

Summary

Background and methods

1. This is the 8th WHO annual report on global TB control. It includes data on case notifications and treatment outcomes from all national TB control programmes that have reported to WHO, together with an analysis of plans, budgets, expenditures, and constraints on DOTS expansion for 22 high-burden countries (HBCs). Eight consecutive years of data are now available to assess progress towards the 2005 global targets for case detection (70%) and treatment success (85%).

2. During 2003, a standard form for reporting surveillance and financial data was sent to 210 countries via WHO regional offices. The form requests information about policy and practice in TB control, about the number and types of TB cases notified in 2002, and about the outcomes of treatment and retreatment for smear-positive cases registered in 2001. It also asks for information about NTP budgets, expenditures, and funding sources, and about the way in which the general health infrastructure is used for TB control.

3. National programme managers in the 22 HBCs were also asked, via a separate questionnaire and interviews, to summarize plans for TB control from 2003 onwards, focusing on activities to improve political commitment, expand access to DOTS, strengthen diagnosis, improve treatment outcomes, ensure adequate staffing, and improve programme monitoring and supervision. They were asked about collaborative TB/HIV activities, the management of drug resistance, and the development of partnerships, and to identify major constraints to reaching TB control targets.

Improving the detection and treatment of TB cases

4. A total of 201 countries reported to WHO on their strategies for TB control, and on TB case notifications and/or treatment outcomes.

5. Using trends in case notifications to update estimates of incidence, we calculate that there were 8.8 million new cases of TB in 2002, of which 3.9 million were smear-positive. The global incidence rate of TB (per capita) was growing at approximately 1.1% per year, and the number of cases at 2.4% per year. The growth in case notifications has been much faster in African countries with high HIV prevalence, and in eastern Europe (mainly the former Soviet Union), but growth has been decelerating in both these regions since the mid 1990s.

6. The number of countries implementing the DOTS strategy increased by 25 during 2002, bringing the total to 180 (out of 210). NTPs reported that, by the end of 2002, 69% of the world's population lived in countries, or parts of countries, covered by DOTS. DOTS programmes notified 3.0 million new TB cases, of which 1.4 million were smear-positive. A total of 13.3 million TB patients, and 6.8 million smear-positive patients, were treated in DOTS programmes between 1995 and 2002.

7. The 1.4 million smear-positive cases notified by DOTS programmes in 2002 represent 37% of the estimated incidence, just over half way to the 70% target. The increment in smear-positive cases notified under DOTS between 2001 and 2002 (214 656) was greater than the average from 1995–2000 (134 157). The acceleration in notifications was

more pronounced for all TB cases, which increased by 610 228 between 2001 and 2002, as compared with the average annual increment of 269 268 in the interval 1995–2000. Nonetheless, to reach 70% case detection by 2005, an additional 1.04 million TB cases, and an additional 433 000 smear-positive cases, must be found in each of the years 2003–5.

8. While the number of TB cases reported by DOTS programmes appears to have been accelerating since 2000, the total number of TB cases reported to WHO increased very little over the period 1995–2002 (average detection rate 46%). The number of smear-positive cases reported from all sources has been increasing (44% detection rate in 2002), but much more slowly than the increases reported under DOTS. If these trends continue, all cases notified to WHO by 2005 will be notified by DOTS programmes.

9. Twenty-eight percent of the additional smear-positive cases reported under DOTS in 2002 were found in India. There were smaller but apparently significant improvements in case detection in South Africa (contributing 12% of the total increase), Indonesia (10%), Pakistan (4%), Bangladesh (3%), and the Philippines (3%). These 6 countries together accounted for over 60% of the additional cases detected in 2002.

10. As DOTS programmes have expanded geographically, the smear-positive case detection rate within DOTS areas has remained roughly constant since 1996 (average 49%), though there are signs of a slow increase in the HBCs, led by India, Indonesia, Bangladesh, and the Philippines.

11. Treatment success under DOTS for the 2001 cohort was 82% on average, the same as for the 2000

cohort. As in previous years, treatment success was substantially below average in the WHO African Region (71%) and in eastern Europe (70%). Low treatment success in these two regions can be attributed, in part, to the complications of HIV co-infection and drug resistance, respectively. Equally important, though, is the failure of NTPs to monitor the outcome of treatment for all patients.

12. Based on case reports and WHO estimates, 18 countries had reached the targets for case detection and cure by the end of 2002. However, Viet Nam was the only high-burden country among them.

Planning and DOTS implementation

13. All 22 HBCs had formulated an overall plan for DOTS expansion by the end of 2003. Detailed plans for major improvements in DOTS coverage, case detection, and programme quality had been made by several countries, including India and Indonesia. However, strategic planning to overcome the constraints to TB control remains weak in several countries with low case detection or cure rates.

14. The six most common constraints identified were: lack of qualified staff; poor monitoring and evaluation; inadequate infrastructure; weak laboratory services; the failure of DOTS programmes to engage private practitioners and other public providers; and ineffective decentralization. The remedies required to overcome these constraints include: the development of staffing plans for TB control that are consistent with plans to strengthen the health workforce in general; public-private mix projects and schemes to involve other public providers and facilities; and the provision of adequate funding for, and the building of local capacity in, countries with decentralized health systems. Intersectoral cooperation

will be critical in overcoming constraints that lie beyond the full control of NTPs.

15. The effectiveness of DOTS, and the prospects for expanding the strategy, are also limited by the failure of drug supplies, inconsistent drug quality, and inadequate drug policies. A consequence is the spread of drug resistance. Part of the remedy will be to establish testing for drug sensitivity as an integral part of DOTS programmes, to standardize treatment regimens for patients that have failed treatment, and to ensure that second-line drugs are available and properly used for patients with MDR-TB.

16. While the DOTS strategy must remain at the heart of TB control policy, a wider range of interventions will be needed to reduce TB burden in the countries most affected by HIV/AIDS, especially those in eastern and southern Africa. The recommended interventions are set out in WHO's *Interim Policy on Collaborative TB/HIV Activities*, but so far they are being carried out on a small scale, in districts or regions of countries, rather than nationally.

Financing DOTS expansion

17. Financial data were received from 123 countries, 77 of which provided complete data on 2003 budgets (including 17 HBCs), and 74 of which provided complete, disaggregated expenditures for 2002 (including 15 HBCs).

18. Expenditure on TB control in the HBCs in 2002 was US\$ 834–884 million. This was lower than the anticipated expenditure of US\$ 976 million, the sum that would have been required, in our estimation, to achieve 70% case detection by 2005. Total estimated costs for the HBCs in 2003 amounted to approximately US\$ 1 billion. This is an increase of about US\$ 150 million on 2002 expenditures, but probably still too

little to meet the target for case detection by 2005.

19. In 14 HBCs, the cost per patient treated was in the range US\$ 125–380. For three others (Brazil, the Russian Federation, and South Africa), costs per patient were significantly higher (> US\$ 700) because the prices of labour and capital are high, or because they rely more on inpatient care. In all HBCs that reported data for both years, the cost per patient increased between 2002 and 2003. The reasons were made clear in some budgets (e.g. a prevalence survey in Viet Nam, equipment in Myanmar), but not all.

20. In 2003, the governments of HBCs contributed (from national funds and loans) 70% of funds specified in NTP budgets, and 87% of total costs. But government contributions to total costs varied from 0% (Afghanistan) to 100% (e.g. Brazil), and tended to be greater in richer countries. External grants contributed about one half or more of the NTP budgets of Afghanistan, Bangladesh, DR Congo, Ethiopia, Pakistan, and Tanzania.

21. The overall funding gap reported by HBCs was US\$ 41 million in 2003 (excluding South Africa and Zimbabwe, for which there were no data), about 4% of total costs, but a much larger fraction of the costs in poorer countries. Between 2002 and 2003, the funding gap narrowed in seven countries, mainly because more funds were promised by governments (including loans) and the GFATM. The gap increased in five countries because more (unfunded) activities were planned to accelerate DOTS expansion.

22. By the end of 2003, the GFATM had approved grants (for up to 5 years) of US\$ 608 million for TB control activities and US\$ 319 million for collaborative TB/HIV activities in 56 countries. The total for the first 2 years is US\$ 294 million for TB control and US\$ 90 million for TB/HIV.

Approximately 70% of the combined total is for HBCs. Although the GFATM grants will make a major contribution to TB control in some countries, the disbursement of money has been slow.

23. We estimate that, if the 2005 targets for case detection and cure are to be met, US\$ 0.95 billion must be spent in the HBCs (except the Russian Federation) in 2004, and US\$ 1.1 billion in 2005, compared with US\$ 0.65 billion spent in 2002 and US\$ 0.85 billion budgeted for 2003. The Russian Federation reported a budget of around US\$ 400 million for 2004, of which US\$ 200 million is yet to be found.

Conclusions

24. The global, smear-positive case detection rate was 37% in 2002, over half way to the 70% target, and rising more quickly than at any time

since 1995. Based on recent trends, we expect the case detection rate to be about 50% by 2005, by which time all TB patients reported in the public sector will receive the internationally recommended standard of care under DOTS. Smear-positive case detection by DOTS programmes could be increased from 37% to 50% simply by ensuring that the diagnosis and treatment of known TB cases in the Americas, Europe, and South-East Asia conforms with DOTS standards. To get above 50% case detection will be challenging because the notification rate of all TB cases by public health authorities has been stable for many years, and because DOTS programmes will probably have exhausted this supply of cases by 2005. Beyond 2005, and preferably sooner, DOTS programmes and public health authorities must begin to recruit patients from non-participating clinics and hospitals, notably in the private sector in Asia,

and from beyond the present limits of public health systems in Africa. A special effort must be made to improve cure rates in Africa.

25. To achieve these goals, governments and NTPs will need to take a more strategic approach to planning, match budgets more closely with plans, and match fundraising activities to realistic budgets. This is already happening in several HBCs, but not in all. If disbursements from the GFATM and other donors can be made more expeditiously, these funds will make a major contribution to TB control in several of the poorer HBCs whose governments cannot adequately support TB control. The HBCs planned to spend an extra US\$ 150 million in total in 2003 (as compared with 2002), which is almost certainly too little to put them on the road to 70% case detection by 2005.