	**10**	**4**	**1**	**62**	**605**	**56**	**8**	**5**	**1**	**17**	**10**	**2**	**64**

Not eval. indicates not evaluated (percentage of registered cases for which outcomes were not recorded); success, sum of cured and completed; cases regist'd, 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
American Samoa		100			50	100	100	100	100	100			63		33	23	23	12	24	25
Australia				66	75	84	74	66	78	82				23	31	24	20	25	9	33
Brunei Darussalam					85	76	63	56	84	60					123	100	111	129	138	129
Cambodia	84	91	94	91	95	93	91	92	92	93	40	34	44	48	53	50	48	57	61	61
China	94	96	96	96	97	96	95	96	93	94	15	28	32	32	29	31	31	30	43	63
China, Hong Kong SAR					85	78	76	78	79	78					60	61	59	63	62	55
China, Macao SAR	75			81		78	89	86	89	88	85	155	194	164		95	93	80	77	76
Cook Islands				50		80		100	100					31			74	39		43
Fiji	90	86	86	91	90	92	85	85	78	86	47	49	49	56	51	50	61	64	70	58
French Polynesia		67	95	100	74	85	97	80	82	83		93	106	90	90	81		82	63	93
Guam						94	93	71	68	96						83	94	65		50
Japan						76	70	75	76	76						22	30	33	41	45
Kiribati					83	88	91	86	94	88			33	161	189	180	221	294	369	550
Lao PDR		70	55	62	75	84	82	77	78	79		24	33	40	45	40	40	46	47	55
Malaysia		69				90	78	79	76	72	64	68				73	74	70	70	69
Marshall Islands					83	82	91	86	100	90				57	93	63	89	109	124	246
Micronesia	64	80				95	93	100	91	92	19	31				42	24	68	85	120
Mongolia			78	86	84	86	87	87	87	87	7	6	31	60	67	62	73	74	68	80
Nauru						50	25	100	50							216	110	112	57	
New Caledonia	62	75			70	77	89	84	85	75	24	31			29	28	27	32	19	24
New Zealand							30	9	60	36						41	37	47	56	59
Niue									100									469		
Northern Mariana Is						80	81	74	71	75						115	83	95	74	67
Palau	64	67	75					100	38	80	115	53	96					154	90	95
Papua New Guinea				93	72	66	63	67	53	58			1	7	8	7	8	16	18	19
Philippines	80		82	83	84	87	88	88	88	88	0	0	3	10	20	48	57	61	68	73
Rep. Korea	71	76	71	82					83	82	34	65	56	57					23	21
Samoa	50	80	100		86	94	92	77	84		47	29	47		61	48	42	75	49	
Singapore	88	86				95	85	88	87	77	57	26				13	22	40	44	67
Solomon Islands		65	73	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						88	88	88	79	75					36	41	78	52	70	107
Viet Nam	91	91	90	85	93	92	92	93	92	92	30	59	78	83	83	82	83	87	85	89
Wallis & Futuna Is								100	100									47	344	
WPR	**90**	**91**	**93**	**93**	**95**	**94**	**92**	**93**	**91**	**91**	**15**	**28**	**32**	**33**	**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+	0–14	15–24	25–34	35–44	45–54	55–64	65+	
American Samoa						2						1							1	2		2.0
Australia	0	18	16	17	15	11	32	0	6	17	5	7	3	19	0	24	33	22	22	14	51	1.9
Brunei Darussalam	0	10	13	12	16	11	10	0	6	11	12	8	2	4	0	16	24	24	24	13	14	1.7
Cambodia	36	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	16 995	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	226	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	
Fiji	0	8	6	8	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	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	1 535	227	925	1 014	852	694	605	532	418	2 120	3 119	3 041	2 584	2 045	2 067	2.2
Marshall Islands	2	5	4	3	3	2		1	7	5	3	3	0	1	3	12	9	6	6	2	1	1.0
Micronesia	0	4	0	2	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	
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					1	2					1	1						1	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	6 792	10 328	12 229	11 413	7 526	4 289	291	3 507	5 090	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	1 382	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																						
Tuvalu																						
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**	**60 898**	**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**	**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	2
Brunei 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	1	32	38	40	55	82	114	1	25	23	19	21	29	30	1	29	31	30	39	56	68
China, Hong Kong SAR																					
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	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																					
Lao PDR	1	21	44	83	168	239	283	1	13	33	52	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	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		1 145	899	1 073	1 043	980	1 013	949	1 059
Brunei Darussalam	196	285	245	276	256	238	212	189	126	128	143		180	160				160		272	307	216	230	206	176
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	14 603	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	226 899	265 095	251 600	304 639	310 607	375 481	345 000	320 426	344 218	363 804	515 764	504 758	466 394	445 704	449 518	454 372	470 221	462 609	615 868	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	585	233	455	671	571	420	389	320	274	343	329	294	285		402	570	575	465		449	465	388	371	323
Cook Islands	37	10	19	29	20	36	17	16	20	1	1	8	12	6	4		0	0	1	3	2	2	1	0	1
Fiji	210	180	163	185	165	230	199	173	162	218	226	247	240	183	225	203	200	171	166	192	144	183	148	185	134
French Polynesia	76	66	65	78	80	78	85	80	63	73	59	49	83	78	89		86	91	105	93	62	62	64	50	60
Guam	55	41	49	48	54	37	49	34	41	75			60	70	94						54	63	51	22	51
Japan	70 916	65 867	63 940	62 021	61 521	58 567	56 690	56 496	54 357	53 112	51 821	50 612	48 956	48 461	44 425	43 078	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	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	2 093	1 135	830	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		26	52	61			59		49	41	34	56	51	60	119
Micronesia	0		67	73	75	66	60	98	77	68	367	350	111	151	173	172	126	107	123		91	104	127	99	118
Mongolia	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	3 829	3 918	4 570
Nauru	0	2	8	0	0	0	8	6	8	0	7				4					2	4	3	5	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		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		67		46	48	51	93	97	66	75	58	53	45	53
Palau	17	10	17	14	20	26	13	38	17	3		6	4	25	41	19	5	15		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	195 767	162 360	145 807	119 914	107 133	118 408	132 759	130 530
Rep. Korea	89 803	98 532	100 878	91 572	85 669	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	21 782	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	
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	1 581	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	1	1	1		0	2	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	
Tuvalu	33	18	12	23	9	32	27	22	24	26	23	30	30	28	19	36			18	14	16	16	13	30	
Vanuatu	178	92	173	196	188	124	131	90	118	144	140	230	193	114	152	79	126	184	178	120	152	175	101	104	115
Viet Nam	43 062	43 506	51 206	43 185	43 875	46 941	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	89 792	90 728	95 044	92 741	98 389
Wallis & Futuna Is	23	24	5	17	14	14		34	1	30		22	4	11	11	6	8	14					19	15	
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**	**724 290**	**824 952**	**873 424**	**870 918**	**834 604**	**820 483**	**786 293**	**805 104**	**811 482**	**980 908**	**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	35	36	30
% reporting	100	92	100	100	100	100	100	100	100	97	92	86	97	92	92	78	86	86	86	92	97	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	3	5	8
Australia	10	9	8	8	8	7	6	6	6	6	6	6	6	6	6	6		6	5	6	5	5	5	5	5
Brunei Darussalam	102	143	120	131	118	107	92	80	52	51	56		66	57				52		84	92	63	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	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	186	131	117	92	76	92	86	75	71		97	136	135	107		101	104	86	82	71
Cook Islands	208	57	107	162	111	198	93	88	110	5	5	43	63	31	20		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	26	22	21	24	18	22	18	22	16
French Polynesia	50	42	41	47	47	45	48	44	34	38	30	25	41	38	42		39	41	46	40	26	26	26	20	24
Guam	52	38	44	42	46	31	40	27	32	57			43	50	66						35	40	32	13	31
Japan	61	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
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
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			115		96	80	65	105	92	104	199
Micronesia			86	91	90	77	68	109	84	72	381	354	110	146	163	160	117	99	114		85	97	118	91	108
Mongolia	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				38					17	33	24	39	23	
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	9	8	10	11	10	9	10	12	9	10	8	10	9
Niue	31	0	69	110	39	0	216	0	141		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		134		84	84	86	150	150	98	108	80	71	59	67
Palau	139	80	133	106	147	186	91	263	116	20		38	25	152	242	109	28	82		168			56	46	25
Papua New Guinea	78	76	81	85	98	94	77	59	109	85	61	81	59	168	117	172	66	162	223	251	199	234	202	226	221
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
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	
Singapore	112	98	86	80	81	72	64	57	58	55	53	59	56	56	50	54	54	53	56	46	43	37	36	37	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	
Tonga	66	51	47	53	58	53	38	26	15	38	24	21	30	34	24	21	23	21	30	22	24	12	29	16	
Tuvalu	410	221	145	274	106	370	307	245	263	280	244	315	312	289	195	367			179	138	157	156	126	290	
Vanuatu	152	77	141	156	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					125	98	
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**

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**
American Samoa	1	4		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
Brunei Darussalam	68				0		102	84	95	112	121	115	24				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	110	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	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		160	157	147	138	128	27		34	61	76	64		36	35	33	30	28
Cook Islands	4	1		0	0	1	0	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	9	8	9	8	8	9	9	9	7
French Polynesia		38		37	41	34	33	29	0	28	21	30		18		17	18	15	14	12	0	11	8	12
Guam		40						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	9	8	8	8
Kiribati	99	184		144	50	52	59	54	64	82	99	142	129	234		175	60	61	67	60	70	88	104	146
Lao PDR			478	886	1 234	1 494	1 719	1 526	1 563	1 829	1 868	2 241			10	18	25	30	33	29	29	33	33	39
Malaysia	6 954	6 861	6 688	7 271	7 496	7 802	8 207	8 156	8 309	7 958	7 989	7 843	36	35	33	35	35	36	36	35	35	33	33	32
Marshall Islands	12			12		11	17	11	15	18	20	39	24			23		22	33	21	28	33	35	65
Micronesia			9	14	9	14		15	8	22	26	35			8	13	8	13		14	7	20	24	32
Mongolia	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	65	60	69
Nauru		2					2	4	2	2	1			19					17	33	16	16	8	
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	6
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	3
Niue	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	57	0	0	61	0	0	65	0	0
Northern Mariana Is			14	26	21	26	15	27	19	21	16	14			25	44	34	40	22	39	26	28	21	18
Palau	8	11	9	4	7		20			9	5	5	49	65	52	22	38		105			46	25	25
Papua New Guinea			1 652	447	1 195	2 107	2 140	1 933	1 351	1 345	2 310	1 896			35	9	24	42	41	36	25	24	41	33
Philippines	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	96
Rep. Korea	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	24
Samoa	21	18	15	9	14	7	17	13	11	19	12		13	11	9	5	8	4	10	7	6	11	7	
Singapore	513	861	455	519	436	482	465	248	357	549	583	506	16	26	13	14	12	13	12	6	9	13	14	12
Solomon Islands	155	114	109	90	113	140	93	109	118	108	138	152	45	32	30	24	29	35	23	26	27	24	30	33
Tokelau		0	1	0			0	0	0		0			0	71	0			0	0	0		0	
Tonga	16	17	9	14	11	16	10	15	8	23	11		17	18	9	14	11	16	10	15	8	23	11	
Tuvalu	2	1	6				0	0	0	0	0		21	10	61				0	0	0	0	0	
Vanuatu		62	30	50	66	38	43	63	57	38	40	59		37	17	28	37	21	23	33	29	19	20	28
Viet Nam			37 550	48 911	50 016	54 889	53 805	53 169	54 238	56 811	55 937	58 389			51	66	66	72	69	68	68	70	68	70
Wallis & Futuna Is			3	3	1				1	1	7				21	21	7				7	7	46	
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**

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, please contact:

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