

# Summary

## Background and methods

**1.** The 10th WHO annual report on surveillance, planning and financing for global tuberculosis (TB) control includes data on case notifications, treatment outcomes, activities, budgets, costs and expenditures. Results are given for all national TB control programmes (NTPs) that have reported to WHO, although the emphasis is on progress in 22 high-burden countries (HBCs).

**2.** Eleven consecutive years of data (1994–2004) are now available to assess progress towards the Millennium Development Goals (MDGs) for TB control, and towards targets set by the World Health Assembly (WHA) and the Stop TB Partnership. WHA targets are to detect, by 2005, 70% of new sputum smear-positive cases and to successfully treat 85% of these cases. MDG target 8 (of 18) is to have halted and begun to reverse the TB incidence rate by 2015. The Stop TB Partnership has endorsed additional targets of halving 1990 prevalence and deaths rates by 2015.

## Improving case detection and treatment

**3.** A total of 200 (of 211) countries and territories reported to WHO on their strategies for TB control, and on TB case notifications and/or treatment outcomes.

**4.** Using surveillance and survey data to update estimates of incidence, we calculate that there were 8.9 million new cases of TB in 2004 (140/100 000 population), of which 3.9 million (62/100 000) were smear-positive and 741 000 were in adults infected with the human immunodeficiency virus (HIV). There were 14.6 million prevalent cases (229/100 000), of which 6.1 million were smear-positive (95/100 000). More than 80% of all new TB patients in 2004 were in the African, South-East Asia and Western Pacific regions. An estimated 1.7 million people (27/100 000) died from TB in 2004, including those coinfecting with HIV (248 000).

**5.** A total of 183 countries and territories were implementing the DOTS strategy during 2004. By the end of 2004, 83% of the world's population lived in countries, or parts of countries, covered by DOTS. DOTS programmes notified 4.4 million new and relapse TB cases in 2004, of which 2.1 million were new smear-positive. In total, 21.5 million TB patients, and 10.7 million smear-positive patients, were treated in DOTS programmes over the 10 years 1995–2004.

**6.** At the end of 2004, DOTS expansion was complete in nine HBCs and nearing completion in five others. Pakistan reported full DOTS coverage by the end of 2005, and coverage has increased considerably in Afghanistan, Brazil, India and the Russian Federation.

**7.** The 2.1 million smear-positive cases notified by DOTS programmes in 2004 represent 53% of the estimated incidence. The increment in smear-positive cases notified under DOTS between 2003 and 2004 (350 000) was greater than ever before (the average annual increment from 1995–2000 was 134 000). If the observed acceleration in case-finding is maintained, DOTS programmes will detect more than 60% of cases in 2005, but they will fall short of the 70% target.

**8.** The acceleration in case-finding since 2000 has been observed in the case reports from all sources, as well as from DOTS programmes. We infer that case detection has continued to improve because patients are being reported from new sources, including public and private clinics and hospitals, especially in the South-East Asia and Western Pacific regions.

**9.** Of the additional smear-positive cases reported under DOTS in 2004, three-quarters (75%) were in China, India and Indonesia. These three countries have been driving the global acceleration in case detection, backed by Bangladesh, Brazil and Myanmar. Among patients who suffered a first episode of TB in 2004 but were not detected by DOTS programmes, 61% lived in eight countries: Bangladesh, China, Ethiopia, India, Indonesia, Nigeria, Pakistan and the Russian Federation.

**10.** The smear-positive case detection rate within established DOTS areas remained stable at an average of 51% up to 2001, but increased to 64% in 2004. These recent improvements in case-finding within DOTS areas have taken place predominantly in Bangladesh, Brazil, China, India, Indonesia, Myanmar and the Philippines.

**11.** While WHO measures case detection principally with reference to smear-positive disease, statistics for detection based on other diagnostic methods give a different view of programme performance. A comparison of 25 European countries in 2004 showed that the proportion of estimated smear-positive cases detected was always higher than the proportion of estimated culture-positive cases detected, but lower than the proportion of all estimated TB cases detected. In the Region of the Americas, by contrast, smear-positive detection rates were typically higher than the detection rates of all TB cases. These differences need further investigation because they are likely to be important in evaluating TB epidemiology and control now, and when assessing the role of new and more sensitive diagnostic tools.

**12.** Treatment success in the 2003 DOTS cohort of 1.7 million patients was 82% on average, edging closer to the 85% target. As in previous DOTS cohorts, treatment suc-

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

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

### Epidemiological trends and the impact of TB control

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

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

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

### DOTS implementation and planning

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

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

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

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

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

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

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

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

### Financing DOTS expansion

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

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

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

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

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

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

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

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

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

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